



Utah Native Plant Society* Review of Manti-La Sal National Forest Species of Conservation Concern

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*The Utah Native Plant Society is a Utah non-profit organization with an IRS 501(c)(3) status founded in 1978 with eight chapters in different areas of the state (including the Canyonlands chapter in southeastern Utah) and with over 400 members. E-mail address: unps@unps.org. Web site: www.unps.org

The Utah Native Plant Society (UNPS), in cooperation with the Grand Canyon Trust, is submitting this review of the plant species recommended by the US Forest Service Intermountain Regional Office (RO) as Species of Conservation Concern (SCC) for the purposes of land use planning by the Manti-La Sal National Forest (MLNF) in Utah. It appears that expert panels, academic and professional botanists and other stakeholders from the botanical community were rarely consulted or included in the development of the Forest SCC list, according to literature referenced. Retired US Forest Service (USFS) Regional Botanist Teresa Prendusi, and retired USFS Ecologist Wayne Padgett contributed their expertise to this review. Both have knowledge and experience with the national and regional rare plant programs, as well as species, and threats to those species, on the MLNF.

From 1978 to 1992 UNPS held annual rare plant conferences and reviews and provided the primary input to the US Fish & Wildlife Service's candidate species priority ranking program, and for the past almost 40 years has frequently informally consulted with the BLM, USFS and Utah Natural Heritage Program with respect to their various sensitive species programs, and provided input and recommendations. UNPS has continued to co-sponsor annual rare plant conferences and reviews over the past 16 consecutive years.

In 2009, the Utah Native Plant Society adopted a more rigorous ranking and review methodology initially developed by Dr. Walter Fertig and which several other states have now started to adopt. In conjunction with annual rare plant conferences and other meetings, the UNPS has updated those rankings in a completely transparent process and continues to do so. Building on prior published reviews (Fertig 2009, Fertig 2012), the most recent publication of our ongoing reviews and evaluations of Utah's rare vascular plant taxa occurred in May 2016 in the publication of our technical journal, *Calochortiana* (Alexander 2016). Older reviews have also been frequently published in our newsletter over many years and have been cited on the Utah Rare Plants guide web site (UNPS 2003-2016), a site that we coordinate and maintain. This site originally was an extension of the *Utah Endangered, Threatened, and Sensitive Plant Field Guide* (Atwood et al 1991) which was in part funded by the Utah State Office of the BLM, and involved extensive input of knowledgeable USFS and National Park Service employees as well as academia

and others. Dr. Atwood was also a long-time member of our board, as well as past president, while working as the Forest Service Intermountain Regional Botanist.

Despite the foregoing, the now extensive UNPS rare plant-related publications were not utilized or at the very least were not even referenced in this analysis and so appear to not have been considered. Each and every plant analyzed by the MLNF also surprisingly includes literature citations of Utah Division of Wildlife Resources' (UDWR) Sensitive Species List and The Utah Wildlife Action Plan. The State of Utah has no jurisdiction over rare plants nor has it historically maintained a Sensitive Plant List. The Wildlife Action Plan is a plan for managing wildlife and their habitats and does not address plants. The botanical community was not included as team members or stakeholders in the development of the Wildlife Action Plan according to literature referenced. Consequently, no rare plants or their habitats are mentioned or addressed as an objective in that Action Plan.

In all, the Intermountain Regional Office (RO) has identified two natural communities, 53 vascular plants, and one fungus as having potential to be included as MLNF SCC. We are first focusing this review on the vascular plants included in that list, then expanding this review to include others.

Of the 53 vascular plants identified by the RO, a USFWS federally listed species known to occur on MLNF is the Heliotrope milkvetch (*Astragalus montii*, syn. *A. limnocharis* var. *montii*) which is listed as threatened and is included in the latest R4 species list (USFS 2016). Welsh (2015) continues to treat this as the species level as does the USFWS and the UNHP per Franklin (2005), and as do we (Alexander 2016, UNPS 2003-2016). Until its name is changed by the USFWS, we encourage the USFS to treat it in a similar fashion. Federal laws dictate that the Forest will manage to protect this species and its habitat, and is therefore not discussed here.

An endangered species, that is suspected to occur on the Forest in the Ferron-Price district is Wright's fishhook cactus (*Sclerocactus wrightiae*). While it is true that it has not yet been found on the MLNF, *S. wrightiae* is known to occur at elevations up to 6,000 ft. and likely occurs on MLNF west of Ferron. Contrary to the indications in the May 19, 2016 MLNF draft review, it is in fact considered to be an endemic species (Welsh 2015, UNPS 2003-2016, many others) and it is also not the "most widespread" *Sclerocactus* in Utah as claimed (that honor goes to instead to *S. parviflorus*). *S. wrightiae* often does hybridize with *S. parviflorus* resulting in frequent misidentifications. Comments made in the MLNF draft review require amendment.

Our review follows direction provided in the national US Forest Service Manual FSM 1909.12, Section 12.52d (Species to Consider when Identifying Potential Species of Conservation Concern) included in Appendix B. This guidance includes the following:

Species with NatureServe G/T1 or G/T2 status ranks are expected to be included unless it can be demonstrated and documented that known threats for these species, such as those threats listed for the species by NatureServe, are not currently present or relevant in the plan area.

The RO has recommended that 27 of the species meeting these criteria **must** be included as SCC unless absence of threats is documented; 24 species **should** be included as SCC; and one is not recommended for further inclusion. The Manti-La Sal National Forest, through their analysis, has identified that only two of the 51 non-ESA species be included for consideration as SCC in their land use plan.

UNPS Concerns

Defining the specific ecological conditions on which each potential SCC depends is an essential first step to a rationale that supports a conclusion that there is or is not a substantial concern about a species' viability

within the plan area. The logical next step is to identify the specific threats acting on the dependent ecological conditions within the plan area. Only after the specific threats to the ecological conditions on which the species depends have been defined, can a defensible SCC rationale be developed.

