

In Search of Beckwith's Violet



and the
Discovery at Red Butte Garden

Tony Frates, March 2010

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Who cares?

Native plants are about:

history, and therefore people;

art, and therefore beauty;

science, and therefore knowledge;

stewardship, and therefore our home.

Viola beckwithii Torrey & Gray (1855)

common names

Mo-ta-komp

Beckwith's Violet

Western Pansy, Western Pansy Violet

Great Basin Violet
(but not really a “Great Basin” species)

Sagebrush Pansy, Sagebrush Violet
(although that is also used for a different species)

Coolest Violet Ever
(take that garden pansies)

Characteristics

- 5-15 cm tall
- Deeply dissected leaves that turn into linear segments
- Flowers 12-20mm long (small)
- Upper petals darker than lower ones, and usually dark or rose-purple, and the lower three white (ours) or pink-lavender, yellow at base and purple-veined
- Vegetative growth seems to occur very quickly prior to flowering and it “disappears” fairly soon thereafter – life cycle, pollination ecology unknown



VIOLA BECKWITHII

Adrian L. DeBenedictis

Plate from Beckwith report.

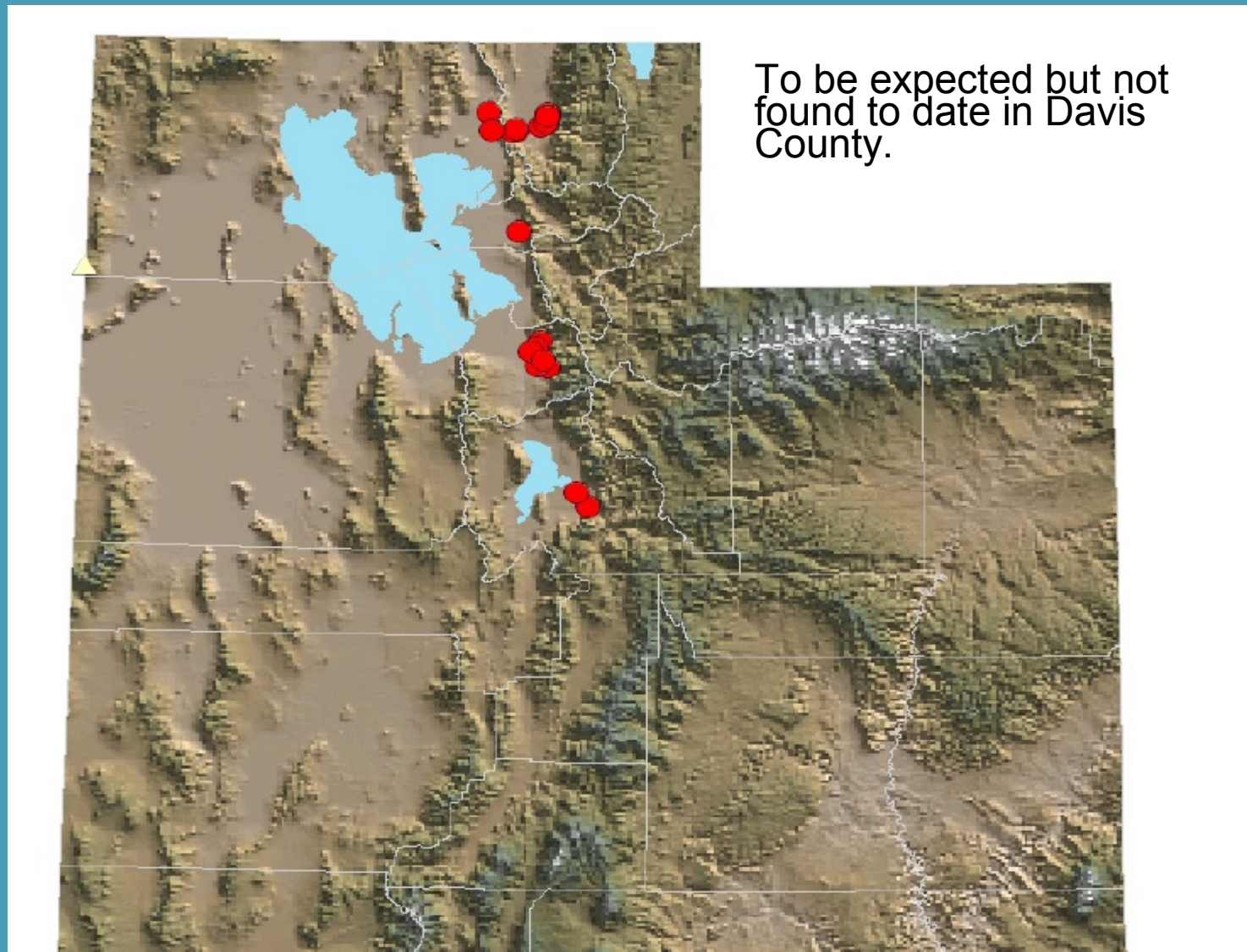


Dr. William Gray, March 21, 2005, Utah County, UT

Habitat

- Commonly with sagebrush (but not always)
- Well-drained, rocky soils, open sites
- Associated with sand/gravel pit areas in Cache and Utah counties
- Utah: SL Co. historic is mainly in the 4300-4800 range, for UT upper limit is about 5500 ft.
- Nevada/Eureka Co. (Elko/Carlin) – elevations are somewhat higher than here, west of Carlin at 5900 ft, by end of March no longer blooming, 5000 ft lower areas there, never with *Wyethia*, rocky, some grass, *Fritillaria pudica*, *Ranunculus glaberrimus*
- Nevada -Washoe (Reno) – early to late April, 4800-5000 ft.
- Range for species per Holmgren IF 3200ft -5900 ft. (but reported in other states as high as 7000+ ft)

Utah distribution



To be expected but not found to date in Davis County.

