

**Plant Inventory
of
Riparian and Wetland Areas
and
Rare Plant Species
2004-2005**

A report prepared by
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Introduction:

This report documents the 2004-2005 plant survey of the John Day Fossil Beds National Monument. The objectives of this project were to inventory the invasion of exotic, noxious weeds; search for new riparian and aquatic species; and check the status of known sensitive plant populations on Monument lands. In addition, photographs of plant species within the Monument boundaries were to be taken. I visited all three units between the months of February and October; a total of 25 field trips were made during 2004 and 2005. Specimens were collected for herbarium mounts of new invasive species, and sensitive plant populations were searched for to check their status. I was unable to locate the colony of *Collomia macrocalyx* on the Painted Hills Unit even though it was searched for extensively. In addition, I watched for plant species that were not previously known to occur in the monument. Potentially 73 new species were identified and added to the herbarium collection. Of these, 41 were native species and 22 were exotic and or invasive. One new addition, scapose catchfly, *Silene scaposa*, is on the Oregon National Heritage List 4 as a plant of concern, but is not currently threatened or endangered.

Additional work is necessary on the sedges and rushes. Seven new specimens were collected and identified. But a further search of all wetland areas may yet yield more new plants. June and July are excellent months for collecting sedges and rushes within the Monument's boundaries – yet the area to be covered on foot makes it difficult to reach all wet areas at the critical flowering and seed set time.

History:

In 1976 Berta Youtie and A.H. Winward conducted the first survey of plants within the boundaries of the newly established John Day Fossil Beds National Park. This study was initiated mid-growing season, (May 23, 1976) and though 230 plant species were identified, some of the early spring forbs might have been missed. Of the 230 species, forty-five were monocots, including 34 grasses, eight grass-like and three lilies; one hundred and eighty were dicots including eleven trees, nineteen shrubs, ninety-three perennial or biennial forbs, fifty-five annual forbs and two cacti. In addition to these, three horsetails, one moss and one fern were identified, and many other cryptograms were present on the Monument. (Youtie and Winward 1977) At this point, eight of these plant species were identified as rare or threatened.

In 1991, David Sapsis conducted an additional vegetative community survey (A Re-Inventory of the Upland Vegetation Communities of the John Day Fossil Beds National Monument, May 1992). The objectives of this study were to document and re-inventory the 22 permanent transects established in 1977; to interpret vegetation change in the 12 year interval and to make recommendations for the Park Service in regard to future upland vegetation monitoring.

A follow-up survey (Botanical Survey: John Day Fossil Beds National Monument, Oregon, May 1992) also was conducted by Carolyn Wright during the same period April Through June, 1991. The objectives of this project were to inventory for the

presence of sensitive plant species on Monument lands, map their location, and collect voucher specimens where population size allowed. Eleven sensitive plant species were identified; populations and colonies of each were searched for, documented and mapped within the boundaries of the three units of the Monument.

Method:

This survey (April 2004 – July 2005) adds a number of new invasive plants voucher specimens to the Monument's herbarium, in addition to a number of newly identified native species. Monitoring and documenting the presence of sensitive plant species also continued under this survey.

The plant specimens collected were dried in a standard plant press and mounted on herbarium sheets before being organized into family folders. Plant species were identified using Hitchcock and Cronquist (1973) Flora of the Pacific Northwest. Each new sample includes a label that documents scientific and common names; date collected; family; collector; identity check, and notes on collection locality, habitat, occurrence rate (rare, scattered, or common) and whether a native or exotic. All new plant species will have their identity checked at the University of Idaho and will be entered into the John Day Fossil Beds National Monument herbarium, which is presently located at the Cant Ranch House - Park Headquarters for the Monument.

Acknowledgements:

I wish to thank Ken Hyde for his creative funding abilities in searching out grant opportunities, which allowed the necessary funding for on-going research into the biomes of this wonderful and special region. I also wish to thank Ranger John Laing for encouraging me to participate in this project. Jenny Deluca thoughtfully warned me of the hazards of rattlesnakes as I prepared to explore the Bridge Creek area in addition to showing me how to reach the "back country" of the Painted Hills. Ken Hyde also proved to be an excellent source of information in offering suggestions as to areas that needed to be checked, pointing me in the right direction to explore areas where new plant species were possibilities. I'd like to thank the "crew in the lab" at the Thomas Condon Paleontology Research Center, who kindly allowed me time on the marvelous dissection scope and space to key out many of the more difficult plants. And last but not least, I wish to thank my family and friends for their company on many long, hot hikes and their help as I learned how to transfer digital pictures through the computer 'nether-lands' to a finished report. This encouragement made the successful completion of this project possible.

Trip 1 Field Notes

Painted Hills Unit April 18, 2004

I met with Ranger Jenny Deluca at the new Kiosk. She showed me where to locate springs, seeps, wet areas and riparian habitats within the Painted Hills Unit. The purpose of this day is mainly to become acquainted with the aquatic areas within the Painted Hills, and the potential locations of sensitive and rare plants.

We hiked into "Spring in the Rock", a spring in the SE corner of the unit (N44°38.150' Latitude and W120°14.680' Longitude). Today is a fairly warm, early spring day; the region has had rain recently and many wildflowers appear to be about 2 weeks early. From the kiosk we crossed an open flat area dominated by *Sarcobatus vermiculatus* (greasewood) and *Bromus tectorum* (cheatgrass) growing on alkali soils. As we approached the colored hills, we came across a scattered population of *Allium pleianthum* (manyflower onion). I collected a specimen to key out to double check identity. These onion are relatively common in the area and grow in clay soils within 100 feet of the barren, tan colored paleosols of the Painted Hills. However it is listed as a species of concern about which additional information is needed before its status can be determined. In addition to greasewood, plant associates included *Atriplex confertifolia* (shadscale), *Lepidium perfoliatum* (peppergrass), and *Bromus tectorum* (cheatgrass).

The "Spring in the Rock" area consists of a dry, flashflood type wash, which opens up into a small alluvial fan below. We hiked up this draw for approximately one-quarter mile before it contained intermittent water. The wet area continues for about 50 feet below the actual spring, which emerges at the base of a rock cliff. Various game trails lead into the spring basin and according to Ranger Jenny Deluca, this spring contains water year-round. Owl pellets can be found at the base of several large junipers and Jenny said it was common to see a Great-horned owl in this area. No plants were collected as most were still in early growth stages. This would be a great place to check for *Mimulus* species later in the summer.

