

# 2005 Final Report

## Field Inventory of Habitat and Potential Occurrence of Six Sensitive Mollusk Species and an Aquatic Lichen, Fremont Winema National Forests

Mollusks: *Deroceras hesperium*, *Fluminicola* n.sp. 1, *Fluminicola* n. sp. 2, *Monodenia chaceana*, *Pristiloma arcticum crateris*, and *Vorticifex klamathensis*,

and

Lichen: *Dermatocarpon luridum*  
[determined to be *D. meiophyllizum* in the Pacific Northwest]

Kathy Cushman  
Chemult Ranger District  
Fremont Winema National Forests  
October 3, 2005

Prepared for the Interagency Special Status/Sensitive Species  
Program  
Portland Regional Office

## **Acknowledgements**

Funding for this work was provided by the Interagency Special Status/Sensitive Species Program, Portland Regional Office. Wildlife and botany personnel from the following units on the Fremont Winema National Forests carried out the field work ably and enthusiastically: Tom Gorman and Terry Smith (Supervisor's Office, Klamath Falls); Jim Chambers, Lester Atterberry, Jesse Smith, and Traci McGovern (Klamath Falls Ranger District); and Terry Simpson, Jill Oertley, Eric Esselstyn, Vern Dotson, Brian Whetsler, and Kathy Cushman (Chemult Ranger District). Sarah Malaby served competently as Field Coordinator. Nancy Duncan, serving as Regional Mollusk Expert Extraordinaire, provided identification services in a helpful, timely manner that was critical to the success of this effort.

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## **I. Introduction and Survey Purpose**

Surveys done for freshwater mollusks by T.J. Frest and E.J. Johannes (1996 and 1998) laid the foundation for subsequent work east of the Oregon Cascades, specifically the Upper Klamath Drainage. As noted by Frest and Johannes (1998) mollusk diversity in the drainage is high, with numerous regional endemic species, and several species which have their type localities in Upper Klamath Drainage. The relative abundance of water sources and bodies varying in size, type, and integrity suggests that additional field surveys in the Drainage may continue to reveal information on the abundance and distribution of sensitive mollusk species. With this hope, crews from the Fremont Winema National Forests initiated field inventories in 2005 to investigate areas not previously inventoried for Region 6 Sensitive mollusks (*Deroceras hesperium*, *Fluminicola* n.sp. 1, *Fluminicola* n. sp. 2, *Monodenia chaceana*, *Pristiloma arcticum crateris*, and *Vorticifex klamathensis*). As areas of suitable or potentially suitable habitat for sensitive mollusks frequently coincide or overlap with those areas containing habitat for the Region 6 sensitive lichen, *Dermatocarpon luridum*, it was included in our 2005 field sampling effort.

## **II. Field Methods and Data Collection**

Our survey crews followed collection protocols and used data sheets drafted specifically for this work, using information available from Duncan *et al.* 2003 (Attachments A and B). We identified sampling locations through consultation with field biologists familiar with springs and riparian areas east of Highway 97 on the Fremont Winema National Forests, including sites on the Chemult, Chiloquin, Silver Lake, Paisley, and Bly Ranger Districts. We made an effort not to sample areas already covered by Frest and Johannes during previous surveys. Sampling locations are shown in Figure 1, and are listed in Attachment C.

The most intense survey efforts took place between May 16 and June 30, and required 74 person days in the field. Sample preparation and data organization required 10 person days. A brief sampling period for 6 days in mid-September yielded additional samples, the identifications for which are not included in this report. A total of 50 locations were sampled during the months of May and June, covering approximately 40 acres (Attachment C).