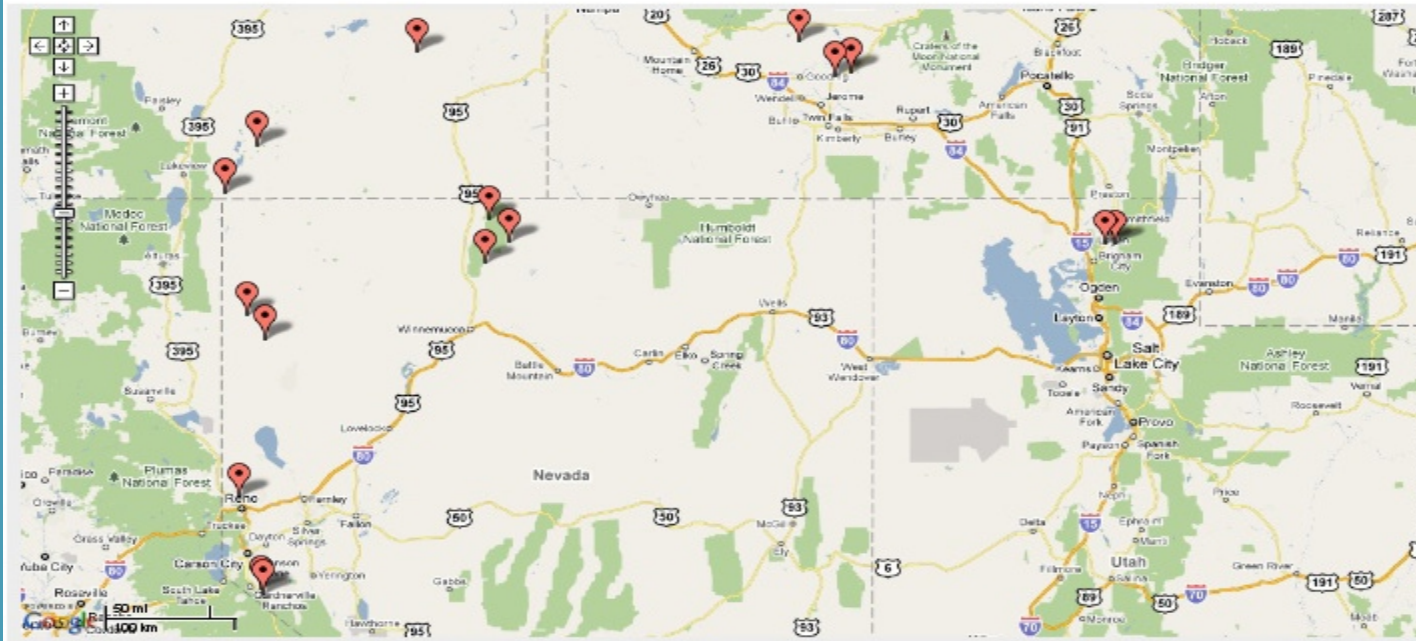
Global distribution

THE NEW YORK BOTANICAL GARDEN

[Science Home](#) — [C. V. Starr Virtual Herbarium](#) — [Search](#)

Search Results:

displaying 1–16 out of 16 available coordinates



Distribution forms a rim around Great Basin but is not restricted to the Great Basin It is limited to eastern Oregon, north/northeastern California, western Nevada (5 counties) and northern Utah in four counties and in an area that is confined along the Wasatch Front in eastern Box Elder, Cache, Salt Lake (eastern portion of the valley) and Utah (south/southeastern) counties.

Utah rare

G4 global (secure)

S2 Utah

(S2 means=imperiled, 6-20 occurrences or
few individuals or limited habitat)

Tracked by Utah Natural Heritage Program

Utah rarity/obscurity factors

Small stature

Not obvious even when in bloom

Blooms very early

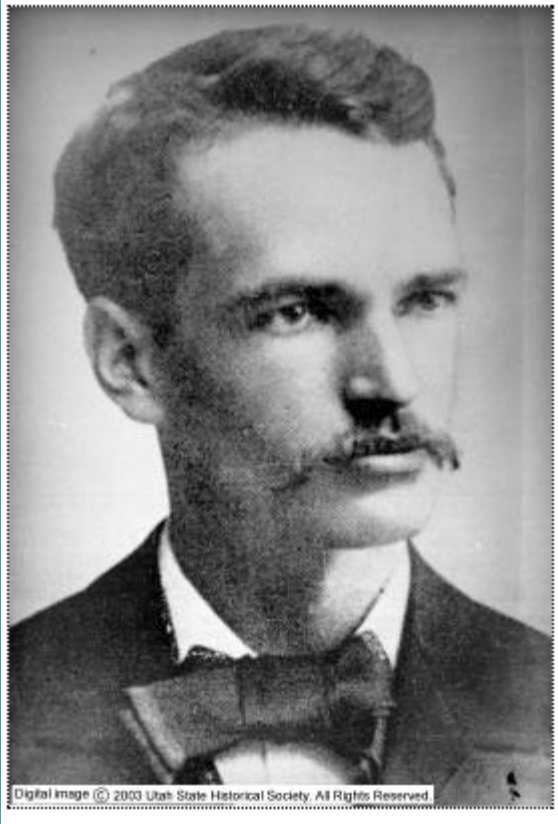
Quickly overgrown by spring vegetation; disappears

In Utah, appears to be mainly limited to foothills
(preferred/historical habitat here is now mostly gone)

Salt Lake County occurrences

- Most sites were in the extreme northern half of the valley near downtown, U of U campus, Sugarhouse areas
- None south of Holladay; a few in Holladay including the 1925 Seville Flowers collection at base of Mt. Olympus (habitat likely gone)
- None west of the Jordan River (and few even close) – here a Bonneville Terrace species mainly
- 29 specimens (some dups) at Garrett Herbarium which appear to include all known SL County specimens (none are at Claremont)
- Most specimens taken in late 20's, 30's and early 40's.

Earliest SL County collections



Dr. Orson Howard
(courtesy Utah State
Historical Society)

Dr. Orson Howard, University of Deseret, collected *V. beckwithii* in 1885, 4600 ft.

