



United States Department of Agriculture

A 7.5-mile interpretive drive

# TJ Howell botanical DRIVE



for the greatest good

rogue river-siskiyou  
NATIONAL FOREST

## TJ Howell Botanical Drive

Named for Thomas Jefferson Howell, an early botanical explorer of Oregon, this drive has been designed to share some of the natural wonders of the Siskiyou Mountains.

- Learn about plants and explore habitats influenced by serpentine geology.
- Visit the Wild and Scenic Illinois River.
- See some of the effects of the 2002 Biscuit Fire.

Approximately 7.5 miles of the Eight Dollar Road is designated as The TJ Howell Botanical Drive. The drive passes predominately through the Josephine Ophiolite, a large chunk of upper mantle and oceanic crust that has been shoved up above sea level, exposing ultramafic serpentine and its parent rock, peridotite. Part of the Klamath-Siskiyou Mountains, this location is one of the largest serpentine areas in North America.

Only plant species that can tolerate extreme conditions grow here. Thin soils, heavy metals (magnesium, nickel, chromium, iron), and nutrient stress (low amounts of calcium and nitrogen) make these serpentine soils inhospitable to most plants. Many unusual, rare, or endemic species have evolved under these conditions, while other plants have special adaptations for survival, or exist in stunted form.

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### Learn more about the Klamath-Siskiyou Serpentes:

Visit the US Forest Service *Celebrating Wildflowers* site:  
[www.fs.fed.us/wildflowers/beauty/serpentes/index.shtml](http://www.fs.fed.us/wildflowers/beauty/serpentes/index.shtml)

For more information about the area, please contact the Rogue River-Siskiyou National Forest, Wild Rivers Ranger District in Cave Junction (541) 592-4000. An Eight Dollar Mountain plant list is available at this Ranger District or at:

[www.fs.usda.gov/Internet/FSE\\_DOCUMENTS/stelprd3830827.pdf](http://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprd3830827.pdf)



## Who was TJ Howell?



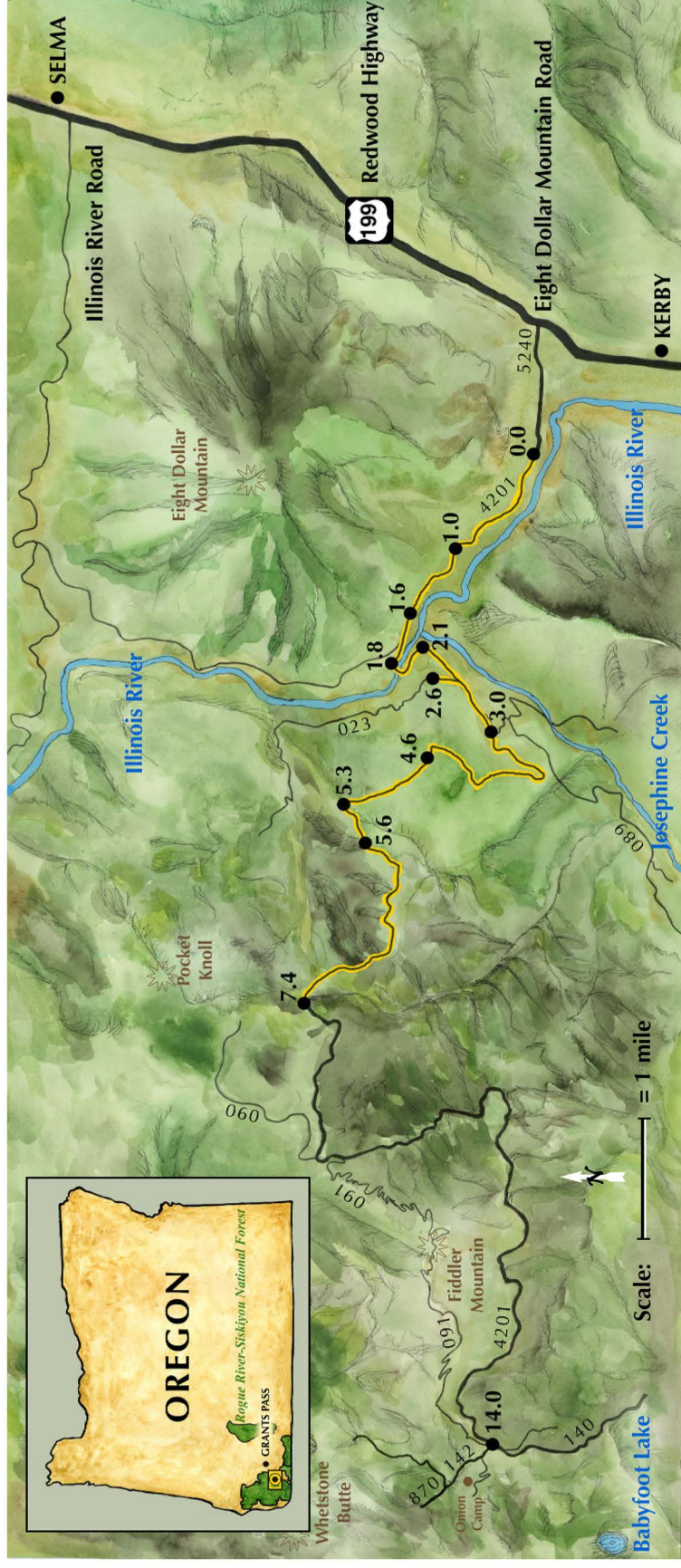
Thomas Jefferson Howell (1842-1912) was Oregon's earliest pioneer botanist and created the first species guidebook to regional flora for the Pacific Northwest. Howell was very determined, botanizing extensively despite being poor and only semi-literate.



