

NORTHERN NEVADA NATIVE PLANT SOCIETY
Rare Plant Committee Meeting
NEVADA RARE PLANT WORKSHOP
1 April 2003, Las Vegas

2003 MEETING NOTES

<http://heritage.nv.gov/notes03.htm>

The following notes were compiled by Cathy King, Randy McNatt, and Jim Morefield during the 2003 Nevada Rare Plant Workshop, and contributed by Jody Fraser and Gina Glenne *in absentia*. Please notify Jim Morefield (775/684-2902, [jdmore \[at\] heritage \[dot\] nv \[dot\] gov](mailto:jdmore@heritage.nv.gov), 901 S Stewart Street, suite 5002, Carson City, NV 89701-5245) of any needed additions or corrections. Except for the proposed M-List additions near the end, each taxon entry begins by repeating the item from the Workshop agenda, followed by notes on the **discussion** that followed, and then any **consensus** that was reached on that taxon. **Any changes to the original version are in the same color as this sentence.**

WELCOME AND INTRODUCTIONS

The 2003 Nevada Rare Plant Workshop convened in Las Vegas on Tuesday, 1 April 2003, at 9:00 am, in the Auditorium of the Marjorie Barrick Museum of Natural History on the University of Nevada Las Vegas campus. The meeting was co-sponsored by the [Nevada Native Plant Society](#) (NNPS) and the [Nevada Natural Heritage Program](#) (NNHP), and was chaired by Jim Morefield. Jim thanked all for their attendance, Wes Niles and Kathryn Birgy of the UNLV Herbarium for arranging the facilities, refreshments, and transportation, and Cathy King and Randy McNatt for volunteering to keep meeting notes.

It was agreed that next year's meeting would be in Reno on Thursday April 1st, and Randy McNatt said he would try to obtain the conference room at the BLM State Office again, as in 2002. Jim also suggested we might want to consider a meeting in the eastern part of the state (Elko or Ely) sometime in the future.

Based on feedback from past participants, and in an effort to provide more time for discussion of plant taxa on the agenda, it was decided this year to try moving the Program Updates section of the agenda to the middle of the day, just after lunch, and to strictly limit contributions to 5 minutes per person or agency.

After the above, introductions proceeded around the room. In attendance during all or part of the day were 37 participants: Kelly Amsberry (**Oregon Department of Agriculture**); John Anderson, Dean Kinerson, Gayle Marrs-Smith, Randy McNatt, and Christina Nelson (**Bureau of Land Management**); Jim Andre (**Sweeney Granite Mountains Desert Research Center**); Janet Bair (**U.S. Fish and Wildlife Service**); Gail Bellenger and Charlene Burke (**Nevada Department of Transportation**); Joanne Baggs, Gail Durham, and Kameron Sam (**U.S. Forest Service**); Kathryn Birgy, Wes Niles, and Lloyd Stark (**University of Nevada, Las Vegas**); David Charlton (**Fort Irwin, CA**); Glenn Clifton (**Kingman, AZ**); Russ Harrison (**Las Vegas Springs Preserve**); Dianne Bangle, Libby Powell, and Dana York (**National Park Service**); Hermi Hiatt (**Nevada Native Plant Society**); Rich Harvey and Mark Hill (**Nevada Division of Forestry**); Bill King and Kathy King (**Utah Native Plant Society**); Sonja Kokos (**Henderson, NV**); Bruce Lund (**The Nature Conservancy**); Rebecca McArther and Seth Shanahan (**Southern Nevada Water Authority**); Robert Meinke (**Oregon State University, Corvallis**); Jim Morefield (**NNPS and NNHP**); Kent Ostler (**Bechtel Nevada**); Ann Pinzl (**Natural History Collections Services, Carson City**); Jim Shevock (**California Academy of Sciences**); Frank Smith (**Western Ecological Services**).

Jim Morefield then briefly summarized the main objectives of the Workshop, which formally is a meeting of the Nevada Native Plant Society's Rare Plant Committee. The main objectives are to arrive at a consensus on the appropriate NNPS status of plant taxa on the agenda, and on recommendations of appropriate status, if

any, for other agencies to consider. The regulations (NAC 527) enacting Nevada's endangered plant laws (NRS 527) require the Nevada Natural Heritage Program to convene such a workshop at least annually to consider additions and deletions to the State's List of Fully Protected Native Flora, and the Program in turn takes advantage of the NNPS Rare Plant Committee's annual workshop for this purpose, so the group's recommendations on State listing of species carry particular weight.

Before proceeding with Old Business, Janet Bair announced the availability of new membership brochures for the Nevada Native Plant Society, and Hermi Hiatt offered (and NNPS accepted) some archival materials from the recently disbanded Mojave Native Plant Society.

OLD BUSINESS: UNRESOLVED TAXA FROM PREVIOUS WORKSHOP

Astragalus lentiginosus var. *stramineus* (Straw milkvetch) - recommended for NNPS Watch List by 2002 Workshop, left open for Threatened list pending surveys in the Mesquite area, where it may be impacted by development. Locally plentiful over a very restricted range in the lower Virgin River valley of Mohave Co., Arizona, and adjacent Clark Co., Nevada. Heritage ranks T2T3, S1S2, three Nevada occurrences documented by collections at UNLV. Any new information? Add to NNPS Threatened List? **Discussion:** Is this a good taxon? How rare is it? It is being suggested by Jason Alexander (Corvallis OR) that the Nevada populations are hybrids between, or otherwise intermediate with, var. *fremontii*. His studies are ongoing. More collections are needed - last year was poor for collecting. No recommendations yet made for BLM status. Threats are mainly from housing development in the Mesquite area; several BLM land sales are proposed. Needs to be surveyed around Mesquite area because of exploding development in that area, federal agencies will not have resources to survey for this plant, looking for volunteers to do so. **Consensus: no change for now, leave open for future Workshops to consider as better information develops.**