Other early collections:

Irvin F. Fisher, 3/27/1888, probably Sugarhouse near the Herman location

Irvin F. Fisher, 6/11/1888 (unusually late probably was May 11), City Creek Canyon (this is the only City Creek collection)

Edith Herman, 4/8/1899, Sugarhouse, 4700 ft.

Apparently none by Marcus Jones (which is surprising since he lived in SLC for several decades); and appears not from anywhere else either; Jones occasionally collected with Orson Howard in the early 1880's

While it is often an early blooming plant, there are only a few SL County collections from early April and the rest are either from roughly mid to late April plus a few from early to mid-May (including several of the "Holladay" locations), and most of these collections are in the 4600 to 4800 ft. range.

Intermountain Herbarium/USU: 29 voucher specimens:

6 Box Elder Co.
18 Cache Co.
2 SL Co.
2 Utah Co
1 Weber Co

Most collected in the 1930's, but one as recent as 1992 in Cache Co.

Weber State University herbarium: 2 specimens
(both from mid to late April in 1965 and 1966)

Stan Welsh Herbarium/BYU: only 7 voucher specimens

(per 2008 *A Utah Flora*, 4th ed)

“It has not been collected in Utah County to my knowledge since 1933.”

A small population in Utah County was discovered by Robert Fitts in 2003 and a collection was made

An 8th collection was made in April 2010 (by Welsh).

When was Beckwith's violet discovered?
By who? Under what circumstances?

“Discovered” means what? And to whom?

mo'-ta-ga. See *mo'-ta-ga*.

mo'-ta-komp. Probably the same as *mo'-ta-ga*, q. v. The name was heard applied by one Gosiute to *Viola beckwithii*.

mo'-ta-ga. Cf. *ti'-da-ya-gu-p.* *Layia glandulosa* Hook. and Arn. *Gymnolomia multiflora* Benth. and Hook. Cf. *i'-ca-mo-ta-ga.* *Helenium autumnale* L. Sneezeweed. The name is properly applied to these and their relatives and has no popular English equivalent. As may be seen, these forms in general may have also a more specific designation as well. It is probably used in a more restricted sense for *Layia*, etc.,—daisy-like forms.

mo'-ta-qai. Occasionally heard for the preceding.

toi'-ya-da-ti-go-ra. *Erigeron glabellus* Nutt. Fleabane. Cf. under *Erigeron* in preceding list.

toi'-ya-da-tsip. See *toi'-ya-bin-da-tsip.*

toi'-ya-di-sas. *Chrysopsis villosa* Nutt. Golden Aster.

toi'-ya-gwa-nu-p. *Saxifraga nivalis* L. Saxifrage. *Parnassia parviflora* DC.

toi'-ya-mo-gu-p. See *toi'-ya-mo-ha-gu-p.*

toi'-ya-mo-ha-gu-p. *Anemone multifida* Poir. Wind-flower.

toi'-ya-mo-ta-gomp (-*komp*). *Mertensia alpina* Don. Lungwort.

toi'-ya-mu-ta-ga. *Helenium hoopesii* Gray. Sneezeweed. Cf. *ti'-da-ya-gu-p.*

Viola cucullata Ait. Violet. ? *pa'-bu-tp.* Name not specific.

Viola palustris L. Violet. ? *dzi'-na-so-so.*

Wood (general term). *o'-pi.* *wu'-pi.* Commonly used as the equivalent of tree or shrub, i. e., woody plant, or even of plant in general at times.

From "The Ethno-Botany of the Gosiute Indians of Utah*" by Ralph Chamberlin, 1911 (*includes eastern NV). "mo" means protrusion or extension. Gosiutes occasionally used the Wasatch Front (e.g. Mill Creek canyon) to hunt deer/antelope (Chamberlin, 1913) otherwise well outside their normal range to the west.

“It would seem that the White race alone has received the divine command, to subdue and replenish the earth: for it is the only race that has obeyed it . . . “

“Civilization, or extinction, has been the fate of all people who have found themselves in the trace of the advancing Whites . . . ”

Missouri Senator Thomas Hart Benton in 1846

Father of Jessie Benton (1824-1902) who married John C.

Frémont in 1841

Thomas Hart Benton
(1782-1858)

Served in U.S. senate
from 1821-1851

160 years later, not much
has changed!