Our review indicates that, in addition to its references to the UDWR Utah Wildlife Action Plan, the MLNF SCC analysis has relied to some degree on herbarium or Utah Natural Heritage Program (UNHP) data sets, many of which are many decades old, and should be considered stale. It is unclear whether the MLNF has monitored or assessed the field status of species that once had been included on its Sensitive Species List, or if there are data addressing habitat conditions, demographic status, population size, etc. for these species. If this information is available at the Forest level, it should be made available as part of the screening material so the public can better assess the adequacy of the SCC list. In addition, it is important to know whether the MLNF submitted new or updated information on their Element Occurrences to the Utah Natural Heritage Program. Accurate species ranks (and changes to the ranks) are dependent on information submitted to the Heritage Programs. Some of the MLNF species may be more common than previously thought, while others may have experienced losses or extirpation.

The reasons given by MLNF for rejecting species proposed as SCC appear to give more weight to the failure of the MLNF to have or gather information than to the information that raises concern for the viability of the species. A typical example is the following: *Aquilegia flavescens* var. *rubicunda* (a T1 species, which is now recognized as the species level) is dismissed from SCC consideration by MLNF with the statement: "Lack of recent documentation precludes concern for persistence in plan area." This type of statement is insufficient as rationale for dismissal. The basis for these determinations are unclear and need a more complete and fuller narrative regarding species' monitoring history, population trends, etc. In cases where population trend data are lacking, the SCC designation rationale should be tied to specific threats to species within the plan area that are affecting the ecological conditions on which the species depends.

In addition, taxonomic questions, and lack of information to resolve those questions, are often raised as rationale for leaving plants off the SCC. Without clear knowledge of taxonomy of a given species, the species should remain on the list until those questions are resolved. The MLNF review of the recommended species to consider for SCC status appears to suggest that unfamiliarity with the presence or condition, or taxonomic questions of a plant species releases the Forest of responsibility to check into the location or trend of that species or manage for the habitat conditions the species needs. To the contrary, UNPS suggests that these are precisely the issues that need to be addressed and resolved before eliminating species from the SCC list.

Past and present threats to rare plant species are today being compounded by the impacts of climate change. Plant species may not be able to survive impacts above and beyond those placed on them through management actions and decisions because of the unknown effects that our changing climate (e.g., increased temperatures, increased droughts) will have on dominant as well as rare plant species.

We understand the concern about having sufficient personnel to adequately monitor and address many rare plant species. We feel, however, to suggest there are only a few plant species that the Forest needs to address through their Forest Plan over an area as vast and disparate as the separate districts are in the case of the MLNF, could not only negatively affect appropriate annual budget allocations from the Washington Office, but is also biologically and logically untenable. We encourage the MLNF to seek partnerships with UNPS, academia and other botanical experts, which would be beneficial to both the plants that need attention, and to overburdened Forest Service staff.

UNPS Review

A total of at least 21 of the 53 species submitted by the RO have rankings of G1 or G2 or have rankings of T1 or T2, including the two Federally Listed species. These species clearly fit within the criteria described in FSM 1909.12, Section 12.52d (Species to Consider when Identifying Potential Species of Conservation Concern). Seven additional species are ranked as G1G3 or G2G3 species and three species are ranked as G4T2T3, so while we consider them to fit within the criteria, their global rarity may be somewhat less. The remaining 22 species do not fit these criteria, and have been included by the RO for other reasons, such as state rarity.

Through our review, we suggest that 34 of the 51 species recommended by the Regional Office be included as Manti-La Sal National Forest Species of Conservation Concern, in addition to the two federally listed species mentioned above. These include 25 of the 34 that clearly fit the national guidance described above (G1, G2, T1, T2); five of the six G2G3 species, one G1G3 species, and two G4T2T3 species. In addition, we have also recommended nine species ranked as G3 or higher since they met the secondary S1 or S2 criteria. Seven of these are S1 species that are threatened by management activities; another is a unique form of *Echinocereus mojavensis*, (syn *E. triglochidiatus* var. *mojavensis*), “forma” *inermis*, formerly federally listed, that is threatened by cactus collectors and with other anthropogenic impacts and threats; and one is an S3 species threatened by the recent introduction of non-native mountain goats to the La Sal Mountains. Each of these species are considered important because they contribute to the genetic variability that is important for maintaining species viability given the potential impacts from climate change and other impacts. Rationale for inclusion of species is based on both rarity and potential threats.

In addition, we have suggested the inclusion of 20 additional taxa that were not considered by MLNF simply because they were not included in the RO recommendation. At least 16 of these have S1 or S2 rankings.

Several species have been excluded for consideration by MLNF because little information is known about their actual occurrence on the Forest or because of taxonomic questions. We suggest that until these questions are resolved, these species must be included on the SCC list precisely for those reasons. When taxonomic questions are addressed and resolved, and/or plant species, varieties, or subspecies are determined to be more abundant than previously known, and threats are not present, then their inclusion on the list could be altered.

Following are species that UNPS has reviewed and recommends. They are not listed in any particular order (mostly but not completely alphabetical order) rather than by global or state rarity. The rationale for the few G1, G2, T1, and/or T2 species we have not suggested be added to the SCC is also provided at the end of this document.

Taxa UNPS recommends for Inclusion as SCC

1. ***Allium geyeri* var. *chatterleyi*** - Geyer’s onion

Ranking: G4G5, T2, S2

UNPS Recommendation: Include

Reasons for SCC status:

- T2 global status (per FSM direction)
- UNPS **Watch** list ranking (Alexander 2016)
- Included on the 2016 R4 sensitive species list (USFS 2016).
- Narrow endemic on the west slope of the Abajo Mountains and Elk Ridge (Bears Ears National

Monument)

- Twelve collections, including at least 5 on the MLNF: Tuhy collection [#1519](#) (Cliff Dwellers Pasture Research Natural Area); M.A. (Ben) Franklin [#7228](#), [#7559](#), A. Clifford [#95-765](#), [#95-748](#), (Intermountain Region Herbarium Network); “New” population (remnant?) discovered in 2013
- Threats: herbivory
- Lack of information regarding the number of populations and other possible threats. Should remain on list until sufficient information is available that addresses its current and potential viability and supports its removal.