Trip 2 Field Notes

Sheep Rock Unit April 23, 2004

I met with Ken Hyde at the Thomas Condon Paleontology Center. We briefly discussed the goals of this project before heading out into the field. Our first stop was McCarty Spring at Foree, (N44°38.937' Latitude and W119°38.607' Longitude) where we hiked up the access road along McCarty Creek. This wet seep and spring area has many sedges, equisetum, grasses and forbs in addition to a few willow and poplar trees. The spring area itself is fenced and many surrounding juniper trees have been cut out recently as part of a habitat restoration project. Ken pointed out that this area would be a good spot to come back to periodically over the summer to check for potential new aquatic plants that may have been missed on earlier surveys. We also hiked out across the sagebrush/juniper flat to the left of the spring, searching for other early spring plants. In addition to noting new invasive species, such as *Linaria dalmatica* (dalmatian toadflax), I made mental notes on how common, scattered or rare various plant species were.

Stop #2: "Spring above Cant Ranch House"

(N44°33.303'Latitude and W119°39.210'Longitude). At this spot there is another long, wet seep, again with significant amounts of aquatic plants including the sedges, and rushes.

A HUGE juniper tree and various willows grow along the margin of this seep. The spring area is fenced.

Stop #3 is "Big Spring"

(N44°32.241'Latitude and W119°38.241'Longitude). "Big Spring" is also characterized by many large grasses, sedges and reeds. A clump willow *Salix rigida*, or rigid willow, is growing in the wet drainage area below the spring. This is the only willow of its type that I found on the Monument.

Stop #4: Rock Creek to the southern edge of the Monument boundary at milepost 97. I collected a sedge that was growing along the banks of Rock Creek.

Stop #5: "Rattlesnake Creek Pond"

(N44°30.63' Latitude and W119°37.47'Longitude). The water is high and most of the willows and sedges would only be accessible by boat. Ken and I decided that this would be a good spot to visit later in the summer to check for other potentially new species of willows. If a new species of rose were to be found, this would be a good area to check later when they are blooming.

Stop #6: Cant Ranch House

(N44°33.335'Latitude and W119°38.672'Longitude). We walked through the wet area at the back of the house and down to the river. Again the high water along the river edge made it impossible to reach the large clumps of sedges that typically grow in the John Day River and along its edges. *Apocynum cannabinum* (Indian hemp) grows at the edge of the river. A large buttercup-type plant was collected from one of the irrigation ditches below the ranch house. We ended the day back at Ken's office where we used new software: Plants of Pacific Northwest Interactive Keys and Color Photos, version 4.0 for Window, produced by Flora ID Northwest (2001) to key out the Rigid Willow collected at Big Spring.

Today was spent in mainly locating the aquatic areas within the Sheep Rock Unit that I needed to concentrate on. The scope of this project includes identifying the aquatic plants within the boundaries of the Monument. If possible, a photograph of each plant will be taken to aid in documentation. Additional time was planned for another trip with Ken into some of the back areas of the Sheep Rock Unit to look for new plant species and check on some of the sensitive plant populations that are known to be in these areas.

Trip 3 Field Notes**Clarno Unit April 30, 2004**

The weather continues to be unseasonably warm. Plants on this part of the Monument indicate growth approximately 2 -3 weeks ahead of our usual spring growing season. We started at the west end of the Clarno Unit. Ranger John Laing showed me where a small seep was located along the western boundary line; he thought that I might

possibly locate some aquatic plants along this seep. We didn't take time to hike into it today. Next we drove up Lee Canyon to the Monument boundary fence. At the upper end of this canyon, a unique area of sandy soils exists below the ignimbrite rim. This area contains an interesting microhabitat; including a population of unusual rodents, according to John Laing. We didn't hike into this area; John just gave me directions for follow-up visits.

Our last stop was at the picnic area where John described his re-vegetative efforts in and around the picnic area. We then hiked approximately two miles up Indian Canyon to the seep area that forms an intermittent stream, early in the spring. The actual spring is above at Sheep Cabin 1, just off the Monument boundary. Indian Canyon has the most potential for further visits, as it spans the width of the Clarno Unit and has the most change in elevation. Many of the wildflowers in bloom in this area are already in the collection. I didn't collect any additional plants, as Ken had said that duplicate plant specimens were not necessary.

Trip 4 Field Notes

Sheep Rock Unit – Water Spout Gulch May 7, 2004

Stop # 1: Water Spout Gulch Ken Hyde and I crossed the river on the cable car above the Cant Ranch House. Then we hiked up the alluvial fan and into Water Spout Gulch. The soils range from deep, well drained, mixed alluvium in the fan to John Day Formation claystone beds overlain with tumbled basalt rock boulders. The small, intermittent stream that cuts into the alluvial fan soon became a steady flow, containing cattails, small willows, stinging nettle, rushes and sedges. We climbed up through a clump of mock orange, willow and wild rose that choked the top of a rock waterfall. This waterfall – a rock cliff - has a drop of ~25 feet, at the base of which there is a small spring. Beyond the dense clump of brush at the top, the dry canyon floor consisted mainly of solid basalt rock carved by flash flood water from severe, summer thunderstorms. Soils on the floor were mainly sandy-gravels deposited in pockets by water run-off. The basalt cliffs often have small seeps on the north side of the gulch. *Mimulus washingtonensis*, (Washington monkey-flower) grow in cracks along these seeps. Specimens were collected of this monkey flower, in addition to their photographs. Approximately 50 yards farther up this canyon, we turned back to the right and climbed up a game trail and followed it back down the slope above the canyon and around the waterfall/cliff. *Cryptopteris fragilis* (brittle bladder fern) also grows at the base of basalt cliffs - tucked back into microhabitats of the little seeps. *Collomia grandiflora* (large flowered collomia), and *Cryptantha celosoides* (Cockscomb cryptantha), also are blooming along the canyon slopes. We disturbed numerous nesting chuckers, and a rattlesnake resting under sagebrush on the hike out of Waterspout Gulch. The lower end of Waterspout Gulch was burned in the fall of 2003 as a result of prescribed burns to aid in juniper management. This area now has many large, dead trees along the river that may provide nesting habitat for hawks and owls. Early colonizing plants into the burn areas include *Bromus tectorum*, *Amsinckia* spp. and dalmatian toadflax.

Stop #2: Deer Gulch Drainage We parked at the bridge along the highway and walked in on a road used to access hay fields across the river. Deer gulch winds

up through the Goose Rock formation. The soils encountered range from areas of coarse gravel to rocky cobbles; Mt. Mazama ash deposits are common at the lower end of the drainage, as is an area of sandy, wind-blown loess. The upper end of Deer Creek drainage reaches the claystones of the John Day formation where heavy alkaline clays are common, as are areas of soil with high salinity. Because of our unseasonably warm and wet spring, it is easy to locate many plant populations. At the head of Deer Creek drainage, a small population of *Asclepias cryptoceras* (pallid milkweed) was located (GPS # UTM 11T0291404 4938877 according to Ken Hyde). The elevation at this spot is 2700' and the plants are growing on a south slope in coarse gravels and cobbles that have been weathered out of the Goose Rock formation. We climbed up and to the left out of Deer Creek drainage, and crossed over to an area of blue/green claystone typical of the John Day formation. Specimens of several *Astragalus* species, growing at the edge of the exposed green clay slopes were collected from this site. At this point, we were about one mile east of the John Day River, close to the back fence on the east side of the Monument.