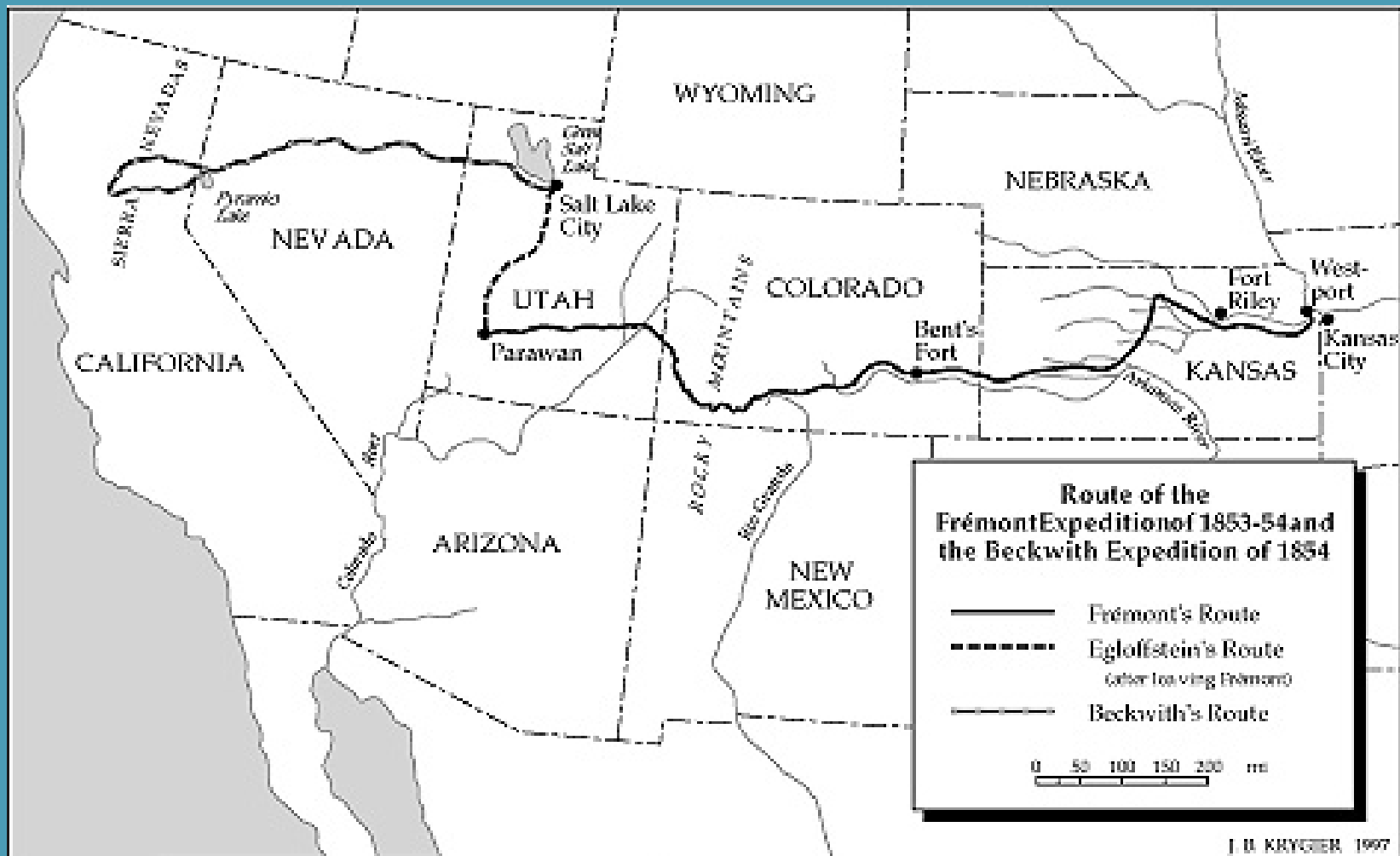


Westward ho!



Gunnison-Beckwith expedition of 1853-1854

Part of a series of intensive railroad route and other surveys that were undertaken primarily from the 1840's to 1880. Botany played an important role in most of these surveys, although the botanical collectors were typically untrained. Note the loop taken by Beckwith in April 1854 from SL to Wyoming not shown on next map.



From *John Charles Frémont Botanical Explorer* by Stanley L. Welsh, 1998

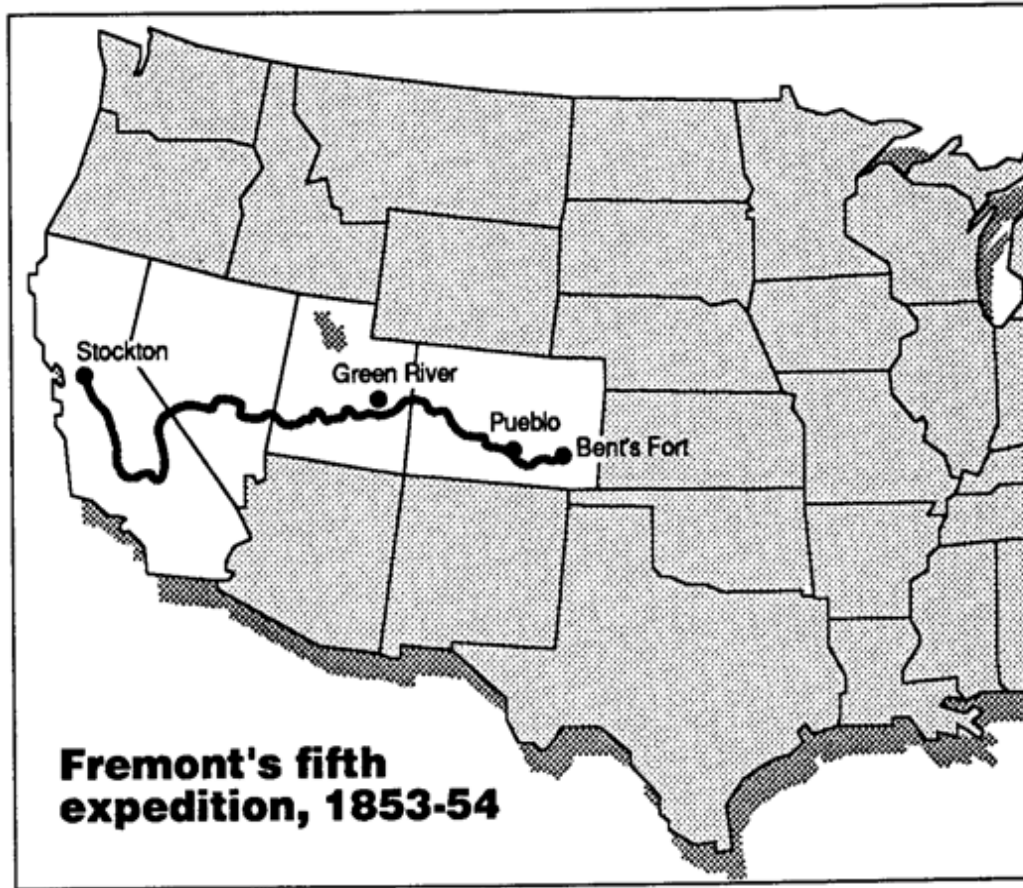


FIGURE 8. Route of the fifth expedition, 1853–54.

Frémont unofficially joins the party on his last expedition and follows Gunnison and as usual gets into the area disastrously late (arrives at Parowan in February 1854). Expedition is privately funded (not the least of which: father-in-law Senator Benton). Forbids diaries.

Frémont-Beckwith connections

1853

Richard Kern

F.W. Egloffstein

Solomon Carvahlo

Frederick Creutzfeldt

Later: Civil War

(although Gunnison and Beckwith were West Point grads, Frémont's background was topography)

Richard Kern, artist/topographer

Brother Edward Kern was on 1845-1847 Fremont expedition
He and brother Benjamin were on the disastrous 1848-49 expedition.
His brother Benjamin killed by Utes on the 48-49 expedition.
Richard then hired by Gunnison for the 1853 expedition.
Killed along with Gunnison, Creutzfeldt, others by Paiutes in October
1853.