Astragalus mohavensis var. *hemigyus* - Recommended for the first time by the 2002 Workshop to be removed from the Nevada list of fully protected species, with the caveat that it be moved to BLM's sensitive species list for Nevada. Recent surveys had greatly expanded the known range, now in 3 counties with at least 30 occurrences separated by 1 km or more, all on federal lands. Any new information? Do we concur for the second and final time that it should be removed from the Nevada list of fully protected species? **Discussion:** Habitat is on limestone ledges and talus slopes. Not vulnerable to threats from OHV use or fire due to habitat, not known to be utilized by people or other fauna. Also occurs in California. **Consensus: second recommendation for removal from Nevada List of Fully Protected Native Flora. Recommend the taxon remain on the BLM sensitive species list after State delisting.**

Astragalus preussii var. *laxiflorus* (Lancaster milkvetch) - Left open by the 2002 Workshop pending studies by Jason Alexander. Fewer than 20 known occurrences in Nevada and possibly globally (T2T3), perhaps fewer than 6 in Nevada (S1S2). Locally plentiful over a restricted range in the lower Muddy River and Virgin River valleys of Mohave Co., Arizona, and adjacent Clark Co., Nevada, with a small disjunct location near Lancaster, California. Welsh *et al.* (1993) report it to be common along the road south of Overton toward Lake Mead. Seven Nevada occurrences documented by specimens at UNLV. On CNPS List 1B, R-E-D-3-3-2. Any new information? Add to NNPS Watch List? **Discussion:** Common in Lake Mead NRA on disturbed gypsum habitats, roadsides, lakeshores. No surveys planned by Lake Mead staff in 2003. David Charlton indicated that about 75 plants had recently been found in a well field on Edwards AFB in California, with two other smaller, less healthy populations. Should check BYU collections to see if there are more locations. Core population within Lake Mead area, but extends beyond to Bitter Springs and Rainbow Gardens.. Jason Alexander thinks our taxon may be limited to the eastern Mojave Desert, and that the western form is a different variety. Identity of the California plants still being investigated. Jason Alexander may have published some findings by next year. **Consensus: no change, leave open for future Workshops to consider as better information develops.**

Atriplex longitrichoma - Pahrump silverscale. Left open by the 2001-2002 Workshops, pending field

searches. Recently described annual, segregated from *Atriplex argentea* complex based on presence of long deciduous hairs and different fruit characters, closest to *Atriplex argentea* var. *hillmanii*. Restricted to Pahrump and Stewart valleys, most abundant in abandoned disturbances. Recently combined as *Atriplex argentea* var. *longitrichoma* by Welsh (Rhodora 102: 421, 2000). Based on specimens cited in the original publication, it is known from one occurrence each in Nevada and California. Heritage ranks currently T1T2, S1. Any new information? Is the taxonomy reasonable? Threatened by habitat conversion in Pahrump Valley? Add to Watch or Threatened List? **Discussion:** Appears to be a good taxon as a variety. Addition to a list might spur better surveys of the habitat. **Consensus: add to the NNPS Watch List.**

Botrychium lineare (slender moonwort) - left open by the 2002 Workshop, recommended for NNPS Watch List and Forest Service sensitive status pending confirmation of its presence in the Spring Mountains. As of January 2003, Dr. Donald Farrar's enzyme electrophoresis results indicate that plants of *B. lineare* in the Spring Mountains, if present at all, are atypical, different from other known populations of the species, probably tetraploid, and possibly F1 hybrids involving *B. crenulatum*. (*Botrychium ascendens* has also been confirmed in the Spring Mountains, as has an undescribed species - see New Business below). *Botrychium lineare* was petitioned for listing under the Endangered Species Act, found warranted for Threatened listing but precluded by higher priorities. Any further information? Is it yet appropriate to give *B. lineare* status or recommendations in Nevada? **Discussion:** USFS Surveys will be completed by 2004. Field morphology of this and all related *Botrychium* is tricky, and they often occur in mixed populations. Perhaps we should list all members of the complex by default. Only 8 plants suggesting this species have been found in the Spring Mountains. The species has federal Candidate status, but not yet in Nevada. Adding to NNPS Watch List would imply that it definitely occurs in Nevada. **Consensus: none reached, status quo, leave open for future Workshops to consider as better information develops.**

Draba incrassata - Left open by 2000-2002 Workshops until Steve Rae's report of its presence on the Nevada side of the Sweetwater Mountains can be verified. Jim Shevock was planning to look for it in 2002. Any new information? **Discussion:** none, no new information. **Consensus: no change, leave open for future Workshops to consider as better information develops.**

Eriogonum corymbosum* var. *glutinosum - recommended for the second time for addition to the Nevada list of fully protected flora at the 2002 Workshop, contingent on finding the Las Vegas Valley populations distinct and on a confirming email poll of the 2002 participants. Reveal's (2002) field study concluded that the southern Nevada populations are a morphologically distinctive entity (also found on the Paria River floodplain, Kane Co., UT, and possibly in NW Arizona), and molecular studies are underway at Utah State University to determine their genetic significance. Is there any further new information? Have the contingencies for the State listing recommendation been met? **Discussion:** Habitat in Las Vegas Valley is very imperiled. BLM and NPS surveys did find new populations last year, about 6000 individuals in White Basin, threatened by OHV use and dumping. Pollinators tend to be generalists. The plant can be transplanted and cultivated. The geographic range and threats are similar to those of Las Vegas bearpoppy in Nevada, a state-listed species. **Consensus: second recommendation for addition to the Nevada List of Fully Protected Native Flora.**