Trip 5 Field Notes

Painted Hills Unit May 15, 2004

The specific purpose of this trip is to search out populations of sensitive plants growing within the southwest boundaries of the Painted Hills Unit and check their status. I chose this area to start with as it is a follow-up of Carolyn E. Wright's route of travel in 1992, as indicated on her maps in her March 1992 report. The weather is overcast and rainy, following a several day period of sporadic rain showers. I hiked up the dry wash at the west end, (there is no intermittent stream despite our wet spring) and followed the west boundary fence. Many early spring forbs are blooming and several thriving populations of *Pediocactus simpsonii* (hedgehog cactus) were located along the ridge tops. This area was burned in the fall of 2003, and many plant populations are in the process of recovery. Significant stands of exotic annuals such as *Bromus tectorum* (cheat grass), the knapweeds, *Amsinckia* species and *Poa bulbosa* (bulbous bluegrass) dominate the vegetation on the slopes of the hills in this area; however much of the dense *Juniperus occidentalis* (juniper) has been removed as a result of the prescribed burn in the area. *Chaenactis nevii* populations grow throughout this area on the claystone paleosols in conjunction with *cleome platycarpa*, golden bee cleome. A new plant species, *Thysanocarpus curvipes* (Lacepod) was collected on a northwest slope. The small population of *Collomia macrocalyx* was not located on this trip, though at this point I am not sure as to the exact drainage where Carolyn Wright found this single population site.

Trip 6 Field Notes

Sheep Rock Unit June 10, 2004

This is a follow-up trip into the spring along McCarty Creek in the Foree area. We have had approximately three weeks of continuous rain showers with today being the first sunny, warm (temperature ~70°) day in over a week. I hiked up a small wash, located to the right of the paved road into the Foree picnic area. This wash, as a result of our recent rains, has an intermittent stream that drains out of the "Pages in Stone" basin

located below the "Story in Stone" trail from the Foree picnic area. *Linaria dalmatica* (dalmatian toadflax) has invaded this area and a collection was made to document the new invasive species. Various *Astragalus* species, asters, *Erigeron pumilus* (shaggy fleabane), and Indian Paintbrush commonly grow among the juniper, sage and *Poa sandbergii* plant communities. I hiked south over a low saddle, crossing an established transect line, and collected several species of sedge and a rush from McCarty Creek, just below the fenced in spring. I also collected a species of watercress and a monkey flower, both of which keyed out to specimens already in the collection.

Trip 7 Field Notes

Clarno Unit June 21, 2004

This is a follow-up trip into the Indian Canyon area of the Clarno Unit. Our weather has warmed up considerably with average afternoon temperatures commonly reaching the 90°'s and 100°'s. I collected another new, exotic species: *Verbascum blattaria*, or moth mullein. This invasive weed is scattered out in the open, growing on the dry, rocky gravels of the canyon floor and up against the palisade cliffs. When I checked with Ranger John Laing, he said that he did not remember this plant growing in the Clarno Unit last year. He considers it a new invasive plant this year. Indian Canyon also has scattered areas of knapweed, and dalmatian toadflax. I located several clumps of a penstemon, and though the leaves are different, the flowers are similar, and it keys out to *Penstemon richardsonii* or Richardson's penstemon. I climbed up the first large draw to the left, and on open, north slopes collected a small, bushy sunflower that looked different. When I keyed it out, it appears to be *Helianthus cusickii* (Cusick's sunflower), which makes it a new addition to the Monument herbarium.

Trip 8 Field Notes

Sheep Rock Unit June 26, 2004

This field trip involved a search along Rock Creek, both the stream banks and the basalt slopes across the road, for new plants and the rare or sensitive plants that previous surveys have indicated as potentially being found in this area. I collected a small rush growing along the sandy, stream bank as an additional aquatic plant for the collection. Also collected was another willow sample. The willow is growing along the right side of highway 26, ~7 tenths of a mile from the junction, in a ditch at the foot of basalt cliffs. The area looks to contain a seep, or at least drainage off the cliffs above. Many of the common flowering herbs are still blooming, but I was unable to locate *Penstemon deustus* var. *variabilis*, (hot rock penstemon) nor *Thelypodium eucosmum* (arrow-leaved thelypodium).

I ended this trip with a walk along the John Day River hay fields. Another willow sample was collected from a large clump of willow growing in the middle of the hay field. *Conium maculatum*, (poison-hemlock) also grows at the edges of the field and along the road. I did not take a specimen to add to the collection, as I didn't have any gloves. A voucher specimen still needs to be made of *Cicuta douglasii* or water-hemlock, which also grows within the Monument.

Trip 9 Field Notes

Sheep Rock Unit June 30, 2004

I hiked into Turtle Cove just to check for invasive weeds along the trails. The weather continues to be extremely hot with high temperatures ranging up to 105°. The only collection made was *Galium multiflorum* (shrubby bedstraw). If time had permitted, I wanted to hike the three-mile loop trail, to check further for invasive weeds. A return trip will have to be made to check this area.

Trip 10 Field Notes

Painted Hills Unit July 2, 2004

The primary goal of today is to reach the area of the single population of *Collomia macrocalyx* (mountain trumpet, or bristleflower) and check on the status of the seven recorded plants in this population (Carolyn E. Wright, 1992). I started by retracing the route into "Spring in the Rock". At the spring basin I collected a specimen of small rush, and a new invasive plant, *Hypericum formosa* (St. John's wort). Also growing in the wet area at the base of the cliff, are two types of monkey-flowers: *Mimulus floribundus* (purple-stemmed monkey-flower) and *Mimulus washingtonensis* (Washington monkey-flower). I only made a collection of the *Mimulus floribundus* because I could only find one plant of the *Mimulus washingtonensis*. My goal was to follow this drainage for approximately one-half mile to the back, south fence of the Painted Hills Unit, then turn to the right and hike along the back fence for about one-half mile up and over into the next drainage. According to Carolyn E. Wright's map, this should be the locality of the *Collomia macrocalyx* population. Even though it is late in the growing season, I'm hoping to find evidence of the plants.

I hiked up and around the rock cliff of "Spring in the Rock" and discovered a drainage system similar to Waterspout Gulch in the Sheep Rock Unit. The canyon floor rocks show evidence of erosion from severe summer thunderstorm flashfloods. Also the wet, intermittent seep continues above the rock cliff and growing in abundant populations were both monkey-flower species. I made a collection of *Mimulus washingtonensis* (Washington monkey-flower) as it has not been documented within the monument boundaries. This drainage needs to be inventoried further for new and sensitive plant species, as I didn't take time to explore the area to the southeast. The wet streambed continues to the back fence, though I believe the run-off is due to our unseasonably wet spring.