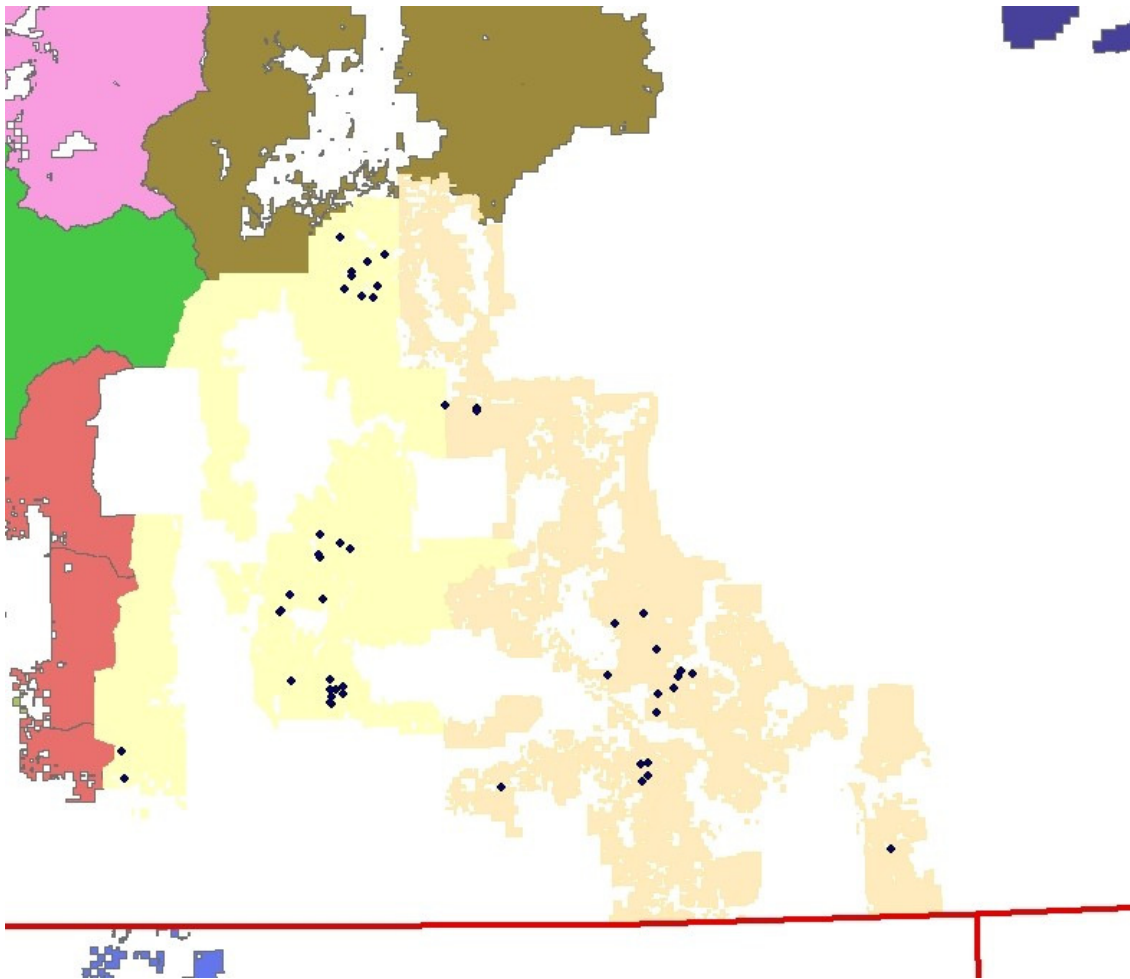
## **III. Specimen Processing and Identification**

All mollusk specimens collected were processed according to protocol outlined in Duncan *et al.* 2003 (Attachment A), and were shipped to the Regional Mollusk Expert (Nancy Duncan) for identification.

Our 2005 survey efforts resulted in the finding and collection of one of our target species, *Deroceras hesperium*, the evening field slug. The results of our survey efforts for mollusks appear in the Final Identification report in Attachment C. No aquatic lichen specimens (*Dermatocarpon*) were located, though several instances of 'look-alike' liverworts were noted.

Data from these surveys will be entered into the NRIS Fauna database by spring of 2006.

**Figure 1. Locations Inventoried for Sensitive Mollusks and One Lichen in Klamath and Lake Counties, Oregon (Map courtesy of N. Duncan 2005).**



#### **IV. Conclusions and Recommendations**

Our 2005 survey efforts resulted in our being able to contribute to current knowledge about the diversity of molluskan species in springs and riparian areas on the Fremont Winema National Forests, and to add distribution data for *Deroceras hesperium*, in areas east of Highway 97. Finding the slug at locations further east than previously recorded allows a range expansion to be demonstrated for this R6 sensitive species.

*Deroceras hesperium* is listed by Oregon Natural Heritage Program as a List 1 species, that is “critically imperiled because of extreme rarity or because it is somehow especially vulnerable to extinction or extirpation”. Our survey efforts responded to Research and Inventory needs outlined for this species in a Conservation Assessment (Duncan 2005) by providing additional data on its geographic range as well as its range of habitat conditions.

Additional surveys for *Deroceras hesperium* in particular would be very useful in areas to the north and west of Klamath County as a means to further define distribution for this species.

#### **V. References Cited**

- Duncan, N., T. Burke, S. Dowlan, and P. Hohenlohe. 2003. Survey Protocol for Survey and Manage Terrestrial Mollusk Species from the Northwest Forest Plan. Version 3.0.
- Duncan, N. 2005. Conservation Assessment for *Deroceras hesperium*, Evening field slug. Originally issued as Management Recommendations, February 1998, authored by Thomas E. Burke. USDA Forest Service Region 6 and USDI Bureau of Land Management, Oregon and Washington. 16 pp.
- Frest, T.J. and E.J. Johannes. 1996. Freshwater mollusks of the Upper Klamath Drainage, Oregon. Yearly Report 1996, Prepared for Oregon Natural Heritage Program, Contract # ORFO 092094.
- Frest, T.J. and E.J. Johannes. 1998. Freshwater mollusks of the Upper Klamath Drainage, Oregon. Yearly Report 1998, Prepared for Oregon Natural Heritage Program, and USDI Bureau of Reclamation, Klamath Project, Contract # ORFO 092094 and BuRec # 1425-97-PG-25-00903.

Furnish, J., R. Monthey, and J. Applegarth. 1997. Survey protocol for aquatic mollusk species from the Northwest Forest Plan. Version 2.0. Unpublished government document, Bureau of Land Management.

# ATTACHMENT A

## Collection Protocols for Mollusk Surveys Fremont Winema National Forests 2005

*(Additional information can be found in*

- (1) *Duncan, N., T. Burke, S. Dowlan, and P. Hohenlohe. 2003. Survey Protocol for Survey and Manage Terrestrial Mollusk Species from the Northwest Forest Plan, Version 3.0; and (2) Furnish, J., R. Monthey, and J. Applegarth. 1997. Survey Protocol for Aquatic Mollusk Species from the Northwest Forest Plan, Version 2.0*  
and from

Nancy Duncan, Regional Interagency Mollusk Specialist, Roseburg BLM, 777 Garden Valley Blvd, Roseburg, OR 97470, 541.464.3338, [nduncan@or.blm.gov](mailto:nduncan@or.blm.gov) (Field specimens collected will be shipped to Nancy at the above address; please let her know in advance of shipments.)

