

A scenic view of a vast, open landscape, likely a high-altitude or volcanic region. In the foreground, a large, dense bush of green leaves with numerous small, pinkish-purple flowers is prominent on the left side. The background shows a wide, flat expanse of land with scattered trees and shrubs, leading to distant, hazy mountains under a cloudy sky. The overall atmosphere is serene and natural.

A Flora of  
Lava Beds National Monument



# A Brief History of LABE 'Contemporary Time'

- 1873--The Modocs are removed from their home
- 1907--Draining of Tule Lake and Livestock grazing commences
- 1925--Lava Beds National Monument established
- 1933-- National Park Service begins managing the monument
- 1973--Livestock grazing ends wilderness areas are established



MODOC NATIONAL FOREST

# LAVA BEDS NATIONAL MONUMENT

WILDERNESS AREA

MODOC NATIONAL FOREST

WILDERNESS AREA

CALLAHAN FLOW

Visitor Center

WILDLIFE REFUGE

Information Kiosk

Gilliam Bluff Trail

Canby Cross

West Wildlife Overlook

Captain Jacks Stronghold

Hospital Rock

East Wildlife Overlook

Petroglyph Point trail

2.7mi 4.3km

0.2mi 0.3km 1.5mi 2.4km

Road suitable for high clearance vehicle only

GILLEM BLUFFS

HOHENSTAUFEN FLOW

GLASS FLOW

Thomas-Wright Battlefield

Black Crater

Hardin Butte

Fleener Chimneys

SCHONCHIN FLOW

Lyons Trail

4.2mi 6.8km

Whitney Butte Trail

Whitney Butte 1044ft 318m

The Castles

Schonchin Butte

Eye Sparrow 2411ft 735m

Three Sisters 4511ft 1384m

Three Sisters Trail

7.5mi 12.0km

Mammoth Crater

Snowpack Butte 4217ft 1284m

Abasco Crater

Hippo Butte 4447ft 1356m

Heppes Cave

Heppes Cave Trail

0.6mi 1.0km

Hidden Valley

Missing Link Trail

Indian Well

Crescent Butte

Hippo Butte

Heppes Cave

Heppes Cave Trail

0.6mi 1.0km

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Crescent Butte

Hippo Butte

Heppes Cave

Heppes Cave Trail

0.6mi 1.0km

Hidden Valley

Missing Link Trail