J. M. Juning from sketch by R. H. Kern.

Printed by A. Hoen & Co. Balt^o

SUMMIT OF THE NEAREST RIDGES SOUTH OF GRAND RIVER
Traversed in passing around lateral Canones 12 O'clock, Sept 12

U. S. P. R. R. EX. & SURVEYS. 36th & 39th PARALLELS.



301. of BARNEY BAILEY & KNAPP. 1854.

VIEW OF THE ROAN OR BOOK MOUNTAINS

At the Spanish Trail Ford. From New Orleans.

U.S. P.R.R. EXP. & SURVEYS 36TH & 38TH PARALLELS.



J. M. Stanley from a sketch by R. H. Kern.

Printed by A. Horn & Co. Bak^o

Opuntia!

ROCK HILLS BETWEEN GREEN AND WHITE RIVERS.
Oct. 3^d Wahsatch Mountains in the distance.

F.W. Egloffstein, topographer

Prussian who was on the first half of 1853 Fremont expedition; went with Carvalho to SLC from Parowan. Hired by Beckwith to replace Richard Kern (killed with Gunnison), so completed the "second half" of the Gunnison-Beckwith expedition. Note: Kern sketch similarities.



Based on Egloffstein sketch made during 1853 Fremont expedition.

Solomon Carvalho, artist

The Desert News - Jun 10, 1977



Historic
portrait of
Brigham
Young
in exhibit

A portrait of President Brigham Young, painted by the Jewish artist Solomon Nunes Carvalho, is being featured in an exhibit of the artist's work at the Museum of American Jewish History at Philadelphia, Pa.

Mr. Carvalho accompanied the soldier-explorer Col. John C. Fremont on his 1853-54 expedition across the western United States. Col. Fremont was trying to find a suitable route through the Rockies so plans for a transcontinental railroad could be completed. Mr. Carvalho was the expedition's official artist.

Early in 1854 the group arrived nearly starved and frozen in Parowan, Utah, and the



Fremont -Civil War era painting



Spanish-Portuguese descent, Jewish
With Frémont 1853
to Parowan
“Messed” with Lt.
Beckwith in SLC in
early March, 1854
Hung out in SLC for
10 weeks

Frederick Creutzfeldt*, botanist (*Kreutzfeldt)

German, birth date/place unknown, where received training unknown

First botanist hired by Frémont but not until the Frémont's ill-fated 4th expedition of 1848-49. Creutzfeldt almost died.

Frémont still collected and did not think highly of him.

Hired by Gunnison for the 1853-1854 expedition.

Collected many plants initially on Gunnison expedition including types *Gilia gunnisonii* and *Calochortus gunnisonii* in Colorado – few if any plants collected in Utah (Gunnison did not get to Utah until Sept, expedition left in June)

Did not think highly of Gunnison, had ominous feeling.

Killed along with Gunnison, Richard Kern and several others by Paiutes in late Oct 1853 approx. 30 miles west of Fillmore.

1853 diary is at Smithsonian Archives under Frederick Kreutzfeldt (German translation – how well he spoke English unknown)

Honored by Welsh with the naming of *Cryptantha creutzfeldtii* in 1982 (which Creutzfeldt never saw) and which is a globally rare species (see Utah Rare Plants).



Cryptantha creutzfeldtii – Susan Meyer



Cryptantha creutzfeldtii - Susan Meyer



Cryptantha creutzfeldtii – Susan Meyer



Beckwith leaves SLC April 4, 1854 for “loop” while awaiting orders.

“Leaving the city we proceeded north along the shore of the lake.”

“Spring was already considerably advanced in the valley, fresh grass and plants were springing up on its sunny slopes.”

Weber Canyon/Ft. Bridger/Kamas/Timpanogas/Utah valley/SLC and was back by the last week in April.

Finally received the Feb. 21, 1854 orders on May 1, 1854. On May 5, left Great Salt Lake on the west side of the Jordan River.

Collected during the 1854 expedition and
named in honor of 1st Lt. E.G. Beckwith
(1818-1881)

- *Arabis beckwithii*
- *Astragalus beckwithii* var. *beckwithii*
- *Trifolium beckwithii*
- *Viola beckwithii*

Two named by Torr & Gray and two later by Watson, names have largely stood the test of time, exception being *Arabis beckwithii* treated as *Boechea beckwithii* in IF, as *Arabis hoelbelli* var. *derensis* by Welsh, and included in *Boechea inyoensis* by mustard experts. Only the *Astragalus* was collected in UT by James Snyder of the Beckwith expedition, but the other three were all later collected in UT.