MLNF reason for rejecting:

- Not enough information to create concern

2. ***Aquilegia flavescens var. rubicunda*** - Kink trail columbine - which is now being treated as ***Aquilegia rubicunda*** (Welsh 2015, Alexander 2016).

Ranking when treated as a variety:: G5, T1, S1

UNPS Recommendation: Include

Reasons for SCC status:

- T1 global status (per FSM direction)
- UNPS **High** list ranking (Alexander 2016)
- Included on the 2016 R4 sensitive species list (USFS 2016).
- Extremely rare and narrow endemic when treated as a variety; treated now at the species level is even more limited in distribution (Welsh 2015)
- (2001): 1300->1700 plants from five different locations, consistently near coal measures
- Majority of occurrences are within the MLNF
- NatureServe: “Rounded Global Status T1- Critically imperiled”
- Threats: Road work, developments, livestock trampling around Link Canyon Spring
- Should remain on list until sufficient information is available that addresses its current and potential viability and supports its removal.
- Recent documentation of species occurrence includes the 2012 Madson collection [#6118](#) just north of Joes Valley Reservoir Dam on the MLNF

MLNF reason for rejecting:

- Lack of recent documentation precludes concern for persistence in area

3. ***Astragalus iselyi*** – Isley’s milkvetch

Ranking: G1, S1

UNPS Recommendation: Include

Reasons for SCC status:

- G1 global status (per FSM direction)
- Ranked at highest level of concern (i.e. **Extremely high**) by UNPS rare plant committee (Alexander 2016)
- Included on the 2016 R4 sensitive species list (USFS 2016).
- Included on the latest Utah BLM sensitive species list
- Extremely narrow Utah endemic with limited population sizes
- Found in one location on the west slope of the La Sal Mountains, Grand and San Juan counties
- Threats:
 - Mining, potentially renewed uranium mining
 - Recreation, including ORV use
 - Heavy grazing

- o Road expansion
- Has been scheduled for a USFWS review by the USFWS within the next few years
- Should remain on list until sufficient information is available that addresses its current and potential viability and supports its removal.
- Contrary to the MLNF reason, significant UNHP and other information exists about the species including presentations that have been made at annual rare plant conferences and plant surveys.

MLNF reason for rejecting:

- Not enough information available about this species in the plan area

4. ***Ericameria nauseosa var. psilocarpa*** (syn. ***Chrysothamnus nauseosus var. psilocarpus***) –

Huntington rubber rabbitbrush

Ranking: G5, T1T2, S1S2,

UNPS Recommendation: Include

Reasons for SCC status:

- T1T2 global status (per FSM direction)
- UNPS **Watch** list ranking (Alexander 2016)
- Utah endemic
- Two sites shown on map
- Recreation (bouldering) may be a threat
- Should remain on list until taxonomic issues are resolved
- Should remain on list until sufficient information is available that addresses its current and potential viability and supports its removal.
- Remains treated as a valid taxon by Welsh (2015) as well as by FNA under *Ericameria*.

MLNF reason for rejecting:

- Questionable taxonomy
- Lack of information

5. ***Cryptantha creutzfeldtii*** – Creutzfeldt's cat's-eye

Ranking: G2, S2

UNPS Recommendation: Include

Reasons for SCC status:

- G2 global status (per FSM direction)
- UNPS **Watch** list ranking (Alexander 2016)
- Included on the 2016 R4 sensitive species list (USFS 2016).
- Utah endemic, very small range
- NatureServe: about 67% of the survey-based individuals are within a single occurrence
- Low density. sparse
- 28 records on MLNF
- Utah BLM Sensitive Species
- Threats: There are many threats to this species including:
 - o Trampling
 - o Recreation - locations such as Lewis 7411 are highly susceptible to recreational impacts
 - o Oil and gas development
 - o Possible industrial development and changes in land use (NatureServe)
- Should remain on list *because* it is uncertain that the species can persist. While there are many individuals, most are in one population. Any impacts to that single population could

significantly affect the species' viability. Management actions should not contribute to the species' inability to persist.

MLNF reason for rejecting:

- Lack of current information to preclude concern for persistence

6. ***Cryptantha jonesiana*** – Jones' cat's-eye

Ranking: G2G3, S2

UNPS Recommendation: Include

Reasons for SCC status:

- G2G3 global status
- UNPS **Watch** list ranking (Alexander 2016)
- Endemic to the San Rafael Swell, Emery County, central Utah
- Possible industrial development and changes in land use.
- Should remain on list until taxonomic questions are definitively resolved.

MLNF reason for rejecting:

- This species appears to be common on the San Rafael swell (IRHN 2016). Identification of *C. jonesiana* in the plan area is questionable as it is surrounded by *C. flava* (waiting verification from BRY).

7. ***Cymopterus beckii*** – Pinnate spring-parsley

Ranking: G2G3, S1

UNPS Recommendation: Include

Reasons for SCC status:

- G2G3 global status (per FSM direction)
- UNPS **Watch** list ranking (Alexander 2016)
- Included on the 2016 R4 sensitive species list (USFS 2016).
- This species is covered by the Navajo Sandstone Endemics Conservation Agreement and should be included on the SCC for that reason.
- National Park Service Sensitive Species; thought to be a Pleistocene relic

MLNF reason for rejecting:

- The Utah Natural History Programs' GIS data reports 45 collections from the plan area (UNHP 2015). Thompson (2001) reports only four collections from the plan area and that 70-95 plants occur from three different populations. However, NatureServe (2015) cites a 2012 report from the Utah Native Plant Society (UNPS) that states that the number of individuals has "greatly increased" to over 30,000.