Indian Well

Crescent Butte

Hippo Butte

Heppes Cave

Heppes Cave Trail

0.6mi 1.0km

Hidden Valley

Island Butte

Mammoth Crater

Heppes Cave Trail

Hidden Valley

Cave Loop Road

Indian Well

Visitor Center

Indian Well

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Visitor Center

Eagle Nest Butte

Heppes Cave

Heppes Cave Trail

Hidden Valley

Cave Loop Road

Indian Well

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Eagle Nest Butte

# LABE Climate

**July is the Hottest (avg hi 82.4 F)**

**August is the driest ( avg .49”)**

**January is the coldest (avg hi 40.3 F)  
and snowiest ( avg 9.2”)**

**Annual precipitation is 15.33” with  
44.1” of snow**

**August is the only month without  
reported snow fall**



**This image was taken on May 27, 2006**

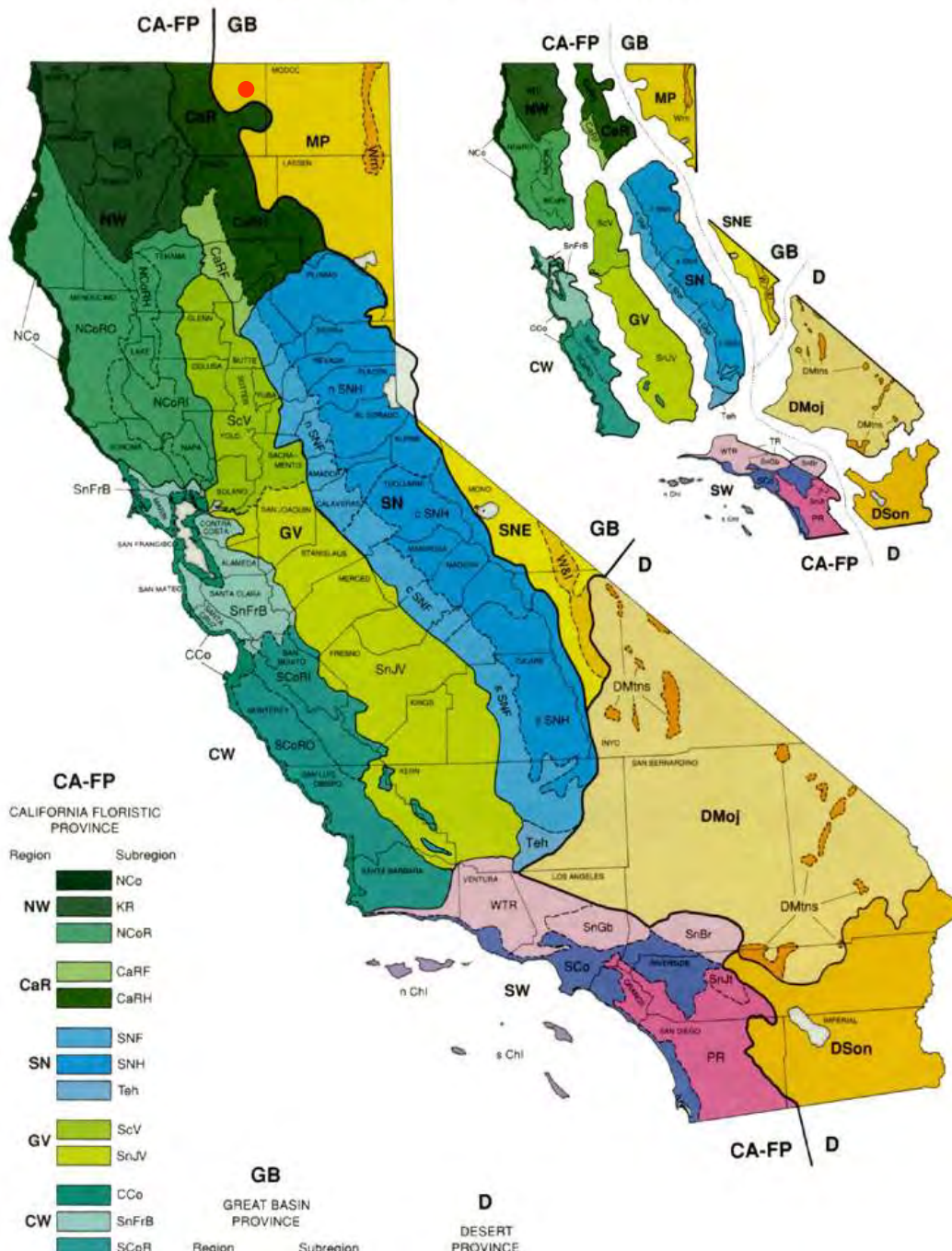
# Geologic Fun Facts

- Lava Beds is part of the Medicine Lake volcano which began erupting 500 tya
- The Mammoth Crater eruption covered 70% of the monument 30 tya
- The Callahan flow occurred 1000 ya, the youngest flow at Lava Beds
- Most of the pumice covering the park fell from the sky during the Glass mountain eruption 885 ya
- Lava Beds has the highest concentration of lava tubes in the continental US





# Geographic Subdivisions of California





# Past Vascular Plant Inventories Include:

- Applegate, E.I. 1938. Plants of the Lava Beds National Monument, California. *American Midland Naturalist* 19:2 pp. 334-368
- Wunner, R.C. 1970. A Flora of Lava Beds National Monument. M. A. thesis. Humboldt State College. Arcata, CA. 102 pp.
- Smith, A.R. 1993. Ferns of Lava Beds National Monument, Siskiyou County, California. *Madrono* 40:3 pp. 174-177

# LABE habitat types: the guide for this inventory

Erhard, Dean H. 1979. Plant Communities and Habitat Types in the Lava Beds National Monument. M.S. thesis Department of Rangeland Resources, Oregon State University, Corvallis, OR. 173 pp.



