

The Uinta Basin Railway A Threat to Rare Plants



Lepidium barnebyanum
Photo credit: Jessi Brunson

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March 3, 2020 Utah Rare Plant Meeting

The Purpose

Current Uinta Basin Oil Production:

85,000 barrels of oil per day (bopd)

Utah Oil Production (Nov. 2019):

102,000 bopd

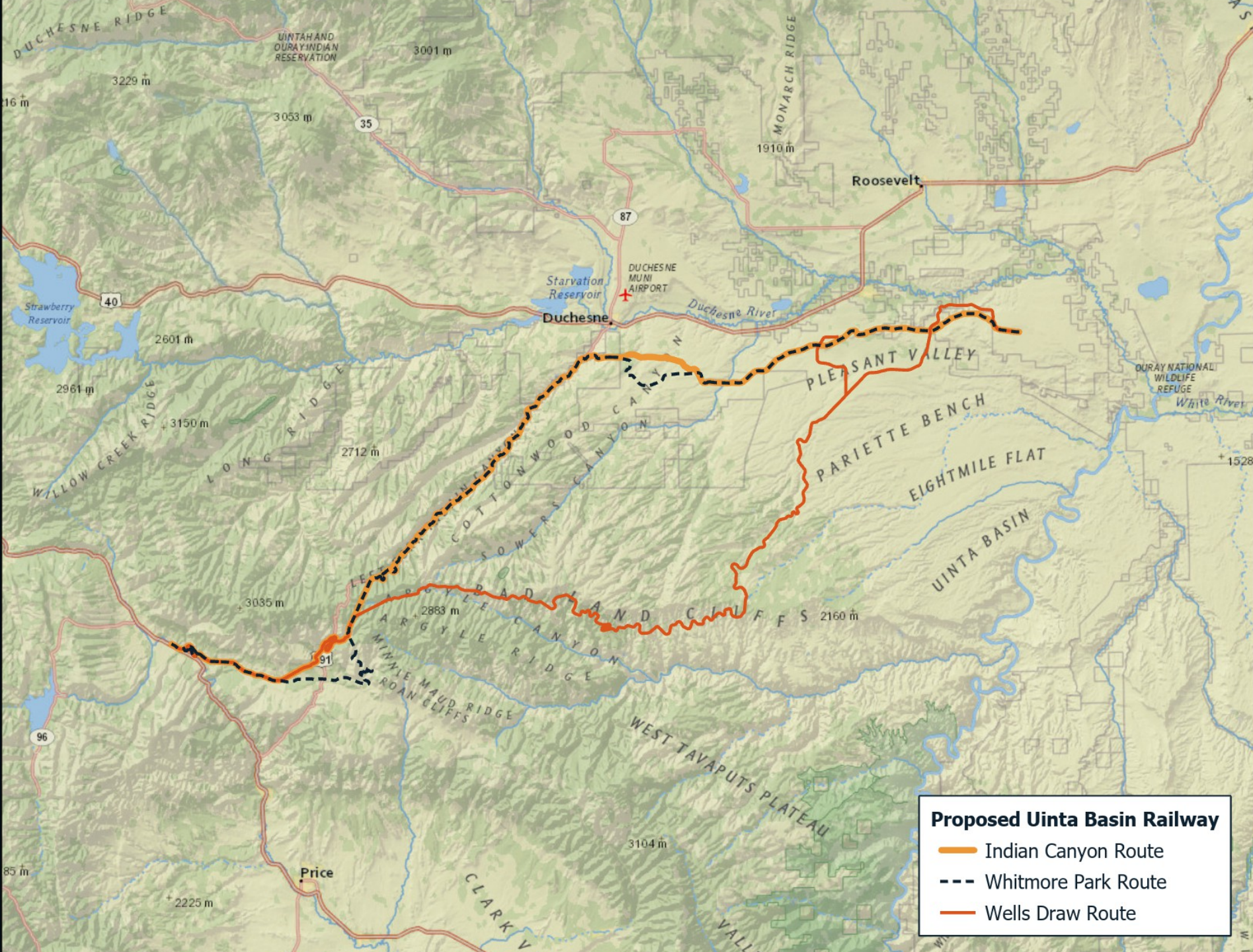
Uinta Basin Railway:

130,000 to 350,000 bopd



Photo Credit: Geof Wilson

The Route



Proposed Uinta Basin Railway

- Indian Canyon Route
- Whitmore Park Route
- Wells Draw Route



Where Is It Headed?



for offshore loading. DHIP was successful in co-opting political support from the governor and the Louisiana state government to coexist alongside the largest coastal protection project in Louisiana.

Project Structure:

The project was structured as a P3 to establish the government as a partner and advocate which has enabled an expedited regulatory process and access to both private and public funding mechanisms. DHIP selected Tallgrass Energy as a reliable and credible terminal and pipeline operator, given their history of operating terminals and pipelines in the Rocky Mountain, Plains and Midwestern states and their desire to expand their footprint to the U.S. Gulf Coast and become a leader in the crude oil export market.

Successful Outcome:

An exclusive Memorandum of Understanding (MOU) was executed between DHIP and PPHTD on December 28, 2017 to allow DHIP to proceed forward with establishing and developing PLT. Final approval to enter into the lease and Cooperative Endeavoring Agreement (CEA) by the PPHTD board and Plaquemines Parish government was approved on October 25, 2018 and the joint venture between DHIP and Tallgrass was executed on November 5, 2018, less than a year from when DHIP was granted exclusive development rights in December 2017. This complex transaction was approved by the state and parish government to move forward and took less than a year for DHIP to bring the PLT project to fruition.

Industry Justification for the Uinta Basin Railway:

DHIP is well versed and experienced in developing oil & gas infrastructure assets and understands the Uinta Basin is a stranded basin due to the waxy nature of the Uinta crude. Uinta crude is unable to be transported via pipelines over long distances, which is the primary reason midstream companies have yet to build pipeline takeaway capacity in Utah for transportation to U.S. Gulf Coast markets where the crude would attract a much better net-back and more competitive price for Uinta producers.

Black and yellow waxes are thick crude oils with a higher paraffinic content than most crude oils found in North America. These waxy crudes are viscous and have a high pour point, which means they become semi-solid at lower temperatures which makes the crude incapable of being transported via pipelines. **The process for refining waxy crudes presents some challenges. Although black wax is well suited for making gasoline, lubricants, and diesel fuel, refining must occur close to the source, because waxy crudes solidify quickly. The way around this problem is crude-by-rail takeaway to PLT in Louisiana which will be able to process this waxy crude and the U.S. Gulf Coast refineries will easily be able to run Uinta crude through their catalytic hydrocrackers.**

Currently, black and yellow waxy crudes must be heated in the field and transported in insulated trucks. The Uinta Basin contains significant black and yellow wax crude oil reserves and the Salt Lake City refineries are purchasing these waxy crudes at a steep discount since they are located relatively close to the Uinta Basin, which thus serves as a captive and stranded market disadvantaging Utah producers.

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The Money

The Funder:



Public Seed Money:
\$27.9 million

The Pusher:



Construction Costs:
\$1.5 - \$4.5+ billion

Our Concerns



Photo Credit: EcoFlight



Photo Credit: Taylor McKinnon, CBD



The Status



Photo Credit: Schnitzel_bank



We are here! ←



Duchesne County contains a high level of biodiversity.

Taxa treated by Utah Rare Plant Guide to date: 34

Geoendemics (Welsh, 2012): 31 (Uintah Co.: 56)

G1/G2 or T1/T2: 33 (with S1/S2: 38 additional)

12th largest county (out of 29: 3,241 sq miles)

(Uintah Co. is 6th largest, 4,480 sq miles)



Important plant areas and areas of high recreational importance in Duchesne County:

Argyle Canyon

Indian Canyon Scenic Byway/Ashley National Forest

Nine Mile Canyon backway

Starvation Reservoir State Park

Yellowstone Canyon

Dude Young Ranch/BOR

TNC preserve (Collier property)

