

ANNUAL BOTANY / NATURAL AREA REPORT FISCAL YEAR 2001

Prineville District
Bureau of Land Management

STAFFING

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MAJOR WORKLOAD/ACCOMPLISHMENTS

A. INVENTORY/NEW POPULATIONS FOUND

Through project clearance, monitoring and/or other work, nine new populations of special status plants were found. This includes one population each of *Achnatherum hendersonii*, *Astragalus peckii*, *Astragalus tyghensis*, *Botrychium pumicola*, *Castilleja chlorotica*, *Lomatium farinosum* var. *hamblenieae*, *Mimulus jungermannioides*, *Talinum spinescens* and *Thelypodium eucosmum*.

Achnatherum hendersonii (Henderson's ricegrass) was located in an area known as the "South Boundary", the southern flanks of the Ochoco Mountains, during a rangeland evaluation trip. This is within an area where this plant would be expected.

Astragalus peckii (Peck's milkvetch) was found adjacent to an area that burned by wildfire in 1999, but within its known range SW of Cline Buttes. It would be interesting to see the effects of fire on this species. The challenge is to have fire burn a known population or to find an area where fire went through a population, leaving some areas unburned.

A new population of *Astragalus tyghensis* (Tygh Valley milkvetch) was found in the Criterion area by a supervisor while giving an introductory tour to a group of recreation technicians. The one plant he found turned into five after the population was thoroughly documented. This was in an area burned by wildfire several years ago (10?) and now dominated by annuals, including medusahead.

One population of *Botrychium pumicola* (pumice grape fern) was discovered during the course of other



Lewisia rediviva (bitterroot)

work in the La Pine basin. As is typical of many of these "populations", only two plants were observed.

The population of *Castilleja chlorotica* (green-tinged Indian paintbrush) was found on the north slope of Pine Mountain in normal, expected habitat for this species while looking at a livestock water project as was the population of *Lomatium farinosum* var. *hamblenieae* which was found during the course of inventory for a minor right-of-way project. Neither will be affected by the proposed projects.

Mimulus jungermannioides (hepatic monkeyflower) was found in the Steelhead Falls WSA in typical habitat consisting of a vertical basalt wall. JoAnne found dried remnants at this site last winter and returned for a positive determination.

A very large population of *Talinum spinescens* (spinescent fameflower), consisting of over 2,000 plants, was discovered by a range technician. Potential problems exist in that this population is easily accessible, is only a few miles north of Madras, and is in an area popular for partying and shooting. Nonetheless, the plant seems to be thriving at the moment.

Finally, a small population of *Thelypodium eucosmum* (arrowleaf thelypody) was found in typical habitat near Kimberly. It is interesting that this population is in a precarious situation on a wad of soil held together by an old juniper tree. Given any significant stream flow this tree might be washed away and over a nearby intermittent waterfall. Would this be called a transitory population?

B. MONITORING

A total of 41 populations of special status plants were monitored. These included *Artemisia ludoviciana* ssp. *estesii* (2), *Astragalus diaphanus* var. *diurnus* (8), *Astragalus tyghensis* (3), *Botrychium pumicola* (10), *Castilleja chlorotica* (1), *Calochortus longebarbatus* var. *peckii* (3), *Lomatium farinosum* var. *hamblenieae* (1), *Lomatium ochocense* (1), *Pilularia americana* (1), *Ranunculus reconditis* (1), *Talinum spinescens* (7) and *Thelypodium eucosmum* (3).

This was the first year in a while that we monitored *Artemisia ludoviciana* ssp. *estesii* (Estes' wormwood). One of the populations near Steelhead Falls had some trespass horses on it which we are dealing with. All these populations should be secure given their habitat in protected riparian areas. It is interesting to note that this species was recently found along the Crooked River, upstream from Prineville, on Bureau of Reclamation land. This greatly expands its known range and opens up the possibility that it could be found at numerous locations within the Crooked River/Deschutes basins.

