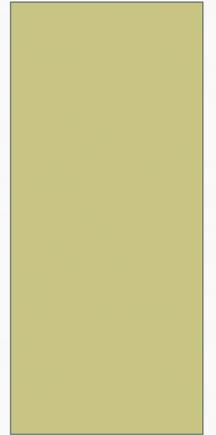


FOUR BLM SENSITIVESCONTINUED

MAGGIE MARSTON
PHONE: 435-781-3410
m.marston@blm.gov
BLM



- Jessi already covered most of the survey and reporting requirements for BLM sensitive plant species.
- This presentation will address 4 BLM sensitive plant species found more commonly in interaction with energy development.



SPECIES & SURVEY DATES

Species	Usual Start	Usual End	Survey valid until
Horseshoe milkvetch	April 15	May 15	TBD -4 years
Hamilton's milkvetch	May 15	June 20	TBD -4 years
Sterile yucca	Anytime snow free	Anytime Snow free	TBD -4 years
Strigose townsendia	March 15	Re-bloom with late precipitation	Data gathering

Bureau of Land Management
VERNAL FIELD OFFICE

BLM

AND Record of Decision
Approved Resource Management Plan



OCTOBER 2008

VFO RMP RESOURCE MANAGEMENT

PLAN DIRECTION PP. 24, 28

The following measures are currently (and will continue to be) implemented to mitigate impacts to the sensitive plant species from submitted projects with proposed surface disturbance:

- (1) Within suitable habitat, site-specific inventories will be conducted to determine occupancy. The inventories will be conducted for lands within 300 feet of proposed surface disturbance.
- (2) In suitable habitat, the project infrastructure will be designed to minimize impacts.
- (3) Within occupied habitat, the project infrastructure will be designed to avoid direct disturbance and to minimize indirect impacts to populations and individual plants.
- The nearest proposed surface disturbance to a plant will be at least 300 feet away

PRE-PROJECT ASSESSMENT



Yucca sterilis near
Vernal, UT (Photo: Grasslands Consulting)

Pre-project habitat assessments will be completed across 100% of the project disturbance area within potential habitat to determine if suitable habitat is present.

- Sterile Yucca – Intermittent in windblown sand sites, dugways, roadsides, rocky crevices in sandy soils (no polygon)
- Strigose Townsendia – Widespread (no polygon)
- Hamilton's milkvetch – polygon*
- Horseshoe milkvetch - polygon*

* or other areas determined by on-site review

HABITAT DEFINITIONS:

1. Potential
2. Suitable
 - Includes marginal and ideal habitat
3. Occupied



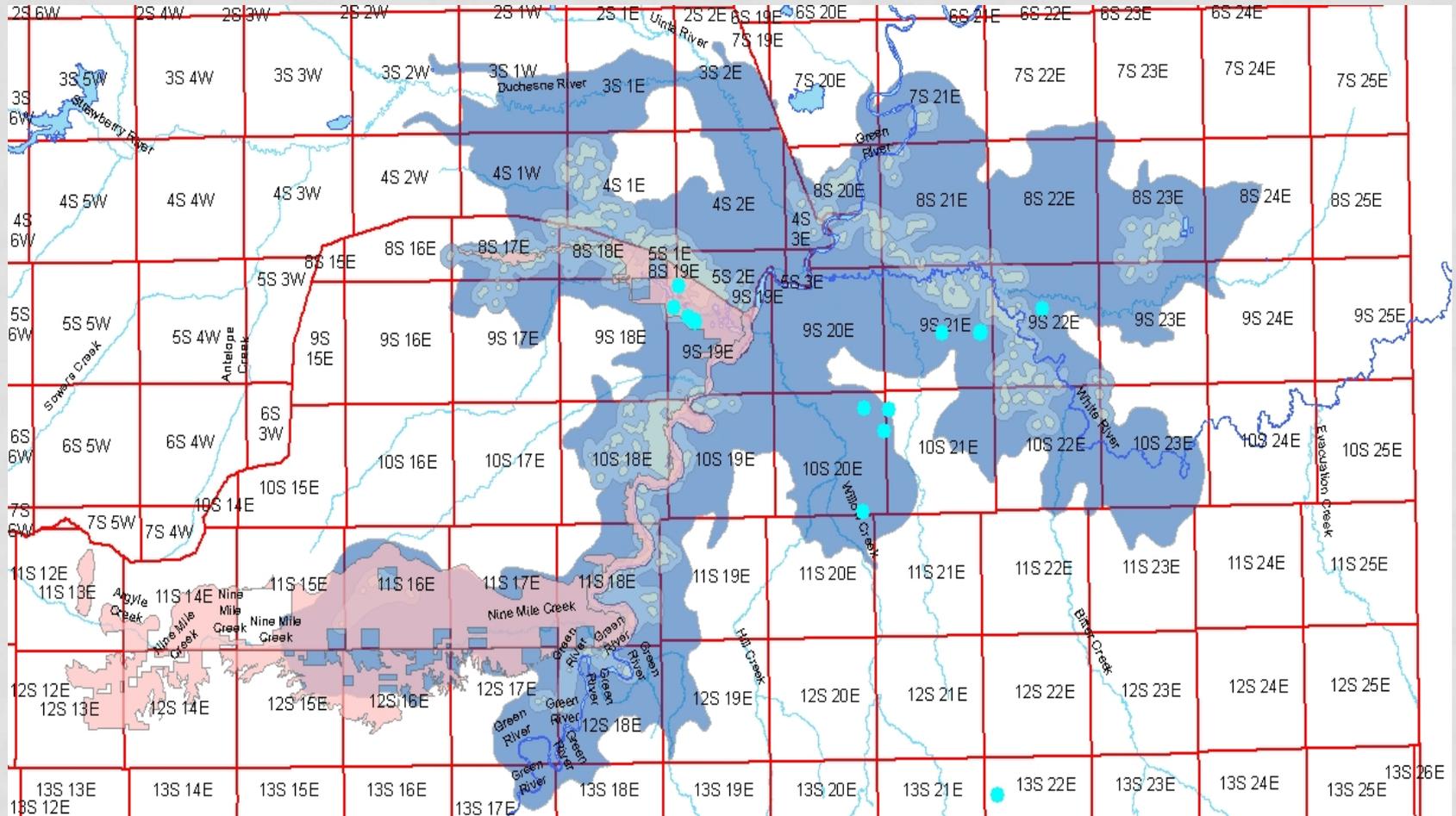
Potential habitat is defined as areas which satisfy the broad criteria of the species habitat description.

Suitable habitat is defined as areas which contain or exhibit the specific components or constituents necessary for plant persistence; determined by field inspection and/or surveys.

Occupied habitat is defined as areas currently or historically known to support a species; synonymous with "known habitat."

Sterile yucca

Sterile Yucca, *Yucca sterilis* (shown in cactus polygon)



Sterile Yucca, *Yucca sterilis*

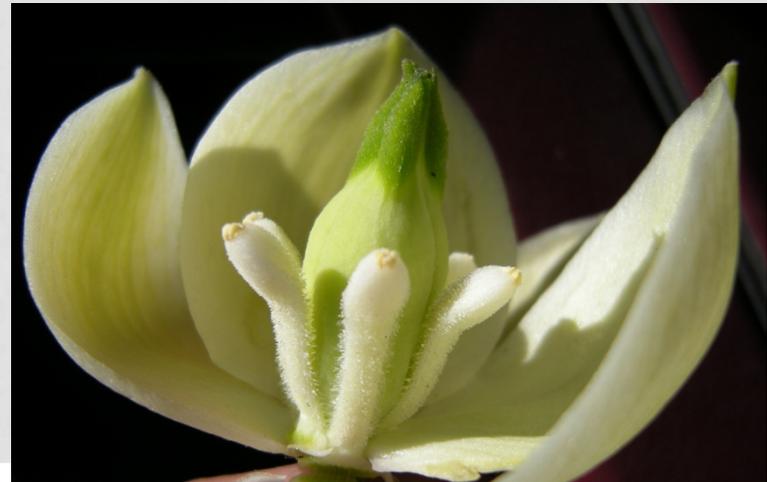
1014 Data summary: In our data, we have 20 records, 1 from Aaron, 1 from Maggie, 11 from Grasslands and 7 from Kleinfelder. All from 2011 surveys, except for Aaron's 2012 location. Concurrent with cactus surveys, we have 18 additional records for the species, obtained over the past 3 years.

*Survey for yucca in '12 and '13 in the oilfield, null thus far.

UT Heritage database (VFO copy) 6 records (2 in the general area of these 20 spread approximately over 20 miles east/west and 10 miles north/south) and 4 from areas on the VFO that range from Willow Creek to Cotton wood Creek. **The overall data spans 50 mi north/south and 30 mi east/west.**

26 Total occurrence records. Density of located vs area surveyed is running at approximately 1 individual/clone site per 1000 acres.