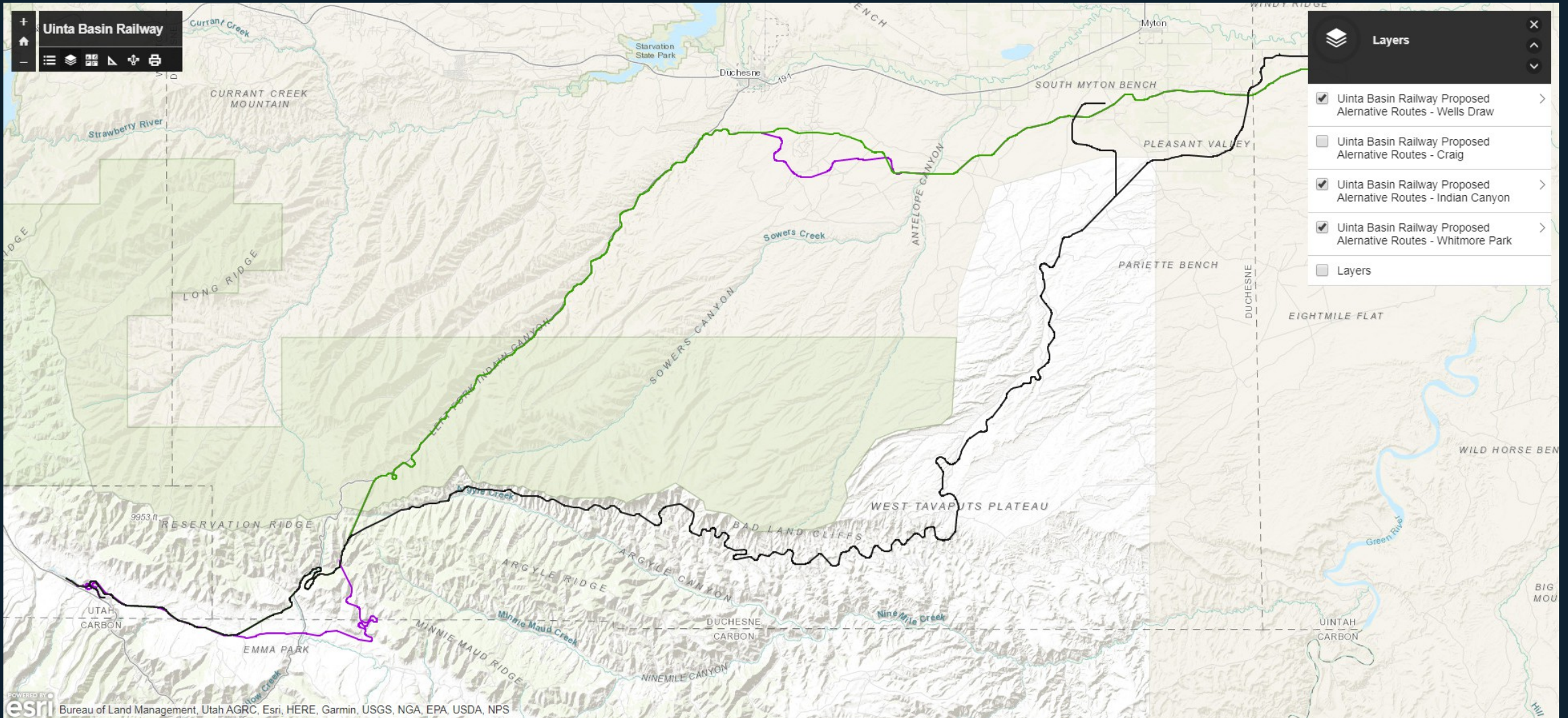
Pariette Bench

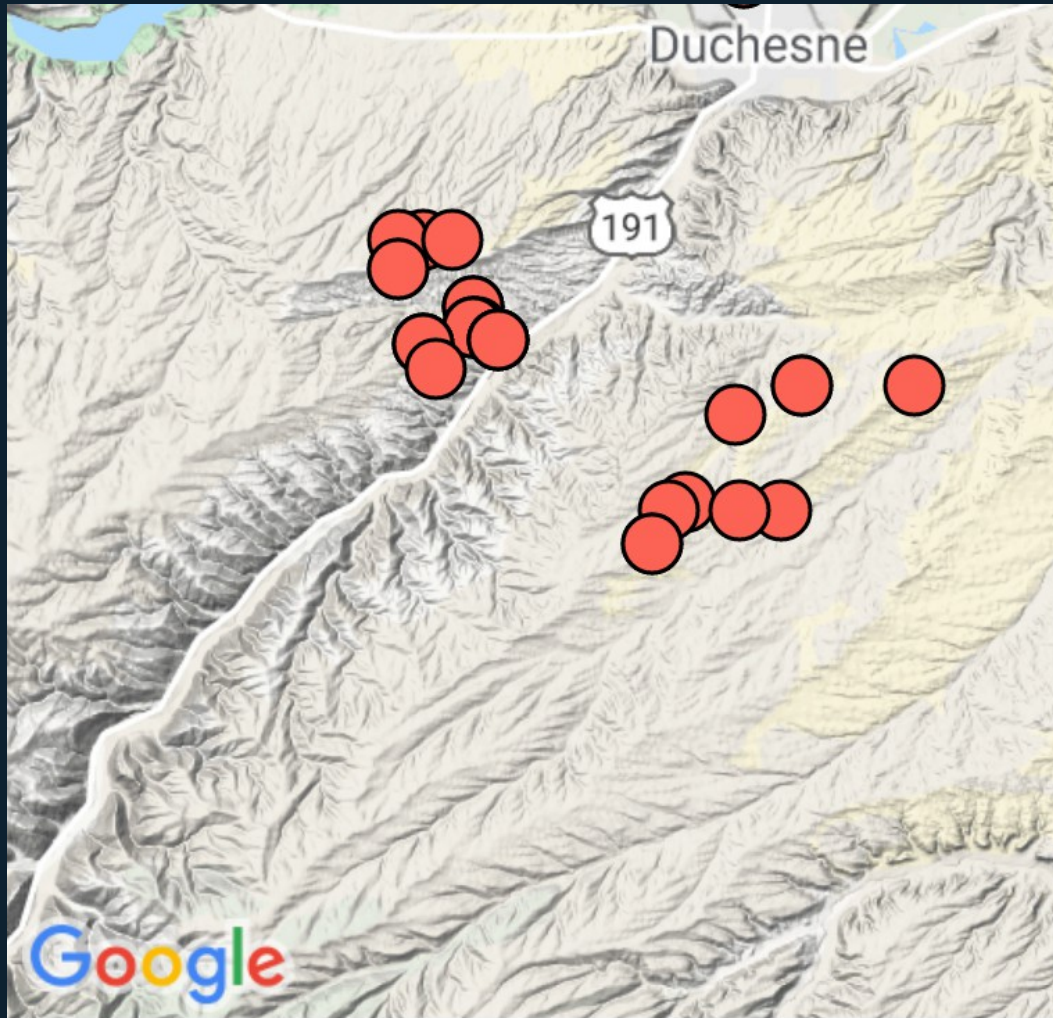


The goal: Conserve (“protect”) biodiversity

We do this in part by considering all potentially rare plant species, not just a limited group of species that have an official agency status, and consider all information that is available concerning those species. “Tracked species” by state heritage programs and related data should always be looked at in any project proposal whether state/private, federal, or other. This is how we conserve them, and prevent extinction (and as a byproduct, avoid whenever possible the need to list them).







