

FINAL REPORT

Lobaria linita Inventory along the Jackson/Douglas County line

A 2013/2014 ISSSSP project

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SUMMARY

Field searches for the lichen *Lobaria linita* were conducted in 2013 and 2014 at selected locations on the Rogue-Umpqua Divide within a 3-4 mile radius of the previously-reported Timbered Rock occurrence. Botanists found *Lobaria linita* at the following new locations during the survey:

- A few hundred meters away from the original Timbered Rock occurrence, on another part of the same extensive rock outcrop/cliff complex where it was previously found.
- On the northeast side of Ragsdale Butte (about 2.5 miles south of Timbered Rock)

Lobaria linita was not found at other locations that were initially identified as promising potential habitat within this geographic area.

Occupied locations vary from mostly open to mostly (but not entirely) canopied. The habitat is perhaps best described as cool aspects of large igneous rock outcrops at these (locally) higher elevations.

Occupied substrate in all locations is rock, cryptogam mats over rock, or cryptogam mats on rocky soil immediately adjacent to occupied rock substrate. *Lobaria linita* was not found on trees, shrubs, logs, or other soil substrates.

Lobaria linita in these locations cannot be clearly assigned to one or the other of the taxonomic varieties that are sometimes recognized.

BACKGROUND

Lobaria linita is managed as an Oregon sensitive species by Forest Service Region 6 and BLM's Oregon Field Office. *Lobaria linita* var. *tenuoir* is a Northwest Forest Plan Survey and Manage (S&M) species. The ISSSSP fact sheet for this species (found at <http://www.fs.fed.us/r6/sfpnw/issssp/species-index/flora-lichens.shtml>) summarizes what is known about this species in the Pacific Northwest.

Prior to our 2013 and 2014 surveys, it had been collected only once in our area, by Scot Loring at Timbered Rock following the 2002 Timbered Rock Fire. Identification was confirmed through our ISSSSP inter-agency vouchering services. See figure 1 for photographs taken by Scot at this site in

the year reported. This site is far south of any other known occurrences of *Lobaria linita* var. *tenuoir*, and in an area and habitat where *L. linita* var. *linita* would also not be expected. The actual occurrence is on Tiller Ranger District of Umpqua National Forest, within a stone's through of Medford BLM boundary, and within a mile of Rogue River-Siskiyou National Forest. The collection was made from the base of an extensive rock outcrop/cliff complex on the north side of Timbered Rock within unburned older forest surroundings, at about 4400 ft. elevation.

The ISSSSP fact sheet states that "Two varieties are sometimes recognized based on morphological and ecological differences. *Lobaria linita* var. *linita* tends to be small, wrinkled, and lacks apothecia; this variety is found in arctic and alpine areas growing on rock and soil. *Lobaria linita* var. *tenuoir* is larger, "ribbed" and usually apotheciate. This variety grows on tree boles, usually in late-successional or old-growth forest at lower elevations".

Objectives of the 2013/2014 inventory were:

- Determine distribution, abundance and local habitat characteristics for *Lobaria linita* in this disjunct part of its range
- Make enough observations, photos, and/or tissue samples to determine if *Lobaria linita* in this part of its range fits clearly into var. *tenuoir* or var. *linita*
- Help agency botanists become familiar with various large foliose lichens in the area and develop a search image for *Lobaria linita*
- Determine if there are any local protective measures that may be needed

This project began with ISSSSP funding distributed in 2013 to Rogue River-Siskiyou National Forest, Umpqua National Forest, and Medford BLM. Field work for the project was split among agency botanists and the primary contractor, Scot Loring. Besides field inventory work, Scot provided on-site field ID training and was also the primary examiner of specimens collected.

2013 FIELD WORK

Field inventory work (intuitive-controlled surveys) was planned and potential habitat areas identified in late-successional forest and on rock outcrops on cool aspects, above 3800 ft. elevation in unburned or lightly burned portions of the 2002 Timbered Rock Fire area, as well as outside the fire perimeter, in the vicinities of Timbered Rock, Hawk Mountain, Savage Bluffs, Ragsdale Butte, Ragsdale Spring, Elkhorn Peak, Devil's knob, and/or Wolf prairie.