*A Flora of Northwest America* was self-published in seven fascicles (1897-1903) and consisted of 3,150 species, 89 of which were newly described by Howell. He collected over 500 specimens from Josephine County, including 46 type specimens! A type specimen is a pressed herbarium specimen upon which the original plant description is based - important in the science of plant taxonomy. Howell also collected tens of thousands of plant specimens from Washington and Oregon and donated approximately 10,000 specimens to the University of Oregon.

*Thos. Howell*

## Location Map





## Suggestions for your visit:

### Half-hour visit:

- Eight Dollar Mountain Botanical Wayside

### One-hour visit:

- Eight Dollar Mountain Botanical Wayside and Interpretive Signs at Eight Dollar Bridge

### Two-hour visit:

One-hour visit plus one of the following:

- Little Falls Trail Hike
- The TJ Howell Botanical Drive (no hikes)

### Four-hour visit or repeat visit:

Two-hour visit plus one of the following:

- Jeffrey Pine Loop Hike
- Little Falls Trail Hike
- Contact Trail Hike

## The TJ Howell Botanical Drive

### 0.0 The TJ Howell Botanical Drive Welcome Sign.

Park in the large lot on the left-hand side of the road. The welcome sign features an overview of the drive and a map. Copies of this brochure are also available.



**The Eight Dollar Mountain Botanical Wayside.** The boardwalk trail is a short distance up the paved road on the right. May is a good month to see wild azaleas in bloom.



*A few handicap parking sites are available past the gate and up the paved road approximately 500 ft. This area can also be used for drop-off and pick-up, if needed.*



View and learn about the insectivorous California pitcher plant, *Darlingtonia californica*, its wet serpentine habitat, and the drier surrounding slopes. Factors that make the Klamath-Siskiyou Mountains so unique are described.

Back at the parking area, the 1-mile Jeffrey Pine Loop Trail traverses downslope to near the Illinois River, and also connects to Little Falls Trail.



**1.0 Little Falls Trail.** Adjacent to the three-site campground, the trailhead marked "Illinois River" is the start of a wonderful one-mile loop. This hike, through serpentine habitats, passes along a historic mining ditch, near a fen and Port Orford cedar, and parallels the Illinois River.

Look for wildflowers blooming in early spring. Little Falls can be a good place to view migrating salmon in the fall.



**1.5 Josephine Creek.** Use the pull-out on the left to enjoy the view of Josephine Creek converging with the Illinois River. Walking west for about 75 yards provides the best view. The first gold claim in Oregon was made in 1851 on this creek by Lloyd Rollins. Both the creek and the county were later named for his daughter.





**1.8 Interpretive Signs** at Eight Dollar Bridge provide information about the Illinois River, Eight Dollar Mountain and Days Gulch

Botanical Areas, and identify a few of the early botanists that explored the Siskiyou Mountains.

**2.1 Josephine Camp.** In spring, interesting plant species, including Howell's saxifrage (*Saxifraga howellii*), grow on the right road bank preceding the camp. For plant enthusiasts wanting a closer look, park at Josephine Camp and walk back. Be careful to watch for traffic.



**2.5 Parking for Days Gulch Botanical Area.** Turn right on FS Rd. #023 and go 0.1 mile to the parking area.

**2.6 Days Gulch Botanical Area.** For a short stroll to see what is blooming, duck under the fence that was constructed to keep this area off-limits to vehicular traffic.

Discover and explore! Wander by foot in the meadow or walk along the vehicle tracks to the left (south) that follow the edge of the savannah ecotone.



The Howell's mariposa lily that grows here was first collected by TJ Howell in 1884 at nearby Waldo, a historic mining town just southeast of Cave Junction.

Days Gulch Botanical Area is the location of a long-term study

of the Howell's mariposa lily.

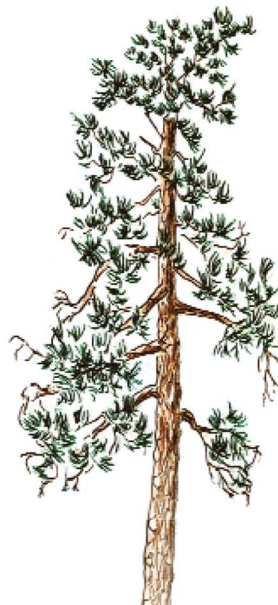
Population characteristics were first studied from 1983-1991, (Fredericks, Oregon State University) and twenty years later, predictions are being reviewed (Meinke, Oregon Department of Agriculture).