- How to Survey: The purpose of our surveys is to look in the most likely habitat types for any of our targeted species. (See habitat descriptions provided on our field guides for what appropriate habitats might look like). A good representation of all habitat types will be searched; that is, **sample areas within the delineated survey area**.
- We will allow at least 20 minutes each for intensive searches of sample areas between  $\frac{1}{4}$  and 1 acre in size within the survey area. Time spent in surveys will be proportional to the size of areas surveyed; start and ending times for sample areas will be recorded.
    - Habitats will be partitioned into different kinds of substrates where appropriate (different vegetation or soils for terrestrial species, different substrates---sand, cobbles etc---for aquatic species) and will be sampled in the same proportion in which they occur in the sample area.
  - Field forms will be completed for each survey area, and will include information on sample areas contained within, and specimens collected.
- What to collect
- Collect specimens from different habitats if the survey area contains some variation in habitat type.
  - Be sensitive to numbers of individuals when collecting terrestrial species. If there are only a few, please collect only a few larger (mature) specimens.



- For aquatic specimens, collect enough so that male individuals, needed for positive identification, are likely to be adequately represented.
- How to collect:
  - For live **Terrestrial** slugs & snails: keep them **moist** (unbleached paper towels work best) and **cool** in hard-sided containers. Moisture is more important than fresh air so air holes are not necessary and may reduce humidity.
  - For live **Aquatic** snails: Cover the specimens with water from the site where collected, allowing enough room so that individuals are not crowded. To minimize the chance for cross contamination between sites, rinse collecting screens well with clean water, and let dry between collection sites.
- How to preserve them for transport:
  - For live **Terrestrial slugs**: Animals may be shipped live for identification if packaged with insulated cold packs and shipped by overnight mail. Please contact Nancy Duncan before shipping live animals. Or, animals may be placed in closed containers filled with water (no air) for 12-36 hours. Transfer drowned specimens to 30-50% ethanol or isopropyl alcohol for a few hours, then to labeled, leak-proof (!) containers with at least 70% alcohol.
  - For **Terrestrial snails**, adult shells in good condition are usually sufficient. Collection of live individuals may not be necessary. If live animals are collected, they should be air-dried for long-term curation. **Note:** Drying will not work for larger terrestrial live snails (like *Monadenia*). They should be drowned and preserved in alcohol like slugs, or, they can be shipped live if preferred. Drying will work for anything less than 1/4 inch length.
  - For live **Aquatic** snails, use cool, clear, preferably well-oxygenated water for relaxing specimens. Add 1-2 menthol crystals, ground, to the water and leave undisturbed in a cool dark room overnight. (Specimens may die or contract if left in the water/menthol solution longer than 12 hours). After 8-12 hours, replace the water with 4% formalin to fix the specimens. For specimens > 1/2", consider carefully chilling or *nearly* freezing them first in order to slow their metabolism prior to using the formalin. In 1-2 days, replace the formalin with 70% isopropyl or ethyl alcohol.
- ***Field Notes: Please don't release live specimens at locations other than those from where they were collected.***

- ***Safety Notes: (1) If Tribal Members ask us to leave an Area, we will leave the area. (2) Please resist the temptation to drink any spring, creek or river water.***

# ATTACHMENT B

## 2005 Survey for ISSSP Mollusks and Lichens, and Oregon Spotted Frogs Fremont Winema National Forests

(Field inventory of habitat and potential occurrence of Fremont Winema sensitive mollusk species, with concurrent opportunistic surveys for Oregon Spotted Frogs and the aquatic lichen *Dermatocarpon luridum*)

**Survey Area** (Name and ID#) \_\_\_\_\_  
\_\_\_\_\_

Date \_\_\_\_\_ Start time \_\_\_\_\_ End time \_\_\_\_\_

Personnel \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

General location (County, USGS Quad map, driving directions) \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

General habitat types, vegetation communities represented \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Weather (Air temp, cloud cover, recent precip) \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

General observations (Any live creatures observed other than those collected? Any circumstances which might affect the integrity of today's surveys?) \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

### Sample Area

**Sample Area** (Description & ID#) \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Site Description:** Size of Area \_\_\_\_\_

Type of Habitat: Spring Channel Wetland Other\_\_\_\_\_

Character of Habitat: Lentic Lotic?

Topographical Location: Valley Bottom; Mid Slope; Ridge Top; Other\_\_\_\_\_

Approximate Elevation \_\_\_\_\_

**UTM Coordinates** \_\_\_\_\_

**Size of Collection Area** \_\_\_\_\_

**Type of Habitat:** Spring Channel Wetland Other\_\_\_\_\_

**Use:** Developments? (spring boxes, impoundments, etc...)\_\_\_\_\_

**Animal Use:** Mammalian(tracks, scat, human)\_\_\_\_\_

Insects: Lentic (pond type-dragonflies, water boatmen, etc...)  
Lotic (stream type-caddisfly, stoneflies, etc...)

