Species: *Howellanthus dalesianus* (Constance) Walden & R. Patt.,
Scott Mountain howellanthus

**Photo Credits:** Left, bottom middle, and top right: John Doyen; top middle: Steve Matson; bottom right: Julie Kierstead (CalPhotos 2021).

**Status**

Table 1 summarizes the current status of this species or subspecies/variety by various ranking entities and defines the meaning of the status.

<table>
<thead>
<tr>
<th>Entity</th>
<th>Status</th>
<th>Status Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>NatureServe CA&lt;sup&gt;a&lt;/sup&gt;</td>
<td>G3</td>
<td>G3: Vulnerable — At moderate risk of extinction or elimination due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors.</td>
</tr>
<tr>
<td></td>
<td>S3</td>
<td>S3: Vulnerable — Vulnerable in the state due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation.</td>
</tr>
<tr>
<td>California Rare Plant</td>
<td>4.3</td>
<td>4: Plants of limited distribution. 0.3: Not very threatened in California.</td>
</tr>
<tr>
<td>Rank&lt;sup&gt;b&lt;/sup&gt;</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

<sup>a</sup> California Native Plant Society, <sup>b</sup> California Rare Plant Committee.
Species Account: *Howellanthus dalesianus*

This taxon was added to the *CNPS Inventory of Rare and Endangered Plants of California* in 1974 (as *Phacelia dalesiana*). It was changed to rank 4.3 in 2001.

<table>
<thead>
<tr>
<th>California State Listing&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Not listed</th>
</tr>
</thead>
<tbody>
<tr>
<td>USDA Forest Service&lt;sup&gt;d&lt;/sup&gt;</td>
<td>Not listed</td>
</tr>
<tr>
<td>USDI FWS&lt;sup&gt;c&lt;/sup&gt;</td>
<td>Not listed</td>
</tr>
<tr>
<td>USDI BLM&lt;sup&gt;f&lt;/sup&gt;</td>
<td>Not listed</td>
</tr>
<tr>
<td>NatureServe OR&lt;sup&gt;g&lt;/sup&gt;</td>
<td>Not present</td>
</tr>
<tr>
<td>Oregon State Listing&lt;sup&gt;h&lt;/sup&gt;</td>
<td>Not present</td>
</tr>
<tr>
<td>NatureServe NV&lt;sup&gt;i&lt;/sup&gt;</td>
<td>Not present</td>
</tr>
<tr>
<td>Nevada State Listing&lt;sup&gt;j&lt;/sup&gt;</td>
<td>Not present</td>
</tr>
</tbody>
</table>

<sup>a</sup> California Natural Diversity Database, California Dept. of Fish & Wildlife [CNDDB 2021, 2021a]

<sup>b</sup> California Native Plant Society [CNPS 2021]

<sup>c</sup> California Department of Fish and Wildlife [CDFW 2021]

<sup>d</sup> US Forest Service Region 5 Forester’s List [USFS 2013] and Pacific NW Survey and Manage [USFS & BLM 2014]

<sup>e</sup> US Department of Interior Fish and Wildlife Service [USFWS 2021]

<sup>f</sup> US Department of Interior Bureau of Land Management [BLM 2020]

<sup>g</sup> Oregon Biodiversity Information Center [ORBIC 2019]

<sup>h</sup> Oregon Department of Agriculture [ODA 2018]

<sup>i</sup> Nevada Natural Heritage Program [NNHP 2021]

<sup>j</sup> Nevada Division of Forestry [NDF 2012]

Note: Individual State Heritage Programs (CNDDB, ORBIC, NNHP) represent NatureServe and contain more up-to-date ranks for their state than NatureServe Explorer.

### Distribution, abundance, and population trend on the planning unit<sup>1</sup>

Table 2 summarizes the distribution and frequency of this species or subspecies/variety within National Forest System Lands in California. Table 4 in Appendix 1 lists all known occurrences of this species or subspecies/variety within California. Individual occurrences are defined as sites that contain an individual, population, or groups of populations of the plant that are located more than 1/4 (0.25) of a mile apart from each other as defined by the CNDDB.

<table>
<thead>
<tr>
<th>National Forest System (NFS) lands in California</th>
<th>Record #s (from Table 4)</th>
<th>CNDDB EOs</th>
<th>Non-CNDDBB Records</th>
<th>Recent (seen in past 20 years)</th>
<th>Historical (not seen in past 20 years)</th>
<th>Most Recent Obs. Date</th>
<th>Total Records on NFS lands</th>
</tr>
</thead>
<tbody>
<tr>
<td>Klamath:</td>
<td>10, 11, (15), 34, 48, 49</td>
<td>3 (1)</td>
<td>2</td>
<td>4</td>
<td>1 (1)</td>
<td>23-Jun-2020</td>
<td>5</td>
</tr>
</tbody>
</table>

---

<sup>1</sup> 1909.12 Chapter 10, Section 12.53, components 2, 3, and 4.
Table 2. Known occurrence frequency of Scott Mountain howellanthus within the planning area (NRIS, CNDDDB, Calflora/CCH databases).

<table>
<thead>
<tr>
<th>National Forest System (NFS) lands in California</th>
<th>Record #s (from Table 4)</th>
<th>CNDDB EOs</th>
<th>Non-CNDDB Records</th>
<th>Recent (seen in past 20 years)</th>
<th>Historical (not seen in past 20 years)</th>
<th>Most Recent Obs. Date</th>
<th>Total Records on NFS lands</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shasta-Trinity:</td>
<td>1, 2, 3, 4, 5, 6, 7, 8, 9, (10, 11), 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 28, 29, 30, 31, 32, 33, (34), 35, 36, 37, 38, 40, 41, 42, 43, 44, 45, 46, 47, (49), 50, 51</td>
<td>41 (3)</td>
<td>3 (1)</td>
<td>5 (3)</td>
<td>39 (1)</td>
<td>21-Jul-2019</td>
<td>44</td>
</tr>
<tr>
<td>Totals:</td>
<td>N/A</td>
<td>44</td>
<td>5</td>
<td>9</td>
<td>40</td>
<td>N/A</td>
<td>49</td>
</tr>
</tbody>
</table>
Scott Mountain howellanthus was last updated in the CNDDB on 18 September 2007 (CNDDB 2021), and therefore all Calflora, CCH, and/or NRIS records prior to this date are assumed to have already been reviewed and entered into the CNDDB for this plant. Accordingly, only records from Calflora, CCH, and/or NRIS reported after this date have been reviewed for potential new or updated occurrence information and are included in Table 4 in Appendix 1 as applicable.