Legend

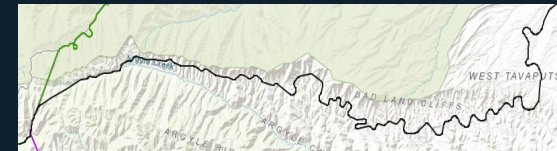
■ = *Lepidium barnebyanum*

○ = Collection

△ = Observation

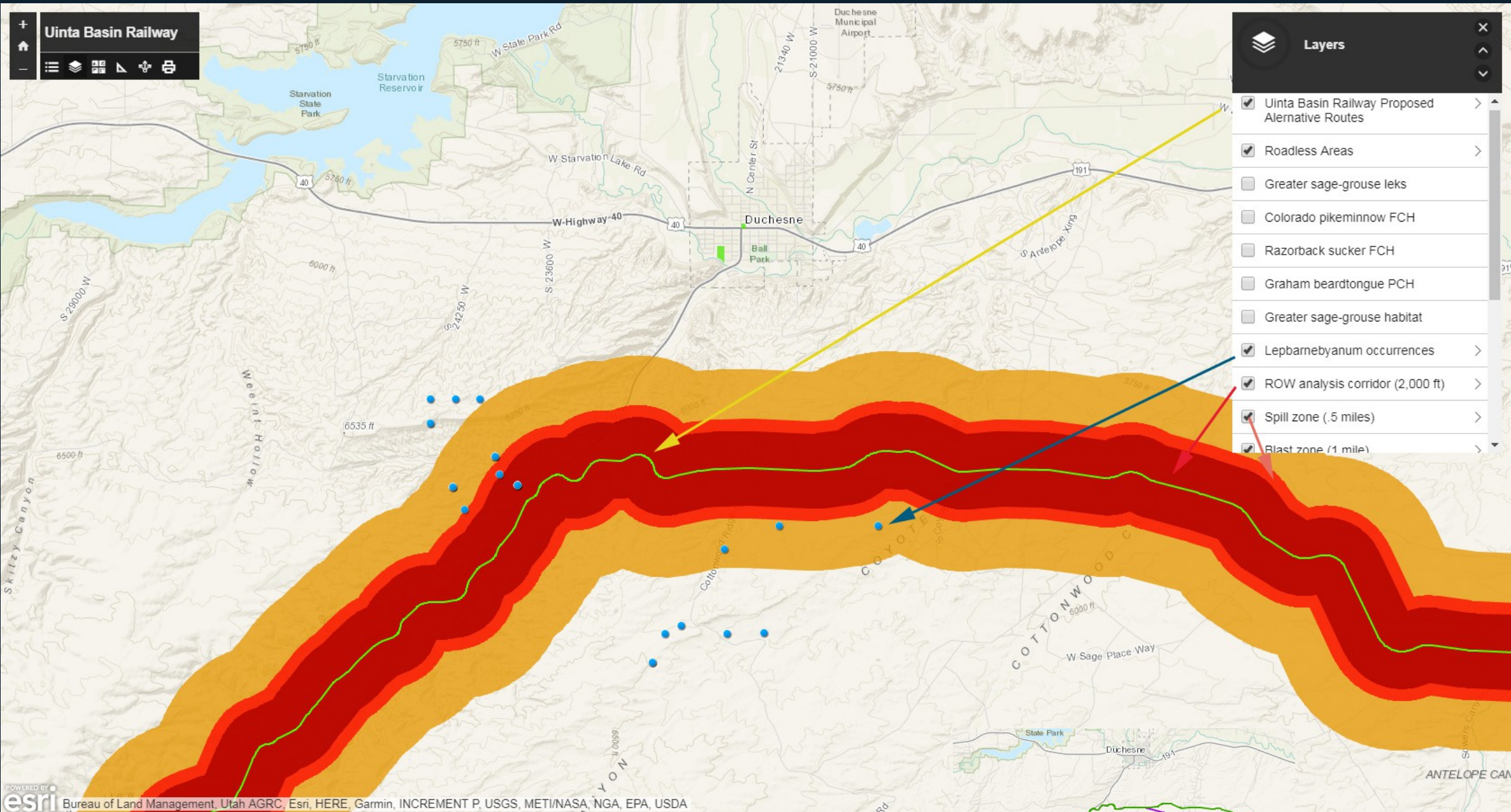


Lepidium barnebyanum
Photo credit: Jessi Brunson



Layers

- Uinta Basin Railway Proposed Alternative Routes
- Roadless Areas
- Greater sage-grouse leks
- Colorado pikeminnow FCH
- Razorback sucker FCH
- Graham beardtongue PCH
- Greater sage-grouse habitat
- Lepbarnebyanum occurrences
- ROW analysis corridor (2,000 ft)
- Spill zone (.5 miles)
- Blast zone (1 mile)

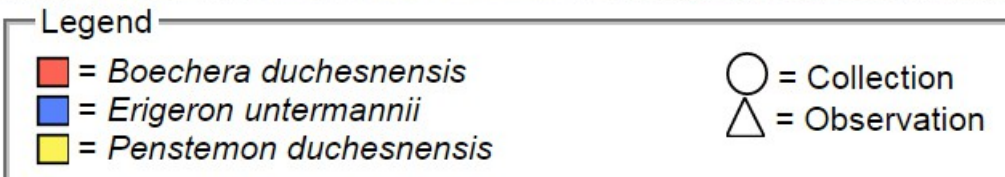
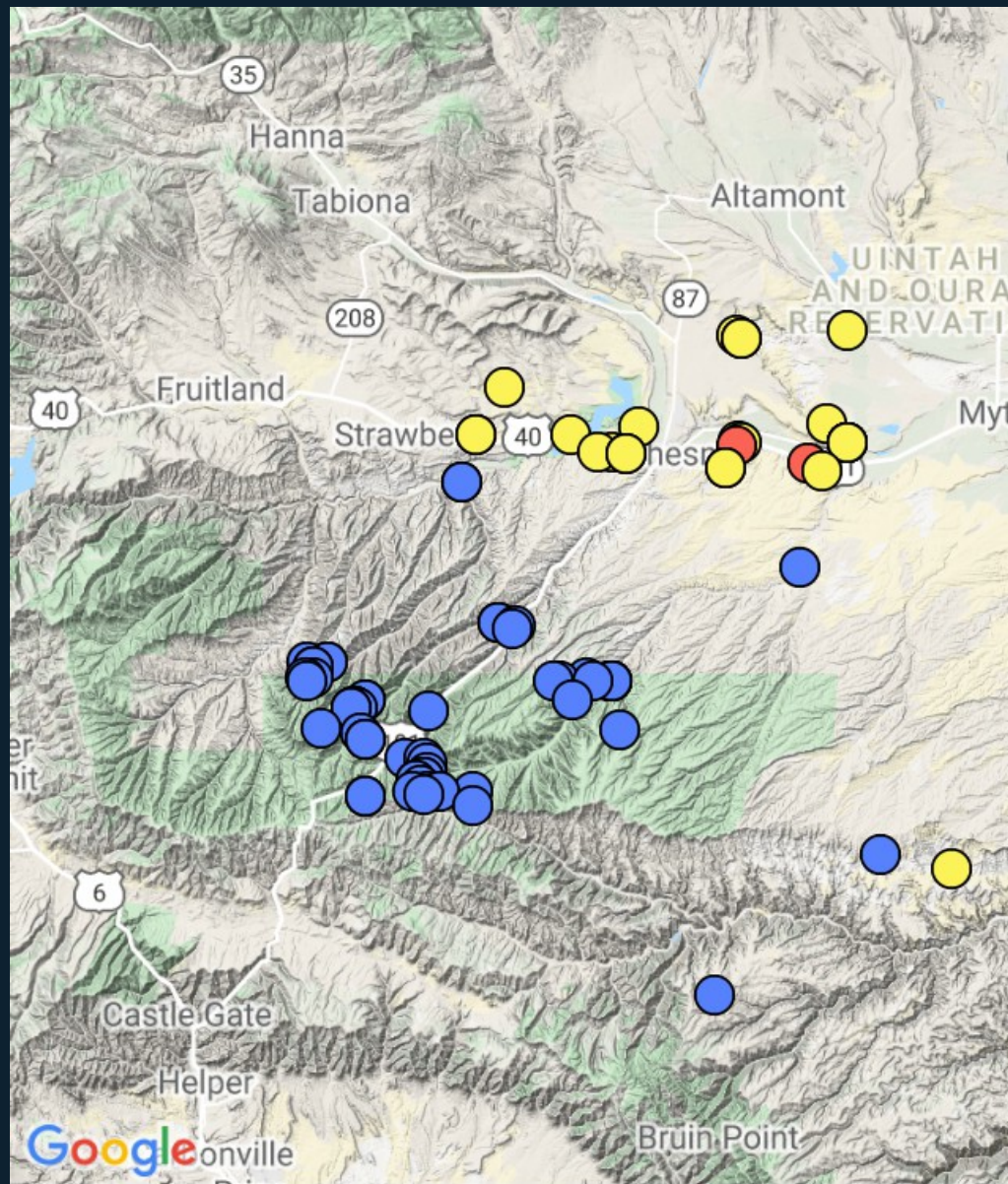


POWERED BY **esri** Bureau of Land Management, Utah AGRC, Esri, HERE, Garmin, INCREMENT P, USGS, METI/NASA, NGA, EPA, USDA

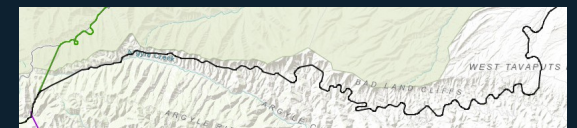
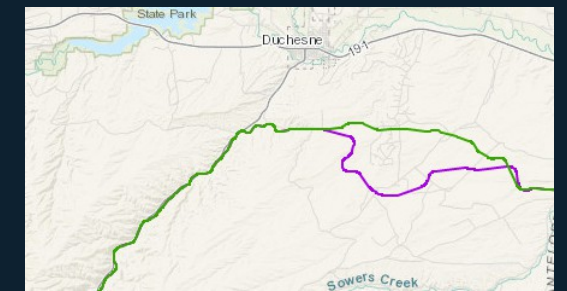




Erigeron untermannii
Photo credit: Ben Franklin



Penstemon duchesnensis
Photo credit: Tony Frates



Argyle Canyon: at least six BLM sensitive plant species

Aquilegia scopulorum var. *goodrichii* (named in 2003)

Erigeron untermannii (named in 1983)

Cryptantha grahamii (*Oreocarya grahamii*)