Lathyrus grimesii* and *Trifolium leibergii - any new information on status of population(s) infested by leafy spurge or other noxious weeds? See comments by Steve Anderson from 2001. **Discussion:** There are two sites on the Mountain City Ranger District with a leafy spurge infestation. The Forest Service has treated the spurge the past two years and are monitoring the results. Regulations require hand pulling within the sensitive plant populations, permits chemical treatment in other areas. The results of monitoring are not available yet. **Consensus: leave open for future Workshops to discuss as further information develops.**

Mimulus ovatus - Steamboat monkeyflower. Considered by past Workshops for State listing recommendation pending better definition of the taxonomy and range. Is an NNPS Threatened species. Have field and/or herbarium surveys shed any new light on the taxonomic status and possible hybrid origin of this taxon, or it's

possible geographic range beyond the Steamboat Springs area? See 2002 comments from Noel Holmgren. Is a State listing recommendation yet appropriate? **Discussion:** no new information. NDF will ask Bruce Pavlik to watch for it during Steamboat buckwheat surveys this year. **Consensus: no change, leave open for future Workshops to consider as better information develops.**

Perityle congesta (Grand Canyon rockdaisy) - left open by the 2002 Workshop pending verification of a Nevada specimen. Reported from one Nevada site east of Spirit Mountain in the Newberry Mountains, Clark Co. Any new information? Add to NNPS Watch List? **Discussion:** no new information as to whether it does or does not occur in Nevada. **Consensus: no change, leave open for future Workshops to consider as better information develops.**

Petalonyx thurberi ssp. *gilmanii* - Death Valley sandpaper plant. Left open at the 2001-2002 Workshops, pending verification of a Nevada report from southern Nye County, Nevada. Any new information? Add to NNPS watch list? **Discussion:** No new information. Jim Morefield will check with Kartesz for documentation of his Nevada reports. **Consensus: no change, leave open for future Workshops to consider as better information develops.**

Phacelia geraniifolia (Jaeger phacelia, =*P. perityloides* var. *jaegeri*) - left open by the 2002 Workshop pending further information on its range in Nevada. Known only from a few locations in the Sheep Range of Clark County, Nevada, and from Clark Mountain (one quadrangle), San Bernardino Co., California, generally in sheltered carbonate rock crevices. Reported to be fairly common in Red Rock Canyon NCA, where Pat Leary (see his comments) knows it from less than a dozen populations from Potosi Mountain to at least La Madre Mountain. Ranked G2, S2 in Nevada. On CNPS List 1B, R-E-D 3-1-2. Any further information? Add to NNPS Watch List? **Discussion:** skipped. **Consensus: no time, to be addressed later.**

Phacelia laxiflora (nodding scorpionflower, =*P. perityloides* var. *laxiflora*) - left open by the 2002 Workshop pending further information on its Nevada range. Known only from sheltered, sometimes moist carbonate rock crevices in the Virgin River gorge, Washington Co., Utah, Emory Falls in the Grand Canyon, Mohave Co., Arizona, and the Virgin Mountains, Clark Co., Nevada. Ranked G2G3, S1? in Nevada. Any new information? Add to NNPS Watch or Marginal List? **Discussion:** skipped. **Consensus: no time, to be addressed later.**

Pinus washoensis - David Charlet (2000, 2001) is planning to further investigate the relationship of the Nevada populations to the northern race of *Pinus ponderosa* var. *ponderosa*. He still believes they may be distinct at some level and worthy of continued conservation status (see the 2001 comments by David Charlet). A recent DNA study (Patten and Brunfeldt. Madroño 49: 189-192. 2002) confirms a close and perhaps reticulate relationship between the two taxa, but the cones of *P. washoensis* still seem to be distinct, at least in the Mt. Rose area. Any status changes or recommendations? **Discussion:** Currently 5-6 populations recognized, most in the northern Carson Range west of Reno, 1-2 in northern Washoe County under BLM management. Not protected by the Forest Service. One BLM population is in the old Susanville District under California BLM jurisdiction, in the Mosquito Mountains. Check with CNPS for their opinion of the species. **Consensus: move to the NNPS Watch List, continue to gather information.**

Senecio pattersonensis - 2000 Workshop recommended adding to NNPS Watch list pending verification of a specimen from Nevada. At the 2001 Workshop, Frank Smith reported that he and Jan Nachlinger searched for and didn't find the Wassuk Range population, and will be trying to check the specimen. Jerry Tiehm 2002 tracked down a voucher specimen at Washington State University and confirmed the identity, but a return visit to the locality on the specimen label by him and Jan Nachlinger in 2002 still did not relocate the plant (see comments). Add to NNPS Watch List at this point? **Discussion:** No known change in the habitat or its management, so it should still be there. Occurs on talus slopes. **Consensus: add to the NNPS Watch List.**

Sisyrinchium funereum (Death Valley blue-eyed grass) - Left open by the 2002 Workshop pending

verification of Nevada locations and assessment of taxonomic validity. Restricted to 4 map quadrangles in the Death Valley area, and reported from adjacent Clark and Nye cos., Nevada. Cholewa and Henderson (Flora of North America vol. 26, p. 362) recognize the species as distinct based on predominantly branched stems, hyaline margins of inner spathe broad, long, apically rounded or truncate, and flowers pale blue, and report it as endemic to the Death Valley and Ash Meadows area, in moist grassy areas along streams and springs where the soil is strongly alkaline. (They also recognize another rare species from southern Nevada, *S. radicum*, see New Business below.) See comments from Anita Cholewa. Habitat vulnerable. Current Heritage ranks G2G3, S1S2. On CNPS List 1B, R-E-D 3-1-2. Add to NNPS Watch List? **Discussion:** Three main sites in Death Valley NP. Threats in Ash Meadows include competition from invasive exotics, water drawdowns, animal grazing. Perhaps *Spiranthes infernalis* should be listed for the same reasons. USFWS will consider a Section-6 grant to fund status survey this year once funds are available. **Consensus: Add to the NNPS Threatened List. First recommendation for addition to the Nevada List of Fully Protected Native Flora.**