Scott Mountain howellanthus is endemic to the Trinity Mountains in the Klamath Ranges (KR) bioregion of Trinity, Shasta, and Siskiyou counties, California, and has been found in 50 locations (Calflora 2021, CCH2 2021, CNDDB 2021, CNPS 2021, JEPS 2021, NRIS 2021). Thirty-four of these locations are wholly managed by the Shasta-Trinity National Forest. The Shasta-Trinity National Forest shares management of five other locations with the Klamath National Forest, and an additional eight records with private land owners. The three remaining records are wholly on private land. Five records occur within the Trinity Alps Wilderness. Eight records have been visited within the last 20 years, and 42 are historical (not visited in > 20 years) (Calflora 2021, CCH2 2021, CNDDB 2021, NRIS 2021).

Forty-three records have some quantitative measure of population size. These estimates range between two and >200,000 individuals, with 15 locations having 1,000 or more individuals recorded in a visit. Nine records have been censused more than once, suggesting that Scott Mountain howellanthus can persist over time, but only five records have been censused within the last 20 years. Given the lack of recent data, population trends for this species are currently unknown (Calflora 2021, CCH2 2021, CNDDB 2021, NRIS 2021).

One additional record from the Grasshopper Ridge quad (Siskiyou County) was not evaluated in this account and is included in pink at the end of Table 4. This record is a misidentified specimen of *Hesperochiron californicus*, which is easily confused with Scott Mountain howellanthus (Walden and Patterson 2010, Whipple pers. comm. 2021).

**Brief description of natural history and key ecological functions**

Scott Mountain howellanthus is a densely hairy, perennial herb 5–15 cm tall from a basal rosette of entire leaves. The inflorescence is slightly scorioid and consists of one to a few white to lavender, five-petalled flowers with purple markings in the throat. The flowering period is May – July (– August). The fruit is a 2–4-seeded capsule (Constance 1952, Ferguson 1999, Walden and Patterson 2010, CNPS 2021, JEPS 2021).

Scott Mountain howellanthus is usually found in flat, dry meadow edges and openings within mixed coniferous forest at 1025–2105 m elevation (Walden and Patterson 2010, Calflora 2021, CCH2 2021, CNDDB 2021, CNPS 2021, NRIS 2021). It is sometimes also found near *Darlingtonia* meadows, streamsides, and other seasonally moist areas, and appears to have the greatest persistence within a mosaic of disturbed and undisturbed patches (Walden and Patterson 2010, Calflora 2021, CCH2 2021, CNDDB 2021, Kierstead pers. comm. 2021, Lindstrand pers.)

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2 Basis for other 1909.12 Chapter 10, Section 12.53 components.
Species Account: *Howellanthus dalesianus*

2021-10-8


*Howellanthus* is a monospecific genus within the family Hydrophyllaceae, (Walden and Patterson 2010, JEPS 2021, Kierstead pers. comm. 2021). It was previously placed as a subgenus of *Phacelia* (Constance 1952) but was later split into its own genus (Gilbert et al. 2005, Walden and Patterson 2010, Vasile et al. 2020). Bumblebees and other insects have been observed visiting Scott Mountain howellanthus, and its showy flowers and open habitat suggest it is probably insect-pollinated (Lindstrand pers. comm. 2021, Sims pers. comm. 2021). Many species within the Hydrophyllaceae family have complex seed dormancy mechanisms, which help maintain a seedbank in the soil (Gamboa-deBuen and Orozco-Segovia 2008). Some species of Hydrophyllaceae (including species from the closely related *Phacelia*) are fire-recruiters—that is, they require smoke, charred wood or heat to break dormancy, and usually grow and flower in the spring after a fire (Gamboa-deBuen and Orozco-Segovia 2008). There is little information on seed dispersal in Scott Mountain howellanthus, but ground disturbance appears to create good habitat for seedling recruitment (Kierstead pers. comm. 2021, Lindstrand pers. comm. 2021, Whipple pers. comm. 2021). A randomized study was conducted from 1991-1994 by Shasta-Trinity NF, Sierra Pacific Industries, and the Forest Service Pacific Southwest Research Station, of plots of howellanthus in several different locations, where some plots were intentionally burned, some were grubbed down to mineral soil, and some were left undisturbed. Two years after treatment, no statistical difference was found in plant size, number, flowering, and fruiting between treated and untreated plots. This study suggests that Scott mountain howellanthus recovers quickly from both soil and fire disturbance (Kierstead pers. comm. 2021).

**Overview of ecological conditions for recovery, conservation, and viability**

Habitat quality has been noted for 29 records of Scott Mountain howellanthus. Of these, four records had “fair” habitat quality, 23 records were “good,” and two records were “excellent.” An additional record described habitat quality as “poor” (CNDDDB 2021). Record # 11 was visited in 2021 to collect seeds for *ex situ* seedbanking. Though the population bloomed extensively, only a few fruits were found. It’s possible that seed production was affected by predation, heat and drought, or some other factor (Sims pers. comm. 2021). Scott Mountain howellanthus is one of several rare plants targeted for *ex situ* seed conservation, so further study on seed dormancy and dispersal is warranted.

