

UC SANTA CRUZ CAMPUS NATURAL RESERVE

TEAR DROP MOSS



Tiffany Theden

Scientific Name: *Dacryophyllum falcifolium*

Common Name: Tear Drop Moss

Global Rank: Imperiled

State Rank: Imperiled; CNPS 1B.3

UCSC Rarity: Very rare



General Description

Tear Drop Moss is characterized by small, asymmetric, pointed and flat leaves. It is green to green-yellow, has short 1-2 cm long branches, and grows in fan-like shelves or mats. It is sparsely distributed, has very strict habitat requirements, and is not found intermixed with more common mosses. It is often overgrown with algae or lichen, and the tips of the mats can be dried and golden-brown.



Identification

Color: Yellow-green

Stem length: 1.5cm \times 0.8-1mm

Leaf shape/size: Asymmetric, scythe-like, 0.3-0.5 \times 0.1-0.2 mm

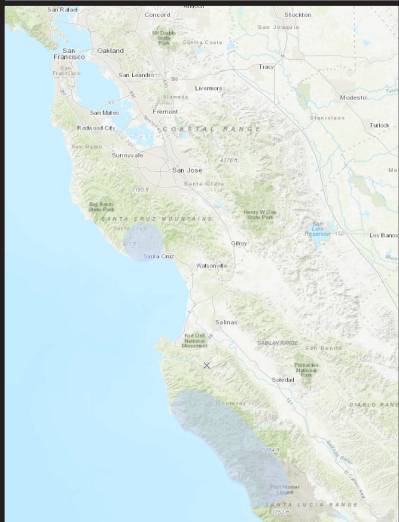
Growth Form: Shelf-like mats

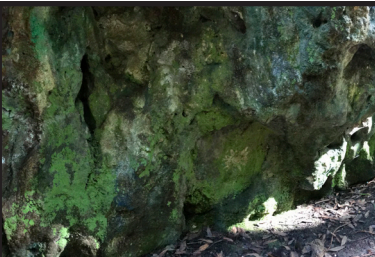
Sporophytes: Unknown; vegetative asexual reproduction

Habitat: Calcium-rich, vertical & overhanging rock faces in redwood forests

Geographic Range

Known only from Santa Cruz and Monterey counties in California. Has only been observed in Coast Redwood (*Sequoia sempervirens*) forests along the coast, with limestone or other calcium-rich rock. Known locations include several drainages along the Big Sur coast, the UCSC campus, and Fall Creek Unit of Henry Cowell SP.





UCSC Distribution

Tear Drop Moss grows on an overhanging marble rock face in Cave Gulch. It may exist in other areas with exposed marble (metamorphosed limestone) bedrock.

Life History

Tear Drop Moss can not compete with other more common and aggressive mosses, and is only found on moist, vertical or overhanging marble or limestone rock faces. It may be intermixed with powdery crust lichens and algae. There has been one observation of it growing on a redwood stump next to a stream with high calcium content in Big Sur. It has a habit of growing in fan-like shelves, which is both distinct and quite beautiful. Reproductive structures have never been observed, but likely exist. This species mostly spreads through asexual reproduction, where pieces of the plants break off to start new colonies.

Research Highlights & Fun Facts

- Ken Kellmann, a frequent sight at the UCSC Norris Center, collected the type specimen of this species. Go say hi to him, he's great!
- Tear Drop Moss has only been recorded in a few drainages in Big Sur, and at mature redwood forest locations in Santa Cruz. It is likely other places, just waiting to be discovered.
- The CZU and Dolan fires in 2020 burned many of the locations this moss has been observed. It is not known if those populations have survived.
- Not much attention is paid to bryophytes, so get out there, find some new species, and help increase the knowledge of these amazing plants! Case in point: this species wasn't described until 2004!



Conservation Status

California Native Plant Society

Rare Plant Rank: 1B.3

A California endemic that is rare throughout its range. This moss is eligible to be listed under the California Endangered Species Act. Currently, there is relatively low immediate threat to the known populations, but this species is lacking data on its full range.



Threats

Statewide:

1. Lack of awareness of its existence
2. Wildfires
3. Habitat loss
4. Drought stress on trees from decreasing summer fog and sporadic winter rain
5. Logging and fragmentation of redwood forest habitat

UCSC campus:

1. Graffiti at Empire Cave
2. Climbing on moss covered rocks



Ways you can help

1. Raise awareness of bryophytes
2. Don't climb on or spray paint on moss covered rocks. You never know, it might be a rare moss!
3. Do what you can to decrease carbon emissions and help slow climate change.



References and Photo Credits

California Native Plant Society, Rare Plant Program. 2021. Inventory of Rare and Endangered Plants of California (online edition, v8-03 0.39). Retrieved from <http://www.rareplants.cnps.org> on 11 February 2021.

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Kellman, K. and J. R. Shevock. 2006. Notes on *Dacryophyllum falcifolium* Ireland. *Evansia* 23:36-39.

Lazar, K., R. Bittman and P. MacIntyre. 2006. Rare Plant Status Review: *Dacryophyllum facilifolium*. California Native Plant Society and California Natural Diversity Database.

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