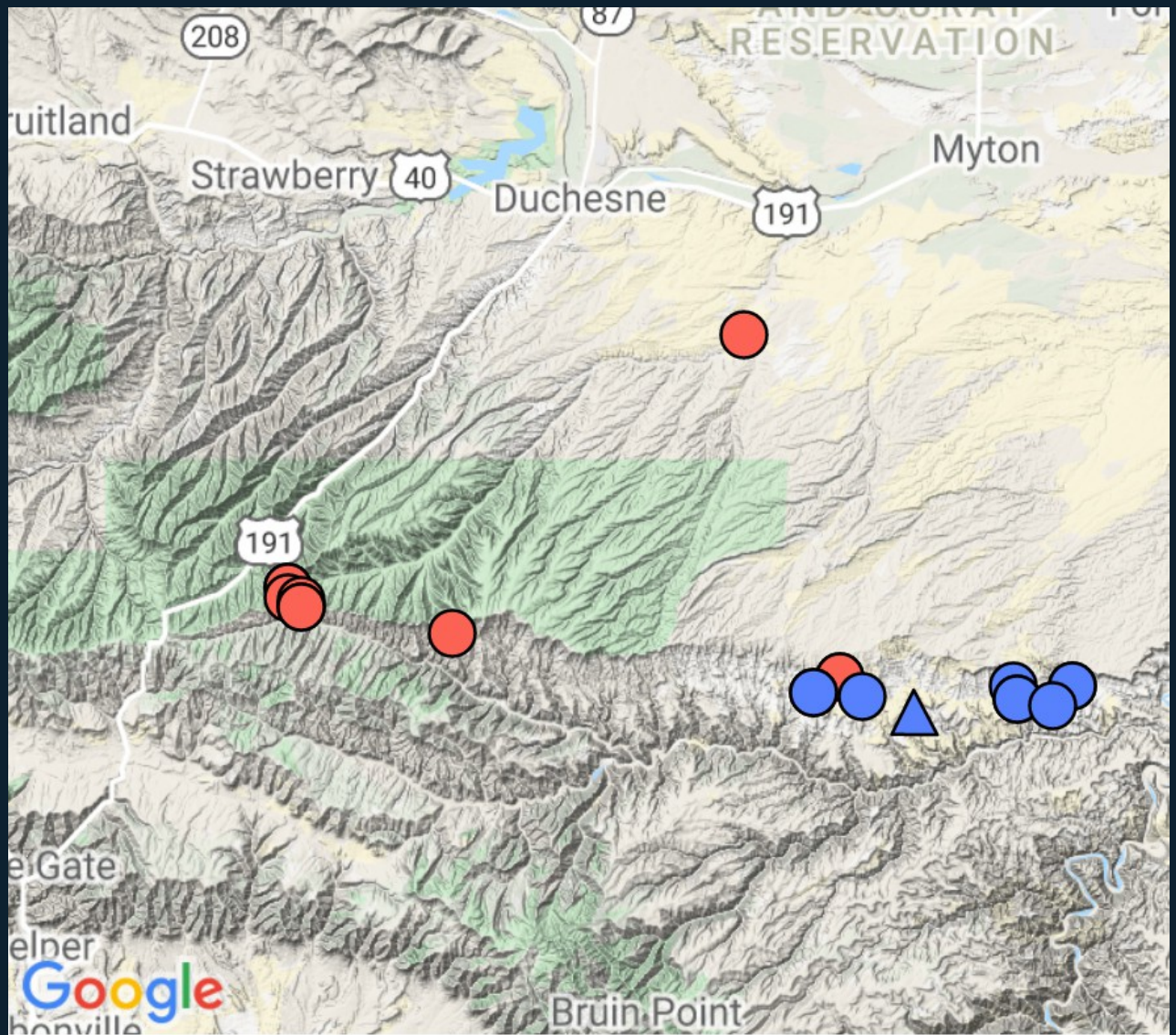
Mentzelia goodrichii (named in 1993)

Phacelia argylensis (named in 2003)

Thelesperma “*caespitosa*” (*caespitosum*)

(in part included in *T. subnudum* var. *maliterrimum* Welsh & Atwood, which they treat as endemic to Duchesne and Uintah Cos and restricted to the Tavaputs Plateau; included within *T. subnudum* by FNA)

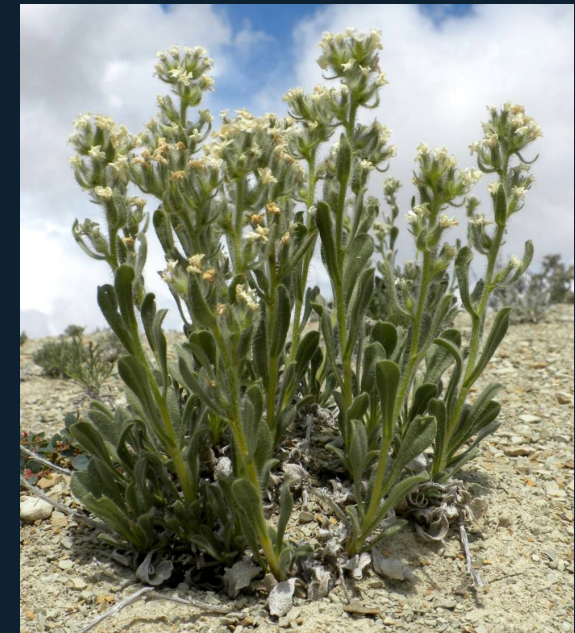




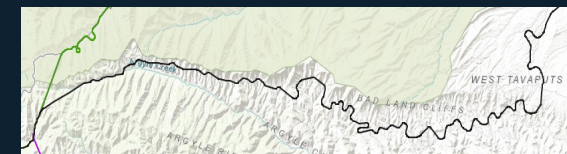
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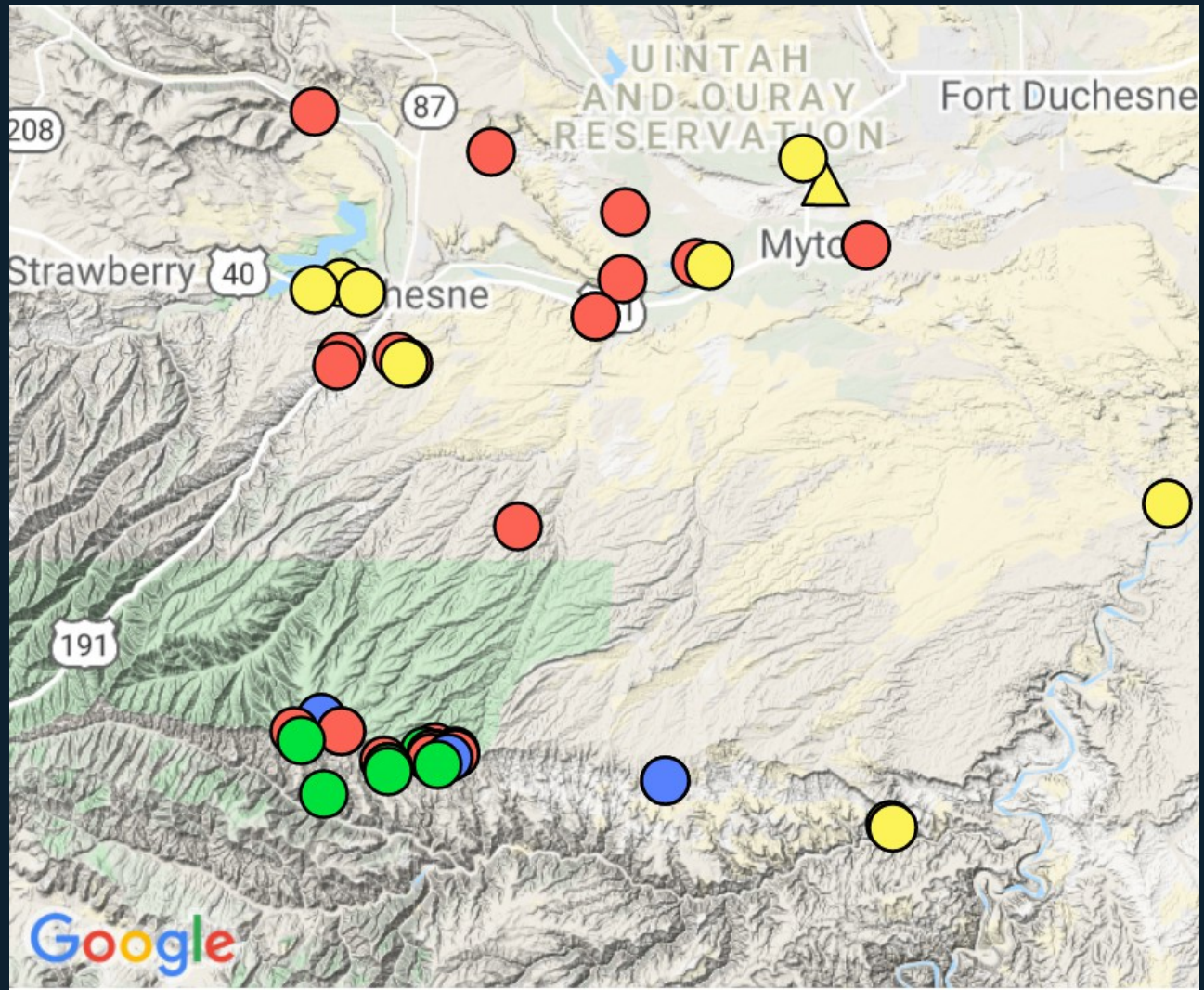
- = *Astragalus lutosus*
- = *Oreocarya grahamii*