Monitoring trends suggest the population remains stable, although concerns remain over potential mining and off-road vehicle damage.



**2.7 Return to Main Road - #4201.**

Days Gulch Botanical Area continues behind fencing constructed by crews from The Job Council and Josephine County Corrections. The fence has been effective in protecting this habitat.



Various fires have burned in this area, beginning at this point on the drive. On the left, a small wildfire burned in 2008 but was quickly extinguished. Remains of dead manzanita are visible near the road.

Two prescribed burns were conducted at Days Gulch Botanical Area in the 1990s. Fire scars remain on the Jeffrey pine trees.



**3.0 Pass FS Rd. #029** and begin a steeper climb up the mountain. Look for the first signs of the Biscuit Fire, which occurred in 2002.



**4.6 Viewpoint of Days Gulch Botanical Area** and the Illinois River. Before fences were constructed, vehicles going off the road damaged the fragile meadow in the distance. These tire tracks are still visible.

**5.3 Vista of Eight Dollar Mountain** and Eight Dollar Bridge crossing the Illinois River.



**5.6 Viewpoint: Mike's Gulch Geologic Contact Zone.**



Park by the Howell mile marker and walk back past the rock pile to the opening in the trees for this view across the drainage. The naturally open area down-slope is serpentine. The upper forested slope is Galice meta-sedimentary soil and, although thinned by the Biscuit Fire, the deeper soils grow Douglas fir, sugar pine, tanoak, and Pacific madrone abundantly.



White bleeding heart (*Dicentra formosa* spp. *oregana*) found along mile 6.



**7.4 Picnic site and end of the TJ Howell Botanical Drive.** Landing and open area for turning around.

**View of Eight Dollar Mountain** and the effects of the Biscuit Fire. One of Oregon's largest wildfires in recorded history, at 499,965 acres, the Biscuit Fire



began as several small fires in July 2002 after a widespread lightning event. It burned for 120 days.

Most of the fire effects seen from The TJ Howell Botanical Drive are a combination of both the wildfire and effects from fire deliberately set to slow the Biscuit Fire which was rapidly burning up and over Fiddler Mountain to the west and north. Throughout the Biscuit burn area, 44% of the area burned very hot, with more than 75% of the vegetation killed.



Noxious and non-native plant species are potential concerns throughout disturbed areas. This site was infested with diffuse knapweed before the Biscuit Fire and there was concern over increased spread after the burn. Repeated pulling efforts and monitoring has resulted in a reduction from about 3,000 plants to fewer than 25 plants each year since 2005.

The **Contact Trail** is 1.8 miles round trip and passes through the two geologic zones seen from afar at mile 5.6. The trail follows the edge of an older clearcut harvest unit, then passes within a mixed conifer hardwood forest and provides a contrast with the end of the trail - open rocky serpentine substrate with nice landscape views. This trail is "more difficult" and sporadically maintained.



## TJ Howell driving directions

From Hwy. 199 turn west onto Eight Dollar Road and travel for one mile. Set your odometer to zero at the parking area. All mileage is listed from this point. Drive carefully; the road is narrow, and gravel portions are rough and washboarded. Beware of falling tree limbs on windy days; keep an eye out for rattlesnakes and poison oak.

## Potential extensions

**These extensions require considerably more time and preparedness. Roads may not be snow-free until June.**

Drive to the end of FS Rd. #4201 for grand vistas of the Kalmiopsis Wilderness and view some of the hottest areas burned within the Biscuit Wildfire of 2002.

**14.0 Jct. #140 - Babyfoot Lake Trailhead.** Travel straight on FS Rd. #140 for 0.7 mile. The 1.5-mile trail leads to a small glacial cirque lake within the Kalmiopsis Wilderness and the Babyfoot Lake Botanical Area.



**Brewer's spruce:** a few remaining spruce are within access of Rd. #140. Drive or walk 0.25 mile past Babyfoot Lake Trailhead and look for the tree with drooping branches and prickly needles. More than 120 feet tall, one spruce was designated the TJ

Howell Tree by Oregon's Heritage Tree Program in 2015.

**14.0 Jct. #142 - Kalmiopsis Rim Trailhead.** Turn right on FS Rd. #142, and stay left onto FS Rd. #870, for 0.5 mile. Two trailheads for hiking:

- Onion Camp Trail (0.3 mile).
- Whetstone Butte (1 mile) and Chetco Pass (4 miles).

**Reference:** *Thomas Jefferson Howell and the First Pacific Northwest Flora*, Robert Ornduff, Kalmiopsis Journal of the Native Plant Society of Oregon, Volume 15, 2008. Historic Howell photo courtesy of Hunt Institute for Botanical Documentation, Carnegie Mellon University, Pittsburgh, PA.

**Photos:** Lee Webb, Norman Jensen, and Paula Golightly. **Artwork:** Mary Paetzel, Nancy Wylie, and Lisa Wolf. **Illustrations:** *Threatened & Endangered Vascular Plants of Oregon* 1982.

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