Astragalus beckwithii var. *beckwithii*



Plate from the Beckwith report

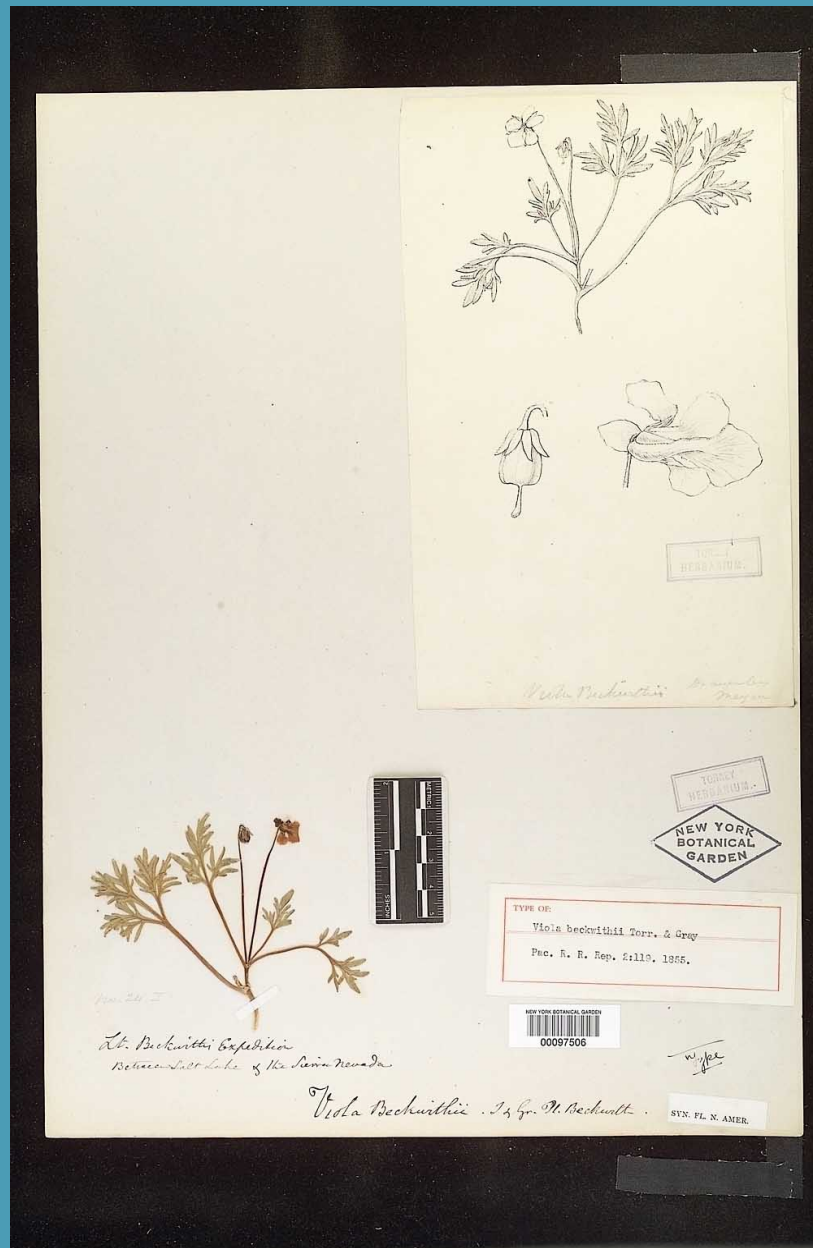
Tony Frates, SL CO, 4/30/08

Type specimen
New York Botanical Garden

June 1, 1854

Agate Pass, Eureka CO NV
Collector: J. Snyder

Taxonomist
John Torrey
(1796-1873)
would often
make drawings
like this as he
studied
collected
material and
then would
ultimately
attach to the
specimen
sheet.





V. beckwithii country in
Nevada

Photo by Mary Winter
5/12/08

Southern end of Tuscarora
Mtns, 8 miles west of
Carlin, Eureka County

5914 ft.

Associated species:
Sagebrush

Antennaria stenophylla
Ranunculus andersonii,
Phoenicaulis cheiranthoides

Fritillaria pudica
Boechera holboellii
Lomatium nudicaule
Others



Photo by Mary
Winter, 5/12/08,
Eureka County NV



Boechea holboelli (note caterpillar) and *Viola beckwithii*, photo by Mary Winter, 5/12/08, Eureka County NV

“on the slope of a mountain between Great Salt Lake and the Sierra Nevada”



5/13/08 photo by Mary Winter – Agate Pass, type locality for *V. beckwithii*, 50 miles south of Carlin in vicinity of Buckhorn mine, Eureka County NV, elevation at the pass 5854 ft.; type collection was made on June 1, 1854 by James A. Snyder of the Beckwith expedition



V. beckwithii photo
by Mary Winter
taken in early 2007
(Nevada)

Irony of *Viola beckwithii*:

It could have been found blooming in the Salt Lake Valley in March 1854 where Beckwith and men were stationed over the winter of 1853-54.

Instead it was found some 240 miles to the west some two months later.

(Hats off to James Snyder for seeing it in NV and collecting it.)

Astragalus beckwithii would be found growing (on the east side) in the SL valley for the first time just three years later by Utah's first resident to make herbarium collections, 17-year old Jane Carrington Young.

Even she however did not collect Beckwith's violet.

Blooms too early! Would not be until 1880's until documented here.

Beckwith:

Born NY, joined army in NY, West Point

Took over when Capt. Thorne drowned in an 1849 survey.

Promoted to Captain by May 1855.

Colonel in 1864/Civil War

Brvt Brigadier General 1865 – in light of war service

Died 1881

Snyder: referred to by Beckwith as his “young assistant” in 1854.

Born in D.C., joined army in VA.

Became the commissary in an 1860 Kearney expedition/CA.

Promoted to 1st Lt. Oct 3 of 1863 from 2nd Lt.
(presumably fought in the Civil War)

Appears to have achieved the rank of Captain, 3rd Infantry.

Ordered before the retirement board, 5/26/1888

So we could keep talking now about the Beckwith expedition.

But there's really nothing more there about Beckwith's violet.

So instead let's return to Utah, and fast forward to 1939.

And to a person that also has a direct connection to Red Butte Garden.

And to the The Nature Conservancy.

And to the Utah Native Plant Society.

BULLETIN OF THE UNIVERSITY OF UTAH

Volume 29

June 28, 1939

No. 13

A New Violet from Utah

BY

W. P. COTTAM

BIOLOGICAL SERIES, Vol. IV, No. 3



PUBLISHED BY
THE UNIVERSITY OF UTAH
SALT LAKE CITY



Alpine Summer School 1920's -
Walter Cottam (standing), A.O.
Garrett (sitting - far right)

Courtesy, L. Tom Perry Special Collections,
Harold B. Lee Library,
Brigham Young University, Provo, UT 84602.

Walter P. Cottam

40 years later, UNPS award, May 4, 1979





April 1984

BEHLE: SEVILLE FLOWERS (1900-1968)

211



Fig. 1. Seville Flowers (ca 1967) in his laboratory preparing illustrations for his monograph on the mosses of Utah and the West.

Illustration by Dr. Seville Flowers (from
1939 Cottam publication)

The Emigration Market at 1706 E. 1300 South in Salt Lake City opened in 1942. The market closed on April 3, 2010.