8. ***Erigeron abajoensis*** – Abajo daisy

Ranking: G1G2, N1N2, S1S2

UNPS Recommendation: Include

Reasons for SCC status:

- Utah endemic with G1G2 global status (per FSM direction). Note: numerous collections have been made on the Abajo Mountains, but until the Global ranking is altered through appropriate channels to change it from G1G2 to G3 or higher, and the known threats, e.g., ORV vehicle use and livestock grazing are no longer present, this species should remain on the SCC list.
- UNPS **Medium Priority** list ranking (Alexander 2016)
- Included on the 2016 R4 sensitive species list (USFS 2016).
- Only on open, rocky Abajo ridgetops on MLNF

- Threats –
 - Livestock grazing and trampling
 - Past terracing and seeding with introduced grasses such as smooth brome (which is invasive and competes with native vegetation)
 - Off-road vehicle use (biggest current threat according to Barb Smith 2015)
 - NatureServe: Possible mineral exploration

MLNF reason for rejecting:

- Not of local concern (thousands of occurrences in last 20 years; plant population stable)

9. *Erigeron carringtoniae* (syn. *E. untermannii*) – Carrington’s daisy

Ranking: G2, S2

UNPS Recommendation: Include

Reasons for SCC status:

- G2 global status (per FSM direction).
- UNPS **Watch** list ranking (Alexander 2016)
- Included on the 2016 R4 sensitive species list (USFS 2016).
- Included on latest BLM sensitive list (under *E. untermannii*)
- [Flora of North America](#) (FNA) lists *E. carringtoniae* as a synonym for *E. untermannii*. Combining these into one species, FNA still states that this species is “of conservation concern.”
- Welsh (2015) continues to treat as separate species distinct from *E. untermannii*
- 2004 Barnes collection [#4120](#) was made on the Wasatch Plateau, Skyline Drive west of Snow Lake.
- NatureServe: A few of the populations are large, but total area occupied is very small
- Threats: off-road vehicle use
- Ongoing road maintenance
- Trampling by livestock
- Lack of information regarding the number of populations and other possible threats.
- Should remain on list until sufficient information is available that addresses its taxonomic issues and current and potential viability issues have been resolved to avoid unintended consequences of management or other activities.

MLNF reason for rejecting:

- Lack of information and synonymy of species, which extends distribution, precludes concern for persistence

10. *Erigeron kachinensis* – Kachina daisy

Ranking: G2, N2, S2

Included on the 2016 R4 sensitive species list (USFS 2016).

UNPS Recommendation: Include

Reasons for SCC status:

- G2 global status (per FSM direction).
- UNPS **High** list ranking (Alexander 2016)
- 40 collections are known (Intermountain Region Herbarium Network) from a relatively small number of populations on and adjacent to the Monticello District of the MLNF.
- There are numerous threats to this species, including:
 - Mining
 - Energy development
 - Water projects could affect water supplies

- o Climbers
- o Grazing
- o NatureServe: Drought – mortality highest in dry alcoves
- o Climate change due to its required hanging garden habitat
- o Road maintenance, esp. tourism

MLNF reason for rejecting

- Not of local concern

11. ***Erigeron mancus*** – La Sal daisy

Ranking: G2, S2

Included on the 2016 R4 sensitive species list (USFS 2016).

UNPS Recommendation: Include

Reasons for SCC status:

- G2 global status (per FSM direction).
- UNPS **High** list ranking (Alexander 2016)
- Extremely limited distribution in the La Sal Mountains
- Threatened greatly by transplanted, non-native mountain goat populations that are increasing
- Nearly all 31 collections noted on the [Intermountain Region Herbarium Network](#) are located in the La Sal Mountains on the MLNF.

MLNF recommends this species be included as an SCC. We strongly agree.

12. ***Platanthera zothecina*** (Syn. ***Habenaria zothecina***) – Alcove bog orchid

Ranking: G2G3, S2

UNPS Recommendation: Include

Reasons for SCC status

- G2G3 global status (per FSM direction).
- UNPS **Watch** list ranking (Alexander 2016)
- NatureServe:
 - o Regional endemic of the Colorado and Green Rivers and their tributaries in eastern Utah
 - o Fewer than 30 known sites and these are small, scattered, and with few individuals
- Hanging gardens and seeps (Because of their inherent fragility, spring and seep ecosystems are sensitive to a variety of human activities that have reduced the ecological integrity of these ecosystems through recreation, groundwater diversion, and very likely through effects of climate change on water availability)
- Trends not known
- Lack of information regarding the number of populations and other possible threats. Should remain on list until sufficient information is available that addresses its current and potential viability and supports its removal.

MLNF reason for rejecting

- Not enough information to create concern

13. ***Hedysarum occidentale* var. *canone*** - Canyon sweetvetch

Ranking: G2G3, S2 (Note: [NatureServe explorer correctly lists this as G5 T2](#) – accessed February 5, 2017)

UNPS Recommendation: Include

Reasons for SCC status:

- T2 global status (per FSM direction).
- UNPS **Watch** list ranking (Alexander 2016)
- Included on the 2016 R4 sensitive species list (USFS 2016).
- Has been a sensitive species on MLNF; 6-20 small scattered sites in Duchesne, Carbon, and Emery Counties
- Only four locations seen in 20 years on the MLNF, common in the four sites
- Multiple threats
 - Coal mining
 - Road expansion/ road work
 - Recreation

MLNF reason for rejecting:

- “Preliminary data indicate little impact to the species.”

14. *Physaria hemiphysaria subsp. lucens* (syn. *Lesquerella hemiphysaria var. lucens*)– Intermountain bladderpod

Ranking: G4T1, S1

UNPS Recommendation: Include

Reasons for SCC status:

- T1 global status (per FSM direction).
- UNPS **High** list ranking (Alexander 2016)
- Population on west Tavaputs Plateau (S. Goodrich collection #20539) is close to MLNF and likely on habitat that occurs on that Forest.
- Until taxonomic questions are resolved, this species should be included on SCC

MLNF reason for rejecting:

- Welsh (2003) states: “Two scarcely differentiated varieties are known: ...Plants in the population at the head of Range Creek vary from glabrous to sparingly pubescent; *possibly they do not warrant taxonomic recognition* [italics added], but they are isolated from the remainder of the species.”