A large *Pediocactus simpsonii* (hedgehog cactus) population exists on the ridge tops to the right of this drainage, though some colonies on the lower edges were burned by the prescribed fires of fall 2003. The climb down into the next drainage revealed significant rocky outcrops and cliffs. Further exploration of this area potentially could reveal sensitive plants, in hidden microhabitats, such as *Silene scaposa* (Scapose catchfly) and *Penstemon deustus* (hot rock penstemon). I believe a follow-up visit earlier in the year would be well worth planning.

The floor of this new drainage is again similar to the previous in that it is wet with a small, running stream and has a solid basalt floor that has been worn smooth by water. There is evidence of relatively recent flashflood damage (within the last 3-4 years). I hiked the slopes on both sides of the drainage, in addition to the narrow canyon floor, searching for the small population of *Collomia macrocalyx*. The associated plant species (according to Carolyn E. Wright, 1992) were found: *Achillea millefolium* (common yarrow), *Agropyron spicatum* (blue-bunch wheatgrass), *Eriogonum* sp. (buckwheat), *Penstemon richardsonii* (Richardson's penstemon), and *Purshia tridentate* (bitterbrush), in addition to *Juniperus occidentalis* (juniper). But even though I hiked approximately one mile down the canyon to a large rock waterfall drop of ~30 feet in height, I was unable to locate any of the *Collomia macrocalyx* population. Two possibilities exist: this population may have been washed out due to a severe flashflood in the area, or this status check may simply have occurred too late in the growing season. A follow-up search next year should be conducted in May and June to check the final status of this population.

I climbed out of this drainage from an area just above the waterfall and crossed over into the next drainage to the west. I walked up and down the following two drainages to the west to make sure that no other populations of *collomia macrocalyx* existed in close vicinity. No sensitive or rare plants were discovered and further documentation can be made of the common occurrence of invasive, exotic weeds such as *Taeniatherum caput-medusae* (medusa head), *Centaurea diffusa* (knapweed), *Amsinckia tessellata* (tessellate fiddleneck) and *Linaria dalmatica* (dalmatian toadflax) into the plant communities of the Monument. Many of these plants have invaded the slopes of the hills bordering the colored paleosol beds of the Painted Hills Unit. Lower slopes and areas that were burned the previous fall, show significant stands of these invasive weeds, entering habitats left vacant by the fire destruction of sagebrush and juniper.

Trip 11 Field Notes

Sheep Rock Unit July 9, 2004

Tina Wu, a specialist on staff for the Nature Conservancy in Hawaii joined Ken Hyde and me today. She wanted some experience with our local plant communities and volunteered to assist in our field work. Our first stop today is again into the Rock Creek locality. A collection was made of *Phacelia ramosissima* (branched phacelia). It was collected at the base of the basalt cliffs to the left of the highway (GPS: UTM# 0290400-4933701 according to Ken Hyde). Another check was made on a penstemon growing among the tallus; Tina and I keyed it out on site as *Penstemon richardsonii* (Richard's penstemon). No collection was made as this species already has a voucher sheet in the herbarium. Another potentially invasive weed, *Saponaria officianalis* (Bouncing Bett) was located along the highway through Picture Gorge. This plant's presence in the same general area; was documented by Berta A. Youtie in 1976.

Stop #2 today was at "Spring Above Cant Ranch House" (N44°33.303' Latitude and W119°39.210' Longitude). An aquatic sedge with a big seed head and another smaller sedge were collected. Several other small flowering plants also were collected so their identities could be checked.

Stop #3 was a hike up Deer Gulch to check on later seasonal plants. We drove in on the access road to hay fields across the river and parked at the mouth of Deer Gulch. The *Epilobium minutum* (small flowered willow-herb) is blooming everywhere. We found an interesting "herbivore" of the small flowered willow herb. Two of the willow-herb plants were dramatically eaten away by large, (3 – 4 cm long), fat green caterpillars. There was only one caterpillar on each plant, but the plant had little left, as did other willow herb plants in the immediate vicinity.

Also collected near this locality (GPS: UTM# 0291437 4938810 according to Ken Hyde) was an *Astragalus* sp.. This plant grew in an *Atriplex confertifolia* (shadscale), and *Atriplex spinosa* (spiny hopsage) plant community at the edge of a barren, dry area with a high alkaline salt content, where few plants grow. On the return trip, we hiked down the ridge on the south side of the canyon. We came across *Portulaca oleracea* (common purslane), a common widespread weed on disturbed soil sites. It was growing in the game trail that we were following, though at this point only two plants were located.

Another new species for the park was collected on a south slope at the edge of the road to the hay field, where it climbs up through a small saddle. The soil in this area is a light sandy loess. *Polygonum majus* (wiry knotweed or Palouse knotweed) was growing among a community of grasses, including *Oryzopsis hymenoides* (Indian Rice Grass), and *Sporobolus cryptandrus* (sand dropseed). Other plants included *Gutierrezia sarothrae* (matchweed or snakeweed), *Sisymbrium altissimum* (Jim-Hill tumble mustard) and *Astragalus* sp.. Approximately 50 feet away in the middle of the road, was a purple penstemon (GPS: UTM#0290346 4939581 according to Ken Hyde). This penstemon keyed out to *Penstemon erianthus*, (crested tongue penstemon), a fairly rare penstemon that has been found in the Monument before.

Trip 12 Field Notes

Sheep Rock Unit July 12, 2004

Today Tina and I are wading across the John Day River just south of Picture Gorge and then hiking up to the research study natural area and on to the east boundary fence. From there we will turn and follow Waterspout Gulch back down, eventually crossing the river again at the hay fields on the north side of Picture Gorge. The purpose of this hike is to check on sensitive plant species in the research natural area. The elevation change from the river to the ridge top is ~ 1,000 vertical feet. After climbing to the top of the ridge, we followed the ridgeline east. The *Pediocactus simpsonii* (hedgehog cactus) population appears to be thriving along the ridge top. We angled toward the north/east and crossed through a low saddle with fairly large rocky outcrops and cliffs. I believe that we found a *Silene* sp. (catchfly) growing at the base of one of these rocky outcrops on a north slope, but because of the past several weeks of 100° temperatures, I was unable to key it. Only one plant existed in the area, so no collection was made. This area should be checked again in the spring between May and June for *Silene scaposa* (scapose silene), a plant listed on the ONHP List 4 as a plant of concern.