**Dominant Substrate:** Silt/Sand, Muck, Gravel, Cobble? **SoilTemp**\_\_\_\_\_

**Vegetation:** Riparian Veg. Description (extent and type):\_\_\_\_\_

Non-native spp. Present: No Yes: What spp.\_\_\_\_\_

Distribution: Ubiquitous, Scattered, Clumped?

Aquatic Veg.: No Yes? (Algae?, Pondweed?, Duckweed?)\_\_\_\_\_

**H2O Quality:** Temp\_\_\_\_\_ Do\_\_\_\_\_ pH\_\_\_\_\_

## ATTACHMENT C

### Sites Sampled for Six R6 Sensitive Mollusks and Lichen *Dermatocarpon luridum*

<u>Sample Area Number</u>	<u>Sample Area Named</u>	<u>Approximate Size of Area Surveyed (Acres)</u>
Chemult Ranger District		
CT 1	Round Meadow Outlet	2.0
CT 2	Cannon Well Spring	1.0
CT 3	Water chance at 780 Rd	1.0
CT 4	Spring off 780 Rd	1.0
CT 6	Old Bridge Spring	0.5
CT 8	Wet meadow off 8829 Rd	1.0
CT 9	Cabin Springs	1.0
CT 10	Mosquito Hell Spring	1.0
CT 11	North Fence Spring	0.5
CT 12	Johnson Meadow Spring	1.0
CT 13	State Meadow Spring	1.0
Chiloquin Ranger District		
C 1	Wetland off Sprague River Rd	0.5
C 2	Spring off 4502 Rd	1.0
C 3	Spring off 080/062 Rd	1.0
C 5	Miranda Springs	1.0
C 19	Unnamed spring	1.0
C 21	Hog Creek	0.5
C 22	Beaver Dam Springs	0.5
C 23	Unnamed spring	0.5
C 24	North Fork Trout Creek	0.5
C 25	Middle Fork Trout Creek	0.5
C 26	Farmhouse wetlands	2.0
C 27	Culvert	0.5
C 28	Unnamed spring	0.5
C 29	Unnamed spring off 22 Rd	0.5
C 30	Unnamed spring off 22 Rd	0.5
C 31	Unnamed spring	0.5
C 32/33	Unnamed spring	0.5

C 34	Unnamed seep	0.5
C 35	Applegate Springs	0.5
Bly Ranger District		
B 1	Boyd Spring	1.0
B 2	Lookout Springs	0.5
B 3	Watson Springs	0.5
B 4	Deer Creek	0.5
B 5	Unnamed Spring, 089 Rd	1.0
B 7	Cottonwood Springs	1.0
B 11	Meadow	2.0
B 12	Tower Springs	1.0
B 13	Beaver Dam Lake	1.0
B 14	Fishhole Creek Meadow	1.0
B 17	Grouse Prairie	1.0
B 18	Spring Pond	1.0
Paisley Ranger District		
P 1	Clear Spring	0.5
P 4	Mud Spring	0.5
P 19	Lee Thomas CG	1.0
P 20	Gearheart Wilderness	0.5
P 21	Gearheart Wilderness	0.5
Silver Lake Ranger District		
S 1	Boundary Spring	0.5
S 3	Road Spring Exclosure	0.5
S 4	Quarry Road	0.5

# ATTACHMENT D

## MEMORANDUM

TO: Kathleen Cushman, Winema-Fremont NF

FROM: Nancy Duncan, Roseburg Bureau of Land Management Office

DATE: Sept. 6, 2005

RE: Final Identification of submitted samples, ID# WIN05-002 through -161

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### Introduction

I have examined the specimens received, and identified them as per the following table. Photos and descriptions of selected species follow the table. Specimens returned on Aug. 3, 2005 are indicated in bold. Specimens that have been verified by Paul Hohenlohe are indicated with an \*, those identified by Terrence Frest are indicated with an \*\*.

### Identifications

Voucher ID	Site ID	Species name
<b>WIN05-002</b>	C21-1-1	Promenetus umbillicatellus
<b>WIN05-003</b>	C22-1-2	Promenetus umbillicatellus
WIN05-004	C19-1-3	Promenetus umbillicatellus
WIN05-005	C19-1-3	Columnella edentula
<b>WIN05-006</b>	C35-2-2	Columnella edentula
WIN05-007	C32/33-1-4	Promenetus umbillicatellus
<b>WIN05-008</b>	C27-1-5	Physella lordi
<b>WIN05-009</b>	C34-1	Columnella edentula
WIN05-010	C32/33-1-2	Pristiloma cherisnella*
<b>WIN05-011</b>	C32/33-1-2	Promenetus umbillicatellus
<b>WIN05-012</b>	C32/33-1-2	Gyraulus parvus
<b>WIN05-013</b>	C27-1-1	Discus whitneyi
<b>WIN05-014</b>	C27-1-1	Promenetus umbillicatellus
<b>WIN05-015</b>	C1-1	Zonitoides arboreus*
<b>WIN05-016</b>	C1-1	Succinidae, species unknown
WIN05-017	C1- wet wood	Deroceras hesperium*
WIN05-018	C1- wet wood	Vertigo sp* (juv)
WIN05-019	C1- wet wood	Vitrena pellucida
WIN05-020	C1-1	Deroceras hesperium*
<b>WIN05-021</b>	C1 aquatic on rock	Promenetus umbillicatellus
<b>WIN05-022</b>	C1 aquatic on veg	Promenetus umbillicatellus
WIN05-022	C35-2-1 terr on wood	Deroceras hesperium
WIN05-023	C19-1-2 wood near water	Deroceras hesperium*