15. *Lupinus crassus* – Payson’s lupine

Ranking: G2, S2

UNPS Recommendation: Include

Reasons for SCC status:

- G2 Status (per FSM direction)
- Incompatible grazing is considered to be the primary threat to the species at this time (Rondeau et al. 2011).
- Moderately threatened by landfills (Paradox dump site), road construction, and oil and gas exploration and extraction (Peterson 1983).
- One population found within a few miles of MLNF in Colorado near Paradox Valley.
- Species should be included with additional surveys conducted to evaluate its presence on the forest and potential threats (species could be removed for recommendation following documentation of lack of habitat)

MLNF Reason for rejecting:

- Not in plan area

16. *Packera dimorphophylla var. intermedia* – (syn. *Senecio dimorphophyllus var. intermedius*) –

Different groundel

Ranking: G4, T2Q

UNPS Recommendation: Include

Reason for SCC status:

- This variety is suspected to be endemic to the La Sal Mountains, and that it appears to be rare at all recorded locations (pers. comm. R. Fitts 2012).
- UNPS **Watch** list ranking (Alexander 2016)
- Mountain goat impacts are very likely and could have severe impacts to populations in the La Sal Mountains.
- Species should be included in SCC until issues as to taxonomy and presence are resolved

MLNF reason for rejecting:

- Taxonomic questions
- A lack of scientific information prevents confirmation that this species has recently (within the last 20-years) been established within the planning area (Payson and Payson collection #[4097](#) in 1924 near Geyser Pass on the La Sal Mountains). Further surveys need to be conducted to verify current status.

17. *Penstemon lentus* var. *albiflorus* – Handsome beardtongue

Ranking: G4, T2T3, S2S3

UNPS Recommendation: Include

Reasons for SCC status:

- T2T3 global status (per FSM direction).
- UNPS **Medium Priority** list ranking (Alexander 2016)
- All known populations (Intermountain Region Herbarium Network) occur within a very narrow distribution; most are on or adjacent to the Abajo Mountain portion of the MLNF.
- Local endemic, San Juan County, incl. west side of Abajo Mountains
- Known only from about 20 populations
- Lack of information regarding this species indicate that it should remain on list until sufficient information is available that addresses its current and potential viability and supports its removal.

MLNF reason for rejecting:

- Not enough info whether it can persist
- Limited scientific information available for this species

18. *Penstemon navajoa* – Navajo Mountain beardtongue

Ranking: G1, S1

UNPS Recommendation: Include

Reasons for SCC status:

- G1 global status (per FSM direction).
- UNPS **Watch** list ranking (Alexander 2016)
- Threats – logging, feral horses
- Trend not known
- NatureServe: Long been known from only the upper elevations of Navajo Mountain, but found in 2005 the head of Dark Canyon, on Chippean Ridge, and in the Abajo Mountains
- Lack of information regarding this species indicate that it should remain on list until sufficient information is available that addresses its current and potential viability and supports its removal

MLNF reason for rejecting:

- Considered secure and stable with no real threats on Navajo lands

- Not enough info whether it can persist

19. ***Penstemon tdestromii*** – Tidestrom’s penstemon

Ranking: G2G3, S2S3

Reasons for SCC status:

- G2G3 global ranking (per FSM direction)
- UNPS **High** list ranking (Alexander 2016)
- Narrow Utah endemic, known from only 4 Utah counties
- Threats (NatureServe): Serious threats from heavy sheep grazing, reclamation projects

MLNF reason for rejecting:

- Species persistence in the plan area is not of substantial concern

20. ***Physaria grahamii*** (includes *P. acutifolia* var. *purpurea* and var. *repanda*) – Sharpleaf twinpod/Book Cliffs twinpod

(**Note:** Flora of North America lists this species as synonymous with [Physaria grahamii](#))

Ranking: G5, T2, S2 (NatureServe Explorer lists [Physaria grahamii](#) as G1Q)

UNPS Recommendation: Include

Reasons for SCC status:

- T2 global status (per FSM direction).
- UNPS **High** list ranking (Alexander 2016) as *P. grahamii*
- Endemic to Utah
- Should maintain on list until/unless based on the best available information as to its taxonomic status
- Stanley L. Welsh collection [#23352](#) (May 6, 1985) was mapped in Link Canyon on the Manti-La Sal National Forest, although the description says 3 miles west of Emery (off National Forest land). Unclear where actual collection was. Similar habitat occurs on the MLNF. Unclear whether these areas have been surveyed.

MLNF reason for rejecting:

- Not enough info whether it can persist

21. ***Salix arizonica*** – Arizona willow

Ranking: G2G3, S2

Included on the 2016 R4 sensitive species list (USFS 2016).

UNPS Recommendation: Include

Reasons for SCC status:

- G2G3 global status (per FSM direction).
- UNPS **Watch** list ranking (Alexander 2016)
- Interagency Conservation Agreement stipulates that this species will be retained as a “Sensitive” species by the Forest Service as a condition of withdrawal of Listing Rule by US Fish and Wildlife Service.
- Threats: NatureServe: Browsing by domestic and wild ungulates (primarily elk and cattle). Nearly all occurrences on public lands are active sheep or cattle grazing allotments. The combination of domestic and wild animals may be beyond its tolerance
- Additional threats noted by Decker (2006): Hydrologic alterations
 - Recreation use
 - Climate change

- Consequences from small population sizes
- Iron, Kane, Sanpete and Sevier Counties in Utah; (Decker 2006)
- Thickets may represent few distinct genets
- “Appearance of stability” is insufficient information to suggest that the species can maintain its viability.

MLNF reason for rejecting:

- Populations are fenced, appear stable [In fact: not all populations are fenced.]

22. *Senecio fremontii* var. *inexpectatus* – Unexpected groundsel; La Sal Mountains’ groundsel

Ranking: G5, T1, S1

UNPS Recommendation: Include

Reasons for SCC status:

- T1 global status (per FSM direction).
- UNPS **High** list ranking (Alexander 2016)
- A narrow endemic, in La Sal Mountains
- NatureServe: Only two occurrences, one of which is entirely within the Mount Peale Research Natural Area
- Plant in RNA likely to be impacted by non-native mountain goats transplanted to area.
- 11 collections from 6 locations, all on the MLNF, are included on the Intermountain Region Herbarium Network
- High UNPS conservation priority
- Threats
 - NatureServe: Rounded Global Status: T1: Critically imperiled.
 - Threatened greatly by transplanted, non-native mountain goat populations that are increasing
 - Recreation, which is increasing
 - Droughts and rapid snowmelt
- Lack of information regarding this species indicate that it should remain on list until sufficient information is available that addresses its current and potential viability and supports its removal.