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3 1909.12 Chapter 10, Section 12.53, components 7, 9, 10, 11 and 12, as appropriate.
Species Account: *Howellanthus dalesianus*

2021-10-8

Germination for this species would be useful (Sims per. comm. 2021). Logging, grazing, road maintenance and construction, recreational activities (including ATV use) and shading or canopy encroachment are the main threats to this species (Calflora 2021, CCH2 2021, CNDDB 2021, CNPS 2021, NRIS 2021). While these disturbances may present some short-term threat at a local scale, this species also appears to benefit from a patchwork of disturbance and prefers open areas. The overall threat from disturbance could therefore be low (Lindstrand pers. comm. 2021). Eight records for this species were burned in the Delta Fire in 2018 (Calflora 2021, CDC 2021, CCH2 2021, CNDDB 2021, FRAP 2021), but this species is likely to be resilient to fire (Kierstead pers. comm. 2021).

Climate change could potentially disrupt plant-pollinator relationships for many flowering plant species. Variations in temperature and short blooming periods could limit pollination activity, particularly if a plant has specific pollinator relationships (Kannely and Schlising 2014). Changes in either plant or pollinator phenology could disrupt plant-pollinator relationships. Changes in co-flowering species could also disrupt plant-pollinator relationships, potentially affecting long-term reproductive success and survival of insect-pollinated wildflowers (Alexander et al. 2015, Theobald et al. 2017). Changes in average temperature and rainfall could also have effects on the survival of Scott Mountain howellanthus. Research suggests that serpentine-adapted species may be more tolerant of drought than non-serpentine species due to the functional traits needed to survive in serpentine soils; however, lower tree canopy cover in serpentine habitats means temperature increases are more pronounced in these areas (Damschen et al. 2012, Harrison et al. 2015). Serpentine endemic species may also be less able to migrate to suitable habitats with climate change due to the patchy distribution of serpentine substrates (Damschen et al. 2012, Harrison et al. 2015). A plant’s ability to migrate due to climate change could also be restricted by biotic interactions or dispersal ability (Ettinger and HilleRisLambers 2013).

**Taxonomy**

Table 3 summarizes this species or subspecies/variety’s name status in key literature.

<table>
<thead>
<tr>
<th>Entity</th>
<th>Name Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>CNDDB and CNPS</td>
<td><em>Howellanthus dalesianus</em> (Constance) Walden &amp; R. Patt.</td>
</tr>
<tr>
<td>Flora of North America</td>
<td>Not yet treated</td>
</tr>
<tr>
<td>USDA NRCS(^a) PLANTS</td>
<td><em>Howellanthus dalesianus</em> (J.T. Howell) Walden &amp; R. Patt.</td>
</tr>
</tbody>
</table>

\(^a\) Natural Resources Conservation Service [NRCS 2021]

*Synonymy:* *Phacelia dalesiana* J.T. Howell (Tropicos 2021).


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\(^4\) 1909.12, Chapter 10, Section 12.53, component 1.

Key literature


Literature cited


Species Account: *Howellanthus dalesianus*


[NDF] Nevada Division of Forestry. 2012. NAC 527.010 List of fully protected species of native flora. April 2012. Available at: https://www.leg.state.nv.us/NAC/NAC-527.html#NAC527Sec010 [accessed February 2021].


Species Account: *Howellanthus dalesianus*


**Persons Contacted**


**Author(s) and Date:**

Molly S. Wiebush, California Native Plant Society, Rare Plant Botanist Coordinator, 26 August 2021; revised 8 October 2021.

**Reviewer(s) and Date:**

Aaron E. Sims, California Native Plant Society, Rare Plant Program Director, 28 September 2021; Julie Ann Kierstead, USDA Forest Service Region 5, Ecosystem Planning, 8 October 2021.
**Formatting:** Form is set up as 508 compliant. Please use the “styles” if further formatting is necessary.

**Purpose:** This is to maintain the best available science on a species that could be used by the Forest Service in a variety of functions. Specifically, there would be additional steps and evaluations to determine whether or not this species would be considered a Species of Conservation Concern under the 2012 Planning Rule or a Sensitive Species under the 1982 Planning Rule.
## Appendix 1: Known Occurrences

Table 4. Known occurrences of Scott Mountain howellanthus within California (NRIS, CNDDB, Calflora/CCH databases).

<table>
<thead>
<tr>
<th>Rec. #</th>
<th>Locality</th>
<th>County</th>
<th>Quad</th>
<th>Ref. (Source)</th>
<th>Date Last Obs’d</th>
<th>Population Info</th>
<th>Threats</th>
<th>Land Mgr.</th>
<th>Elev. (ft.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.8 AIR MILE ESE OF BLACK ROCK ALONG ROAD BETWEEN SCOTT MOUNTAIN &amp; MOSQUITO LAKE.</td>
<td>Trinity</td>
<td>Tangle Blue Lake (4112226)</td>
<td>CNDDB, Jan. 2021 (EO 1)</td>
<td>19-Jun-1987</td>
<td>50-100 PLANTS OBSERVED IN 1977. USFS POPULATIONS #14-10 (683-1).</td>
<td>CATTLE TRAMPLING.</td>
<td>Shasta-Trinity NF, Private</td>
<td>6600</td>
</tr>
<tr>
<td>1</td>
<td>Trinity</td>
<td>Tangle Blue Lake (4112226)</td>
<td>(PHDA05 140010)</td>
<td>26-Jun-1994</td>
<td></td>
<td></td>
<td></td>
<td>Shasta-Trinity NF, Private</td>
<td></td>
</tr>
</tbody>
</table>
Species Account: *Howellanthus dalesianus*

Duplicate records from the same site are given the same record number and are included in red. Rows containing questionable records are highlighted in red.