We climbed up to the Rattlesnake Formation overlooking Waterspout Gulch. Growing out on top in the dry, open gravels was *Stephanomeria tenuifolia* (skeletonweed), a native in this region. These plants were scattered throughout this area and later we even came across some growing on the slopes down in Waterspout Gulch. Also on the top of the Rattlesnake Formation, we found a small population of hoary aster, *Machaeranthera canescens*,

The area from the Rattlesnake Formation to the back, east fence was part of a prescribed burn in the fall of 2003. Steep north slopes with rock cliffs make up much of

this area. A more thorough exploration of microhabitats potentially could yield early spring forbs not yet in the collection. This survey should start no later than February and continue through June, in order to document these early spring forbs.

We started our walk down Waterspout Gulch at the back fence. Within a quarter mile, we came across populations of *Penstemon deustus* (hot rock penstemon). These plants were growing along the bottom of the gulch in areas of sand and gravels left by floodwaters from flashfloods and winter run-off. This plant is on the ONHP List 3; a watch list where additional information is needed before status can be determined. We came across at least three scattered populations of *Penstemon deustus* between the back fence and the last waterfall drop over the large cliff at the southwest end of the gulch. In the small wet seeps between rock cracks, *Mimulus washingtonensis* continued to bloom in the area I visited earlier on May 7, 2004. I searched for *Mimulus jungermannioides*, but was unable to locate any populations.

Trip 13 Field Notes

Clarno Unit July 13, 2004

Tina and I traveled to the Clarno Unit today with plans of hiking into the Lee Canyon area, as I had not yet been back into this drainage to check the area of sandy soils below the ignimbrite rim. Our weather continues to be hot, with temperatures into the upper 90°'s. We have had afternoon thunderstorms with heavy, localized rain.

Unfortunately, I hiked into this area too late in the growing season, to make a good collection of an unusual grass that John Laing had asked me to collect. This grass is growing in the sandy soils below the ignimbrite rim at the northwestern end of the canyon. This area should be walked through again next year to check this grass, as its dried structures indicate a potential new species for the Monument. Also, above the sandy area, is another population of hoary asters. Growing at the edge of the sandy area, intermixed with the plants listed above was *Polygonum majus* (wiry knotweed). This knotweed has not been collected before within the boundaries of the Monument. A good source for various *Astragalus* sp. is the area above and to the east of this canyon, again within the same drainage, but below the ignimbrite rim. A further check of these plants earlier in the season should be made. This area contains a number of potential new additions and should be thoroughly inventoried. Our field trip was cut short because of an impending thunderstorm and we didn't want to be on the ridge with lightening around.

Trip 14 Field Notes

Clarno Unit July 19, 2004

The purpose of this trip is to check the population of plants at the northwestern end of Lee Canyon to see if they have bloomed yet, so a collection can be made for a positive identification. John Laing hiked with me, as I wanted to make sure that the grasses I checked last week were the ones he was interested in. The hoary asters have not bloomed yet and yes, the grasses are the ones – so they will need to be checked next year for identification.

Trip 15 Field Notes

Painted Hills Unit July 26, 2004

I hiked into the same draw, as of the trip 10 field notes, only this time I hiked in from below, up to the ~30' rock waterfall. I had not searched this area before and believed that potentially the *Collomia macrocaylx* population might have been washed out and reestablished much lower in the drainage. Again no evidence of these plants was found. It is frustrating to not locate this population, as we have had an unusually wet year and a very long growing season, so the potential of new plants in the colony was high. However, even so, at this time of the year, and at this point in the canyon, there is no running water, nor an intermittent stream. The canyon opens out into a very large wash with water worn cobbles, rocks and boulders reaching diameters of one to two feet – indicating an area extensively damaged by flashfloods of summer thunderstorms. No other new plants were collected on this trip. Marsha Holly of Fossil and my children, Franklin and Dorothy accompanied me on this hike.

Trip 16 Field Notes

Sheep Rock Unit September 3, 2004

I had planned this day as a workday in the herbarium, to compare new plants with those in the collection, and identify some of my plants using the dissecting scope in the lab at the Thomas Condon Paleontology Center. Before starting this, Ken and I went to Hancockville Spring on the Sheep Rock Unit. Ken had located *Betula occidentalis* (water birch) growing in the wet drainage area of this spring. We had not been into this particular spring earlier in the year, so this was a new collection for the Monument. In addition to the water birch, this area also provided a voucher specimen of *Soldago occidentalis* (Western goldenrod), another new species for the Monument. Earlier in the day, Ken had collected a specimen of *Solanum triflorum* (cutleaf nightshade) from the trails around the Cant Ranch House. Ken also gave me a sample of a new, potentially invasive plant that escaped cultivation from a local ranch. This plant, *Amaranthus caudatus* or Love-Lies-Bleeding, is one of the grain producing amaranths, and when I interviewed the ranch owner later, he said that he had, "brought seeds with him about 2 -3 years ago from California because the wild birds loved it." According to Ken, this plant showed up in the fields below Foree this year and reproduces quickly, adapting to the alkaline soils and grows prolifically. The particular plant he collected for the herbarium was ~ 4 – 5 feet tall.

Trip 17 Field Notes

Sheep Rock Unit February 4, 2005

I met with Ken Hyde today. The plan of the second phase of this project is to visit each unit in early spring in order to collect and identify rare or new species missed on earlier inventories. In addition, further collections will be made of flowering and other plant parts necessary to identify the willows sedges and rushes. One more early spring walk through riparian areas will be conducted to check for any new species.

On the way home today, I stopped at Turtle Cove and hiked the loop trail to check for flowers. The lomatiums are starting to bloom on the switchback trail, but these are already in the collection.

Trip 18 Field Notes

Painted Hills Unit March 12, 2005

Our weather started out early this month warm and dry. But recently we have had a lot of rain. Today it is sunny and warm ~50°. I started from the parking lot at the kiosk with the goal of checking on the *Collomia macrocalyx* population. At elevation 1970', GPS N44°38'57.2" Latitude and W120°14'59.6" Longitude, I came across small chickweeds and an *Amsinckia* species. The plant community is made up of shadscale, sage, lomatiums – blooming, sunflower remains, medusahead, allium and willowweed. The soils are red clay type. Purple mustard is also blooming – but it is in the collection, as is the wall flower, *Erysimum asperum*. The 30' waterfall in the canyon is dry and though I hiked clear to the back fence, there is still no evidence of the *Collomia macrocalyx*.

Trip 19 Field Notes

Clarno Unit March 19, 2005

I hiked up Indian Canyon to the NW corner of the unit and the back fence. The weather is warm and dry. I located a white lomatium: *Lomatium gormanii*, along the trail at ~1910' elevation. GPS N44°55'57.4" Latitude and W120°24'21.2" Longitude. This is a new plant for the Monument. Associated species are medusa head, willow weed, broom snake-weed, juniper, sage, buckwheat, blue-eyed Mary and buttercup sp. There is only a small amount of water in the waterfall basin at the head of Indian Canyon, and the rushes/sedges have not started growing yet.