MLNF reason for rejecting:

- Not enough trend data to determine concern
- Not enough info for concern whether it can persist

23. *Packera musiniensis* (syn. *Senecio musiniensis*) – Musinea ragwort

Ranking: G1, S1

UNPS Recommendation: Include

Reasons for SCC status:

- G1 global status (per FSM direction).
- UNPS **High** list ranking (Alexander 2016)
- Included on the 2016 R4 sensitive species list (USFS 2016).
- Local endemic, restricted to Flagstaff limestone in southern Wasatch Plateau
- 3 extant sites, 1 historical
- All known occurrences (9 collections included in Intermountain Region Herbarium Network) on MLNF
- Threats: Mining
- Lack of information regarding this species indicate that it should remain on list until sufficient information is available that addresses its current and potential viability and supports its

removal

MLNF reason for rejecting:

- Not enough info for concern whether it can persist

24. *Townsendia montana* var. *caelilinesis* (Syn. *T. alpigena* var. *caelilinesis*) – Skyline townsendia

Ranking: G4, T2T3

UNPS Recommendation: Include

Reasons for SCC Status:

- T2T3 global status (per FSM direction)
- UNPS **Watch** list ranking (Alexander 2016)
- Variety *caelilinesis* is an endemic in subalpine habitats on the Wasatch Plateau (Sanpete Co.); it also occurs at somewhat lower elevations on the West Tavaputs Plateau (Duchesne and Wasatch cos.).
- Should remain on list until taxonomic issues are resolved.

MLNF reason for rejecting:

- Taxonomic questions

25. *Anticlea vaginatus* (syn. *Zigadenus vaginatus*) – Sheathed deathcamus

Ranking: G2, S2

UNPS Recommendation: Include

Reasons for SCC status:

- G2 global status (per FSM direction).
- UNPS **Medium Priority** list ranking (Alexander 2016)
- Overall threat impact: High
- Major threats are drying of the seeps on which the species relies (due to drought/climate change or groundwater development) and trampling by livestock and humans
- Franklin 7282 (July 13, 1990) places the species on the west slope of the Abajo Mtns on the east slope of Elk Ridge at 6800 ft. elev. which in fact places this taxon within the resource area

MLNF Reason for rejecting:

- Not in resource area

Other Recommended SCC Species

The following species have been ranked as G3 or higher, and/or have been included because they are of local genetic concern or meet the S1/S2 criteria. Species on the edge of their distribution that provide important genetic variation for the perpetuation of species, especially with increasing pressures on species from changing climates. In addition, one cactus has been included because it is highly sought by plant collectors. They warrant a level of protection not necessary for other plant species with this global ranking.

26. *Echinocereus mojavensis* forma *inermis* - Spineless claret cup cactus; Spineless hedgehog (MLNF lists as *E. triglochidiatus* var. *inermis*; syn. *E. coccineus* var. *coccineus* – USDA 2016 - it should not however be treated with *E. triglochidiatus* (which does not occur in Utah) nor with *E. coccineus*). As *E. triglochidiatus* var. *mojavensis*, has been ranked as S1 in Utah. As now understood, however, *E. mojavensis* is the most common *Echinocereus* in Utah.

Reasons for SCC status:

- Formerly listed under the Endangered Species Act
- Forma *inermis* has had highway/road construction, power line impacts
- Road expansion continues to be a potential threat
- Has a severe threat from cactus collectors.
- Even the non-inermis form doesn't seem to be common on the MLNF
- The Forest Service historically has treated it as a sensitive species (e.g. by Bob Thompson, pers. communication Duane Atwood)
- This genetic variant is rare and localized and is prized by cactophiles and collectors.
- Trees are routinely conserved for important genetic expression and variation (e.g. albino redwood). For the same reasons, this taxon should as well.
- These spineless forms are known only in southeastern UT and southwestern Colorado - it is not a variation that occurs in other populations of this otherwise widely occurring species.
- Its strong habitat preference with *Yucca baccata* and other species suggest the need for intact ecosystems requiring ongoing monitoring and management awareness

MLNF reason for rejecting:

- Uncertain taxonomy as valid species "There is a cline within the specimens from eastern Utah and western Colorado from densely spiny to no spines at all . . . but they do not seem to represent a taxon"

27. ***Festuca dasyclada*** – Oil shale fescue

Ranking: G3, S1

UNPS Recommendation: Include

Reasons for SCC status:

- UNPS **Watch** list ranking (Alexander 2016)
- Because this species is prevalent in areas with ever-expanding oil and gas drilling, the effects of those activities will not be monitored unless this species is included.
- NatureServe:
 - Oil shale and gas drilling most prominent threats
 - Sheep grazing has had major impact on its distribution
- Map shows only four sites in Utah

MLNF reason for rejecting:

- Not enough information on whether it can persist

28. ***Oreoxis bakeri*** (syn. ***Cymopterus bakeri***) – Baker's spring-parsley, Baker's oreoxis

Ranking: G3?, S1

UNPS Recommendation: Include

Reasons for SCC status:

- UNPS **High** list ranking (Alexander 2016) (and see other additional commentary re: threats)
- Known in Utah only from La Sa Mtns (USDA 2008)
- Populations in or near Mount Peale Research Natural Area are threatened by recent introduction of non-native mountain goats.

MLNF recommends this species be included as an SCC; we agree.

29. ***Paeonia brownie*** – Western peonia

Ranking: G5, S1

UNPS Recommendation: Include

Reasons for SCC Status:

- UNPS **Medium Priority** list ranking (Alexander 2016)
- Tertiary forest relict species at the edge of its range. Should be managed for genetic conservation of this species. This species is a low seed producer and often subject to herbivory impacts. Recommend SCC status
- Nativity issue should be resolved definitively before removing MLNF reason for rejecting:
 - Question regarding nativity of species to Forest

30. *Penstemon crandallii ssp. atratus* – La Sal penstemon

Ranking: G4, T3, S3

UNPS Recommendation: Include

Reasons for SCC status: Only 10 sites in Utah.