- = Collection
- △ = Observation



Cryptantha grahamii
(Oreocarya grahamii)
 Photo credit: Sherel Goodrich



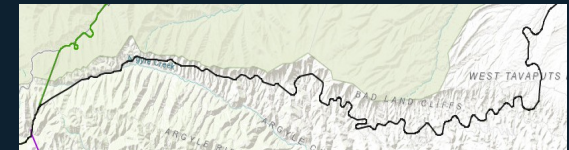
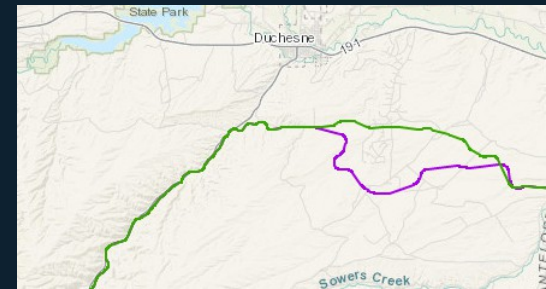


Legend

- = *Thelesperma subnudum*
- = *Thelesperma pubescens*
- = *Thelesperma subnudum* var. *subnudum*
- = *Thelesperma subnudum* var. *caespitosum*
- = Collection



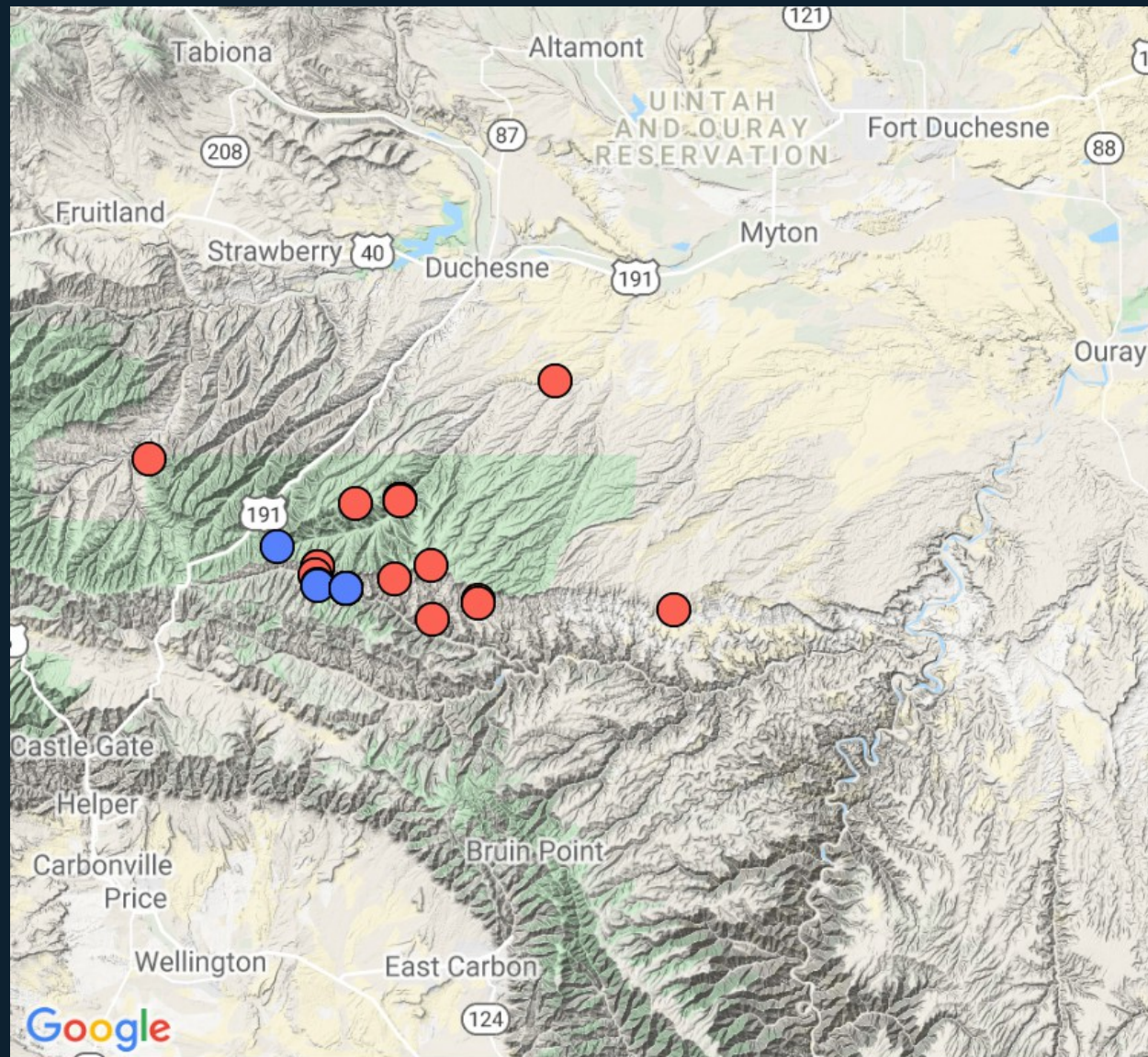
Thelesperma "caespitosum"
Photo credit: Sherel Goodrich



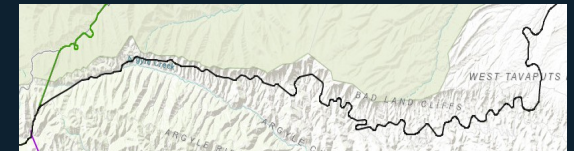


Mentzelia goodrichii
Photo credit: Sherel Goodrich

These two species are not known to be sympatric (they grow at different elevations).



Phacelia argylensis
Photo credit: Jessi Brunson



High elevation endemics growing on Green River formation shales
(Argyle Canyon area, West Tavaputs Plateau)

Aquilegia scopulorum var. *goodrichii* 7400-9200 ft. (possibly long-lived)

Mentzelia goodrichii 8000-8800 ft. (long-lived)

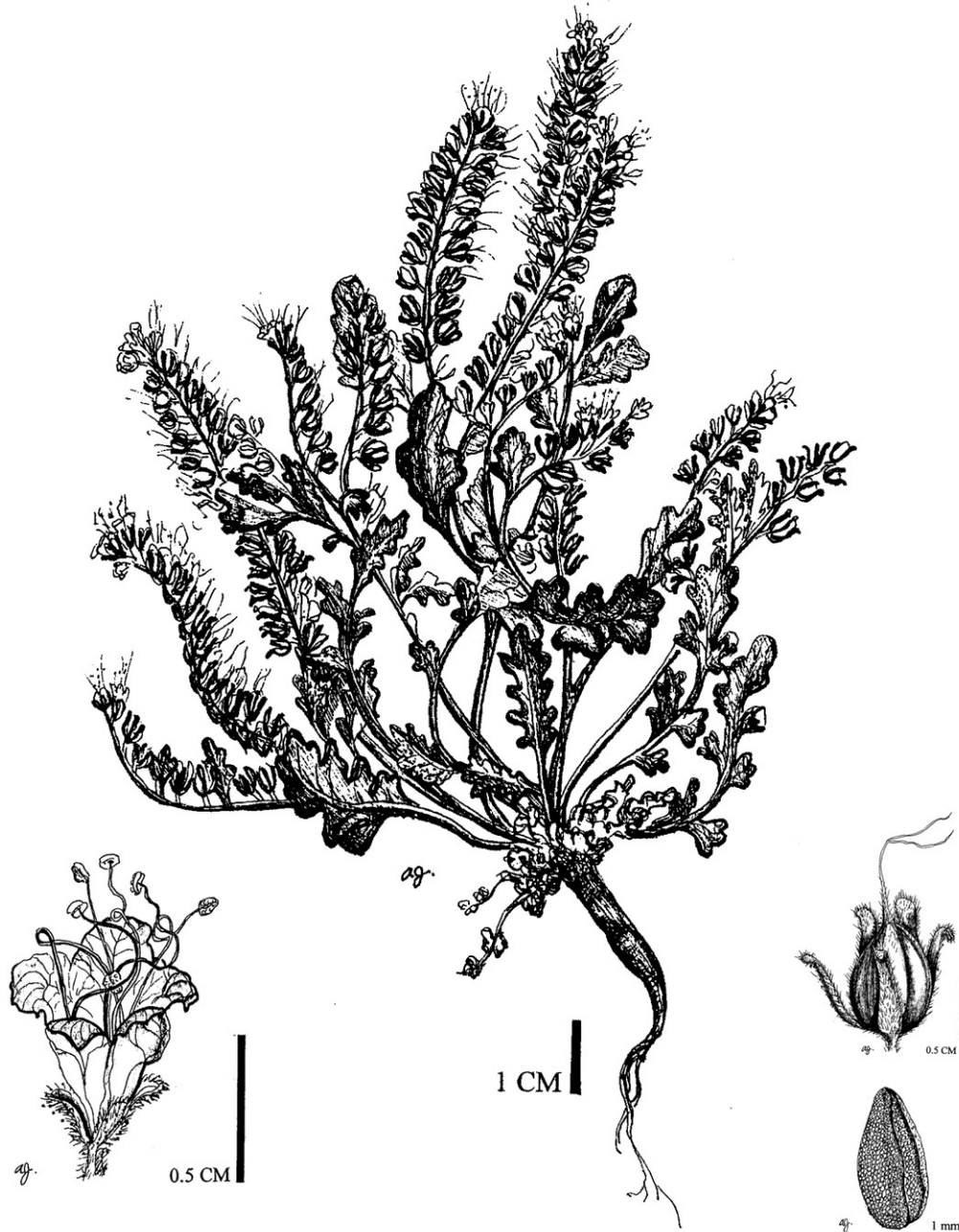
Phacelia argylensis 7500-7600 ft. (biennial or perhaps rarely short-lived)