Trip 20 Field Notes

Painted Hills Unit April 17, 2005

The weather has been rainy with snow. The previous month has been wetter and colder than usual. Today it is ~60°, cloudy with some sunshine. The purpose of this hike is to explore the areas east of the *Collomia macrocalyx* canyon. I am hoping to come across some new plants as this area hasn't been hiked before. But actually I found nothing new – *Amsinckia tessellata* – is blooming, as are the wild onions, fuzzy pod milkvetch, lomatiums, and ragged star flower. We saw a little white butterfly and cougar tracks in the mud. Nothing else – and by early afternoon it started raining heavy. End of hike.

Trip 21 Field Notes

Sheep Rock Unit May 13, 2005

My goal today is to check on the potential catchfly population that is in the Research study area. Ken and I started from the mouth of Waterspout Gulch and hiked up to the Rattlesnake cap stone formation. I shot pictures of early spring forbs, but didn't see any new plants to add to the collection. We climbed down into the first canyon to the southeast of the Rattlesnake formation and located a new fern, *Woodsia scopulina*. This fern is different in that it has short hairs along the rachis, it also appears to be somewhat

larger than the brittle bladder fern. It is growing on a basalt cliff – facing north – that has many wet areas seeping from cracks in the rock face. We explored down this canyon and found the fern only growing in one other spot a short way down the canyon – same type of habitat. A new rose also was located at UTM 0292018 4933336, GPS N44°31'30.7" Latitude and W119°37'05.9" Longitude. This is a large rose with canes an inch or more in diameter. It is not blooming yet – so we will have to hike back in here to collect a sample with blooms. The catchfly also is not blooming yet – though I am sure that it is a catchfly and may even be the one I've searched for: *Silene scaposa*.

We decided to hike down this canyon to the John Day River. At GPS N44°31'26.4" Latitude and W119°37'12.1" Longitude we came across an unusual monkey-flower. It has dramatic red colors to it's leaves and stem, and the flower has a large red spot on the lower lip. When I keyed it out later – it keyed out to *Mimulus guttatus*. The red colors still seems odd though.

This canyon also had 2 groups of *Orobanche uniflora*. It is growing along the base of a basalt cliff in association with stonecrops, and saxifrages. I didn't collect any, as there were too few, but this is a new species for the Monument. I documented it with a GPS of N44°31'25.6" Latitude and W119°07'20.9" Longitude, and a photo. Prairie sage, –both gray and green leaf plants, grow thick through this part of the canyon. At the base of another waterfall/basalt rock cliff, we found Swamp saxifrage, *Saxifraga integrifolia*: another new plant for the collection! GPS: N44°01'22.0" Latitude and W119°07'20.8" Longitude. Associated species with this saxifrage are Woodsia fern - new, cinquefoil, mock orange, lomatium, prairie sage, Mt. mahogany, alum, juniper, and monkey-flower – including *Mimulus washingtonensis*.

Our hike took us out of the canyon and then we followed the John Day River along, before scrambling up and over a saddle and back down into Waterspout Gulch. Across the river from the highway junction, I found a small population of *Smilacina stellata* or Starry Solomon. (GPS N44°31'41.1" Latitude and W119°37'58.2" Longitude) This is a fantastic canyon as it yielded five new plants for the collection!

Trip 22 Field Notes

Painted Hills Unit

May 23, 2005

I stopped on my way home from the Junior Olympics (a school field trip) with the goal of obtaining some good photographs of the willows growing at the west end of the unit. It is hard to catch these catkins between rain showers and being free to make a trip into this area. Today is warm ~80° and we have had a few warm days, but the weather in general has been cold and rainy. I shot some pictures of roses, dogwood, white-top, medusa head, and the willows.

Trip 23 Field Notes

Sheep Rock Unit

June 10, 2005

The purpose of this field trip is to hike into the locality of the suspected catchfly; that is growing across the canyon from the Rattlesnake cap rocks. In addition, a collection will be made of the new rose that was located on May 13th. Before hiking, we

re-visited a couple of wetland areas. We drove into Big Spring to check on the rigid willow and a purple flower that was blooming in the burned over area. This area was burned in the fall of 2004 as part of a prescription fire. The rigid willow is starting to grow back with a few small branches from the burned trunk. The purple flower is *Phacelia linearis* or threadleaf phacelia. Usually it is a small, slender, 6 to 8 inch plant, but with the rains this year, it is close to 15 inches tall and wide with many branches, giving it an unusual rounded shape. Another stop was in the field by the upper crossing. In this field there is a large circular "clump" of sedges. The circle has a diameter of 30 feet or so. These sedges are grass-like with soft, hairy stems and have rhizomes. We collected specimens with younger flowering heads and older seed heads. When keyed out, I believe it to be *Carex sheldonii*, or Sheldon's sedge.

We crossed the John Day River at the USGS gauging station on the cable car. American licorice, *Glycyrrhiza lepidota*, was collected as a new voucher specimen. It was growing across the river on a rocky, gravel terrace above the river to the left of the cable car. Associated species are reed canary grass, Shasta daisy, coyote willow, teasel, rose, sage, wild clematis, mock orange and hound's tongue. We climbed up the canyon to the left of the cable car and located another new plant ~ half a mile from the river. GPS/UTM 0292160 4933223. *Penstemon speciosus*, or Showy Penstemon is a large plant with sky blue colored flowers. Associated species are juniper, sage, Idaho fescue, elk-horn clarkia, and Oregon sunshine. The rose was blooming and I later keyed it out to *Rosa eglanteria* or Sweetbrier rose. This rose seems to grow only here, as I have not found it anywhere else on the Monument. The canes are thick ~1 to 1.5" in diameter, have large, downward curved spines and form a large arch as they bend toward the ground. The flowers are big, bright pink and solitary. Rose hips from last year are 1.5 – 2.0 cm across and dark red.

The Catchfly also was blooming and I believe that it is *Silene scaposa* or Scaposa catchfly. GPS: 11TUTM0292348 4933334, elevation: 3,332', north slope across from Rattlesnake cap stone formation. This plant is part of a small colony made up of only 5 – 6 plants that are growing around the north edge of a small Rattlesnake cap rock outcrop in the Research Natural Area. Associated species are Idaho Fescue, hedgehog cactus, yellow threadleaf, juniper, yarrow, gooseberry, sage, and native wavy-leaf thistle. We searched around all other outcrops in the area for more catchfly plants and were unable to find any. We hiked the ridge back toward the John Day River before dropping down into the canyon. I collected a specimen of Hound's tongue growing just below the cable car at the river's edge. This is another new, toxic, invasive species in the Monument.