# Microclimates pay off



# Last Plant Standing



# Summary of vascular plants at Lava Beds NM.

<b>Group</b>	<b>Families</b>	<b>Genera</b>	<b>Species</b>
Pteridophyta	3	7	10
Coniferophyta	2	4	8
Magnoliophyta	47	193	343
<b>Total</b>	<b>52</b>	<b>204</b>	<b>361</b>

Compared to 192 species in Applegate's work

# Summary of Findings

- 100 vouchers
- 89 new vascular plant species
- 31 vouchers from the monument located at herbaria throughout California

# Developing the Key

- 1a. Plants reproducing by one celled spores.....**Group 1 (Ferns) Pg. 67**
- 1b. Plants reproducing by seeds.....2a
- 2a. Ovules not enclosed in an ovary, generally occurring on the surface of a cone scale; fruit a woody cone or cone-like berry; plants woody, trees or shrubs.....**Group 2 (Gymnosperms) Pg. 69**
- 2b. Ovules enclosed within an ovary; plants woody or not.....3a (**Angiosperms**)
- 3a. Floral parts, especially perianth, in 3's (rarely 1,2, or 4's, never 5's); leaves mostly parallel veined; 1 cotyledon  
.....**Group 3 (Monocots) Pg. 71**
- 3b. Floral parts, especially perianth) in 4's or 5's (rarely 3's) leaves mostly palmately or pinnately veined; 2 cotyledons.....**Group 4 (Dicots) Pg. 80**



*Artemisia tridentata*



*Juniperus occidentalis* var. *occidentalis*



*Cercocarpus ledifolius* var. *intermontanus*



*Pinus ponderosa*



*Ribes velutinum*



*Ribes cereum*



*Symphoricarpos rotundifolius*



*Arctostaphylos patula*





A close-up photograph of a flowering branch of Purshia tridentata. The image shows several small, white, five-petaled flowers with prominent yellow stamens. The leaves are small, green, and have a characteristic three-lobed or tridentate shape. The background is softly blurred, showing more of the plant's structure and flowers.

*Purshia tridentata*



*Pseudoroegneria spicata* ssp. *spicata*



*Cycladenia humilis*

*Leymus cinereus*






*Chamaebatiaria millefolium*



*Chrysothamnus viscidiflorus*



*Chrysothamnus nauseosus*

*Achnatherum thurberianum*





Other notable species include:



*Phlox diffusa*



*Phlox hoodii var canescens*

*Lithophragma tenellum*



*Fritillaria pudica*






*Leucocrinum montanum*

*Draba verna*



A close-up photograph of a small, green, upright plant with several tiny white flowers. The plant is growing from a dark, porous, and highly textured rock surface, likely volcanic. The rock has numerous small, irregular holes and a rough, granular appearance. The background is a blurred, dark brownish-grey ground. The lighting is bright, casting some shadows on the rock.