<b>WIN05-024</b>	C23-1-1 wood (terr?)	Promenetus umbilicatellus
<b>WIN05-025</b>	C23-1-1 wood (terr?)	Juga (Juga) plicata
<b>WIN05-026</b>	C19-1-1 wood in water (terr?)	Pseudosuccinea columnella**
WIN05-027	C21-1-2 wood	Deroceras hesperium*
WIN05-028	C23-1-2 wood	Deroceras hesperium*
WIN05-029	C22-1-1 wood	Deroceras hesperium*
WIN05-030	C26-1,3,4	Deroceras hesperium*
<b>WIN05-031</b>	C26-1,3,4	Discus whitneyi
<b>WIN05-032</b>	C26-1,3,4	Pseudosuccinea columnella**
WIN05-033	C26-1,3,4	Euconulus fulvus
WIN05-034	C34-1 wood	Vitrena pellucida
<b>WIN05-035</b>	C34-1 wood	Discus whitneyi
<b>WIN05-036</b>	C32/33-1-1,5 veg	Discus whitneyi
WIN05-037	C32/33-1-1,5 veg	Deroceras hesperium*
<b>WIN05-038</b>	C32/33-1-1,5 veg	Vitrena pellucida
<b>WIN05-039</b>	C32/33-2-2 wood	Vitrena pellucida
WIN05-040	C32/33-2-1 veg. duff	Euconulus fulvus
<b>WIN05-041</b>	C32/33-2-1 veg. duff	Vitrena pellucida**
<b>WIN05-042</b>	C32/33-2-1 veg. duff	Discus whitneyi
WIN05-043	C32/33-2-1 veg. duff	Vertigo modesto*
<b>WIN05-044</b>	C3-2-1	Prophysaon sp. nov. (Klamath )
<b>WIN05-045</b>	C5-1	Deroceras hesperium*
<b>WIN05-046</b>	P19-4	Deroceras hesperium*
WIN05-047	CT12-2	Deroceras hesperium*
WIN05-048	CT13-1	Deroceras hesperium*
WIN05-049	CT4-2	Deroceras hesperium*
<b>WIN05-050</b>	Spencer Creek	Fluminicola new species 31
WIN05-051	Rainbow Creek	Lake of the Woods pebblesnail**
		Deroceras hesperium*
		Deroceras sp. juvs – hatchlings, died after a few days
	C5-4	Insect larvae (caddiflies)
	C5-2	Decayed tissue – no ID possible
	CT9-1	Mollusk egg – unidentified - dead
	P20-1-3	Unknown body part – non-mollusk
	P20-1-2	Euconulus fulvus
	P21-1	Vitrena pellucida
	P21-1	Can't find specimen in bottle
	P1	
WIN05-070	Horse Canyon	Stagnicola caperata
WIN05-071	Horse Canyon	Planorbella occidentalis
WIN05-072	Burnt Creek	Physella gyrina ampullacea
WIN05-073	B 1-1-1	Punctum randolphi



WIN05-074	B14-2-2	Radix auricularia
WIN05-074	B14-2-2	Fossaria obrussa
WIN05-075	B2-1-1	Punctum randolphi
WIN05-076	B2-1-1	Pristiloma cherisnella
WIN05-077	B5-1-1	Zonitoides arboremus
WIN05-078	B17-1-1	Pristiloma cherisnella
WIN05-079	B17-1-1	Vitrena pellucida
WIN05-080	B14-1-1	Euconulus fulvus
WIN05-081	B5-1-2	Discus whitneyi
WIN05-082	B7-1-2	Discus whitneyi
WIN05-083	S1-1-1	Euconulus fulvus
WIN05-084	S3-1-1	Punctum randolphi
WIN05-085	S3-1-1	Discus whitneyi
WIN05-086	S3-1-2	Punctum randolphi
WIN05-087	S4-1-1	Euconulus fulvus
WIN05-088	S4-1-1	Discus whitneyi
WIN05-089	S1-1-2	Promenetus umbillicatellus
WIN05-090	S3-1-3	Promenetus umbillicatellus
WIN05-091	S4-1-2	Promenetus umbillicatellus
WIN05-092	S4-1-2	Pisidium casertanum
WIN05-093	CT 10-2	Gyraulus parvus
WIN05-094	CT 12-4	Vertigo sp. nov.**
WIN05-095	CT 11-1	Euconulus fulvus
WIN05-096	CT 6-1-1	Euconulus fulvus
WIN05-097	CT 11-1	Euconulus fulvus
WIN05-098	CT 6-1-1	Fossaria obrussa**
WIN05-099	CT 6-1-1	Promenetus umbillicatellus
WIN05-100	CT 8-1	Vertigo ovata**
WIN05-101	CT 3-2	Gyraulus parvus
WIN05-102	CT 13-2	Oxyloma nuttallianum**
WIN05-103	CT 13-2	Vertigo ovata**
WIN05-104	CT 4-1	Vertigo ovata
WIN05-105	CT 12-3	Euconulus fulvus
WIN05-106	CT 8-1	Pseudosuccinea columella**
WIN05-107	CT 3-1	Columnella edentula
WIN05-108	CT 12-1	Menetus opercularis**
WIN05-109	CT 1-1	Gyraulus circumstriatus**
WIN05-110	CT 10-1	Euconulus fulvus
WIN05-111	S1-1-3	Nesovitrea binneyana occidentalis**
WIN05-112	P 1-1-1	Deroceras hesperium
WIN05-113	P 19-2	Promenetus umbillicatellus
WIN05-114	P 4-2-1	Fossaria obrussa
WIN05-115	P 20-1	Promenetus umbillicatellus