Trip 24 Field Notes

Sheep Rock Unit

July 4, 2005

I set out today to shoot pictures of plants that were missing from the photo collection and in the process located several more new species for the collection. At a stop at the John Day River bend below Cathedral Rock, I found Poverty sumpweed, *Iva axillaries*: a native, weedy perennial that was growing in the rocky, sandy gravels of a terrace above the river. At the Cant Ranch House, I found Water plantain,

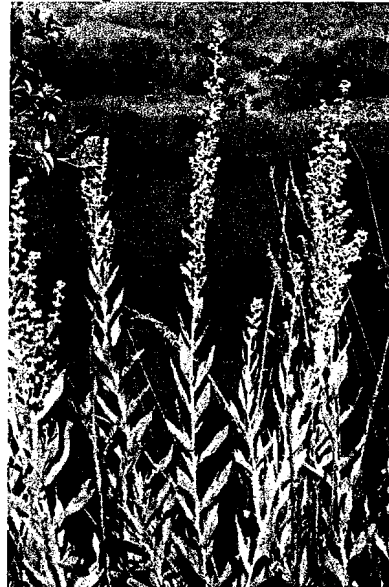
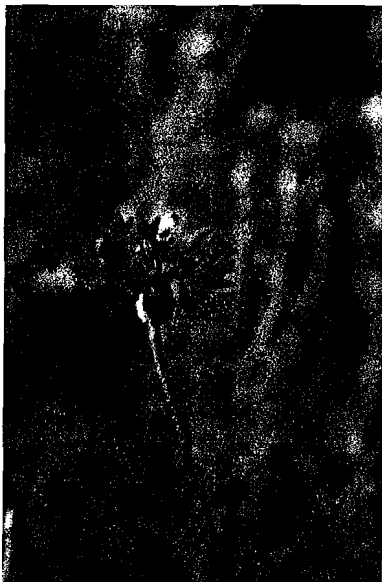
Alisma plantago-aquatica, growing in the irrigation ditch. I also found a new rush at McCarty Spring drainage – *Juncus ensifolius*, Dagger-leaf rush.

Trip 25 Field Notes

Sheep Rock Unit

July 6, 2005

I spent today at the Thomas Condon Paleontology Center using the scope to identify sedges and rushes. Before heading home, I decided to walk the field edge at the upper crossing to double check the identity of a hawthorn. In the process a new *Oenothera* species: *Oenothera strigosa*, or common evening-primrose was located along the John Day River's edge. I also took pictures of *Centaurea cyanus*, Cornflower or Bachelor's button, but did not collect a specimen as I took it for granted that it was in the collection. When I checked, it is not in the collection and should be added as a voucher specimen. Also, a fairly large, sage smelling, type of plant needs to be checked against the collection. It could possibly be Silver sagebrush or *Artemisia cana*, a native perennial that grows on sandy soils. If it is, it should also be collected for a specimen.



I stopped later at another river bend below Goose Rock to take some more photos, and collected a sample of Queen Anne's Lace or Wild Carrot, *Daucus carota*. I needed a specimen of Snowberry with flowers to aid in a positive species identification and collected the needed specimen at this site also. A specimen of poison hemlock, *Conium maculatum* was also collected at this stop.

Native or Exotic	Family Name	Scientific Name	Common Name	Datum	Abundance	OR Nat. her. List (y/n)	2004 Plant Study	2005 Plant Study	Herbarium Sheet (y/n)
n	Alismataceae	<i>Alisma plantago-aquatica</i>	Water plantain	SRU - Irrigation ditch below Cant House	r	no		2005	y
e	Amaranthaceae	<i>Amaranthus (caudatus)</i>	Love-Lies-Bleeding, Tassel Flower	Escapes into Foree flat	s	no	2004		y
e	Apiaceae	<i>Cicuta douglasii</i>	Water Hemlock	SRU - Riparian areas and ditches	c	no		2005	n
e	Apiaceae	<i>Conium maculatum</i>	Poison Hemlock	SRU & PHU - Riparian areas & ditches	c	no		2005	y
e	Apiaceae	<i>Daucus carota</i>	Wild carrot	SRU - In ag fields/disturbed areas	c	no	2004		y
n	Asclepiadaceae	<i>Asclepias cryptoceras</i>	Pale milkweed, Humboldt milkweed	SRU - Deer Gulch and Foree, on gravel soils	r	no	2004		y
e	Asteraceae	<i>Centaurea diffusa</i>	Diffuse knapweed	SRU - and Clamo Units	s	no	2004		y
e	Asteraceae	<i>Centaurea maculosa</i>	Spotted knapweed	SRU - and Clamo Units	s	no	2004		n
e	Asteraceae	<i>Centaurea solstitialis</i>	Yellow star thistle	All Units - near waterways	s	no	2004		y
e	Asteraceae	<i>Onopordum acanthium</i>	Scotch thistle	Throughout lowland areas	c	no	2004		y
n	Betulaceae	<i>Betula occidentalis</i> variety <i>occidentalis</i>	Water Birch	Hancockville Spring, burned in Rx fire, some new growth 2005	r	no	2004		y
e	Boraginaceae	<i>Amsinckia lycopsoides</i>	Tarweed fiddleneck	waste areas & dry slopes	c	no	2004		y
n	Boraginaceae	<i>Cryptantha flaccida</i>	Weak-stemmed Cryptantha	PHU - dry wash on west end	s	no	2004		y
e	Boraginaceae	<i>Cynoglossum officinale</i>	Hound's tongue	SRU - along John Day River	s	no		2005	y
e	Brassicaceae	<i>Brassica nigra</i>	Black mustard	SRU - field edges, ditches, riparian	c	no	2004		y
e	Brassicaceae	<i>Lepidium latifolium</i>	Perennial Pepperweed	SRU - along river across from shop	s	no	2004		y
n	Brassicaceae	<i>Thelypodium laciniatum</i>	Thick Leaf Thelypody	SRU - along basalt cliffs/Rattlesnake F.	s	no	2004		y
n	Brassicaceae	<i>Thysanocarpus curvipes</i>	Lace pod, Fringe pod	PHU - W. end, on slope @ back fence	r	no	2004		
n	Caryophyllaceae	<i>Silene scaposa</i>	Scapose Catchfly	SRU - at NE edge of Research area	r	yes		2005	y
n	Caprifoliaceae	<i>Symphoricarpos albus</i> var. <i>laevig</i>	Common Snowberry	PHU - edge of big beaver pond	r	no		2005	y
n	Compositae	<i>Carduus nutans</i>	Musk thistle	SRU - fields	s	no	2004		y
n	Compositae	<i>Helianthus cusickii</i>	Cusick's sunflower	CU - Indian Canyon drainage	s	no	2004		y
n	Compositae	<i>Hymenopappus filifolius</i> variety <i>filifolius</i>	Hymenopappus	SRU - along service road to fields					
n	Compositae	<i>Iva axillaris</i>	Poverty-weed	SRU - river bend below Cathedral Rx	s	no		2005	y
e	Compositae	<i>Onopordum acanthium</i>	Scotch Thistle	SRU - in and along all fields	c	no	2004		y
n	Compositae	<i>Solidago occidentalis</i>	Western goldenrod	SRU - near Hancockville	s	no	2004		y
n	Cyperaceae	<i>Carex hystrix</i>	Porcupine sedge	SRU - Spring above Cant Ranch House	s	no	2004		y
n	Cyperaceae	<i>Carex nudata</i>	Torrent sedge	SRU - rocky bed John Day River	c	no	2004		y
n	Cyperaceae	<i>Carex sheldonii</i>	Sheldon's sedge	SRU - in field by upper crossing	r	no		2005	y
n	Equisetaceae	<i>Equisetum laevigatum</i>	Horsetail	Foree - McCarty Spring drainage	s	no	2004		y
e	Hypericum	<i>Hypericum formosum</i>	St. John's Wort	PHU - At & above "Spring in the Rock"	s	no	2004		y
n	Juncaceae	<i>Juncus articulatus</i>	Jointed rush	SRU - spring above Cant Ranch House	s	no	2004		y
n	Juncaceae	<i>Juncus ensifolius</i>	Dagger-leaf rush	SRU - Irrigation ditch below Cant House	r	no		2005	y
n	Juncaceae	<i>Juncus longistylis</i>	Long-styled rush	PHU - "Spring in the Rock"	r	no	2004		y
n	Juncaceae	<i>Juncus torreyi</i>	Torrey's rush	CU - upper end of Indian Canyon	r	no		2005	y
n	Leguminosae	<i>Glycyrrhiza lepidota</i>	American licorice	SRU - to left of USGS Gauging station	s	no		2005	y
n	Liliaceae	<i>Smilacina stellata</i>	Starry solomon	SRU - Picture Gorge, along river	r	no		2005	y
n	Loasaceae	<i>Mentzelia albicaulis</i>	White stemmed mentzelia	SRU & PHU - dry slopes	r	no	2004		y
n	Orobanchaceae	<i>Orobanche uniflora</i>	Naked Broomrape	SRU - Canyon Left of Picture Gorge	r	no		2005	n
n	Poaceae	<i>Agrostis exarata</i>	Spike bentgrass	CU - upper end of Indian Canyon	r	no		2005	y
e	Poaceae	<i>Cenchrus longispinus</i>	Sandbur	SRU - Ditch in front of Foree house	s	no	2004		y
e	Poaceae	<i>Elymus caput-medusae</i>	Medusahead	All units	c	no		2005	y
e	Poaceae	<i>Phragmites communis</i>	Common reed	SR - Picture Gorge, Field #3, and Main Cant Ranch spring	s	no	2004		y
n	Polygonaceae	<i>Eriogonum sphaerocephalum</i> variety <i>halimoides</i>	Rock buckwheat, round- headed eriogonum	CU - Indian Canyon drainage N. slope, gravelly soil	s	no	2004		y
n	Polygonaceae	<i>Polygonum majus</i>	Winy/ palouse knotweed	CU - Lee Cyn. & SRU, fl. sandy soils	c	no	2004		y
n	Polypodiaceae	<i>Woodsia scopulina</i>	Woodsia fern	SHU - Picture Gorge - across River	r	no		2005	y
n	Ranunculaceae	<i>Delphinium nuttallianum</i>	Low Larkspur	SRU - Deer Gulch above waterfall	s	no	2004		y
n	Rosaceae	<i>Rosa canina</i>	Dog rose	SRU - Along John Day River	s	no		2005	y