Agency botanists from Rogue River-Siskiyou N.F, Umpqua N.F, and Medford BLM met with Scot Loring at Timbered Rock on June 34, 2013 for on-site identification training, orientation to the project requirements and procedures, and searches of suitable habitat close to the known *Lobaria linita* site at Timbered Rock. Scot helped the agency botanists become familiar with *Lobaria pulmonaria*, various Peltigeras, and Pseudocephallarias, which are the common large foliose lichens in potentially-suitable areas searched in 2013.

Figure 1; *Lobaria linita* (4 images) and habitat (1 image) at Timbered Rock at the time of discovery following the 2002 Timbered Rock Fire, courtesy of Scot Loring.



At the previously known site (T32S, R1W, Sec 1, north ½) in 2013 we found *Lobaria linita* to be limited to a small area (perhaps 1/10 acre) but present in multiple large and small patches. This

facilitated identification, comparison to other large foliose lichens, clarification of the local habitat, and development of a search image. Suitable tree bole habitat was available at this site but was occupied by *Lobaria pulmonaria* (and *Peltigeras* and *Pseudocephallarias*). *Lobaria linita* was confined to rock or associated rubble at the base of the cliff or cryptogam mats growing over these substrates.

The only new *Lobaria linita* occurrence we were able to locate on 6/24/2013 is a few hundred meters away from the original occurrence, on the same extensive north-facing rock outcrop/cliff complex but closer to the summit of Timbered Rock (see figure 2a and 2b photos). It is a much smaller occurrence. Most of this rock outcrop/cliff complex is not accessible (too steep/unsafe). Although our searches indicated *Lobaria linita* is not ubiquitous here, our assumption now is that *Lobaria linita* occupies more of this cliff complex than just the two microsites. All of this particular rock outcrop/cliff complex is on Umpqua N. F.

All apparently-suitable habitat within the survey area on Umpqua N.F. north of Timbered Rock (parts of Hawk Mountain, Savage Bluffs, Devil's knob, and/or Wolf prairie vicinity) was surveyed by Richard Helliwell and Dave Baker in the summer and early fall, except for one steep NW-facing old growth forest patch on Hawk Mountain that aerial photos indicated could have rock outcrops suitable for *Lobaria linita*. *Lobaria linita* was not found in these locations.

All apparently-suitable habitat on Rogue River-Siskiyou N.F. (confined to the Elkhorn Peak vicinity) was surveyed in late October by Drew Colyer. *Lobaria linita* was not found.

Other than a bit of rocky scabland near the top of Timbered Rock, suitable habitat on BLM land was not surveyed in 2013 (See next section).

2014 FIELD WORK

Aerial imagery, topographic maps, and knowledge of apparently-suitable and unsuitable habitat gained in 2013 were used to identify remaining areas where surveys should occur on BLM lands south of Timbered Rock. These were 4 small remote scattered polygons in the general vicinity of Ragsdale Butte at:

- Northeast side of Peak with Elev. 4497' in section 11
- Two polygons on the north and northeast sides of "Ragsdale" (north end of Ragsdale Butte with Elev. 4803')
- An east-facing rock outcrops at 4000 ft. elevation in possibly suitable habitat below the road (trail?) in the NW ¼ of section 14, northeast of Ragsdale Springs.

Scot Loring surveyed these areas for *Lobaria linita* in June 2014. He also surveyed the one steep NW-facing old growth forest patch on Umpqua N.F.'s Hawk Mountain that aerial photos indicated could have rock outcrops suitable for *Lobaria linita*.

Figures 2a and 2b; *Lobaria linita* near the top of Timbered Rock in 2013, a. among other cryptogams, and b. close-up. Photos by Wayne Rolle.