All ranked from High to Extremely High conservation priority by UNPS



Phacelia argylensis

Botanical illustration by
April Jensen
Utah Rare Plant Guide
project





Phacelia argylensis
Photo credit: Jessi Brunson



Note plant at center

Phacelia argylensis habitat, Photo credit: Jessi Brunson



Phacelia argylensis habitat (not just on steep slopes), Photo credit: Jessi Brunson



Phacelia argylensis, Photo credit: Jessi Brunson, note drainage in background

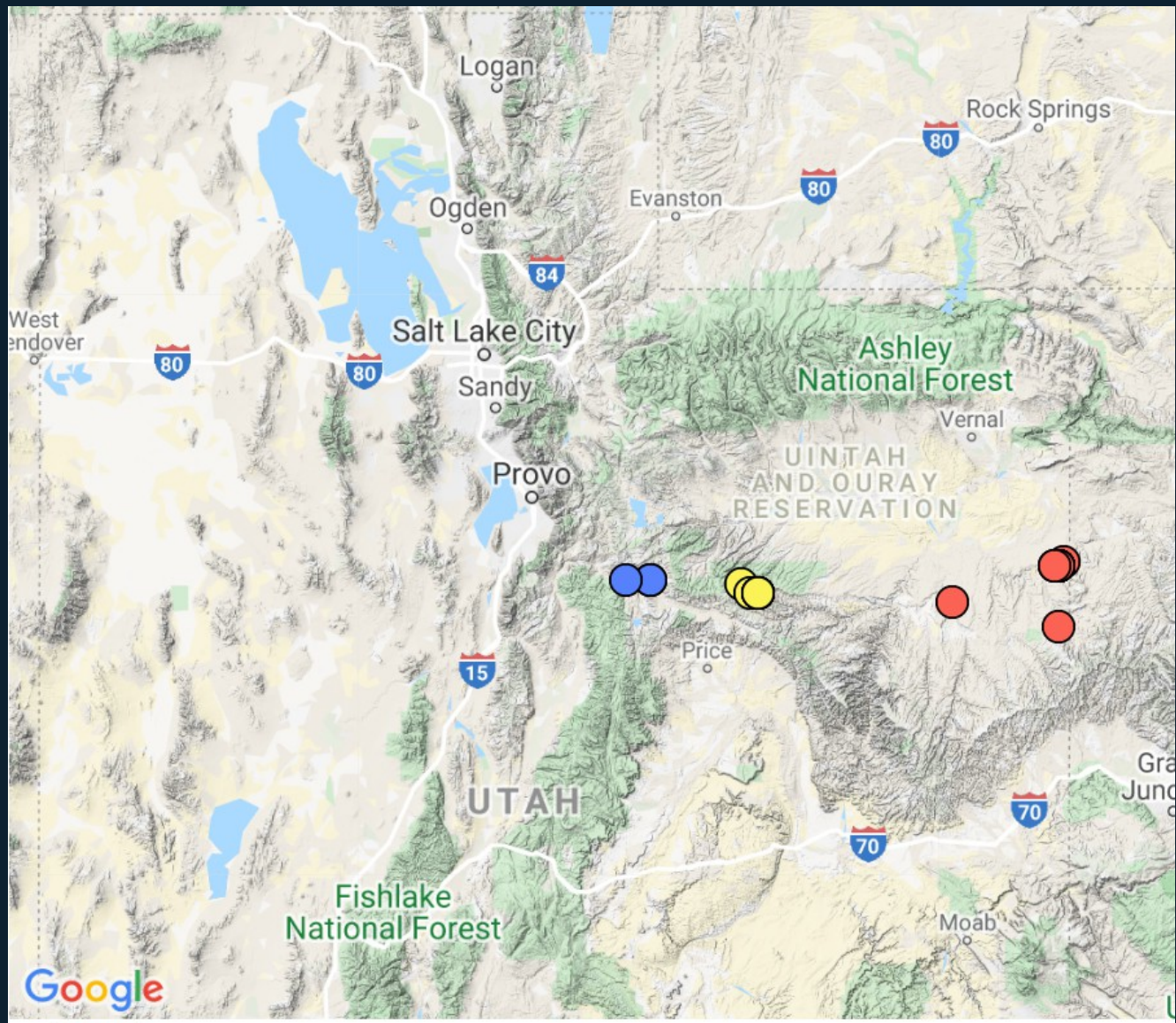


Phacelia argylensis wash habitat, Photo credit: Jessi Brunson



Phacelia argylensis basal rosette (first year plant), Photo credit: Blake Wellard

Phacelia argillacea was the first Utah plant species to receive ESA protection (Oct. 1978).



Legend

● = <i>Phacelia glandulosa</i>	○ = Collection
● = <i>Phacelia argillacea</i>	△ = Observation
● = <i>Phacelia argylensis</i>	

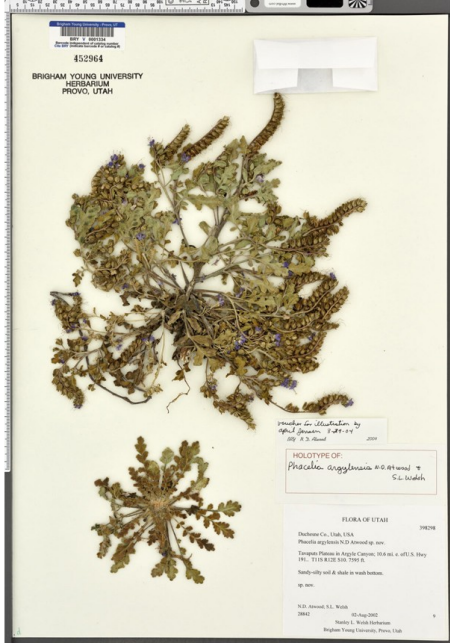
A tale of three Phacelias

The aerial distance between The ESA listed Clay Phacelia (*Phacelia argillacea*) and *Phacelia argylensis* is 30 miles.

From left (west) to right (east):
P. argillacea (globally rare)
P. argylensis (globally rare)
P. glandulosa var. *glandulosa* (state rare)

All are biennials which like to grow on Green River formation shales. *P. glandulosa* is less substrate specific and will grow in other types of rocky habitats.