PROGRAM UPDATES

Nevada Division of Forestry: On the pending State listing of Webber ivesia (*Ivesia webberi*), Rich Harvey announced that NDF has held public hearings and consulted with Washoe County, whose comments are not yet in. There should be a decision by mid-April. No public comments against the action were received. The Southern Nevada Public Lands Management Act has provided funds for positions to work with the Clark County MSHCP in southern Nevada. NDF has a Section-6 grant from the USFWS to prepare a conservation and management plan for Steamboat buckwheat (*Eriogonum ovalifolium* var. *williamsiae*). NDOT is replacing the Highway 395 right-of-way fence adjacent to the buckwheat habitat, and a permit for this activity has been issued. A permit is also pending with Sierra Pacific Power Co. for a new transmission line from the geothermal plant out to the highway. Steamboat Geothermal is proposing a power plant addition where buckwheat plants occur, and an NDF permit will be required. In southern Nevada, several permit applications are underway. NDF attended a water rights hearing for more water from the Sodaville milkvetch (*Astragalus lentiginosus* var. *sesquimetalis*) habitat at Sodaville. White Pine County wants to use the railroad tracks near Monte Neva paintbrush (*Castilleja salsuginosa*) habitat for a tourist train ride facility. HUD application was signed by NDF with the County, stipulating that the tracks would not be altered from their current alignment.

Bureau of Land Management: Randy McNatt from the Nevada State Office handed out their current sensitive species list, and discussed the upcoming revision process, which will include the input from this group over the past several years. Gayle Marrs-Smith and Christina Nelson indicated that in southern Nevada, Mark Baker has been conducting field surveys for Blue Diamond cholla (*Opuntia whipplei* var. *multigeniculata*) and apparently finding new populations, and surveys for Las Vegas buckwheat (*Eriogonum corymbosum* var.) are ongoing. In the Carson City District, Dean Kinerson discussed some recent vandalism to fences around Williams combleaf (*Polyctenium williamsiae*) populations. ACEC nominations have been submitted for Williams combleaf and Churchill Narrows buckwheat (*Eriogonum diatomaceum*) populations. Intensive mapping of Kearney buckwheat (*Eriogonum nummulare*) habitat is underway at Sand Mountain, with proposals to start monitoring and consider regulations to prohibit OHV use in occupied buckwheat habitat. Work is underway with USFWS to conduct rare plant monitoring for Webber ivesia and Churchill Narrows buckwheat. John Anderson from Arizona BLM announced that Blue Diamond cholla has been reported in Arizona at Elephant Wash in the Black Mountains.

Humboldt-Toiyabe National Forest: Joanne Baggs from Sparks announced that the HTNF Forest Plan revision process is beginning, and that it has been helpful to get NNPS and individuals providing comments to the Forest Service regarding proposed actions. Joanne also mentioned that 5-year action plans are being evaluated with conservation agreement partners. Bruce Lund from the Spring Mountains NRA noted that his area covers about 30 Forest Service sensitive species plus about 20 others in the Clark County MSHCP. Monitoring continues for Clokey eggvetch (*Astragalus oophorus* var. *clokeyanus*), and surveys of historic

sites will begin soon. Rough angelica (*Angelica scabrida*) is now known from Kyle Canyon and Red Rocks National Conservation Area. A highly unusual and disjunct occurrence of fringed chocolate chip lichen (*Solorina spongiosa*) has recently been discovered in the Spring Mountains. OHV use in the Spring Mountains is increasing rapidly, and the Forest Service wants to stop the pioneering of new OHV roads and assess the impacts of existing roads on biodiversity hot spots in the range.

U.S. Forest Service, Lake Tahoe Basin Management Unit: Gail Durham noted that 4 outplantings of Tahoe yellowcress (*Rorippa subumbellata*) are planned for the coming summer. Two new populations of *Botrychium crenulatum* were found on the California side of the lake. Several new species were recently added to the sensitive species list for the basin.

California Academy of Sciences: Jim Shevock announced that about 30 species of mosses previously undocumented in Nevada had been found during the past year.

Utah Native Plant Society: Bill King announced that the Bureau of Land Management in Utah had just developed a new sensitive species list, but that the Forest Service list for Region 4 has not been updated since 1994.

Lake Mead National Recreation Area: Libby Powell announced the availability of a new plant brochure for the park. A new invasive species, Sahara mustard (*Brassica tournefortii*) has become a real problem in sandy areas of the park.

Death Valley National Park: Dana York noted that Sahara mustard had not yet reached Death Valley, and announced that the Eureka Dunes facilities had been moved away from evening primrose habitat.

U.S. Fish and Wildlife Service: Janet Bair discussed several ongoing projects with other agencies, included in the following written summaries submitted after the Workshop by Jody Fraser and Gina Glenne:

Astragalus lentiginosus var. *sesquimetralis* (Sodaville milkvetch) – This site was visited in April 2002 to discuss a pending water right application (status?). Concerns regarding the potential effects of the application on the adjacent ASLES population have been expressed to the State Engineer's office and the surrounding landowners. There were visible impacts from livestock use and a water diversion had recently been dredged. This population remains vulnerable to effects from existing land uses and hydrology alterations. Efforts to work with the landowner to implement conservation measures have not proven successful to date. Another population of this species occurs on Death Valley National Monument and has been reported to be stable over the past few years (Dana York?).