<table>
<thead>
<tr>
<th>Rec. #</th>
<th>Locality</th>
<th>County</th>
<th>Quad</th>
<th>Ref. (Source)</th>
<th>Date Last Obs’d</th>
<th>Population Info</th>
<th>Threats</th>
<th>Land Mgr.</th>
<th>Elev. (ft.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>NORTH &amp; SOUTH OF GUMBOOT LAKE, NORTH OF MUMBO BASIN.</td>
<td>Siskiyou</td>
<td>Mumbo Basin (4112225)</td>
<td>CNDDB, Jan. 2021 (EO 3)</td>
<td>27-Jun-1985</td>
<td>TWO SMALL COLONIES IN 1983; 20 OVER AN AREA OF 1 ACRE AND ABOUT 100 OVER AN AREA OF 100 SQ. METERS. 1985 SURVEY EXPANDED KNOWN POPULATION SIGNIFICANTLY. USFS POPULATION #14-21A, 14-21B. INCLUDES FORMER OCCURRENCE #8.</td>
<td>Shasta-Trinity NF</td>
<td>5680</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>BEAR RIDGE &amp; HUMMINGBIRD LAKE SADDLES, NORTHEAST OF PICAYUNE LAKE.</td>
<td>Trinity</td>
<td>Mumbo Basin (4112225)</td>
<td>CNDDB, Jan. 2021 (EO 4)</td>
<td>18-Jul-1983</td>
<td>MORE THAN 100 PLANTS SEEN IN TWO POPULATIONS IN 1983. USFS POPULATION 14-23. PORTIONS OF SECTION 23 LOGGED IN 1970S; PLANTS ONLY SURVIVE IN ADJACENT UNDISTURBED AREAS.</td>
<td>Shasta-Trinity NF, Private</td>
<td>6800</td>
<td></td>
</tr>
</tbody>
</table>
Duplicate records from the same site are given the same record number and are included in red. Rows containing questionable records are highlighted in red.

<table>
<thead>
<tr>
<th>Rec. #</th>
<th>Locality</th>
<th>County</th>
<th>Quad</th>
<th>Ref. (Source)</th>
<th>Date Last Obs'd</th>
<th>Population Info</th>
<th>Threats</th>
<th>Land Mgr.</th>
<th>Elev. (ft.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>COWHEAD SADDLE, UPPER PICAYUNE MEADOW EDGE.</td>
<td>Trinity</td>
<td>Mumbo Basin (4112225)</td>
<td>CNDDDB, Jan. 2021 (EO 5)</td>
<td>18-Jul-1983</td>
<td>ABOUT 100 PLANTS OBSERVED IN 1983. USFS POPULATION 14-25. SOME PLANTS SURVIVE IN AREAS UNATTRACTIVE TO CATTLE, OUT OF MAIN PATH OF CATTLE DRIVE. NO PLANTS IN ERODED AREA. POPULATION UNUSUAL BECAUSE MOST OF IT IS ON SLOPING GROUND.</td>
<td>CATTLE DRIVES, GRAZING, AND RESULTING SHEET EROSION.</td>
<td>Shasta-Trinity NF</td>
<td>6500</td>
</tr>
<tr>
<td>6</td>
<td>FRED WILLIAMS JEEP TRAIL FROM USFS ROAD 39N26 SOUTH ABOUT 0.5 MILE; ABOUT 1.4 AIR MI WEST OF SPIKE BUCK GULCH.</td>
<td>Trinity</td>
<td>Mumbo Basin (4112225)</td>
<td>CNDDDB, Jan. 2021 (EO 6)</td>
<td>4-Aug-1983</td>
<td>300-500 PLANTS SEEN IN 1983. USFS POPULATION 14-26 (A,B,C).</td>
<td>LOGGING.</td>
<td>Shasta-Trinity NF</td>
<td>5725</td>
</tr>
<tr>
<td>7</td>
<td>FROM INTERSECTION OF FRED WILLIAMS JEEP TRAIL AND USFS ROAD 39N26 NORTH TO HEAD OF GRAVES CREEK.</td>
<td>Trinity</td>
<td>Mumbo Basin (4112225)</td>
<td>CNDDDB, Jan. 2021 (EO 7)</td>
<td>12-Aug-1983</td>
<td>50-100 PLANTS OBSERVED IN COLONY AT INTERSECTION IN 1983. MAP DETAIL AND ECOLOGICAL INFORMATION LACKING FOR THE THREE NORTHERN COLONIES WHICH ARE IN SADDLES. USFS POPULATION 14-29.</td>
<td>ROAD MAINTENANCE COULD THREATEN IF BLADING CUTS DEEPLY.</td>
<td>Shasta-Trinity NF, Unknown</td>
<td>5450</td>
</tr>
</tbody>
</table>
## Species Account: *Howellanthus dalesianus*

Duplicate records from the same site are given the same record number and are included in red. Rows containing questionable records are highlighted in red.

<table>
<thead>
<tr>
<th>Rec. #</th>
<th>Locality</th>
<th>County</th>
<th>Quad</th>
<th>Ref. (Source)</th>
<th>Date Last Obs'd</th>
<th>Population Info</th>
<th>Threats</th>
<th>Land Mgr.</th>
<th>Elev. (ft.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>MUMBO BASIN SOUTH TO WEST BRANCH CROW CREEK, TRINITY MOUNTAINS.</td>
<td>Trinity</td>
<td>Mumbo Basin (4112225)</td>
<td>CNDDDB, Jan. 2021 (EO 9)</td>
<td>22-Jun-1986</td>
<td>MORE THAN 200,000 PLANTS OBSERVED OVER 300 ACRES IN 1986. USFS POPULATIONS 14-18, 14-38 AND 14-39.</td>
<td>LOGGING, ASSOCIATED ACTIVITIES, AND HEAVY GRAZING HAVE IMPACTED POPULATION. BRUSH ENCROACHMENT ALSO THREATENS.</td>
<td>Shasta-Trinity NF, Unknown</td>
<td>6200</td>
</tr>
<tr>
<td>10</td>
<td>SCOTT MTN CAMPGROUND AT SCOTT MTN SUMMIT ON HWY 3, BOTH SIDES OF HWY.</td>
<td>Siskiyou</td>
<td>Scott Mountain (4112236)</td>
<td>CNDDDB, Jan. 2021 (EO 11)</td>
<td>11-Jun-1986</td>
<td>TYPE LOCALITY.</td>
<td>CAMPGROUN D.</td>
<td>Klamath NF, Shasta-Trinity NF, Private</td>
<td>5300</td>
</tr>
<tr>
<td>10</td>
<td>Pacific Crest Trail, Callahan, CA 96014, USA</td>
<td>Trinity</td>
<td>Scott Mountain (4112236)</td>
<td>Calflora, Jan. 2021 (mu9845)</td>
<td>17-Jul-2011</td>
<td>1+ individuals</td>
<td></td>
<td>Klamath NF, Shasta-Trinity NF</td>
<td>5404</td>
</tr>
<tr>
<td>10</td>
<td></td>
<td>Siskiyou</td>
<td>Scott Mountain (4112236)</td>
<td>(PHDA05 140004)</td>
<td>12-May-1995</td>
<td></td>
<td>Klamath NF, Shasta-Trinity NF</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Howellanthus dalesianus