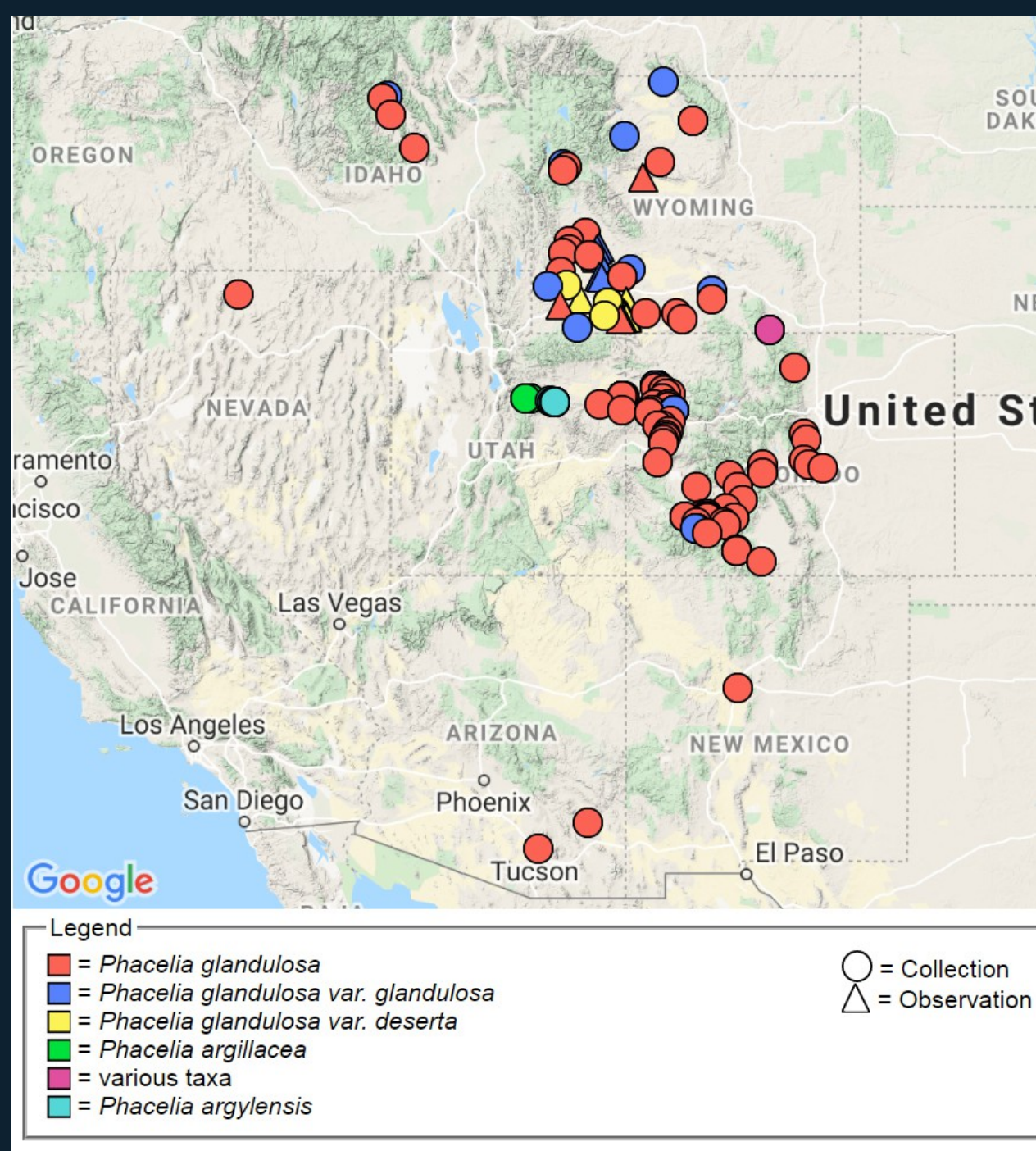
Phacelia argillacea

Phacelia argylensis

Phacelia glandulosa



Phacelia argillacea was the first Utah plant species to receive ESA protection (Oct. 1978).



The bigger picture re:
P. glandulosa

(Not all points reliable!)

Plants in adjoining Colorado:
Treated as var. *deserta*.
Or as *P. deserta*.

Are UT plants
var. *glandulosa*
var. *deserta* (or *P. deserta*)
Both?
Something else?

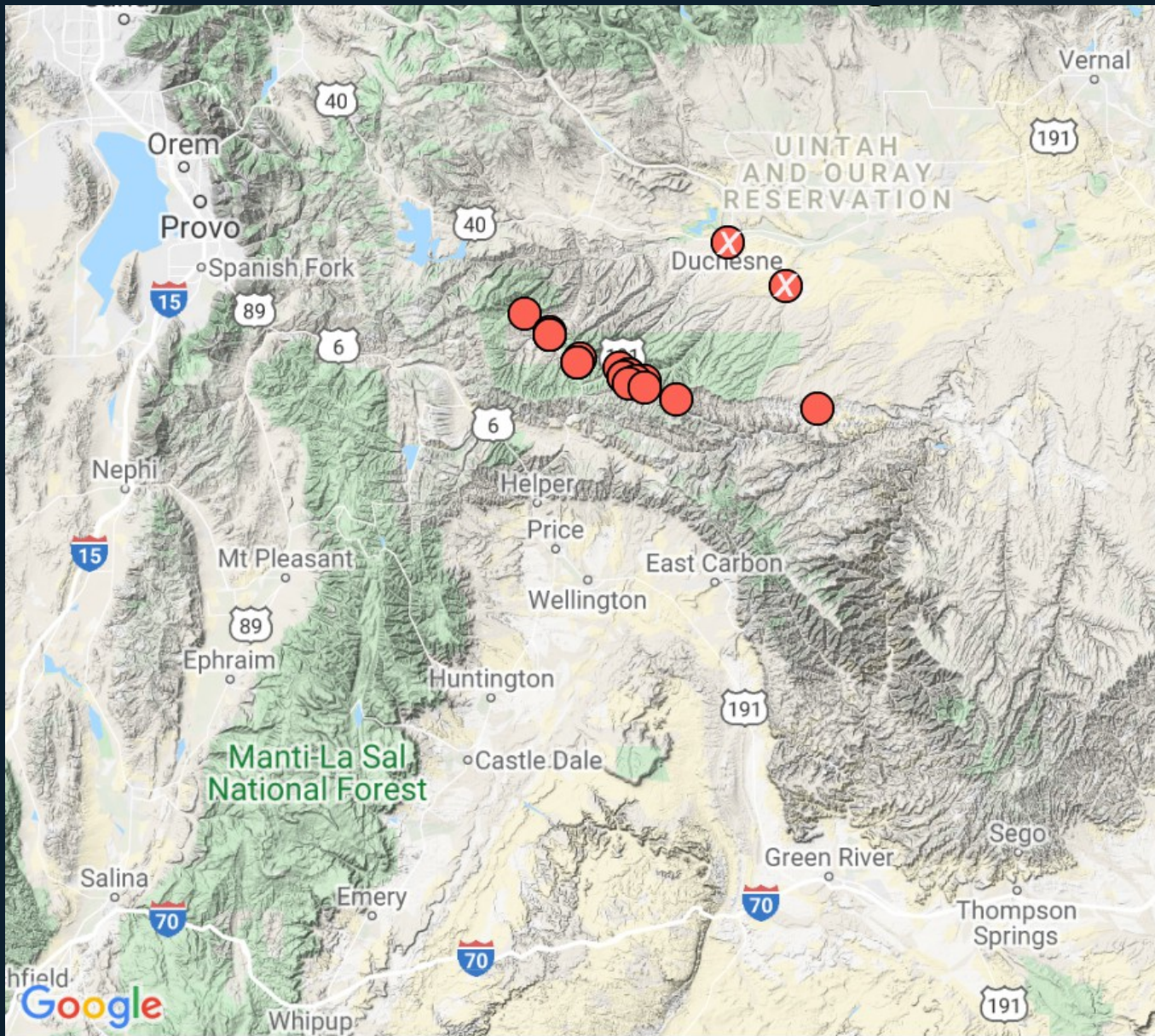


Tom Kelly, 22 miles south of Duchesne on Highway 191; the fire started in Argyle Canyon June 26, 2012, Flickr. These plateau fires cause downslope erosion impacting *P. argylensis*.