Botrychium lineare (slender moonwort) - In 2002, we (USFWS) funded an electrophoretic study, in conjunction with the Spring Mountains National Recreation Area, investigating if slender moonwort resides in the Spring Mountains. The funding went to Dr. Donald R. Farrar at Iowa State University who works on genetic relationships of moonworts. His original morphological observations, reported on September 3, 2002, indicated slender moonwort was present at 3 of 7 surveyed springs. Subsequent electrophoretic analysis, however, has found the moonworts of the Spring Mountains to be more complicated than Dr. Farrar's original interpretation.

An e-mail dated January 17, 2003 stated that the plants thought to be slender moonwort were allotetraploids, slender moonwort is supposed to be diploid; however, there is some disagreement about the diploid status of slender moonwort. Dr. Farrar predicts his collections may be hybrids of slender moonwort and we have not yet located the pure slender moonwort likely residing somewhere in the Spring Mountains. Collections for this summer (2003) hope to locate pure slender moonwort individuals by visiting a ridgeline locale (different habitat) and Rainbow Falls where old collections resemble slender moonwort individuals. Slender moonwort collections in the Spring Mountains may provide new data crucial to understanding slender moonwort genetics. Further funding for this project is being sought through the Clark County MSHCP. In the meantime, the addition of Nevada to states where slender moonwort resides has been put off until we have a more definitive answer about its presence. Interestingly, Dr. Farrar has found a new species of moonwort in the Spring Mountains. This new species was found at Three, Mummy, Mazie, and Echo Springs and is not yet named.

Castilleja salsuginosa (Monte Neva paintbrush) – The Service and NDF visited these populations in July 2002. The Monte Neva site is in fair condition. The most obvious impact to the habitat is from excavation of the springheads to

divert water to the adjacent property (the landowner has the water rights). Currently, all water from the springs is being diverted to the adjacent property. It is believed that the diversion has been in place since before 1979. The area below the springs is in fair to good condition. There was some evidence of use by livestock, mule deer, pronghorn antelope, and horses.

NDF has been instrumental in maintaining contact with the landowner about future conservation activities on this property. We intend to visit the site again this year and hope to install permanent photo points and begin development of a monitoring plan.

The Hot Springs Hill site on BLM lands is subject to livestock grazing that has resulted in severe habitat degradation. Water improvements and recreational activities, such as OHV and camping, have also caused resource damage in this area. Overall, this site is in poor condition and we are working with the BLM to implement conservation measures to protect the species and its habitat.

***Cirsium* sp. (Unnamed)** - Last summer the Desert National Wildlife Refuge was contacted by Dr. Patricia Barlow-Irick for locations of *C. arizonicum* or *C. nidulum* in the Sheep Range. From this we discovered Dr. Barlow-Irick, from her dissertation work, and Dr. David Keil are in the process of describing a new species of thistle in the Sheep and Spring Mountains. In addition, there may be another new thistle species in the New York Mountains. We have requested an update.

Eriogonum argophyllum (Sulphur Springs buckwheat) – The Service and NDF also visited this site in July 2002. Overall, the site is in fair to poor condition with livestock use causing severe habitat damage. NDF has worked hard to reach an agreement with the landowner to allow fencing to be constructed around the spring mound where the plant occurs. We will be visiting the site on April 10, and intend to have the fence built prior to the fire season. Permanent photo points will also be installed.

Eriogonum corymbosum* var. *glutinsum (Las Vegas buckwheat) - We funded two studies in 2002 investigating the taxonomic distinctness of Las Vegas buckwheat. The first study was a morphological investigation done by Dr. James L. Reveal. On November 10, 2002 Dr. Reveal submitted a report entitled *A Review of Eriogonum corymbosum Benth. with Emphasis on the Species in Southern Nevada*. This report states the Nevada material as well as material from the Paria River in Kane County, Utah is distinct from other *Eriogonum corymbosum* var. *glutinsum* (these differences are pictured on page 27 of the report). Dr. Reveal is proposing a new varietal name for the Nevada and Utah material, pending the results of a genetic study.

The second study is a genetic study being done by Dr. Paul Wolf at Utah State University and his graduate student Mark Ellis. This study planned to compare 10 Las Vegas Valley populations and 12 populations range-wide of *Eriogonum corymbosum* var. *glutinsum* using AFLP genetic analysis. Preliminary results should be available in the near future. However, Dr. Reveal identified a series of holes in our understanding of the *Eriogonum corymbosum* complex as a whole that should be addressed if trying to accurately determine the distinctness of Las Vegas buckwheat. Using Dr. Reveal's comments, Dr. Wolf has proposed to expand his study to the entire corymbosum complex, incorporate genetic sequencing techniques, and has requested additional funding from the USFWS. We are currently seeking funding to address Dr. Wolf's new additions.

Eriogonum diatomaceum (Churchill Narrows buckwheat) – The Service submitted a candidate assessment form for this species because of future, imminent threats from mining. (Dean Kinerson from BLM will speak specifically about the proposed project and ACEC nomination.)

Eriogonum ovalifolium* var. *williamsiae (Steamboat buckwheat) – A monitoring plan has been finalized and, pending funding, will be implemented in April/May 2003. The habitat management plan revision is ongoing. A permit application for the development of a new geothermal power plant is expected to be submitted to NDF at any time. We have encouraged the proponent to avoid occupied habitat and minimize disturbance to potential habitat.

Ivesia webberi (Webber ivesia) – This species was added to the candidate list in the 2002 Candidate Notice of Review. The Service together with the Forest Service visited several of the sites last spring and are working with NDF to develop a habitat management/conservation plan for the species. The habitat is negatively affected by OHV activity and encroaching residential development.

