

Unpublished Wetland Plot Data Recorded in southwestern Oregon

Jonathan H. Titus
Oregon Natural Heritage Program

1996-1998

As of September 2017, most information about wetland plant associations in southwestern Oregon can only be found in unpublished reports that are not available in libraries or on the Internet. Jon Titus's unpublished summaries of plot data from vernal pools, serpentine fens, and other wetlands that he sampled in the 1990s are presented here as a temporary measure to help make some of this information available. Titus' original field notes and spreadsheet data are stored in the files of Portland State University's Oregon Biodiversity Information Center. Titus analyzed the data using TWINSpan and Detrended Correspondence Analysis (DCA). Edits made by John Christy in 2017 are given in square brackets. Nomenclature follows the [Oregon Flora Project's checklist of vascular plants](#) (June 2017, version 1-7), which in most cases follows [Flora of North America](#).

Aquatic Beds and Wet Prairie

French Flat (Josephine County)

June 22, 1996

Sites were sampled too late to really catch the full expression of the communities of interest (#s 10, 11 and 12)

1. *Potamogeton natans* (2 Plots).
In ponds.
2. *Eleocharis macrostachya* (3 Plots). [Presumably *Eleocharis palustris*, which in 1996 the PLANTS database had synonymized with *E. macrostachya*].
Common: *Juncus oxymeris*, *Veronica scutellata*.
3. *Eleocharis pauciflora* [*Eleocharis quinqueflora*] - *Veronica scutellata* (1 Plot).
Common: *Juncus dubius* [*Juncus nevadensis* var. *nevadensis*], *Ludwigia palustris* var. *pacifica*.
4. *Juncus balticus* (1 Plot).
5. *Juncus effusus* (3 Plots)
Common: *Spiraea douglasii*, unknown Sedge.
Bank of ponds.
6. *Spiraea douglasii* (1 Plot)
Common: *Carex aquatilis* var. *dives*
Bank of ponds.
7. *Carex aquatilis* var. *dives* (1 Plot).
Bank of ponds.
8. *Brasenia schreberi* (1 Plot).
9. *Salix sitchensis* (1 Plot).
Common: *Spiraea douglasii*.
Bank of ponds.

10. *Danthonia californica* vernal meadow (12 Plots).
Deschampsia cespitosa infrequent.
 Common: *Gnaphalium palustre*, *Lotus purshianus* [*Acmispon americanus*], *Epilobium brachycarpum*,
Camassia quamash, *Brodiaea hyacinthia* [*Triteleia hyacinthina*], *Mimulus guttatus* [*Erythranthe guttata*],
Agrostis exarata, *Eleocharis* cf. *acicularis*, *Downingia elegans*.
11. *Deschampsia cespitosa* vernal meadows (8 Plots).
Danthonia californica infrequent.
 Common: *Lotus purshianus* [*Acmispon americanus*], *Camassia quamash*, *Brodiaea hyacinthia* [*Triteleia hyacinthina*], *Mimulus guttatus* [*Erythranthe guttata*], *Agrostis exarata*, *Eleocharis* cf. *acicularis*, *Juncus tenuis*.
12. *Downingia* cf. *elegans* - *Juncus bufonius* - *Danthonia californica* - *Navarretia* cf. *intertexta* (3 Plots).
 Common: *Phacelia* spp., *Juncus tenuis*.
Deschampsia cespitosa minor.

Serpentine Fens

Eight Dollar Mountain, South Bog, Josephine Bog, Woodcock Bog, and Wimer Road (Josephine County)