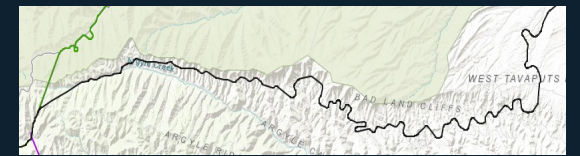
Goodrich's columbine

Grows in part with
Bristlecone pines



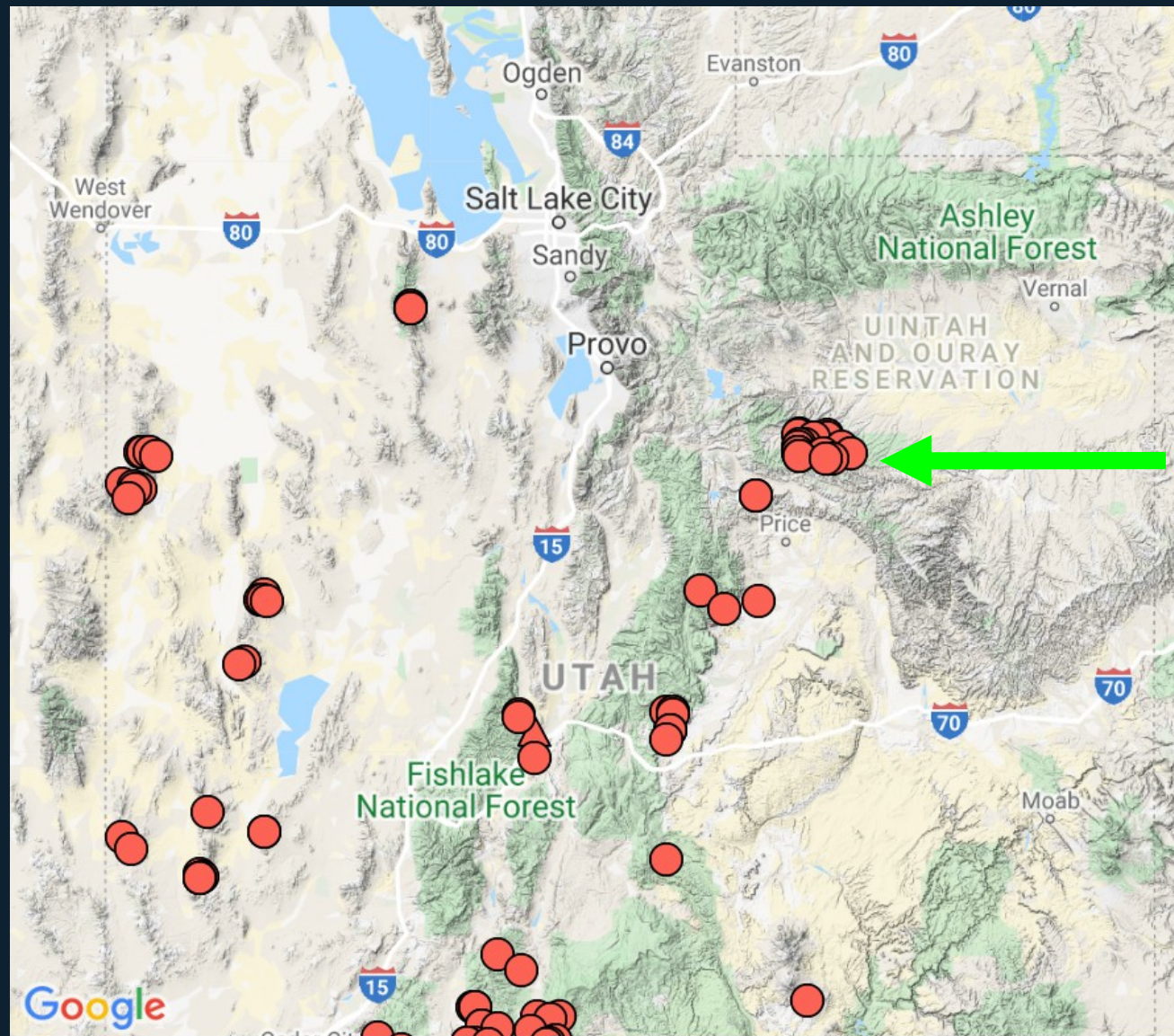
Legend

- = *Aquilegia scopulorum* var. *goodrichii*
- = Collection
- = Observation



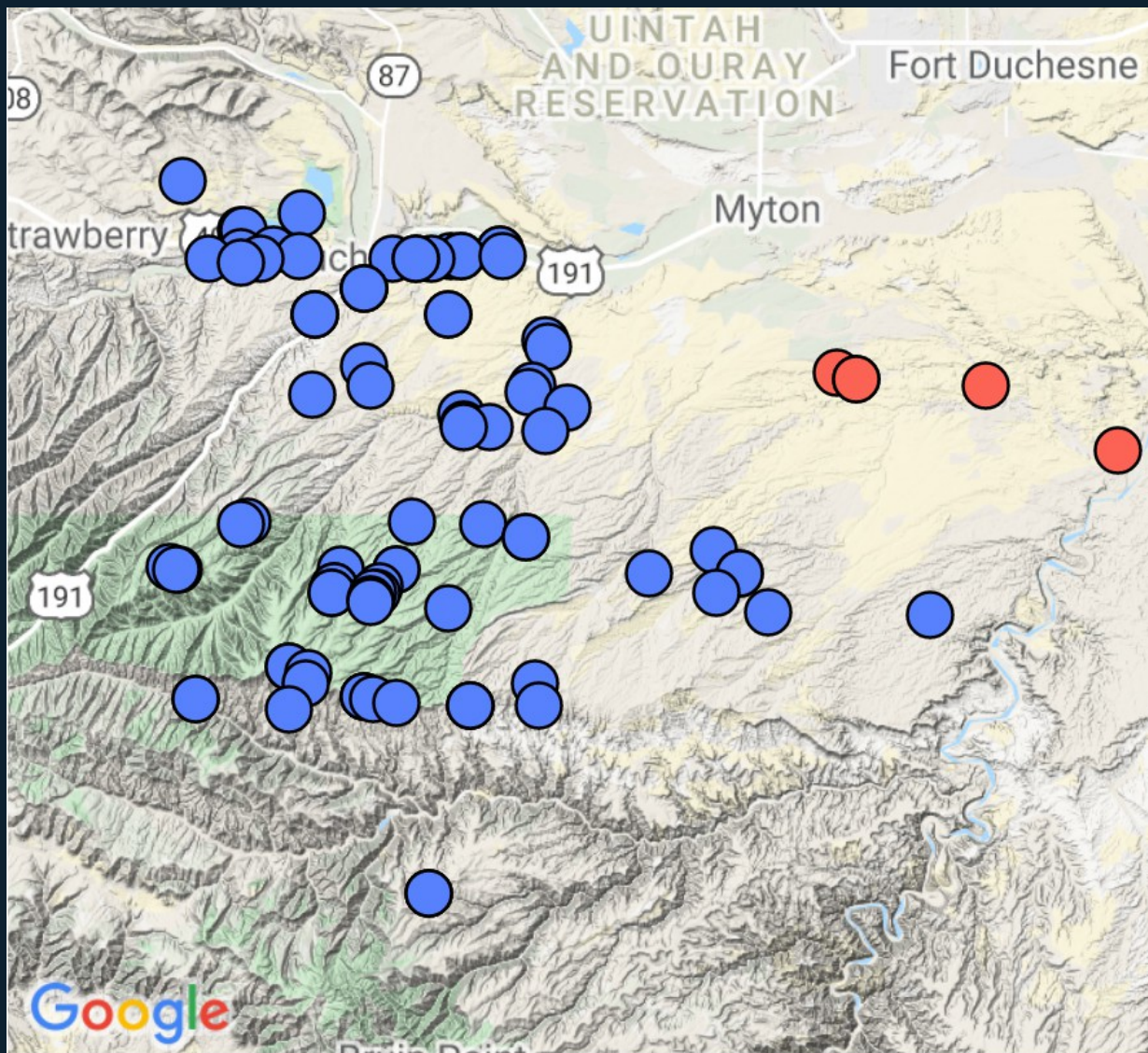
Aquilegia scopulorum var. *goodrichii*
Photo credits: Sherel Goodrich





Intermountain Bristlecone pines are only known from the Uinta Basin in the vicinity of Argyle Canyon





Legend

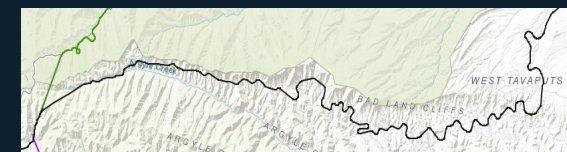
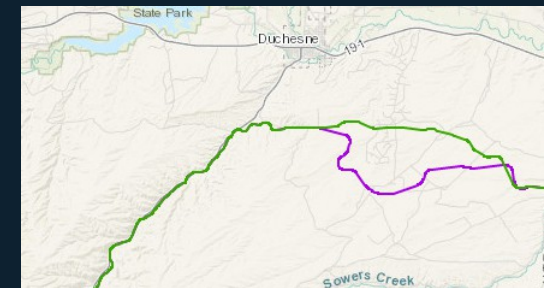
- = *Sclerocactus brevispinus*
- = *Astragalus detritalis*

- = Collection
- △ = Observation



Sclerocactus brevispinus
Photo credit: Tony Frates

Yucca sterilis could also be Impacted.



Argyle Canyon is an Important Plant Area.

Any of the routes as currently proposed will likely have have a serious impact on the rare plants in these areas (and their ecosystems).



Special thanks to Jessi Brunson, Sherel Goodrich and Blake Wellard.

And to the authors of the *Intermountain Flora*, *A Utah Flora*, and *Uinta Flora*.

And:

Consortium of Intermountain Herbaria. 2020. <http://www.intermountainbiota.org/portal/>.

And to all of the botanists who have made significant contributions to the understanding of these species!

And:

Kara Clauser (CBD) for creating the interactive and static UBR maps.

The many other people at CBD and in our coalition working on the campaign to Stop the UBR





Questions?



Take Action:

StopUintaBasinRailway.com