

SPECIES FACT SHEET

Common Name: Mucronleaf tortula moss

Scientific Name: *Tortula mucronifolia*

Division: Bryophyta

Class: Bryopsida

Order: Pottiales

Family: Pottiaceae

Technical Description: Plants dark green, 2-3 mm wide, to 1 cm long but usually less than 5 mm. Leaves 2-5 x 0.6-1.5 mm, tightly clustered, keeled, contorted and infolded when dry and spreading when moist, oblong to oblong-obovate, blunt at apex except for short point formed by excurrent costa, unistratose in section; costa strong, conspicuous and shiny on back of leaf, exceeding the apex to form a short, distinct yellowish point (mucro); margins entire, recurved in lower 1/2 to 2/3 and plane above, not bordered or bordered only in lower part by elongate cells; upper leaf cells 15-21 (28) μm , usually smooth but rarely with low papillae; basal cells longer than upper cells but not forming a conspicuous differentiated group. Setae 8-15 mm long. Capsules frequent, erect and straight, 3-5 mm long, peristome teeth twisted into a cone. **Distinctive characters:** (1) Tiny *Tortula* on bare soil, (2) leaf cells usually without papillae, (3) costa excurrent as a short point, (4) basal cells not forming a differentiated group. **Similar species:** Other soil-dwelling species of *Tortula* in this size class have strongly papillose leaf cells and either long awns, bordered leaves, or differentiated basal cells. *Tortula latifolia* has blunt leaves with no awn, but the cells are papillose, the leaves are obovate, and it usually grows on trees west of the Cascades. **Other descriptions and illustrations:** Crum 1983:122; Crum & Anderson 1981: 395; Ireland 1982: 240; Lawton 1971: 110; Sharp et al. 1994: 325.

Life History: Details for this species are not documented. The protonema is inconspicuous, forming buds and shoots in the usual fashion of moss growth and development. Fruiting in summer and fall.

Range, Distribution, and Abundance: Widely distributed throughout the Northern Hemisphere, Turkey, Africa and New Zealand. In North America south to Mexico, Nebraska, the upper Midwest, and Virginia.

Documented on: National Forests: Rogue River-Siskiyou. BLM Districts: Burns, Medford.

Rare, probably undercollected.

Habitat Associations: Forming small turfs or cushions on soil, tree roots, and sheltered ledges and crevices of rock outcrops and cliffs. Elevation of known sites ranges from 5000-7000 feet. Known vegetation types are rock outcrops in *Abies concolor* and *Abies x shastensis* forest in southwestern Oregon, and riparian forest on Steens Mountain composed of *Betula occidentalis*, *Populus tremuloides*, and *Populus balsamifera* ssp. *trichocarpa*. Reportedly a calciphile (Crum and Anderson 1981; Crum 1983), but in Oregon and Washington on acid rocks as well.

Threats: Current knowledge of *Tortula mucronifolia* in Oregon and Washington is very limited, but populations appear to be small, discontinuous, and subject to local catastrophic loss. Sites such as those observed in riparian zones on Steens Mountain may be threatened by livestock bedding and trampling. Montane rock outcrops may be threatened by road construction or quarrying. Higher-elevation habitats favored by *T. mucronifolia* may be at risk from global warming. In Europe, threats include urbanization and mining.

Conservation Considerations: Consider managing known sites and surveying for new sites at least until more information is known about this species in Oregon and Washington.

Preparer: John A. Christy
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Edited by: Rob Huff
Date: June 26, 2007

Updated by Camille Duncan in February 2010 (Update added Attachment 1: Photos, to the Species Fact Sheet.)

ATTACHMENTS:

(1) Photos

References

- Crum, H. 1983. Mosses of the Great Lakes Forest. 3rd edition. University of Michigan Herbarium, Ann Arbor. 417 pp.
- _____ & L.E. Anderson. 1981. Mosses of Eastern North America. 2 volumes. Columbia University Press, New York. 1328 pp.
- Ireland, R.R. 1982. Moss flora of the Maritime Provinces. National Museums of Canada Publications in Botany 13: 1-738. National Museum of Natural Sciences, Ottawa.
- Lawton, E. 1971. Moss Flora of the Pacific Northwest. Hattori Botanical Laboratory, Nichinan, Japan. 362 pp.
- Oregon Natural Heritage Information Center. 2004. Rare, threatened and endangered species of Oregon. Oregon Natural Heritage Information Center, Oregon State University. Portland. 104 pp.
http://oregonstate.edu/ornhic/2004_t&e_book.pdf
- Sharp, A.J., H. Crum & P.M. Eckel (eds). 1994. The Moss Flora of Mexico. 2 volumes. Memoirs of the New York Botanical Garden 69: 1-1113.
- Zander, R. & P. Eckel. 2005. *Tortula*. Bryophyte Flora of North America, Provisional Publication, Missouri Botanical Garden.
[http:// www.mobot.org/plantscience/bfna/V1/PottTortula.htm](http://www.mobot.org/plantscience/bfna/V1/PottTortula.htm)