- For the purposes of the ESA, Congress defined species to include subspecies, varieties, and, for vertebrates, distinct population segments. Therefore, MLNF rationale is incorrect.
- UNPS **Medium Priority** list ranking (Alexander 2016)
- Many *Penstemon* species are considered “ice cream” plants for ungulates and are likely to be impacted by excessive amounts of grazing.
- Taxonomic issues should be resolved before plant is removed from SCC list

MLNF reason for rejecting:

- FS claims that when 6 occurrences were observed, they were of a variety, not *ssp. atratus*.
- Not enough information whether it can persist
- Questionable taxonomy

31. *Podistera eastwoodiae* – Eastwood’s podistera

Ranking: G3, S2

UNPS Recommendation: Include

Reasons for SCC status:

- Of local concern; disjunct species at edge of its range
- UNPS **Watch** list ranking (Alexander 2016)
- Obscurely known and can be difficult to identify; may be confused with *Oreoxis bakeri*
- Known in Utah only from La Sa Mtns (USDA 2008)
- Populations occur in area where mountain goats have been transplanted and are likely to be impacted by pressures from this non-native species.

MLNF reason for rejecting:

- No known threats or risks

32. *Erigeron melanocephalus* - Black-head daisy

NatureServe S1 ranking

RO recommended

UNPS Recommendation: Include

Reasons for SCC status:

- UNPS **Watch** list ranking (Alexander 2016)
- Threats include grazing and related impacts from cattle and naturalized mountain goats. Climate change is also a threat.

The MLNF reasons for rejecting include being more abundant in Colorado (hardly adequate reason for excluding the species from consideration), lack of information, and the fact that the species had been collected over a 50 year period (also a highly inadequate reason for excluding).

33. *Androsace chamaejasme* subsp. *lehmanniana* (syn *Androsace chamaejasme* var. *carinata*) -

Sweet-flowered rock-jasmine

NatureServe S1

UNPS Recommendation: Include

Reasons for SCC status:

- State rare regardless of how treated taxonomically
- RO recommended
- UNPS **Watch** list ranking (Alexander 2016)
- Included on the 2016 R4 sensitive species list (USFS 2016).
- Threats include grazing related impacts from non-native mountain goats.
- Climate change is also a threat.

The MLNF reasons for rejecting it as a more widespread species is unupportable in that this taxon is only known in Utah from the La Sal mountains

34. *Asplenium septentrionale* - Forked spleenwort

NatureServe S1

UNPS Recommendation: Include

Reasons for SCC status:

- UNPS **Watch** list ranking (Alexander 2016)
- RO recommended
- Threatened by grazing including introduced goats and climate change
- On the MLNF, known only from a 1933 collection the La Sal mountains.

The MLNF rejected primarily because it is a circumboreal species yet is a highly rare species in Utah known from only five counties and appears to be exceptionally rare on the MLNF which is disjunct not only in Utah but is highly isolated from occurrences of the species elsewhere.

Additional recommended taxa missed in RO recommendation:

35. *Potentilla paucijuga* (syn. *Potentilla pensylvanica* var. *paucijuga*) - La Sal cinquefoil

Ranking: G3, S2

UNPS Recommendation: Include

Missed in RO recommendation

Reasons for SCC status:

- UNPS **High** list ranking (Alexander 2016)
- Local endemic restricted to the La Sal Mountains in Grand and San Juan Counties.
- Threats to this taxon include grazing-related impacts from naturalized mountain goats and climate change.

In addition, these next 16 taxa have been ranked as **Watch** by UNPS (Alexander 2016) and they all occur in the La Sal Mountains. Each one in almost every case also has an existing S1 or S2 ranking.

36. *Oxypolis fendleri* NatureServe S1

37. *Erigeron elatior* NatureServe S1

38. *Helianthella parryi* Species not ranked (SNR) by NatureServe since it was only first discovered in Utah in 2010; known in Utah only from the La Sal and Abajo Mtns (Welsh 2015)

39. *Rudbeckia laciniata* var. *ampla* NatureServe S1
40. *Senecio serra* var *admirabilis* NatureServe S1
41. *Senecio fremontii* var. *blitoides* SNR
42. *Symphyotrichum laeve* var. *geyeri* NatureServe S1
43. *Callitriche heterophylla* NatureServe S1
44. *Stellaria longifolia* NatureServe S2S3
45. *Carex perglobosa* NatureServe S1 - Known in Utah only from La Sal Mtns (USDA 2008)
46. *Potentilla nivea* NatureServe S2
47. *Claytonia megarhiza* NatureServe SNR - known from only three or four highly disjunct areas in Utah incl. the MLNF, and only at elevations about 10,000 ft; highly susceptible to climate changes
48. *Saxifraga flagellaris* ssp. *crandallii* NatureServe S1
49. *Saxifraga cernua* NatureServe S2
50. *Saxifraga bronchialis* var. *austromontana* NatureServe S2 - Known in Utah only from La Sal Mtns (USDA 2008)
51. *Synthyris alpina* (syn. *Besseyia alpina*) NatureServe S1 - Known in Utah only from La Sal Mtns (USDA 2008)

Based on threats (ranging from grazing to climate change, and more) discussed with respect to these taxa in *Calochortiana* Num 3 (Alexander 2016), these should be included for review and added as SCC's in either all or almost every case.

In addition, consideration should be given to:

52. *Botrychium simplex*

NatureServe S1

- Obscurely known from Utah generally
- Known from the La Sal Mtns based on Franklin 7432 (8/29/1991) and from two other sightings over the last several years.
- Highly prone to grazing and climate change impacts.

53. *Artemisia pattersonii*

- Unknown in Utah prior to 2008
- Identified as a new state record in 2008 by the MLNF and so far remains known only from the La Sal Mtns (USDA 2008).
- Requires analysis.

53. *Astragalus consobrinus* - Bicknell milkvetch

NatureServe G2G3

- UNPS **Medium Priority** list ranking (Alexander 2016)
- Foster 8262 (July 13, 1979) places the species as 300 ft NW of the Ferron Reservoir at 6200 ft. It should therefore be suspected on the Forest.
- Included with a "?" re: M-L on the 2016 R4 sensitive species list (USFS 2016).