The *Astragalus diaphanus* var. *diurnus* (transparent milkvetch) populations are all located within the corridor of the South Fork John Day Wild and Scenic River. All populations appeared secure although some had no plants at all. This is normal for this cyclical species based on weather patterns and especially so since 2001 was so dry. For those populations with above-ground plants, both first and second year plants were found, with some populations showing an apparently unusual dominance of second year plants. The first year plants become productive during their first year if they can survive, and a small portion of them usually overwinter and become second year plants, the main reproductive individuals. Interesting to note that one population was visited in November 2001 and new plants were observed to have germinated and actively growing.

The population of *Astragalus tyghensis* (Tygh Valley milkvetch) near Tygh Valley which was weeded last year was weeded again, and once again, the diffuse knapweed seems to be diminishing. There now are less than 100 knapweed plants on the five mounds with the *Astragalus tyghensis*. The population in the Criterion area which was inadvertently sprayed in 1998 now has nine plants out of an original 23, after no plants were observed in 1999 and three were found last year. Although infrequently used, a two-track road goes through the population and may need to be re-routed or closed.

Several of the *Botrychium pumicola* (pumice grape fern) populations monitored this year, near La Pine, were in or adjacent to areas that had been logged. We are noticing a dramatic increase in grass in these logged areas, which is expected, but which may be detrimental to *Botrychium pumicola*. Plants were not found in some of the areas but this appears to be normal.

Calochortus longebarbatus var. *peckii* (Peck's long-bearded mariposa lily) didn't seem to be doing as well this year, most likely to the lack of moisture. No particular disturbances were noted but there was a paucity of flowering plants in the three populations observed near Big Summit Prairie.

Castilleja chlorotica (green-tinged paintbrush) was monitored in the area burned accidentally 3 years ago, near Horse Ridge. Plants continue to be absent from the burned portion but are surviving in the unburned areas. Our monitoring is now going to change toward documenting recolonization of the burned area, as opposed to monitoring where the plants once were.



Eriophyllum lanatum
(Oregon sunshine)

Only one of BLM's four known populations of *Lomatium ochocense* (Ochoco biscuitroot) was qualitatively monitored in 2001. No disturbances were noted and none are expected, given the rocky habitat and the fact that all are within the North Fork WSA. Given the extremely dry year, it was interesting that access to other populations was blocked by snow. A small group of non-botany types, including the field office manager responsible for this area, were taken to monitor this species and it was beneficial for all involved.

Our lone population of *Pilularia americana* (American pillwort) was visited at the reservoir where it lives, near Hampton. Similar to other species during this dry year, it stayed underground as the reservoir was dry and there was no suitable habitat this year.

Our only population of *Ranunculus reconditis* (Dalles Mtn. buttercup) was visited on Mill Creek Ridge. As this is the only known population in federal ownership, we will visit it at least annually. We were a little late this year as all plants were in fruit. No disturbances or concerns were noted.

Seven populations of *Talinum spinescens* (spiny fameflower), north of Trout Creek, were observed and all appeared healthy, despite the dry conditions. No disturbances were noted, although there seems to be a dramatic increase in the density of medusahead (*Taeniatherum caput-medusae*) from what was documented before.

Three populations of *Thelypodium eucosmum* were visited, including the one by Little Canyon Mountain which was burned in 1999. This population was still vigorous, with 832 plants counted, but there is

C. CLEARANCES

A total of 25 field clearances were completed encompassing 13,655 acres. Types of projects included emergency fire rehab (40 acres), juniper thinning (1,472 acres), land exchanges (80 acres), livestock projects (85 acres), prescribed fire (11,886 acres), rights-of-way (77 acres), recreation projects (10 acres) and miscellaneous projects including a mineral materials sale, potential radio repeater site locations, a watershed project and a paleontology field

speculation the vigor might be attributed more to the plant's proximity to abundant moisture more so than as a result of burning. The other two populations near Kimberly were secure.

project (25 acres, all).