On June 10, 2014 Scot found a spread-out occurrence of *Lobaria linita* in four places among cliffs and outcrops on the NE side of “Ragsdale” (T32S, R1W, Section 14, NE1/4 of the NE1/4, and NW ¼ of the NE ¼)(figures 3a, 3b, and 3c). He describes the habitat as exposed cliffs, primarily north-facing, not forested (10% overstory, 5% understory) but Douglas fir, white fir, and Douglas maple are on the nearby forest fringe. He reports the “thalli are generally much browner in color on the upper surface, likely due to the higher light exposure at the Ragsdale site” (compared to Timbered Rock).

Scot reported that this collective occurrence is “substantially larger than the original Timbered Rock site”, reporting 65-70 “patches” seen, occupying collectively 3-5 square meters of rock surface, scattered over a collective area of several acres total. The four microsites (sub-populations) are close enough together that they will be reported as a single Element occurrence. As for Timbered Rock, the assumption is that *Lobaria linita* is probably present here in additional parts of this extensive rock outcrop/cliff complex.

Lobaria linita was not found at any of the other 2014 survey polygons, or on the NW side of Hawk Mountain which, when visited, was steep but did not have rock outcrops.

OTHER DETERMINATIONS

Taxonomy: *Lobaria linita* at these sites often has large thalli, is confined to rock or rock-associated substrates, does not have apothecia, is at upper elevations within the local area but still montane (nowhere near alpine or even sub-alpine). Photographs, both included and not included in this report, show thalli that could be called “wrinkled” or could be called “ribbed”. One site can easily be called old growth forest, and one site can easily be called non-forest. Altogether, the morphological features, habitats, and substrates that may allow discrimination between varieties *linita* and *tenuoir* elsewhere do not seem to be reliable enough for a varietal determination at Timbered Rock and Ragsdale.

Threats and recommendations for local management: A predicted warming climate with associated drier and longer summers would presumably pose a challenge for this lichen which has small isolated local populations and appears adapted locally to a specialized cool habitat. Although there is not enough fuel to carry a wildfire fire over much of the potential habitat, wildfires could threaten parts of these occurrences. There does not seem to be threats from mining, road building, timber sales, grazing, or invasive species at this time. Given the remote locations, an uncertainty about what kind of fuels work might be best for the *Lobaria* (if any), and no specific management actions currently planned in the area, no recommendations are given at this time.

PROJECT DATA MANAGEMENT

The one previously-known *Lobaria linita* occurrence was already documented in Forest Service NRIS TES Plants database with Umpqua N.F. as the NRIS “active unit”. This occurrence is also in the BLM GeoBob database since it was found during a BLM contract botany survey (though the actual site is on Umpqua N.F.). Medford BLM and Umpqua N.F. presumably also have copies of the paper sighting report of this original Timbered Rock *Lobaria linita* discovery. The original Timbered Rock collection packet was submitted for vouchering by ISSSSP identification services in the first year after it was found to be curated and deposited at the Oregon State University Herbarium.

Our 2013 minor extension of that original EO was recently entered into NRIS with Rogue River-Siskiyou N.F. as the active unit. A paper record of that minor population extension was recently sent to Umpqua N.F. and they will presumably update their existing NRIS EO to include it. A small piece of thallus was collected on 6/24/2015 at this site, for spot tests by Scot Loring. The spot tests confirmed the ID as *Lobaria linita*. The packet with the remaining scrap of material went to Umpqua N.F.

The new 2014 Ragsdale EO (with multiple polygons) was recently entered into GeoBob. It was also entered into NRIS with Rogue River-Siskiyou N.F. as the active unit, even though the site is

on BLM land. Medford BLM and Rogue River-Siskiyou N.F. have copies of the 2014 paper sighting report describing the four places here where *Lobaria linita* was found (sub-populations). A 2014 Scot Loring collection from the Ragsdale site will be sent by Medford BLM for vouchering by ISSSP identification services.

The survey areas have been entered into NRIS with Rogue River-Siskiyou N.F. as the NRIS active unit even though only a portion of the survey work was done on Rogue River-Siskiyou N.F.

Figures 3a, 3b, and 3c; a. *Lobaria linita* habitat at Ragsdale, b. thallus, c. edge view of thallus, courtesy of Scot Loring.