*Plagiobothrys tenellus*



*Mimulus suksdorfii*





*Ranunculus glaberrimus* var. *glaberrimus*



*Lomatium nevadense var. nevadense*

*Delphinium andersonii*





*Nothocalais troximoides*

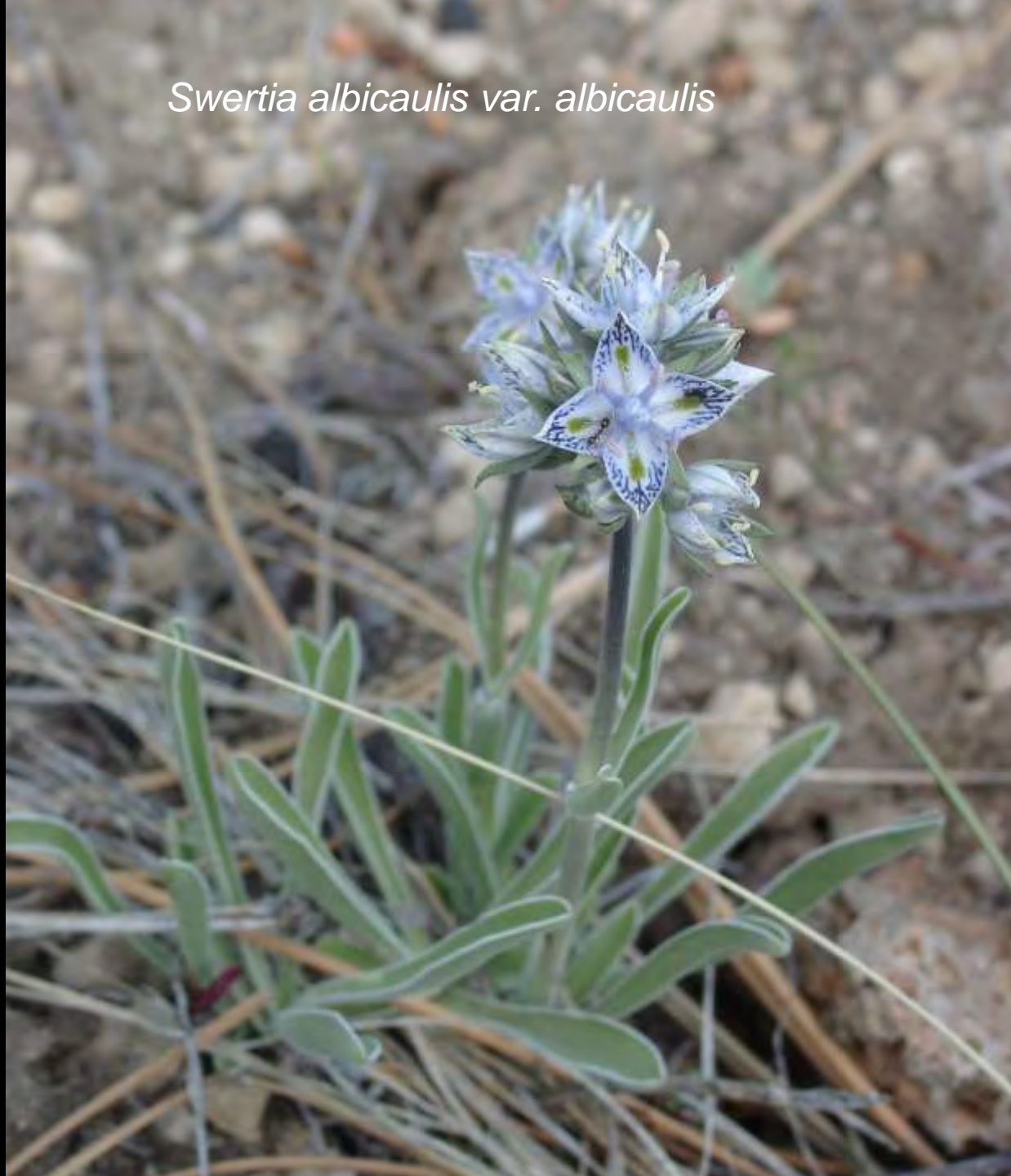
*Arabis sparsiflora* var. *sparsiflora*





*Arabis holboellii*

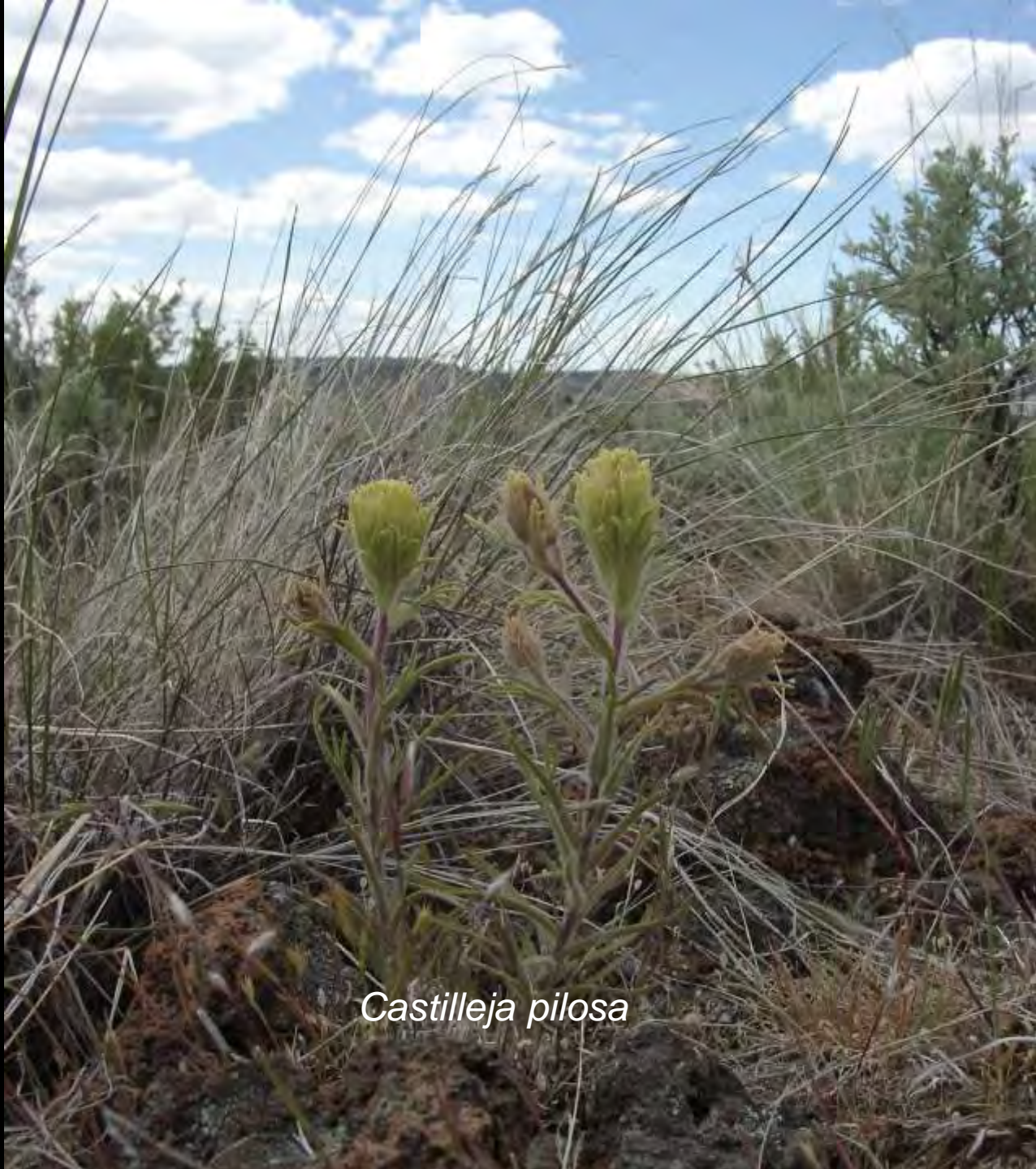