June 20, 21, 23, 1996

1. *Rhododendron occidentale* thickets (5 Plots).
Pinus jeffreyi canopy common 0- 40% (usually <10%).
 Common: *Rudbeckia californica* var. *glauca* [*Rudbeckia glaucescens*], *Carex mendocinensis*, etc.
 Eight Dollar Mountain
2. *Carex mendocinensis* dominated seeps (4 Plots). [Titus called this *C. californica*, which does not occur on serpentine.]
Pinus jeffreyi (0-20%, usually <10%) and *Calocedrus decurrens* (0-10% cover) common.
 Common: *Rudbeckia californica* var. *glauca* [*Rudbeckia glaucescens*], *Sanguisorba microcephala* [*Sanguisorba officinalis*], *Eriophorum cringer* [*Calliscirpus criniger*], *Rhododendron occidentalis*, *Carex laeviculmis*, *Deschampsia cespitosa*, *Hastingsia alba*, etc.
 All Sites.
3. *Darlingtonia californica* - *Rudbeckia glaucescens* seeps (44 Plots).
 Dominant species: *Darlingtonia californica*, *Carex laeviculmis*, *Narthecium californica*, *Rudbeckia californica* var. *glauca* [*Rudbeckia glaucescens*], *Sanguisorba microcephala* [*Sanguisorba officinalis*], *Hastingsia alba*.
Darlingtonia californica is in most plots.
Pinus jeffreyi 0-25% cover (usually <10%) and *Calocedrus decurrens* canopy (0-10% cover) common.
 Common: *Plantanthera sparsiflora*, *Eriophorum cringer* [*Calliscirpus criniger*], *Carex mendocinensis*, *Rhododendron occidentalis*, *Helenium bigelovii*, *Danthonia californica*, *Hastingsia bracteosum*, *Eleocharis pauciflora* [*Eleocharis quinqueflora*], *Sisyrinchium bellum*, etc.
 Note: Splits occurred in TWINSpan within this community because of $\pm$ *Rudbeckia californica* var. *glauca* [*Rudbeckia glaucescens*], *Eriophorum cringer* [*Calliscirpus criniger*], *Hastingsia alba*, *Helenium bigelovii*, etc. I have lumped all the plots due to DCA.
 All Sites.

4. *Eriophorum cringer* [*Calliscirpus criniger*], - *Eleocharis pauciflora* [*Eleocharis quinqueflora*] seep. (8 Plots).
Eriophorum cringer [*Calliscirpus criniger*] and *Eleocharis pauciflora* [*Eleocharis quinqueflora*] dominate these seeps. *Hastingsia alba* is also often dominant.
Pinus jeffreyi cover $\leq 1\%$.
 Common: *Carex laeviculmis*, *Narthecium californica*, *Rudbeckia californica* var. *glauc* [*Rudbeckia glaucescens*], *Sanguisorba microcephala* [*Sanguisorba officinalis*], *Danthonia californica*, *Helenium bigelovii*, *Sisyrinchium bellum*.
 Transitional sites have no *Eriophorum cringer* [*Calliscirpus criniger*],
 All Sites.
5. *Deschampsia cespitosa* - *Danthonia californica* - *Rudbeckia glaucescens* seeps (11 Plots).
Deschampsia cespitosa and *Danthonia californica* dominate these seeps along with *Rudbeckia californica* var. *glauc* [*Rudbeckia glaucescens*], *Hastingsia alba*, *Rhododendron occidentale*, *Camassia quamash*.
Pinus jeffreyi cover $\leq 6\%$ and *Calocedrus decurrens* 0-30% (usually 0%) cover.
 Common: *Helenium bigelovii*, *Carex laeviculmis*, *Carex mendocinensis*, *Narthecium californica*, *Sanguisorba microcephala* [*Sanguisorba officinalis*], *Eriophorum cringer* [*Calliscirpus criniger*], *Eleocharis pauciflora* [*Eleocharis quinqueflora*], *Dodecatheon* cf. *hendersonii*, *Horkelia congesta*, *Lotus purshiana* [*Acmispon americanus*], *Prunella vulgaris*, *Mimulus guttatus* [*Erythranthe guttata*], *Panicum acuminatum*.
 All sites.
 Splits occurred in TWINSPAN because of $\pm$ *Rhododendron occidentale*, *Camassia quamash*, *Eleocharis pauciflora* [*Eleocharis quinqueflora*]. I have lumped all the plots due to DCA.
6. *Deschampsia cespitosa* - *Danthonia californica* vernal meadows (8 Plots). *Deschampsia cespitosa* and *Danthonia californica* dominate these meadows along with *Camassia quamash*.
Pinus jeffreyi 0-12% (usually $\leq 6\%$) cover and *Calocedrus decurrens* 0-10% cover.
 Common: *Prunella vulgaris*, *Mimulus guttatus* [*Erythranthe guttata*], *Horkelia congesta*, *Tritelia hyacinthia*, *Sisyrinchium bellum*, *Allium amplexans*.
 Flat areas, Woodcock and Josephine Bogs.