Duplicate records from the same site are given the same record number and are included in red. Rows containing questionable records are highlighted in red.

<table>
<thead>
<tr>
<th>Rec. #</th>
<th>Locality</th>
<th>County</th>
<th>Quad</th>
<th>Ref. (Source)</th>
<th>Date Last Obs’d</th>
<th>Population Info</th>
<th>Threats</th>
<th>Land Mgr.</th>
<th>Elev. (ft.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td>JUST SOUTH OF ROBBERS MEADOW, ABOUT 0.8 AIR MI SOUTHWEST OF Cory Peak.</td>
<td>Trinity</td>
<td>South China Mtn. (4112235)</td>
<td>CNDDB, Jan. 2021 (EO 13)</td>
<td>1-Jun-1977</td>
<td>400-600 PLANTS SEEN IN 1977. USFS POPULATION 14-2.</td>
<td>GRAZING AND GOPHER PREDATION ARE THE ONLY APPARENT THREATS.</td>
<td>Shasta-Trinity NF</td>
<td>6640</td>
</tr>
<tr>
<td>Rec. #</td>
<td>Locality</td>
<td>County</td>
<td>Quad</td>
<td>Ref. (Source)</td>
<td>Date Last Obs'd</td>
<td>Population Info</td>
<td>Threats</td>
<td>Land Mgr.</td>
<td>Elev. (ft.)</td>
</tr>
<tr>
<td>-------</td>
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<td>---------------</td>
<td>-----------------</td>
<td>--------------------------------------------------------------------------------</td>
<td>----------------------------------------</td>
<td>---------------------------</td>
<td>-------------</td>
</tr>
<tr>
<td>14</td>
<td>RIDGE ABOVE SHERER CREEK, ABOUT 3.2 AIR MI DUE SOUTH OF SLIDE LAKE.</td>
<td>Trinity</td>
<td>South China Mtn. (4112235)</td>
<td>CNDDB, Jan. 2021 (EO 15)</td>
<td>10-Aug-1982</td>
<td>ABOUT 100 PLANTS SEEN OVER 0.5 ACRE IN 1982. USFS POPULATION 14-19.</td>
<td>POSSIBLE ACCESS FOR FUTURE LOGGING.</td>
<td>Shasta-Trinity NF</td>
<td>6200</td>
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<tr>
<td>15</td>
<td>UPPER LITTLE TRINITY MEADOWS.</td>
<td>Trinity</td>
<td>Scott Mountain (4112236)</td>
<td>CNDDB, Jan. 2021 (EO 16)</td>
<td>26-Jul-1982</td>
<td>FEWER THAN 100 PLANTS SEEN. USFS POPULATION 14-24.</td>
<td>TIMBER PLANTING PREPARATION AND HEAVY GRAZING.</td>
<td>Shasta-Trinity NF, Klamath NF</td>
<td>5900</td>
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<tr>
<td>16</td>
<td>MIDDLE FORK PASS, 1.0 MILE SOUTH OF PORCUPINE LAKE ALONG TRAIL NEAR SPRING.</td>
<td>Trinity</td>
<td>South China Mtn. (4112235)</td>
<td>CNDDB, Jan. 2021 (EO 17)</td>
<td>8-Sep-1983</td>
<td>FEWER THAN 100 PLANTS SEEN IN 1983. USFS POPULATION 14-31.</td>
<td>CATTLE GRAZING AND LOGGING.</td>
<td>Shasta-Trinity NF</td>
<td>6900</td>
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<tr>
<td>17</td>
<td>SURROUNDING GENTIAN MEADOWS, 1.0 MILE SOUTHWEST OF PORCUPINE LAKE.</td>
<td>Trinity</td>
<td>South China Mtn. (4112235)</td>
<td>CNDDB, Jan. 2021 (EO 18)</td>
<td>30-Aug-1984</td>
<td>500-1000 PLANTS SEEN IN 1984. USFS POPULATION 14-31A. PLANTS OFTEN FOUND IN OLD ARCHAEOLOGICAL CAMPS AND INFREQUENTLY USED FOOTPATHS. PLANT DOES NOT GROW IN WELL-USED AREAS.</td>
<td>LOGGING.</td>
<td>Shasta-Trinity NF</td>
<td>6600</td>
</tr>
<tr>
<td>18</td>
<td>CEDAR CREEK RIDGE SOUTH OF CEDAR CREEK ABOVE FS ROAD 40N62Y.</td>
<td>Trinity</td>
<td>South China Mtn. (4112235)</td>
<td>CNDDB, Jan. 2021 (EO 19)</td>
<td>12-Jul-1984</td>
<td>POPULATION DECLINING DUE TO LOGGING DISTURBANCE.</td>
<td>POPULATION DECLINING DUE TO LOGGING DISTURBANCE.</td>
<td>Shasta-Trinity NF</td>
<td>6350</td>
</tr>
</tbody>
</table>
## Howellanthus dalesianus