n	Rosaceae	<i>Rosa eglanteria</i>	Sweetbrier rose	SRU - Canyon Left of Picture Gorge	r	no		2005	y
n	Rosaceae	<i>Rosa nutkana</i> var. <i>nutkana</i>	Nootka rose	SRU - Hancockville spring drainage	r	no	2004		y
n	Saxifragaceae	<i>Saxifraga integrifolia</i>	Swamp saxifrage	SRU - Canyon Left of Picture Gorge	r	no		2005	y
e	Salicaceae	<i>Populus alba</i>	White poplar	SRU - Cant House Spring - increasing	s	no	2004		y
e	Salicaceae	<i>Salix alba</i> variety <i>vitellina</i>	Golden willow	SRU - Hancockville spring	r	no	2004		y
n	Salicaceae	<i>Salix amygdaloides</i>	Peach leaf willow	PHU - 1 tree drainage along NW edge	r	no	2004	2005	y
n	Salicaceae	<i>Salix exigua</i> variety <i>exigua</i>	Coyote willow	SRU & PHU - John Day River riparian	c	no	2004		y
n	Salicaceae	<i>Salix lasiandra</i>	Pacific willow	PHU - near beaver ponds	s	no	2004		y
n	Salicaceae	<i>Salix rigida</i>	Rigid willow	SRU - Main Cant Ranch spring - burned in Rx fire - 2004	r	no	2004		y
e	Solanaceae	<i>Solanum triflorum</i>	Cut-leaf nightshade	SRU - on western edge of field #1	r		2004		y
n	Scrophulariaceae	<i>Collinsia parviflora</i>	Blue-eyed Mary	PHU - eastern end draw, sandy soils	s	no		2005	y
e	Scrophulariaceae	<i>Linaria dalmanica</i>	Dalmation toadflax	All Units - river gravel bars & riparian areas to upper slopes	c	no	2004		y
n	Scrophulariaceae	<i>Mimulus washingtonensis</i>	Washington mimulus	PHU - at & above "Spring in the Rock"	s	no	2004		y
n	Scrophulariaceae	<i>Penstemon speciosus</i>	Showy penstemon	SRU - Canyon Left of Picture Gorge	r	no		2005	y
e	Scrophulariaceae	<i>Verbascum blattaria</i>	Moth mullein	CU - Indian Canyon drainage	s	no	2004		y
n	Umbelliferae	<i>Lomatium gormanii</i>	Gorman's lomatium	CU - Indian Canyon drainage	s	no		2005	y

John Day Fossil Beds National Monument

Sp. # (51) _____

Date: May 13, 2005

Scientific Name: *Orobanche uniflora*

Common Name: Naked Broomrape

Family: Orobanchaceae

Collected by: Michelle Ordway

Identity checked by: _____

Elevation: ~2450' Slope: south Substrate: rocky-gravels

GPS: N44°31'25.6"Latitude and W119°07'20.8"Longitude

Habitat & Assoc. spp.: Sheep Rock Unit – located up draw just to the left of the USGS gauging station, along base of basalt cliff. Associated species: juniper/sage on slopes above, wild clematis, mock orange, grasses, teasel, prairie sage, and cinquefoil along canyon floor.

Grant County

Native