Attachment 1: Photos

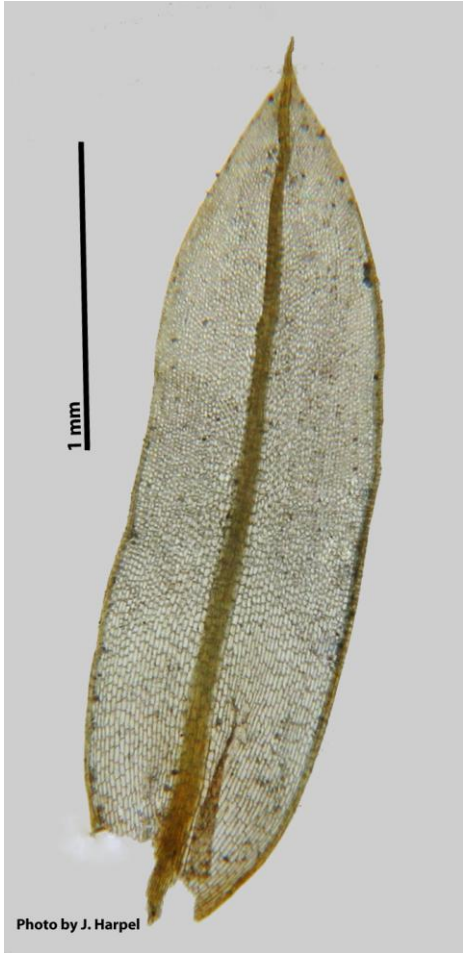
All photos by Dr. Judy Harpel, under contract with the Oregon/Washington Bureau of Land Management