Nitrophila mohavensis (Amargosa niterwort) - Shawn Johnston with San Diego University did surveys for Amargosa niterwort on BLM land in California in 2002. His surveys located ~300,000 individuals. We are hoping to get a copy of these survey results as well as learn more about the research that is apparently being done on the plant.

Opuntia whipplei* var. *multigeniculata (Blue Diamond cholla) - In February of 2002 a population of what appeared to be Blue Diamond cholla was found on Black Mountain in the McCullough Range, Nevada. A specimen was sent to Dr. Marc Baker, a cholla expert at Prescott University, already working on morphometric comparisons of Blue Diamond cholla with Whipple and silver cholla. In late April Dr. Baker made collections for a phenetic analysis of this population and, aside from the occasional spiny fruit, this population is likely to cluster with Blue Diamond cholla. Furthermore, a population at Elephant Wash, considered a strange form of silver cholla, in the Black Mountains of Arizona clustered with Blue Diamond cholla except the Elephant Wash material always has spiny fruits.

Given these two potential new populations of Blue Diamond cholla, we funded Dr. Baker to survey for and compare other potential Blue Diamond cholla populations, particularly between the Elephant Wash, Arizona and Black Mountain, Nevada populations. Thus far Dr. Baker has found one new population near the Elephant Wash site. In the meantime, Jed Botsford and Patrick Putnam of the BLM located two new potential populations in the Las Vegas area, one in Sloan Canyon and the second above Little Red Rocks near the base of the La Madre Mountains. Another population was located along Kyle Canyon Highway (by Gina?). Dr. Baker has visited all of these populations and believes them to be Blue Diamond cholla. He will return to collect from these populations in the Las Vegas area for phenetic analysis after the plants have fruited. Dr. Baker is considering full species status for these plants, and we are currently seeking funding for him to compile an updated Status Report.

Penstemon bicolor (twotone beardtongue) - Gina Glenne's thesis entitled *Reproductive Biology, Hybridization Isolating Mechanisms, and Conservation Implications of Two Rare Subspecies of *Penstemon bicolor* (Brandeg.) Clokey and Keck: ssp. *bicolor* and ssp. *roseus* Clokey and Keck (Scrophulariaceae s.l.) in Clark County, Nevada* has been signed by her committee and should be bound by May of 2003. The thesis found twotone beardtongue exhibits a mixed mating system, it may self-fertilize (especially ssp. *roseus*) but out-crossing is more successful. Twotone beardtongue is host to a wide array of pollinators including at least 46 species of solitary bees, a few of which have yet to be named. No barriers to hybridization with *P. palmeri* (Palmer's beardtongue) were found and hybrid swarms are common, placing the species and especially **ssp. *bicolor*** at risk from genetic swamping. Conservation recommendations to protect the species are provided. Additional genetic and morphometric studies investigating hybrid relations with *P. palmeri* are recommended to further investigate subspecific designations.

Polyctenium williamsiae (Williams combleaf) – The development of a management/monitoring strategy for POWI, including *P. fremontii* var. *confertum*, has been funded through the Service's section 6 program. Dr. Bruce Pavlik has been selected to draft this plan. We are in the process of drafting an interim conservation agreement to include the Forest Service, BLM, NDF, Heritage, and CalTrans. As the strategy is developed, a long-term CA will also be drafted. Plans for this season include site visits to as many known populations as possible throughout California and Nevada, and potentially to one site in Oregon. Brief risk assessments will be performed in order to rank the sites according to management and conservation needs.

Potentilla basaltica (Soldier Meadow cinquefoil) – This species was added to the candidate list in the 2002 Candidate Notice of Review. The most significant threats to the species continues to be recreational use of spring outflows for bathing, camping in the upland areas, and livestock grazing and associated activities. Current habitat conditions in Soldier Meadow as they relate to these activities and ecosystem health have not been monitored or quantified and are therefore difficult to discern; however, qualitative assessments of the area over time suggest that areas in and around the springs which support POBA (and the desert dace) are steadily declining in habitat value.

All of the known sites were visited in 2002; a qualitative assessment and GPS mapping of the sites were conducted. Collectively, the species occurs on a little less than 24 acres with a total population estimate around 100K. Potential habitat was not mapped in 2002, but we intend to visit some of these sites this spring.

The Service is working with the BLM on the Soldier Meadow allotment re-evaluation and the planning process for the Black Rock-High Rock National Conservation Area. Inclusion of conservation measures into these management plans is very important for the long-term protection of this species.

Rorippa subumbellata (Tahoe yellow cress) – The conservation strategy and MOU/CA was signed in January 2003. Implementation is ongoing. A pilot outplanting project on Forest Service, CA State Parks, and NV State Parks is scheduled for this spring. This project is in support of research efforts to enhance our knowledge about the life history and ecological requirements of the species. We are also working with State and private partners to develop CCAAs to allow outplanting on these properties and further conservation efforts.

An expanded genetic analysis is currently being conducted. Analysis conducted in 1999/2000 included samples from only 11 sites (lake elevation 6,228 ft) and revealed that very little genetic variation occurs within and among ROSU occurrences. Because of the proposed outplanting studies and concerns regarding genetic composition throughout the

population, the Service initiated an expanded study made possible by lower lake levels in 2002 (lake elev. 6,224 ft). Twenty-four sites were sampled and preliminary results are similar to those observed in the previous work, thereby alleviating concerns about potential genetic mixing.