The market was located at the southeast corner of the intersection at 13th So. and 17th East. It likely was one of the developments that was ultimately situated on the vacant lot where the type specimen for *V. bonnevillensis* was taken.

The Cottam connection



7/29/07 – SE corner of 13th South and 17th East Streets



V. bonnevillensis was suspected to be a hybrid of *V. beckwithii* and *V. purpurea* – looking to W/SW

7/29/07



7/29/07 - type locality for *Viola bonnevillensis*

4500 ft. April 17, 1937 vacant lot, benchlands (p. 66 Vol 2B IF)



7/29/07 – S/SW



“This property and neighboring areas to the east have for years been known to harbor one of the few relict colonies of *Viola beckwithii* once so widely distributed over the Bonneville bench lands along the Wasatch Front.” Cottam, 1939

7/29/07



7/29/07 –Utah's Choice! - the closest thing found to native plant growth – looking N on 1700 E.

Color varieties – SL County plants – per W.P. Cottam, 1939

Most common:

Upper petals dark violet, the others white, yellow at base, yellow spot of the lower petal pencilled with deep purple veins

Other/less common:

Three lower petals vary in color from light orchid to a shade of violet only slightly less deep than the upper petals

April 4, 1939 Garfield and 17th East

Albino form, all petals white, or uppers light purple at base, purple lines in the yellow spot faint in this form

Cottam's conclusion: lower three petals are variable in violet pigmentation, but even upper petals may lose pigmentation, cannot recognize varieties based solely on flower color

Beckwith's violet found at Red Butte Garden in 2008

Faye Rutishauser, Natural Area Horticulturist at Red Butte Garden (within the fenced natural area at RBG no less!) found *Viola beckwithii* on April 28, 2008. The plant was last collected from Salt Lake County in April of 1950.



5/2/08



5/2/08 – Faye R.



5/2/08 – where are the plants?



5/2/08



5/2/08



5/2/08



5/2/08



5/2/08



5/2/08



5/2/08



5/2/08



5/2/08



5/2/08



5/2/08



5/2/08



5/2/08 – 5,300 feet!



5/2/08



5/2/08



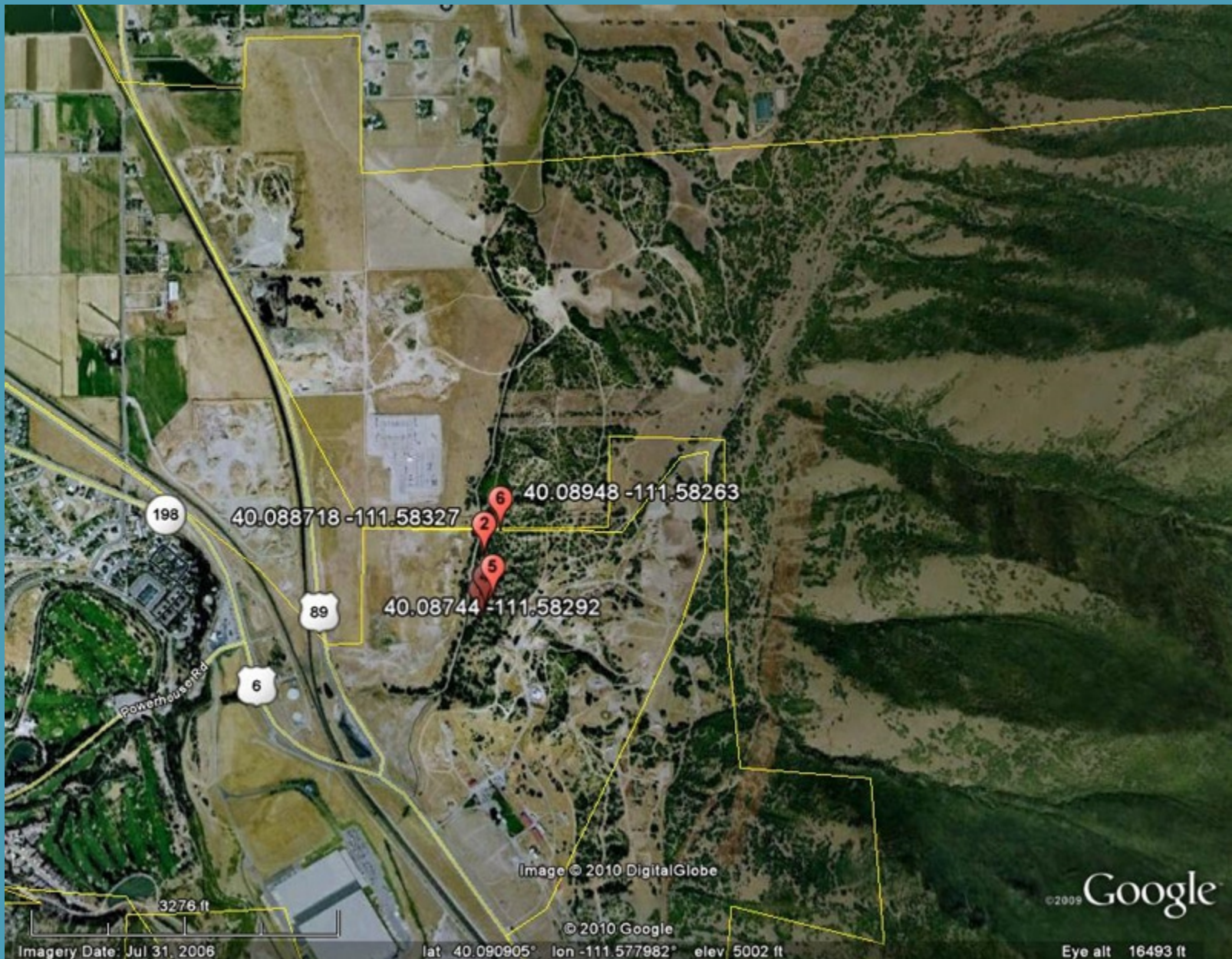
5/2/08

You can help!