Whole mount dry



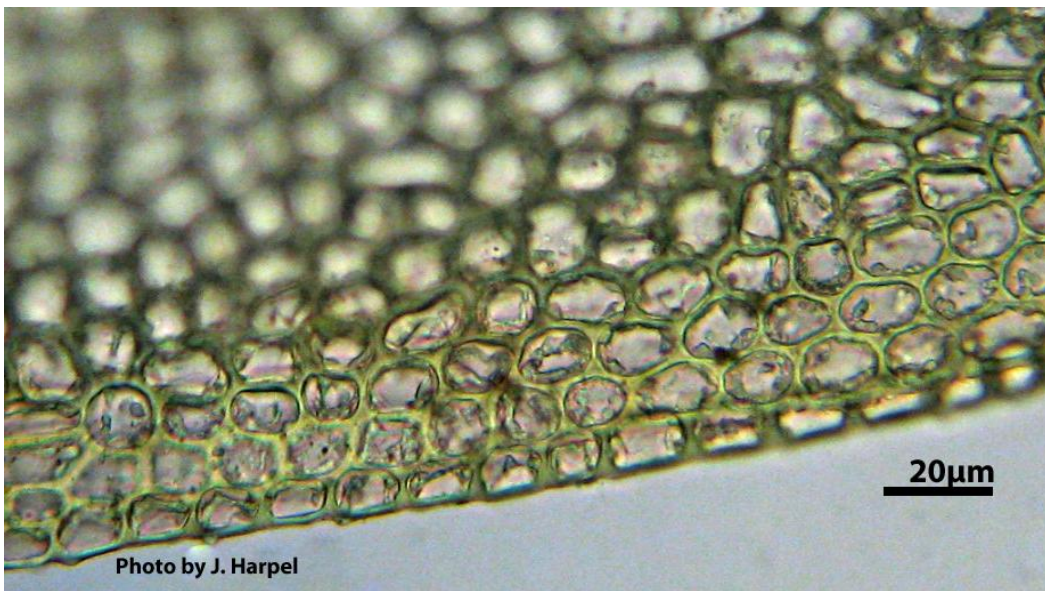
Whole mount wet



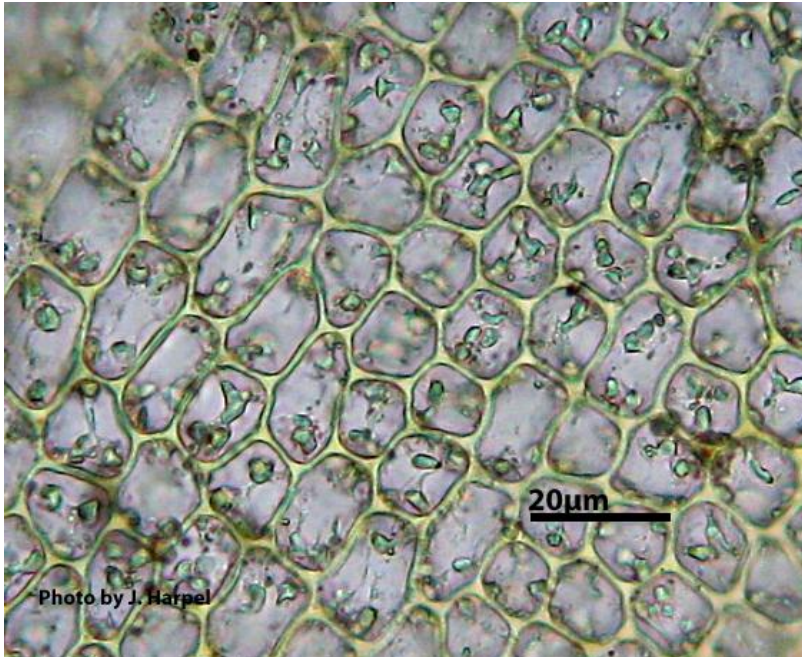
Leaf



Whole sporophyte



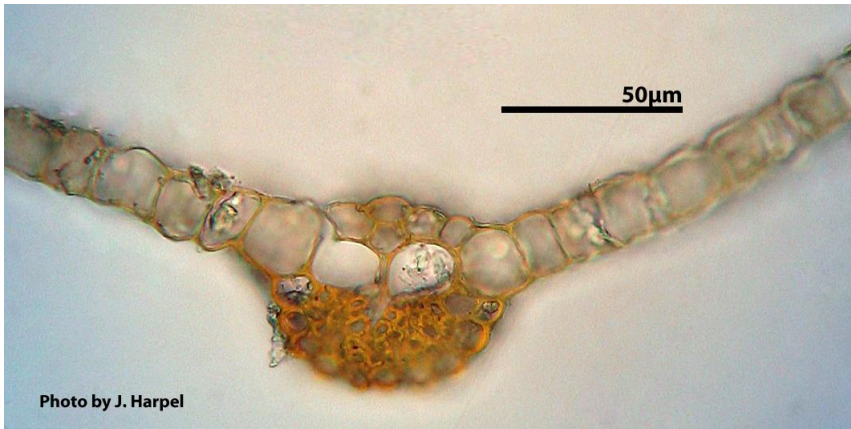
Leaf marginal cells



Upper medial cells



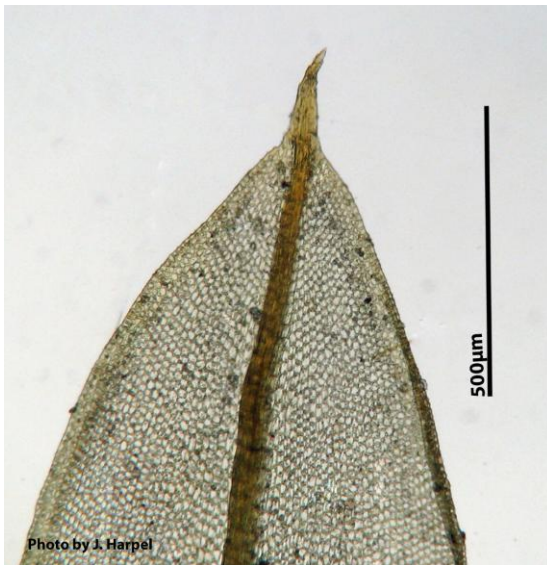
Leaf cross-section



Leaf cross-section



Leaf cross-section



Leaf apex



Leaf alar and basal cells