OUTLIERS

I tend to think that types 7 and 8 are just big patches and not communities! More data required.

7. *Hastingsia bracteosum* seeps (2 Plots).
 Common: *Eriophorum cringer* [*Calliscirpus criniger*], *Danthonia californica*, *Helenium bigelovii*, *Carex californica*, *Sanguisorba microcephala* [*Sanguisorba officinalis*], *Scirpus congdonii*.
 Woodcock Bog.
8. *Scirpus congdonii* seep. (1 Plot).
 Common: *Panicum acuminatum*, *Hastingsia bracteosum*, *Sanguisorba microcephala* [*Sanguisorba officinalis*].
 Woodcock Bog.
9. *Deschampsia cespitosa* - *Carex hoodii* vernal meadows (2 Plots).
 I want to resample to authenticate this interesting type.
 Common: *Hastingsia alba*, *Dodecatheon* cf. *hendersonii*.
 Wimer Road.

Vernal Pools and Wet Prairie

Popcorn Swale (Jackson County)

Spring 1996

At the time of sampling *Camassia quamash* was dominant or co-dominant in many plots. It was downweighted so species groupings were determined by other less common species.

1. *Carex densa* - *Juncus patens* (Plots 3-6, 12).
Camassia quamash and *Mentha pulegium* are co-dominant. Often weedy.
Associated species: *Juncus ensifolius*.
A good type.
2. *Carex densa* - *Deschampsia cespitosa* (Plots 8, 9, 10).
Camassia quamash and *Mentha pulegium* are co-dominant. Often weedy.
A good type.
3. *Carex unilateralis* (Plot 11).
May be a patch only but I think it's a community.
4. *Fraxinus latifolia* / *Juncus patens* (Plots 1, 2).
Associated species: *Lycopus uniflorus*.
A good type.
5. *Ranunculus lobbii* (Plots 20, 21).
Phases:
Ranunculus lobbii (Plot 21).
Fraxinus latifolia / *Ranunculus lobbii* (Plot 20).
A good type.
6. *Eleocharis macrostachya* (Plot 13). [Probably *Eleocharis palustris*, which in 1996 had been synonymized with *E. macrostachya* by the PLANTS database].
Associated species: *Mentha pulegium*.
Common in wet areas.
7. *Juncus ensifolius* (Plots 16).
Associate species: *Carex densa*, *Camassia quamash*, *Mentha pulegium*.
Common in moist-wet disturbed areas across the temperate zone.
8. *Brodiaea hyacinthia* [*Triteleia hyacinthina*] (plot 19).
Camassia quamash is dominant. Very weedy.
Brodiaea [*Triteleia*] and *Camassia* are blooming in weeds.
9. *Mentha pulegium* (Plots 7, 14, 15, 17, 18).
Camassia quamash is the dominant here. Very weedy.
Ignore this community.

Vernal Pools

Lower Table Rock, Upper Table Rock, and Poverty Flat (Jackson County)

Spring 1996

Associates have at least 20% cover in a plot or high constancy. In the analyses the types listed here were pretty clear in definition as repeatable groupings of species. I have named them after the dominant plant. Many of the plots contained a lot of dead/rotting plants or plants too young to identify. In the analyses types 4a-4e are separate but I am not sure if they are all part of the same type. There are some obvious identification problems in types 3, 7, 8, and 9.

1. *Deschampsia danthanoides* (Plots 11, 17, 29-30, 36-39, 44-47, 49, 59, 64, 66, 67).

Associates: *Hordeum brachyantherum*, *Lasthenia californica*, *Trifolium willdenovii*, *Mimulus* [*Erythranthe*] spp., hairy bristly scroph, *Nostoc*, *Downingia yina*.