54. *Townsendia beamanii* - Beaman's townsendia

UNPS Recommendation: Include

Reasons for SCC status:

- Utah BLM sensitive species
- NatureServe G-rank not assigned but global rarity appears ultimately probable

- Named in 2003 and continuing to be recognized by the author, with only four BRY collections (Welsh 2015)
- Known only from San Juan County Utah
- Despite lack of information as a precaution to preclude accidental loss of what appears to be a highly restricted endemic species
- Not yet ranked by UNPS but on the list for future review (“need information”)
- Atwood 11134 (June 4, 1985) is a paratype that places the species on the MLNF on South Elk Ridge at an elevation of 7200 ft. occurring in a Ponderosa pine community.

Species That Have Been Excluded

The following species meet the criteria as G1, G2, T1, and/or T2 rankings recommended for inclusion in SCC in US Forest Service Manual FSM 1909.12, Section 12.52d. The rationale for their exclusion from the list above is included below.

Hymenoxys acaulis* var. *nana (Syn. *Tetraneuris acaulis* var. *nana*) – Low hymenoxys

Ranking: G5, T1T2, S1S2. After further review, we recommend this be removed from consideration.

Over 200 collections of this variety have been made throughout Utah according to the [Intermountain Region Herbarium Network](#).

Lomatium latilobum – Canyonlands biscuitroot

Ranking: G1G2, S1. All populations appear to be below the elevation of MLNF in habitats that do not appear to occur on the Forest.

Silene petersonii – Peterson catchfly, Plateau catchfly

Ranking: G2G3, S2S3. After review, there appear to be many documented populations of this species on and off the MLNF.

CONCLUSION

Our review suggests that the initial draft review by the Manti-La National Forest of the species recommended by the Regional Office has not been undertaken in the spirit of what a sensitive species plant program is intended to accomplish, but instead has sought to disqualify any taxonomic entity where the slightest doubt might exist. Our knowledge is always imperfect with respect to every native plant (and animal) species that occurs within the state. Decisions must be made based on the best available information regardless of how imperfect that knowledge might be and in order to ensure that entities identified as of concern are not unintentionally adversely impacted by land management or land-disturbing projects. When in doubt, the benefit should inure to the taxon under consideration to encourage further knowledge and study, and to ensure that it does not become extirpated from the Forest. Reasonable threats can be logically assumed for the vast majority of these species regardless of whether specific threats are known. The MLNF includes multiple districts located in widely separate places in a state rich in plant diversity. In many cases, the MLNF represents the only place where these taxon are known to occur in Utah, and in the vast majority of these cases, they are disjunct and greatly isolated from other occurrences. In the many instances of local (state) rarity, genetic isolation means that these species will evolve without the gene flow of those other species. In many cases they may

already be genetically different than their purported widespread counterparts, indicating that a practical, conservative, and protective approach is required to ensure that these unique elements are allowed to persist and reach their evolutionary potential which in the long term benefits all living things, including us.

Literature Cited

Alexander J. 2016. The Utah Native Plant Society rare plant list: version 2. *Calochortiana* (3):3-247. Available at <http://www.unps.org/Calochortiana/CalochortianaMay2016Num3.pdf>

Atwood D, Holland J, Bolander R, Franklin B, House DE, Armstrong L, Thorne K, England L. 1991. Utah endangered, threatened, and sensitive plant field guide. Ogden, Utah: USDA Forest Service Intermountain Region. Unpaginated.

Consortium of Intermountain Herbaria. 2017. <http://intermountainbiota.org/portal/index.php>. Accessed on Nov. 24, 2016 through February 20, 2017.

Decker K. 2006. *Salix arizonica* Dorn (Arizona willow): A technical conservation assessment. Prepared for the USDA Forest Service, Rocky Mountain Region, Species Conservation Project. Colorado Natural Heritage Program. Colorado State University, Fort Collins, CO. Peer Review Administered by Society for Conservation Biology. 45 pp.

Fertig W. 2009. Developing a Utah rare plant list. *Sego Lily* 32(6):1-17.

Fertig W. 2012. Prioritizing plant species for conservation in Utah: Developing the UNPS rare plant list. *Calochortiana* 1:196-237.

Franklin MA. 2005. Plant information compiled by the Utah Natural Heritage Program: a progress report. Prepared for Utah Reclamation Mitigation and Conservation Commission. Publication No. 05-40, Utah DWR. Salt Lake City, Utah: Utah Department of Natural Resources, Division of Wildlife Resources, Utah Natural Heritage Program. 334 pp.

NatureServe Explorer. 2017. <http://explorer.natureserve.org/index.htm>. Accessed January 10, 2017 - February 20, 2017.

USDA Forest Service Intermountain Region, Manti-La Sal National Forest. 2004. Final Environmental Impact Statement State of Utah School and Institutional Trust Lands Administration (SITLA) access route on East Mountain. 159 pp. plus appendices

USDA Forest Service (USDA). 2008*. Rare plants and alpine vegetation of the La Sal mountains: studies of a unique ecosystem rising above the arid Colorado Plateau desert. Accessed on 11/25/2016 at: https://www.fs.fed.us/wildflowers/Rare_Plants/conservation/success/LaSals_studies.shtml

(*2008 date is presumed based on photograph dates mentioned, and comments referring to 2009 as the "upcoming" season - publication date might instead have been in early 2009.)

U.S. Forest Service (USFS). 2016. Intermountain Region (R4) threatened, endangered, proposed, and, sensitive species: known/suspected by forest. 19 pp.

Available at: https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5370041.pdf

Utah Native Plant Society (UNPS). 2003-2016. Utah rare plant guide. [Internet]. Frates AJ, editor/coordinator. Salt Lake City, UT: Utah Native Plant Society. Accessed on Nov. 24, 2016 through February 20, 2017.

Available from: <http://www.utahrareplants.org>.

Welsh SL, Atwood ND, Goodrich S, Higgins LC [eds]. 2015. A Utah flora, fifth edition, revised. 2015 summary monograph. Provo, Utah: Brigham Young University. 987 pp