WIN05-116	P 1-1-3	Promenetus umbillicatellus
WIN05-117	P 1-1-4	Vitrena pellucida
WIN05-117	P 1-1-4	Discus whitneyi
WIN05-118	P 19-3	Euconulus fulvus
WIN05-118	P 19-3	Pseudosuccinea columella
WIN05-119	P 19-1	Pseudosuccinea columella
WIN05-120	B 4-1-2	Deroceras laeve
WIN05-121	B 14-1-2	Deroceras hesperium
WIN05-122	B 14-4-2	Vitrena pellucida
WIN05-123	B 14-4-2	Discus whitneyi
WIN05-124	B 14-4-2	Vertigo ovata
WIN05-125	B 3-1-1	Vertigo ovata
WIN05-126	B 1-2	Vitrena pellucida
WIN05-127	B 7-1-1	Discus whitneyi
WIN05-128	B 7-1-1	Vitrena pellucida
WIN05-129	B 7-1-1	Euconulus fulvus
WIN05-130	B 7-1-1	Carychium occidentale
WIN05-131	B 13-1-2	Fossaria dalli**
WIN05-132	B 12-1-1	Fossaria dalli
WIN05-133	B 14-4-3	Fossaria dalli
WIN05-134	B 14-4-1	Discus whitneyi
WIN05-135	B 12-1-2	Discus whitneyi
WIN05-136	B 12-1-2	Vertigo ovata
WIN05-137	B 13-1-2	Vitrena pellucida
WIN05-138	B 11-1-1	Discus whitneyi
WIN05-139	B 11-1-1	Gyraulus parvus
WIN05-140	B 14-1-3	Physella gyrina ampucellae
WIN05-141	B 14-1-3	Bakerilymnaea bulimoides**
WIN05-142	B 14-1-3	Punctum randolphi
WIN05-143	B 4-1-1	Fluminicola sp. nov.**
WIN05-144	B 14-2-1	Planorbella occidentalis
WIN05-145	B 14-2-1	Fossaria sp. (juv)**
WIN05-146	B 14-2-4	Planorbella sp. juv
WIN05-147	B 14-3-1	Valvata mergella
WIN05-148	C 25-1-1	Physella gyrina
WIN05-149	C 25-1-1	Bakerilymnaea (Fossaria)bulimoides
WIN05-150	C 25-1-2	Bakerilymnaea (Fossaria)bulimoides
WIN05-151	C 25-1-2	Physella gyrina
WIN05-152	C 28-1-11	Promenetus umbillicatellus
WIN05-153	C 3-1-2	Discus whitneyi
WIN05-154	C 5-3	Vertigo ovata
WIN05-155	C3-1-1	Promenetus umbillicatellus
WIN05-156	C 2	Discus whitneyi

WIN05-157	C 2	Zonitoides arboremus
WIN05-158	C 2	Pseudosuccinea columella
WIN05-159	C 2	Promenetus umbillicatellus
WIN05-160	C 30-1-1	Promenetus umbillicatellus
WIN05-161	C 28-1-2	Discus whitneyi

Here is a useful key to microterrestrials [www.livinglandscapes.bc.ca/](http://www.livinglandscapes.bc.ca/)

Below are some descriptions of species given by Paul and Terry with their reports.

*Vertigo ovata* (Say, 1822) ovate vertigo



**Note deep depression in outer lip, continuing into body whorl**

Typical pupiform shell, slightly larger than many *Vertigo* species. Like many western forms, this does not have a shiny shell but rather prominent growth lines. Note that the typical medium number of lamellae is present. This would be 1 columellar; 1 basal; 2 parietals, neither large but the outside smallest, almost vestigial; 2-4 palatals, with compound basal-lower palatal in one case. The shell periostracal color here is rather dark as compared to Midwest forms; and the shell is not particularly glossy; some transverse growth lines are prominent. These look very much like a form we intend to describe as new from the northern CA Pit River drainage in OR not far from the OR-CA border. 2 have the typical 6-7 lamellae; the third has a compound basal.

*Vertigo n. sp.* (WIN05-094) undescribed species

This taxon has a shell shape quite reminiscent of that of *V. ovata*. Growth lines are fairly poorly developed; and the outer surface is fairly smooth. However, these are smaller, very blunt, with only 4-5 whorls. There is no sinulus and the apertural lamellae are mostly small and not deeply inset. There are 4 lamellae; a small columellar; a small parietal; and 2 small palatals, with the lower at 180° from the parietal. There are taxa with similar lamellar configuration, e.g. *V. concinnula*, also possibly found locally. But *concinnula* is larger (taller); much narrower; has more numerous and narrower whorls; a striate shell; and both the shell and sometimes the lamellae are cinnamon red. Also, all lamellae are more prominent and a subparietal is present. This one needs to be looked into in greater detail. The very dark gray to black animal eliminates *V. ovata* or similar forms. *Concinnula* also has a dark animal.