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<table>
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<th>Date Last Obs'd</th>
<th>Population Info</th>
<th>Threats</th>
<th>Land Mgr.</th>
<th>Elev. (ft.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>19</td>
<td>MEARS CREEK BASIN, TAMARACK LAKE, SADDLE EAST OF TAMARACK LAKE.</td>
<td>Shasta</td>
<td>Chicken Hawk Hill</td>
<td>(PHDA05 140016)</td>
<td>18-Jul-1993</td>
<td></td>
<td></td>
<td>Shasta-Trinity NF</td>
<td></td>
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<tr>
<td>20</td>
<td>CHICKEN HAWK SADDLE AND RIDGE, DOWN DRAW TO SP LAND, BELOW SP LOG DECK, NORTHEAST SIDE OF CHICKEN HAWK HILL.</td>
<td>Shasta</td>
<td>Chicken Hawk Hill</td>
<td>CNDDB, Jan. 2021 (EO 21)</td>
<td>3-Jul-1984</td>
<td>400 PLANTS SEEN IN 1984. USFS POPULATION 14-34.</td>
<td>LOGGING IN AREA.</td>
<td>Shasta-Trinity NF</td>
<td>5900</td>
</tr>
</tbody>
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</tr>
</thead>
<tbody>
<tr>
<td>24</td>
<td>1.0 AIR MI NORTHWEST OF RATTLESNAKE HILL AND 0.8 AIR MI SOUTHWEST OF CHICKEN HAWK HILL, SOUTH OF HEAD OF SLATE CREEK.</td>
<td>Shasta</td>
<td>Chicken Hawk Hill (4112214)</td>
<td>CNDDDB, Jan. 2021 (EO 25)</td>
<td>22-Jul-1982</td>
<td>200 PLANTS SEEN IN 1982. USFS POPULATION 14-22.</td>
<td>IN PLANNED CLEARCUT; POPULATION HAS BEEN FLAGGED AND SIGNED FOR PROTECTION.</td>
<td>Shasta-Trinity NF</td>
<td>5400</td>
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</tbody>
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<tbody>
<tr>
<td>26</td>
<td>MUMBO LAKES ROAD ABOUT 0.25 MI WEST OF ASBESTOS GULCH. BOTH SIDES OF ROAD.</td>
<td>Trinity</td>
<td>Seven Lakes Basin (4112224)</td>
<td>CNDDB, Jan. 2021 (EO 27)</td>
<td>1-Jun-1991</td>
<td>100 PLANTS SEEN IN 1982 AND 1991 OVER 1-2 ACRES. USFS POPULATION 14-17.</td>
<td>LOGGING THREATENS.</td>
<td>Private</td>
<td>6000</td>
</tr>
<tr>
<td>27</td>
<td>Trinity Mountains; saddle between Rattlesnake Hill and Chicken Hawk Hill, at summit on Forest Road 38N21, at Sardine Spring</td>
<td>Shasta</td>
<td>Chicken Hawk Hill (4112214)</td>
<td>CCH2, Nov. 2020 (JEPS112 882)</td>
<td>16-Jun-1993</td>
<td></td>
<td></td>
<td>Private</td>
<td>5850</td>
</tr>
<tr>
<td>28</td>
<td>HEAD OF SMITH CREEK DRAINAGE AND AT BAKER HOLLOW.</td>
<td>Trinity</td>
<td>Chicken Hawk Hill (4112214)</td>
<td>CNDDB, Jan. 2021 (EO 29)</td>
<td>2-Sep-1981</td>
<td>TWO POPULATIONS WITH 70 PLANTS TOTAL OBSERVED IN 1981. USFS POPULATIONS 14-7 AND 14-8.</td>
<td>AREA TO BE LOGGED.</td>
<td>Shasta-Trinity NF</td>
<td>6000</td>
</tr>
<tr>
<td>29</td>
<td>NORTH SLOPE OF WHITE RIDGE, 4.0 AIR MILES SOUTH OF MT EDDY SUMMIT.</td>
<td>Siskiyou</td>
<td>Mount Eddy (4112234)</td>
<td>CNDDB, Jan. 2021 (EO 31)</td>
<td>8-Sep-1983</td>
<td>FEWER THAN 1000 PLANTS SEEN. USFS POPULATION 14-30.</td>
<td>CATTLE GRAZING.</td>
<td>Shasta-Trinity NF</td>
<td>6300</td>
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<tbody>
<tr>
<td>30</td>
<td>HILLSIDES ON EDGE OF MEADOWS S &amp; E OF CABIN 0.5 MI E OF TOAD LAKE continuing W to mdws/ridges/slopes around Toad Lk</td>
<td>Siskiyou</td>
<td>Mount Eddy (4112234)</td>
<td>(PHDA05140003)</td>
<td>31-Jul-1993</td>
<td></td>
<td></td>
<td>Shasta-Trinity NF</td>
<td></td>
</tr>
<tr>
<td>32</td>
<td>DEER FLAT, ABOUT 1.5 AIR MILES SOUTHWEST OF YCATAPOM PEAK.</td>
<td>Trinity</td>
<td>Ycatapom Peak (4112217)</td>
<td>CNDDB, Jan. 2021 (EO 34)</td>
<td>4-Jul-1991</td>
<td>10,000 PLANTS OBSERVED IN 1991 OVER 26 ACRES. USFS POPULATION #14-44.</td>
<td>OCCASIONAL LIGHT TRAMPLING BY HIKERS AND PACK STOCK.</td>
<td>Shasta-Trinity NF</td>
<td>6600</td>
</tr>
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Species Account: *Howellanthus dalesianus*