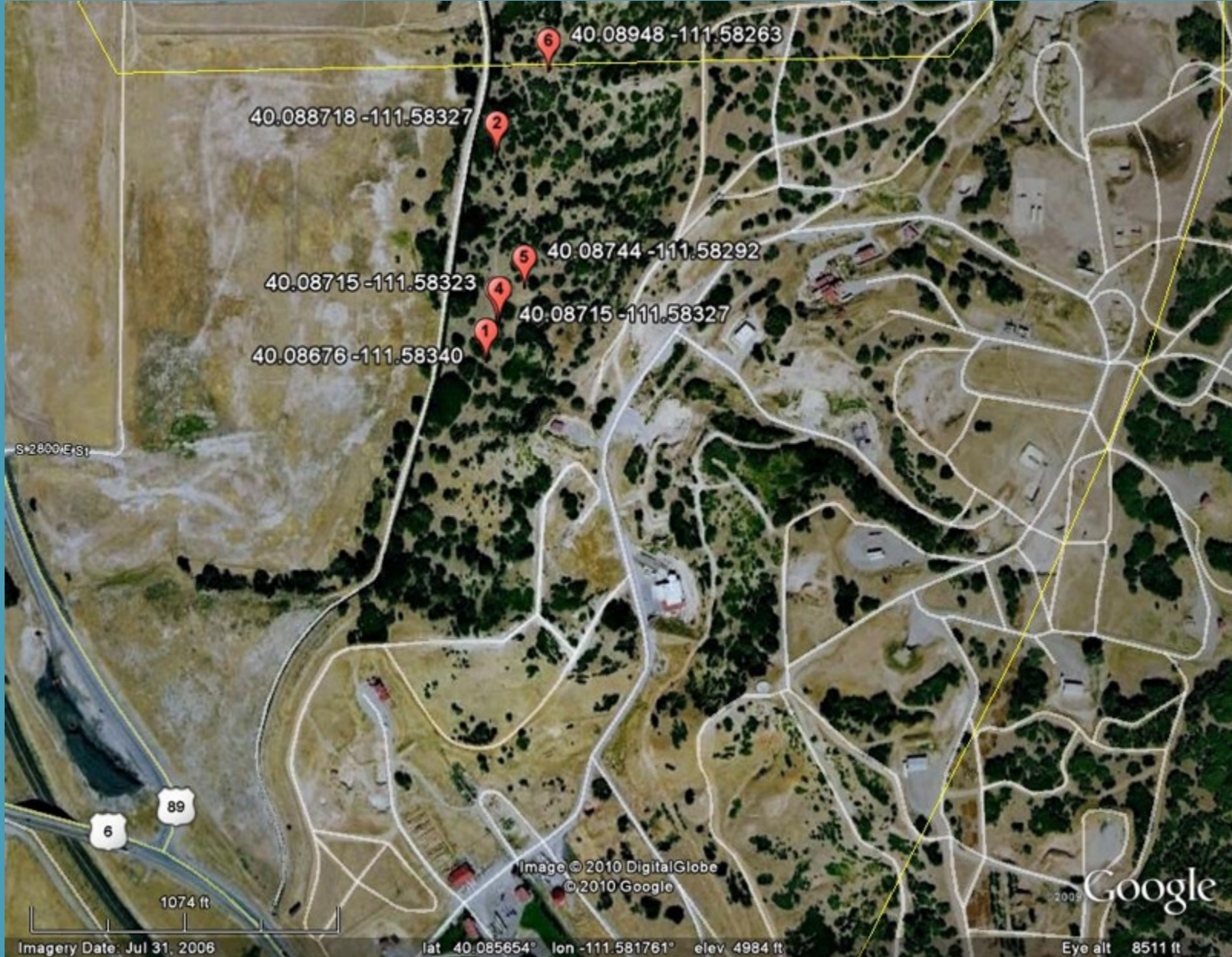
We need your eyes to be on the lookout for this little plant!
(see pics that follow taken March 19, 2005 in Utah County as a
to help provide more clues as to what to look for).

We need to be stewards of this species wherever it still
occurs along the Wasatch Front and be advocates for
its protection; we need to ensure that minimal impacts
occur to its habitat and that we do not appreciate it to
death; and we need to encourage research and study.

Because we care!



Southern Utah County occurrence found in 2003 by Robert Fitts. This site is in peril and may be the only extant occurrence of Beckwith's violet in UT Co. Location is also at the most southeastern portion of its known distribution.



A collection was made by Robert Fitts at red balloon location #6 on 3/19/05 (but not yet accessioned), the first in Utah Co. since 1933. On 3/29/09 a collection was made from the same area by Stan Welsh who visited the area with Steve Hegji.

The number of plants at the only known currently existing Utah County site discovered by Robert Fitts in 2003 was, in 2005, estimated at 100.

Observations since including a count by Steve Hegji in early April of 2010 indicate about the same number.

Compared to the Red Butte population of just a few plants (perhaps under 20), this is much larger, but still very small.

Will this be enough to sustain these isolated occurrences and even if further incursions to their habitat does not occur?



Robert Fitts points to *Viola beckwithii*.

3/19/05 Tony Frates



3/19/05 Tony Frates



3/19/05 Tony Frates



View of habitat looking northwest.

3/19/05 Tony Frates



3/19/05 Tony Frates

Susan Garvin Fitts searching for Beckwith's violet.



3/19/05 Tony Frates

View to the south towards Spanish Fork Canyon



3/19/05 Tony Frates



View to the west.

3/19/05 Tony Frates

On April 5, 2010, Blake Wellard and Margaret Harris re-discovered the site of an April 16, 1966 Weber County specimen of Louis Best in Pleasant View (a specimen located at Weber State). Plants were growing in a sandy loam in an *Artemisia tridentata* community. Natives also in flower included *Fritillaria pudica* and *Lomatium grayi*.

The population is imminent danger of housing development (Deer Crest).



Provided by Blake Wellard – based on observations made on 4/5/10, Weber Co.



Weber County – Deer Crest

4/5/10 Blake Wellard



Weber County – Deer Crest

4/5/10 Blake Wellard