This species bears some resemblance also to the California form *Vertigo occidentalis* Sterki. Note that Roth & Sadeghian (2003) regard *V. allyniana* and *V. allyniana xenos* (both Berry, 1919) as synonyms. I question this synonymy. But in any case, this taxon has a distinct sinulus (I'm not sure about *xenos*) and has a subparietal. This taxon requires further study to be certain of its identity and affinities; but is unlikely to be either *ovata*, *concinnula*, or *occidentalis*.

*Vertigo modesta* –



**(Could be the same as the undescribed species above?-N./)**

**Paul's Notes: WIN05-043** One pupillid shell, about 5.5 whorls in 2.3mm length. Shell ovate with oblique striations. Teeth not very well-developed (not fully mature?), with 2 parietal, 1 columellar, and 1 palatal. Identification based on shell shape, and tooth pattern is within the wide range for this species.

*Fossaria obrussa* (Say, 1825) golden fossaria



**(Fossaria have a straight, vertical inner lip)**

The very thin shell with typical fossariid appearance is helpful here. Unlike most western forms, this one has medially flattened whorls and is distinctly larger than *F. dalli*. Note also light periostracum and growth lines. Sporadic in Winema-Fremont, mostly along shore lines of lakes or permanent streams and also in marshes and wet meadows. No chance of *Colligyrus* (“*Lyogyrus*”) here; would have small very evenly and deeply convex whorls and an operculum.

*Oxyloma nuttallianum* (Lea, 1841) oblique ambersnail



This specimen, WIN05-102, though partly crushed and dirty, shows enough for a relatively positive ID. Note succineid shell shape, especially rapidly expanding spire and rust to red tip on shell apex. Terrestrial species, usually found along stream courses, permanent swamps, shorelines.

*Pseudosuccinea columella* (Say, 1817) mimic lymnaea



A rather succineid-looking lymnaeid; it shows lymnaeid anatomy through the thin rather transparent shell. The crushing makes things difficult but does show it to be a submature lymnaeid. Note strong growth lines. Habitat “on wood submerged” is typical.

This small succineid-like lymnaeid has a thin shell, mostly transparent, is dextral, is rather high-spired for a succineid but low compared to most other genera and even some other succineids, such as *Catinella*. This taxon is best told apart from true succineids by anatomy and ecology. In the western U. S., *P. columella* is very uncommon but widespread. There is some question as to its native status, with Taylor convinced it is introduced, presumably from the eastern U. S. However, I have found it sufficiently often and in settings that make introduction unlikely. Hence, I regard it as an uncommon but widespread native. It is most likely here to be found in cold streams, especially creeks, bogs, or spring runs; and sometime along small lakes near shore.

Note that this sort of habitat can be very like that of native succineids, which are usually found on emergent vegetation along shorelines, on emergent vegetation, in swamps and marshes, etc. *Oxyloma* seems to be the most widespread western Succineid: it is larger, and has very few whorls. Note that *Pseudosuccinea* is here generally found on stones or sticks in the water, though generally in quite shallow water. Succineids are true land snails and only occasionally found actually under water, though this does happen, especially after sudden rises in water level. *Pseudosuccinea* looks most like certain species of the succineid *Catinella* in shell shape. The lymnaeid anatomy is distinctive and usually easy to establish. *P. columella* tends to be quite uncommon and very local in the West. Most succineids are pretty abundant when found (except for xeric specialists). One sometimes helpful feature is that immature Western *Pseudosuccinea* often have the edge of the foot darker. Many succineids have some internal organs a bright, almost metallic-appearing gold. This does not happen in *Pseudosuccinea*. This taxon has been noted by us before in Winema National Forest.

At many Western sites, this species seems to prefer cold streams. Quite often, the shell is heavily covered by brownish mucky-appearing epiphytes. Succineids usually can tolerate warmer water situations and have clean shells (though this is not true of all!). Growth lines on *Pseudosuccinea* can be rather rougher than those of succineids.

*Menetus opercularis* (Gould, 1847) button sprite

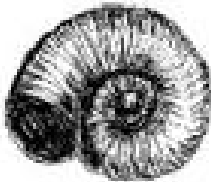


**(This picture is a Czechoslovakian species of Menetus, but the closest to *M. opercularis* I could find. Note strong peripheral keel. Menetus have an angular periphery, deep umbilicus, Gyraulus rounded, with shallow umbilicus)**

These (WIN05-108) are slightly smallish and don't have a strong peripheral keel; but nevertheless are best regarded as either *M. opercularis* or *M. callioglyptus*. It is usual in this area, as elsewhere, to find *M. callioglyptus* in Taylor's (1981) sense and much more rarely *M. opercularis*, which he regards as restricted to the Mountain Lake area near San Francisco and now extinct. However, every once in a while one does run into western *Menetus* that look rather more like *opercularis* than *callioglyptus*. This is one case; we cited others in our Upper Klamath/Sycan Marsh report. Basically, *opercularis* generally has striations (lirae) both above and below which *callioglyptus* lacks; and *callioglyptus* generally has a strong side keel and nearly flat upper surface. These 2 specimens are somewhat intermediate in characters, but with rather weak keel.

*P. umbilicatellus* would have no keel; be smaller; and have a larger, more open umbilicus. *Z. arboreus* is so different that it shouldn't enter the picture.