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</thead>
<tbody>
<tr>
<td>34</td>
<td>RIDGE W OF GROUSE CREEK LAKE, SCOTT MOUNTAINS.</td>
<td>Siskiyou</td>
<td>Scott Mountain (4112236)</td>
<td>CNDDB, Jan. 2021 (EO 36)</td>
<td>8-Jun-1986</td>
<td>ABOUT 200 PLANTS.</td>
<td></td>
<td>Klamath NF, Shasta-Trinity NF</td>
<td>6560</td>
</tr>
<tr>
<td>34</td>
<td>Scott Mt - Summit Campground</td>
<td>Siskiyou</td>
<td>Scott Mountain (4112236)</td>
<td>Calflora, Jan. 2021 (jgr6024)</td>
<td>15-Jul-2000</td>
<td>1+ individuals</td>
<td></td>
<td>Klamath NF, Shasta-Trinity NF</td>
<td>6349</td>
</tr>
<tr>
<td>35</td>
<td>TAMARACK CR, S OF BOULDER PEAK, TRINITY MTNS. EXTENDS INTO SECS 7 &amp; 17 AS WELL.</td>
<td>Trinity</td>
<td>Seven Lakes Basin (4112224)</td>
<td>CNDDB, Jan. 2021 (EO 37)</td>
<td>18-Jun-1991</td>
<td>MORE THAN 100,000 PLANTS OBSERVED OVER 200 ACRES IN 1986, 300 PLANTS/ACRE ESTIMATED IN 1991 (APPROX 60,000 PLANTS), USFS POPULATION 14-37(682).</td>
<td>PLANTS OCCUPY A PREVIOUSLY LOGGED SITE; EVENTUAL CANOPY COVER INCREASE MAY RESULT IN POPULATION DECREASE.</td>
<td>Shasta-Trinity NF</td>
<td>5760</td>
</tr>
<tr>
<td>36</td>
<td>NORTH OF GREY ROCKS, SSE OF WHALEN STATION, TRINITY MOUNTAINS.</td>
<td>Trinity</td>
<td>Seven Lakes Basin (4112224)</td>
<td>CNDDB, Jan. 2021 (EO 38)</td>
<td>16-Jun-1986</td>
<td>50 PLANTS SEEN OVER 0.25 ACRE IN 1986.</td>
<td>IMPACTED BY LOGGING.</td>
<td>Shasta-Trinity NF, Southern Pacific Railroad</td>
<td>5600</td>
</tr>
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<th>Land Mgr.</th>
<th>Elev. (ft.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>37</td>
<td>WEST OF PANTHER ROCK, TRINITY MTNS.</td>
<td>Trinity</td>
<td>Seven Lakes Basin</td>
<td>CNDDDB, Jan. 2021 (EO 39)</td>
<td>20-Jun-1986</td>
<td>MORE THAN 100,000 PLANTS SEEN OVER 200 ACRES IN 1986. USFS POPULATIONS 14-35 AND 14-36.</td>
<td>RECOVERING SLOWLY WHERE LOGGED OVER, DECLINING IN SOME AREAS DUE TO ENCROACHMENT BY PINES.</td>
<td>Shasta-Trinity NF, Private</td>
<td>6240</td>
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<tr>
<td>38</td>
<td>TWIN LAKES, NORTH OF CHICKEN HAWK HILL.</td>
<td>Trinity</td>
<td>Chicken Hawk Hill</td>
<td>CNDDDB, Jan. 2021 (EO 40)</td>
<td>1-Jun-1988</td>
<td>THIS SITE IS AN EXTENSION OF USFS POPULATION #14-16.</td>
<td>HEAVY CATTLE GRAZING &amp; TRAMPLING, LOGGING, &amp; BRUSH ENCROACHMENT ARE THREATS.</td>
<td>Shasta-Trinity NF, Unknown</td>
<td>5700</td>
</tr>
</tbody>
</table>
### Species Account: *Howellanthus dalesianus*

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<th>Land Mgr.</th>
<th>Elev. (ft.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>40</td>
<td>ABOUT 0.5 AIR MI ENE OF SCORPION LAKE AT HEAD OF SCORPION CREEK, BONANZA KING.</td>
<td>Trinity</td>
<td>Carrville (4112216)</td>
<td>CNDDB, Jan. 2021 (EO 42)</td>
<td>19-Jul-1991</td>
<td>30,000 PLANTS OBSERVED OVER 12 ACRES IN 1991. USFS POPULATION #14-45.</td>
<td>Shasta-Trinity NF</td>
<td>6500</td>
<td></td>
</tr>
<tr>
<td>42</td>
<td>0.6 AIR MI SOUTH OF PICAYUNE LAKE, NORTH OF MUMBO BASIN.</td>
<td>Trinity</td>
<td>Mumbo Basin (4112225)</td>
<td>CNDDB, Jan. 2021 (EO 44)</td>
<td>29-Jun-1988</td>
<td>200 PLANTS OBSERVED IN 1988. USFS POPULATION # 14-41. INCREASED INTENSITY OF LOGGING &amp; GRAZING IN AREA MAY IMPACT THIS POPULATION.</td>
<td>Shasta-Trinity NF</td>
<td>6400</td>
<td></td>
</tr>
<tr>
<td>42</td>
<td>Pacific Crest Trail, California, USA</td>
<td>Trinity</td>
<td>Mumbo Basin (4112225)</td>
<td>Calflora, Jan. 2021 (mu4623)</td>
<td>25-Jun-2019</td>
<td>51 - 100 individuals</td>
<td>Shasta-Trinity NF</td>
<td>6408</td>
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<tbody>
<tr>
<td>44</td>
<td>RIDGE BETWEEN EAGLE CREEK AND RIPPLE CREEK ON TRAIL TO STODDARD MEADOWS, ABOUT 3 AIR MI SOUTH OF TANGLE BLUE LAKE.</td>
<td>Trinity</td>
<td>Tangle Blue Lake (4112226)</td>
<td>CNDDB, Jan. 2021 (EO 46)</td>
<td>26-Jul-1991</td>
<td>1000-1500 PLANTS OBSERVED OVER 1-1/4 ACRES IN 1991. SITE IS WITHIN THE TRINITY ALPS WILDERNESS AREA.</td>
<td>HIKING TRAIL IS ONLY DISTURBANCE IN THE AREA. TRAIL APPARENTLY PROVIDES SUITABLE HABITAT FOR PHACELIA ESTABLISHMENT.</td>
<td>Shasta-Trinity NF</td>
<td>5500</td>
</tr>
<tr>
<td>45</td>
<td>0.7 AIR MI SOUTHEAST OF BLACK ROCK, NORTH OF TANGLE BLUE LAKE.</td>
<td>Trinity</td>
<td>Tangle Blue Lake (4112226)</td>
<td>CNDDB, Jan. 2021 (EO 47)</td>
<td>9-Jun-1977</td>
<td>80-100 PLANTS OBSERVED IN 1977. THIS POPULATION WAS FORMERLY CONSIDERED PART OF OCCURRENCE #1. SPLIT OUT DUE TO THE DISTANCE (&gt;0.5 MI) BETWEEN THE TWO SITES. USFS POPULATION #14-11 (683-2).</td>
<td></td>
<td>Shasta-Trinity NF</td>
<td>6400</td>
</tr>
<tr>
<td>46</td>
<td>JUST SOUTH OF SHA/TRI COUNTY LINE AND SOUTH OF HIGHLAND LAKES, ABOUT 1.3 MILES SSE OF WHISKEY BILL PEAK.</td>
<td>Shasta</td>
<td>Whisky Bill Peak (4112215)</td>
<td>CNDDB, Jan. 2021 (EO 48)</td>
<td>20-Jul-1977</td>
<td>300-1000 PLANTS OBSERVED IN 1977. THIS SITE HAD ERRONEOUSLY BEEN INCLUDED WITH OCCURRENCE #2 FURTHER TO THE EAST.</td>
<td></td>
<td>Shasta-Trinity NF</td>
<td>5600</td>
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### Howellanthus dalesianus