Spiranthes infernalis (Ash Meadows lady's tresses) - In 1991, a Status Report published on Ash Meadows lady's tresses estimated the number of individuals under 1200. This number made Ash Meadows lady's tresses the rarest plant at Ash Meadows. Being concerned about these low numbers and the lack of current survey data, we undertook surveys in the summer of 2002. We found the plants were doing great at all known locations and our surveys increased the numbers from 1200 to over 10,000. Although we made it to all known populations last summer, we are planning to survey potential habitat this summer in hopes of finding additional populations. A Status Report is expected to be completed in the Winter of 2003/2004.

Nevada Natural Heritage Program: Jim Morefield noted that revision of the Nevada Rare Plant Atlas has been further delayed while several Section-6 status surveys and reports are finalized. He hopes to be back to work on it by this fall.

NEW BUSINESS: REVIEW AND STATUS OF HIGH-PRIORITY SPECIES (IN ALPHABETICAL ORDER)

Botrychium sp. (Spring Mountains moonwort) - As of January 2003, Dr. Donald Farrar is confident in reporting an undescribed species of moonwort based on his enzyme electrophoresis results. It is related to *B. crenulatum* (also confirmed present in the Spring Mountains) and so far is known only from the Spring Mountains. Any further information? Add to NNPS Watch List? Recommend addition to USFS sensitive species list? **Discussion:** So far, this taxon is only known from 3 springs in the Spring Mountains. We should protect all *Botrychium* taxa in this complex, given how rare and difficult to distinguish they are. Should wait for a formal description before adding to a list. But money for research is needed now, and might be facilitated by listing. A long discussion ensued on the merits of listing now while undescribed, placing on a conditional watch list pending formal description, or leaving as an open agenda item. A vote showed the group to remain divided on the issue, with the majority favoring leaving open for a future Workshop to consider further. Jim pointed out that this would automatically be the status quo result if no consensus was reached. **Consensus: none reached, status quo, leave open for future Workshops to consider as better information develops.**

Eriogonum diatomaceum (Churchill Narrows buckwheat) - after previous mining exploration for cat litter, the habitat is once again being proposed for mining exploration and possible development. Heritage rank G1, habitat extremely limited, could be almost entirely destroyed if mining proceeds. USFWS is considering moving to Candidate status. Recommend emergency listing as fully protected plant by Nevada Division of Forestry? Recommend emergency addition to BLM sensitive species list? **Discussion:** All known populations are on BLM land. Population of about 38,000 plants over 97 acres. Proposed mining would impact about 50% of the known habitat. **Consensus: Recommend for emergency addition to Nevada List of Fully Protected Native Flora, without waiting for a second consensus next year.**

Galium hilendiae ssp. *carneum* (Panamint Mountains bedstraw) - known from three quadrangles in the Panamint Mountains of Inyo Co., CA, and reported by Kartesz (1987) from "Phinney Canyon and near the Strozzi Ranch, Grapevine Mts., Nye Co.", Nevada, within Death Valley National Park. Current Heritage ranks T2, S1. It is on CNPS List 1B, R-E-D 2-1-3. Add to NNPS Watch List? **Discussion:** Secure habitat in wilderness area, rare in California. Not threatened in its Nevada habitat. **Consensus: add to the NNPS M-List.**

Horkelia hispidula (White Mountains horkelia) - one collection reported from Nevada by Dean Taylor (Taylor 15283, 20 July 1995) in the White Mountains, ridge 1 mile NE of Trail Canyon Saddle north of Boundary Peak, 11,000 ft. Otherwise endemic to the White Mountains in California. On CNPS List 1B, R-E-D 3-1-3. Heritage ranks G2, S1. On Inyo National Forest Sensitive Species List. See comments from Kathleen Nelson. Add to NNPS Watch List? **Discussion:** skipped. **Consensus: no time, to be addressed later.**

Mentzelia argillicola (Pioche blazingstar) - described as a new species by the Holmgrens (Systematic Botany 27: 747-762. 2002), restricted to barren clay knolls and slopes between Panaca and the Patterson Wash area of southern Lake Valley, Lincoln County, Nevada. The numerous cited collections resolved to 5 separate occurrences. Add to NNPS Watch List? Recommend for BLM sensitive species status? **Discussion:** Most populations on BLM land, some private. **Consensus: add to the NNPS Watch List. Recommend for addition to the BLM sensitive species list.**

Mentzelia packardiae (Packard stickleaf) - Noel Holmgren (see comments) has determined that the one reported Nevada location for this species is based on specimens of *Mentzelia dispersa*, a common and widespread species, instead. Recommend removing from the BLM Sensitive Species List? Recommend moving to the NNPS "A" list (absent currently and historically in Nevada). **Discussion:** none. **Consensus: move to the NNPS A-List. Recommend for removal from the BLM sensitive species list.**

Mentzelia tiehmii (Tiehm blazingstar) - described as a new species by the Holmgrens (Systematic Botany 27: 747-762. 2002), restricted to the White River Valley of Lincoln and Nye counties, Nevada, mostly in the Sunnyside area. The numerous cited collections resolved to 7 separate occurrences. About as rare, in the same habitat, and subject to the same threats, as *Frasera gypsicola*. Add to NNPS Watch List? Recommend for addition to the Nevada list of fully protected species? Recommend for BLM sensitive species status? **Discussion:** Most population on Nevada state lands, some on BLM. **Consensus: add to the NNPS Watch List. Recommend for addition to the BLM sensitive species list.**

Orthotrichum shevockii (Scodie Mountains moss) - found at one location in Nevada by Jim Shevock in 2002 about one mile up Voltaire Canyon in Carson City. Another Nevada location is reported in the Lake Tahoe Basin. Otherwise known from three map quadrangles in the southern Sierra Nevada of Kern and Tulare counties, California. Ranked G1, and on CNPS list 1B, R-E-D 3-1-3. Add to NNPS Watch List? Recommend for Humboldt-Toiyabe sensitive species list? (see comments from Jim Shevock). **Discussion:** likely much more common and with few or no threats. **Consensus: add to the NNPS M-List.**