Fourteen botanical waivers were granted, primarily for minor rights-of-way, recreation projects in developed campgrounds and other projects in areas previously disturbed or which would likely result in no impact to botanical resources. Many of our emergency fire rehab plans fell into this category.

Geo-area statistics are found on page 5.

OTHER ACCOMPLISHMENTS

A. NATURAL AREA MANAGEMENT

The fourth year of the permit system for **The Island ACEC/RNA** continued with good results. Total visits for FY 2001 were 47, only 8.3% of the high of 564 in 1996 (see Figure 1). Permitted visitors included the "Becoming an Outdoor Woman" program with ODFW, the Native Plant Society of Oregon and a nature writer. Approximately 36% of the visitation was associated with administrative (BLM or OPRD) activities.

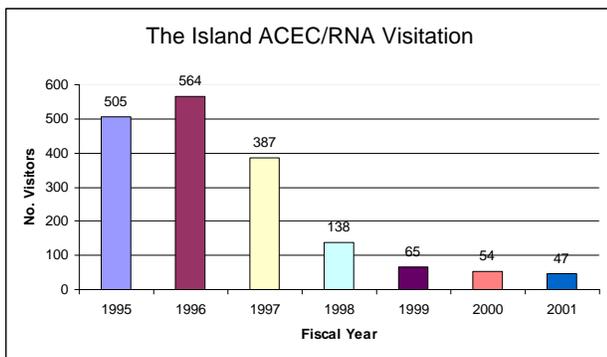


Figure 3

The Island received its annual weed treatment *twice* by the botany crew. Last year's GPS'd locations were revisited and new locations added. The Natural Area was extremely dry in 2001 and we may have made some real progress this year. We now have over 20 discrete medusahead locations to monitor and pull as needed.

We are still awaiting designation of The Island as a National Natural Landmark. There are apparently

some procedural hoops for the National Park Service to go through, but it should receive formal designation in 2002.

Along with weed-pulling trips, two BLM-led groups visited The Island. The first, in early May, consisted of several of the Forest Service botanists from Central Oregon, most of whom had never been to the Natural Area. The second, in September, involved the Deschutes Field Office Manager and others from the Resource Area who also were first-time visitors. The Island, along with Horse Ridge, were two ACECs that were formally evaluated in FY 2001.

Horse Ridge ACEC/RNA was visited several times during FY 2001 related to resource concerns, unfortunately. A substantial mountain bike trail was discovered through a portion of the area and signing will begin in FY 2002 to try and alleviate the problem. Additionally, a lightning strike occurred in the RNA which, unfortunately, was extinguished with some associated disturbance.

Surprisingly, a lightning strike occurred in the **Benjamin ACEC/RNA** as well, and once again, crews were on the scene to put it out. No other disturbances were noted in this area, but the issue of wildfire suppression in RNAs needs to be addressed prior to the next fire season.

The other two RNAs in the district, **Forest Creeks** and **Powell Buttes** were each visited at least once to inspect for disturbances (defensibility monitoring) and to add to our floristic lists. One concern for Powell Buttes is a potential acreage subdivision of private land adjacent to the RNA boundary.

B. CHALLENGE COST SHARE / COOPERATIVE EFFORTS / OUTREACH

One challenge cost share project was funded during FY 2001 which was the fourth year of a projected five-year study to determine the effects of various disturbances on *Botrychium pumicola*, a species endemic to the lodgepole pine pumice zone near La Pine. Results are pending.

A field meeting with Oregon Department of Agriculture led to a multi-agency proposal to study *Astragalus peckii*, a species endemic to the area between Bend and Sisters, and in locations near Chemult. This would be a study similar to that for *Botrychium pumicola*, but it is unclear at this time if the project will

C. OTHER PROGRAM SUPPORT

Botanical input continued to be provided to all resource management programs as needed, especially as related to the lands and hazardous fuel reduction programs. Time was spent assisting in PFC

D. OTHER ITEMS OF INTEREST

Data collected from our long-term monitoring of *Astragalus peckii* was analyzed by the Oregon Natural Heritage Program. It appears Peck's milkvetch increased after 1992 (a dry year) but that some populations may be returning to 1992 levels. Populations grazed prior to 1992 and then mostly ungrazed since appear to be increasing in density. Further monitoring will be necessary to determine the trends of these populations.