*Swertia albicaulis* var. *albicaulis*





*Agoseris heterophylla*





*Castilleja pilosa*



*Cirsium cymosum*

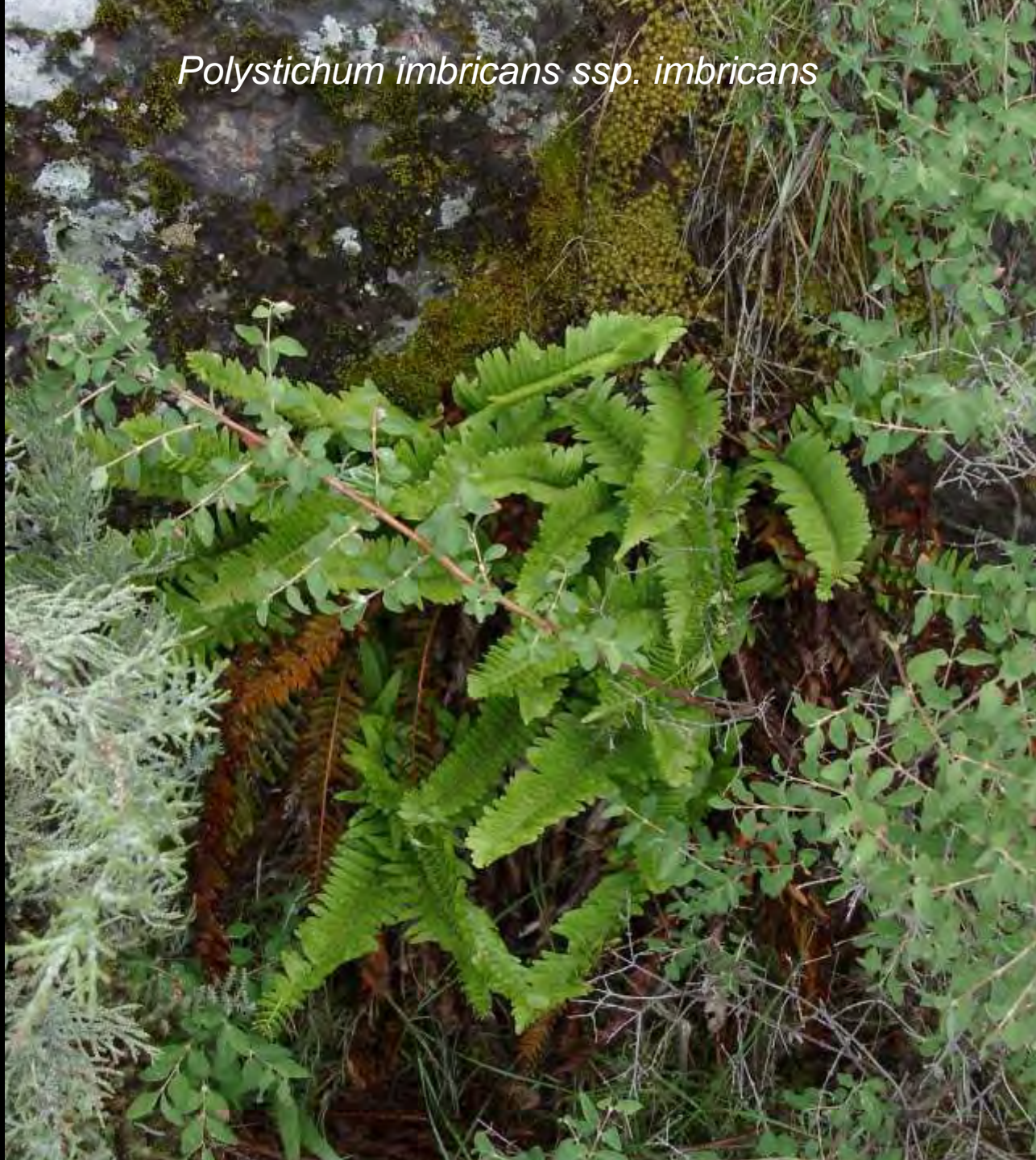


*Clarkia lasseensis*

A cluster of bright yellow flowers with multiple petals and dark centers, growing from a rocky, sandy soil. A monarch butterfly with orange and black wings is perched on the top of the flower cluster. The background is a mix of small rocks and dry, brownish soil.

*Senecio canus*

*Polystichum imbricans* ssp. *imbricans*



# What about the lava tubes?

*Polystichum munitum*

- The unique microclimate of the lava tubes provides refuge for ferns, non-vascular plants, and pika.





*Dryopteris arguta*



*Pentagramma triangularis* ssp. *triangularis*