*Gyraulus circumstriatus* (Tryon, 1866) disc gyro



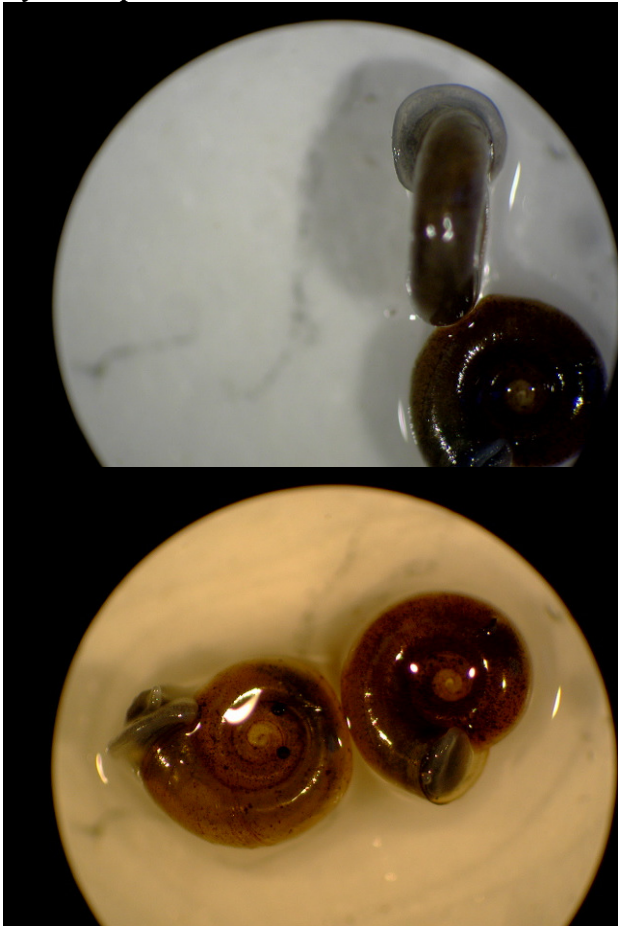
**(Note very rough radial growth ribs – I don't see this on the specimen. Also supposed to have an angular periphery, which I don't see...)**



**(This is just for fun – I found it while searching for other photos. It's called *Gyraulus distortus*! Too cool.)**

If you had to guess terrestrial, then something like *Helicodiscus* would be closer. No chance. This is, however, pretty interesting. This is one of the very few *Gyraulus circumstriatus* I've seen in the West, perhaps the first from OR. Becomes more common to the north but still rare here, much like *Gyraulus (Armiger) crista*, but fairly common in the Midwest and East, and across northern North America. Flatter and with a larger, very shallow open umbilicus as compared to other *Gyraulus*.

*Gyraulus parvus*



**(this voucher photo is really not Promenetus, as I said in the first report. That genus has a deeper umbilicus, but same rounded periphery, general size.) Shallow umbilicus, all whorls in single plane, rounded periphery, 3-4 whorls. in 4 mm.**

*Nesovitrea binneyana occidentalis* (Baker, 1931)

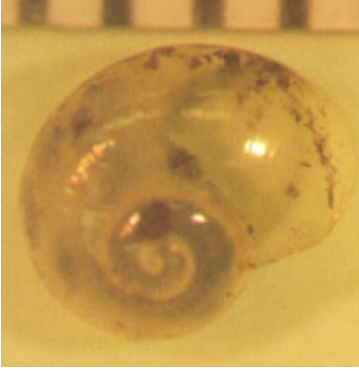


**(see great description on website at top, looks a lot like Menetus, but inner whorls not successively farther from center axis. Umbilicus is straight-sided, not tapering out at bottom.)**

These are terrestrial. We've reported this from Winema and elsewhere previously. Not too common but found fairly frequently. Has no keel; not flat on top; has land snail appearance and shiny periostracum, which is whitish where old; semitransparent with a slight bluish cast where fresh, not brown and dullish as in Menetus. Often found in pretty wet settings but can be found in talus also.



*Vitrena pellucida* – Western glass snail



**Rapidly expanding body whorl, transparent shell.**



**This is a voucher photo of WIN05-038 showing how mantle extends back over the body whorl. Shell is about 3-4 mm wide, very shiny.**

*Stagnicola caperata* – wrinkled marshsnail (Family Lymnaeidae)



**NO OPERCULUM in any Limnaea (Fossaria or Stagnicola). Thin shell. Stagnicola inner lip is folded, or braided/twisted, unlike Fossaria, which is straight. Very fine periostracal ridges (wrinkles) on body whorl. Can grow to be 17-18 mm high. I think we found some of these at Hagelstein Park.**

*(Fossaria) Bakerilymnaea bulimoides* (Lea, 1841)

prairie fossaria



This taxon is known from several sites in Winema National Forest and is regionally fairly common, e.g., in interior WA and OR, ID. Distinctive features include the following: rather larger than most small *Fossaria*, such as *dalli*, but way too small for most *Stagnicola*; rather rapid rate of whorl expansion; fairly distinctive fine transverse ornament. This one (WIN05-141) is a little difficult to call to subspecies; could be small *cockerelli*.

***Pristiloma chersinella* – Paul ID'd one of these in your specimens**



voucher



(web

site)

**Notes: WIN05-110** One shell, about 4.0 whorls in 2.2mm diameter. Narrowly umbilicate, height about half the diameter. The height/diameter ratio of this shell suggests *P. subrupicola*, but the relative width of the umbilicus matches *P. chersinella* much more closely. The height/diameter ratio may be a result of the young age of this specimen.