The GIS shop did us a favor and digitized all the special status plant population locations. Hurray! Now as soon as we all learn Arcview we can become digitally literate. No more hand coloring of maps!

JoAnne had the opportunity to take a distance leaning course in Plant Taxonomy from Eastern Oregon State College. Along with the collection she made for this class, she also added to the herbarium and gained substantial knowledge in this field so critical to the botany program.

This was an unusual year for the botany program due to the extremely dry conditions and personnel-related

be funded in FY 2002.

One public field trip was conducted in 2001. The Crook County Library held its first annual wildflower show, and in conjunction with the show BLM led a hike to the Chimney Rock area. We also participated in a NPSO field trip to Big Summit Prairie, tagging along with the Forest Service botanist but providing support where needed.

BLM also led another "plant walk" in support of Prineville Reservoir State Park's second annual "Star Party". This was to be an "extra curricular" event to help broaden participants' knowledge of the natural world.

(proper functioning condition) analyses as well as with Rangeland Standards and evaluations. There was also involvement in several planning efforts, including the Upper Deschutes RMP/EIS, the Casey-Young Land Exchange and the Timber Basin EFR plan.

reasons. In general, BLM lands were at 60% of normal precip and the native flora responded appropriately. Some annuals, using *Phacelia linearis* as an example, were perhaps 6 cm. or less in height sporting one single flower, when in a normal year they might be 30 or more cm. in height with 20 flowers. Robust perennial bunchgrasses, such as *Pseudoroegneria spicata*, produced perhaps 20% of its normal biomass and did well to produce one flowering stem. This made for a very drab field season but increased our ability in forensic botany.

Considering our personnel, it didn't seem like a week went by without one or more of the botany crew on one sort of leave or another. In spite of the challenges this presented, we still got the critical work done and in reality, accomplished more than we should have under the circumstances.



Calochortus macrocarpus
(sagebrush mariposa lily)

GEO-AREA STATISTICS

High Desert

2 new populations found (*Achnatherum hendersonii* and *Castilleja chlorotica*)

6 populations monitored (*Calochortus longebarbatus* var. *peckii* - 3; *Castilleja chlorotica* - 1; *Lomatium ochocense* - 1; *Pilularia americana* - 1)

3 botanical waivers (livestock project, minor ROWs, juniper treatment)

13,423 acres botanical clearance (fuels treatments, livestock projects, realty authorizations, OHV trails, watershed restoration)

Lower Deschutes

4 new populations found (*Astragalus tyghensis*, *Lomatium farinosum* var. *hambleniae*, *Mimulus jungermannioides*, *Talinum spinescens*)

12 populations monitored (*Astragalus tyghensis* - 3; *Lomatium farinosum* var. *hambleniae* - 1; *Ranunculus reconditis* - 1; *Talinum spinescens* - 7)

3 botanical waivers (fences/restoration and EFR)

50 acres botanical clearance (right-of-way)

Lower John Day

1 new population found (*Thelypodium eucosmum*)

3 botanical waivers (fire rehabilitation and Oil/Gas lease)

2 acres botanical clearance (communication sites)

Upper Deschutes

2 new populations found (*Astragalus peckii* and *Botrychium pumicola*)

12 populations monitored (*Artemisia ludoviciana* ssp. *estesii* - 2; *Botrychium pumicola* - 10)

3 botanical waivers (minor rights-of-way and fence reconstruction/restoration)

110 acres botanical clearance (rights-of-way, land exchanges)

Upper John Day

11 populations monitored (*Astragalus diaphanus* var. *diurnus* - 8; *Thelypodium eucosmum* - 3)

1 botanical waiver (wildlife guzzler)

70 acres botanical clearance (EFR, paleontology field school, fence)