Phacelia petrosa (talus phacelia) - added to NNPS Watch list and recommended for BLM sensitive status by the 1998 Workshop when still undescribed, now formally published with full range map and specimen citations. The full range extends from southern Nevada through the Grand Canyon area and up the middle Colorado River basin into the San Juan and Virgin river valleys, and its habitat of carbonate or volcanic talus slopes, rocky washes, and canyon bottoms between 2500 and 5800 feet is common throughout this range. The species has not been systematically surveyed. Currently on the Natural Heritage Program watch list, ranked G3G4 S2. Move to NNPS Marginal List or Dropped List? Reconsider recommendation for BLM sensitive status? **Discussion:** none. **Consensus: move to the NNPS M-List. Retract earlier recommendation for addition to the BLM sensitive species list.**

Sisyrinchium radicum (Las Vegas blue-eyed grass) - Cholewa and Henderson (Flora of North America vol. 26, p. 362) recognize this species as distinct based on predominantly branched white-margined stems, hyaline margins of inner spathe broad, apically rounded or truncate, and flower parts narrow, dark blue to purple pale blue, and report it as endemic to the region from Las Vegas to St. George in moist, sometimes alkaline meadows, stream banks, and borders of springs. See [comments](#) from Anita Cholewa. Heritage Ranks G2?, S2?. Habitat highly vulnerable. Add to NNPS Watch or Threatened List? **Discussion:** seems to merit Watch-List status. **Consensus: add to the NNPS Watch List, leave open for discussion of other agency recommendations next year.**

Sphaeralcea caespitosa var. *williamsiae* (Railroad Valley globemallow) - recently published by Noel Holmgren (*Intermountain Flora* project) as the name for the Railroad Valley populations previously reported as *Sphaeralcea caespitosa*. Currently on the BLM and USFS sensitive species lists and the NNPS Watch List (as *S. caespitosa*). Heritage ranks still G2T2 S2. Any changes needed? **Discussion:** none. **Consensus: no changes needed, except to attach the new varietal name for the Nevada plants.**

NEW BUSINESS: REVIEW AND STATUS OF OTHER SPECIES (IN ALPHABETICAL ORDER)

Astragalus pulsiferae* var. *coronensis (Rams Horn Spring milkvetch) - segregated from var. *suksdorfii* by Welsh et al. (2002), and now considered endemic to eastern Plumas, Lassen, and Modoc counties, California, and northern Washoe County, Nevada. Already on NNPS Watch List (as var. *suksdorfii*). New Heritage ranks: T2?, S1. Any changes needed? **Discussion:** none. **Consensus:** leave open for consideration by future Workshops, possibly as an addition to the NNPS M-List.

Echinocereus engelmannii* var. *armatus (armored hedgehog cactus) - known from 5 sites, two east of Victorville, San Bernardino Co., CA, one in the Argus Range of Inyo County, CA, and two from the Pahute Mesa area on the Nevada Test Site of Nye Co., all in granite boulder areas. Recognized by Benson (1982) but not in Jepson Manual treatments (1993, 2002). Its taxonomy has been questioned because of its spotty distribution amidst other variants of *Echinocereus engelmannii*; the current draft FNA treatment does not recognize it. Heritage ranks T2?Q, S1?. Add to NNPS Watch List? **Discussion:** skipped. **Consensus:** no time, to be addressed later.

Hackelia brevicula (Poison Canyon stickseed) - one collection reported from Nevada by Dean Taylor (*Taylor 15236*, 18 July 1995) in the White Mountains, Queen Canyon near Albert Mine, 8200 ft. Otherwise endemic to the White Mountains in California. Identity may be questionable, as this species is difficult to distinguish from *H. floribunda*, also reported from the same general vicinity. On CNPS List 3 (needing more information), R-E-D ?-1-3. Heritage ranks G2Q, S1. On Inyo National Forest Watch List. See comments from Kathleen Nelson. Any need to add to NNPS Watch List yet? **Discussion:** skipped. **Consensus:** no time, to be addressed later.

Taxa recommended for addition to the NNPS "M" List (Marginal and/or disjunct occurrence in Nevada, more widespread elsewhere):

- **Taxa with 1-5 known occurrences added to the M-List:** *Asplenium resiliens*, *Astragalus lentiginosus* var. *borreganus*, *Astragalus panamintensis*, *Calandrinia ambigua*, *Hibiscus denudatus*, *Juniperus californica*, *Marah fabaceus*, *Menodora scoparia*, *Panicum urvilleanum*, *Phacelia lutea* var. *calva*, *Quercus chrysolepis*, *Sphaeralcea leptophylla*, *Stenotus lanuginosus* var. *andersonii*, *Stipa shoshoneana*, *Toxicodendron diversilobum*, *Trixis californica*.
- **Taxa with 6-20 known occurrences added to the M-List:** *Cladium californicum*, *Fouquieria splendens*, *Kochia californica*, *Psoralea spinosa*.
- **Taxa to remain under consideration for the M-List, pending further information:** *Bowlesia incana*, *Draba ventosa*, *Hesperocallis undulata*, *Keckiella antirrhinoides*, *Lycium parishii*, *Mentzelia jonesii*, *Nolina bigelovii*, *Stillingia linearifolia*, *Tetracoccus hallii*.
- **Reject for M-List:** *Camissonia californica*, *Hyptis emoryi*, *Perityle congesta*, *Rhamnus ilicifolia*.

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