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<tr>
<td>47</td>
<td>On Trinity-Siskiyou county line at jct of rd from Scott Mtn Summit to Mosquito Lk; extends downslope on E &amp; W sides rg.</td>
<td>Trinity</td>
<td>Tangle Blue Lake (4112226)</td>
<td>(PHDA05 140011)</td>
<td>26-Jun-1994</td>
<td></td>
<td></td>
<td>Shasta-Trinity NF</td>
<td>47</td>
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<tr>
<td>48</td>
<td>Klamath Ranges. Scott Mountains; opening on spur ridge 1.9 km west-southwest of Scott Mountain Summit. T39N R07W S06 SE1/4 of NW 1/4 USGS Quadrangle: Scott Mountain 1:24,000</td>
<td>Siskiyou</td>
<td>Scott Mountain (4112236)</td>
<td>CCH2, Nov. 2020 (CHSC09 6030)</td>
<td>4-Jul-2006</td>
<td></td>
<td></td>
<td>Klamath NF, Shasta-Trinity NF</td>
<td>6030</td>
</tr>
<tr>
<td>50</td>
<td>Scorpion Lake, Trinity Mountains, westerly upper flank Bonanza King</td>
<td>Trinity</td>
<td>Carrville (4112216)</td>
<td>CCH2, Nov. 2020 (JEPS109 623)</td>
<td>13-Jun-2002</td>
<td></td>
<td></td>
<td>Shasta-Trinity NF</td>
<td>5899</td>
</tr>
</tbody>
</table>
Appendix 2: Additional Considerations at the Forest Level

This section, including the next 5 subheadings, would be filled out by Forest Service botanists.

Forest Name

Geographic distribution within the Forest
A. Scarce or isolated
B. Patchy or gaps
C. Contiguous

Select a geographic distribution rank and provide references or cite ‘specialist expertise, <name>’ where appropriate.

Abundance of the species on the Forest
A. Rare – current abundance is low enough that stochastic and other factors could lead to potential imperilment.
B. Uncommon – current abundance is large enough that demographic stochasticity is not likely to lead to rapid local extinction, but, in combination with highly variable environmental factors, could pose a threat.
C. Common – current abundance is large enough that species persistence is not threatened by demographic stochasticity in combination with environmental variation.
D. Insufficient information to draw inferences about criterion.

Select a species abundance rank and provide references or cite ‘specialist expertise, <name>’ where appropriate.

Population trend on the Forest
A. Significant downward or suspected downward population trend.
B. Stable population.
C. Upward population trend.
D. Insufficient information to draw inferences about criterion.

Select a population trend rank and provide references or cite ‘specialist expertise, <name>’ where appropriate.

Habitat trend on the Forest
A. Decline in habitat quality or quantity.
B. Stable amounts of suitable or potential habitat, relatively unchanged habitat quality.
C. Improving habitat quality or increasing amounts of suitable or potential habitat.
D. Insufficient information to draw inferences about criterion.

Select a habitat trend rank and provide references or cite ‘specialist expertise, <name>’ where appropriate.
Vulnerability of habitat on the Forest
A. Substantial modification of habitat has occurred or is anticipated with conditions departing from expectations based on NRV, and/or habitat is impacted by modern stressors such as drought, climate change, high intensity wildfire and wildfire suppression disturbances, loss of natural openings due to historical wildfire suppression, nonnative invasive species, water impoundments and diversions, and recreation, etc.
B. Habitat modification is likely to result in ecological patterns similar to the range of historical conditions, but is being impacted by modern stressors.
C. Habitat resilient, changes are similar in frequency and intensity to those expected from NRV, and modern stressors not significant.
D. Insufficient information to draw inferences about criterion.

<Select a habitat vulnerability rank and provide references or cite ‘specialist expertise, <name>’ where appropriate.>

Additional Forest specific information related to the SCC determination
<This section is provided for Forest botanists to add additional Forest specific information that is not captured in the section above, if necessary. Provide a narrative description here of the additional relevant information. State “No additional information” if this section is not used.>