Lower and Upper Table Rocks.

Phases:

Deschampsia danthanoides - *Hordeum brachyantherum* (Plots 45, 46).

Deschampsia danthanoides - *Lasthenia californica* (Plots 64, 66, 67).

Deschampsia danthanoides - *Plagiobothrys bracteatus* (Plot 38, 39, 59).

2. sterile *Brodiaea* [*Triteleia hyacinthina*] (Plots 60, 62, 63, 72, 73).

Associates: *Phlox gracilis*, *Deschampsia danthanoides*, *Limnanthes floccosa* ssp. *pumila*, *Bryum miniatum* [*Imbriobryum miniatum*], *Bryum pseudotriquetrum* [*Ptychostomum pseudotriquetrum*].

Lower Table Rock, Poverty Flat.

3. *Gnaphalium*-like species [*Psilocarphus brevissimus*] (Plots 2, 3, 7, 25, 26).

Associates: *Nostoc*, *Juncus hemiendytus*, *Gratiola ebracteata*, *Deschampsia danthanoides*, *Polygonum polygaloides*, *Alopecurus saccatus*.

Lower Table Rock.

Phases:

Gnaphalium-like species [*Psilocarphus brevissimus*] - *Juncus hemiendytus* (Plots 2, 3).

- 4a. *Plagiobothrys bracteatus* (Plots 1, 10, 15, 20, 27, 28, 56-58).

Associates: *Nostoc*, *Juncus hemiendytus*, *Veronica peregrina* var. *xalapensis*, *Downingia yina*

Lower and Upper Table Rocks.

Phases:

Downingia yina - *Plagiobothrys bracteatus* (Plots 33, 34, 35).

Veronica peregrina var. *xalapensis* (Plot 43).

- 4b. *Navarretia intertexta* (*leucocephala*?) (Plots 12, 13, 14, 40, 41, 42, 51).

Associates: *Nostoc*, *Deschampsia danthanoides*, *Downingia yina*, *Polygonum polygaloides*.

Lower and Upper Table Rocks.

Phases:

Navarretia intertexta (*leucocephala*?) - *Downingia yina* (Plots 51).

Navarretia intertexta (*leucocephala*?) - *Polygonum polygaloides* (Plots 12, 13, 14).

- 4c. *Downingia yina* (Plots 4, 5, 8, 21, 22, 32, 50).

Associates: *Deschampsia danthanoides*, *Veronica peregrina* var. *xalapensis*.

Lower and Upper Table Rocks.

Phases:

Downingia yina - *Juncus hemiendytus* (Plot 4).

Downingia yina - *Eleocharis acicularis* (Plots 21, 22).

Downingia yina - *Gnaphalium*-like (Plots 5, 8, 32).

- 4d. *Gratiola ebracteta* (Plot 6, 16, 61, 68).
Associates: *Nostoc*, *Calitriche heterophylla*, *Plagiobothrys bracteatus*.
Lower Table Rock.
Phases:
Gratiola ebracteta - *Plagiobothrys bracteatus* (Plots 16, 61).
- 4e. *Alopecurus saccatus* - *Plagiobothrys bracteatus* (Plots 9, 23, 24).
Associates: *Nostoc*
Lower Table Rock.
5. *Isoetes bolanderi* (Plot 65, 69).
Associates: *Nostoc*, *Plagiobothrys bracteatus*, *Riccia sorocarpa*.
Lower Table Rock.
6. *Isoetes nuttallii* - *Plagiobothrys bracteatus* (Plots 70, 71).
Associates-sterile *Brodiaea* [*Triteleia hyacinthina*]
Poverty Flat.
7. Unknown large plant - *Alopecurus saccatus* (Plots 53, 54, 55).
Upper Table Rock.
8. short grass (Plot 52).
Upper Table Rock.
9. Hairy/ bristly scroph (Plot 31).
Lower Table Rock.
10. *Bromus tectorum* (Plot 48).
This was originally a *Navarettia intertexta* (*leucocephala*?) community which is now totally dominated by
Bromus tectorum.
Upper Table Rock.