YUCCA HARRIMANIAE VAR. *STERILIS*



Hamilton's Milkvetch

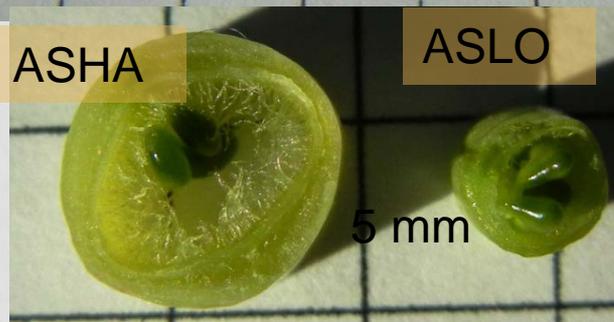
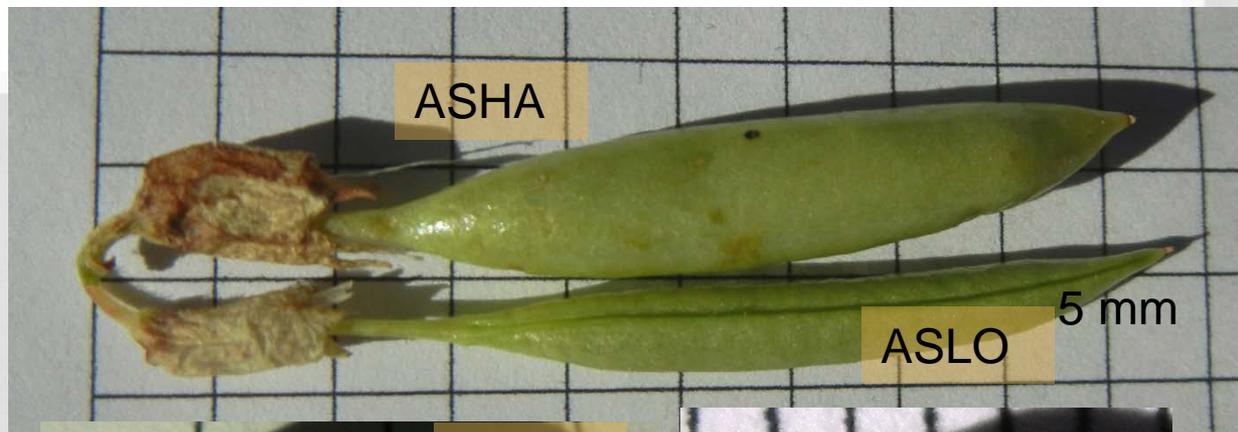
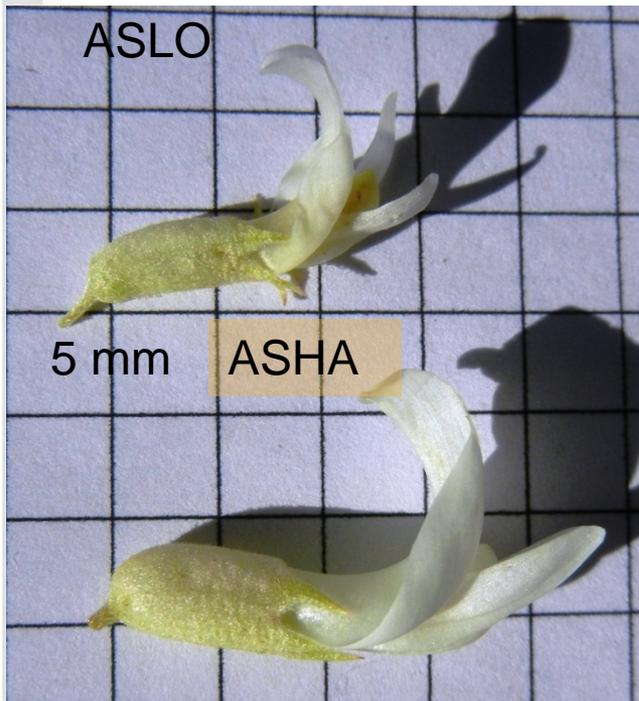




A. Hamiltonii
late summer phylogeny

ASTRAGALUS HAMILTONII & A. LONCHOCARPUS

(SLIDE FROM: S. GOODRICH)



ASHA: flowers 20-24 mm long;
fruit over 5 mm wide, terete when
young and mature.

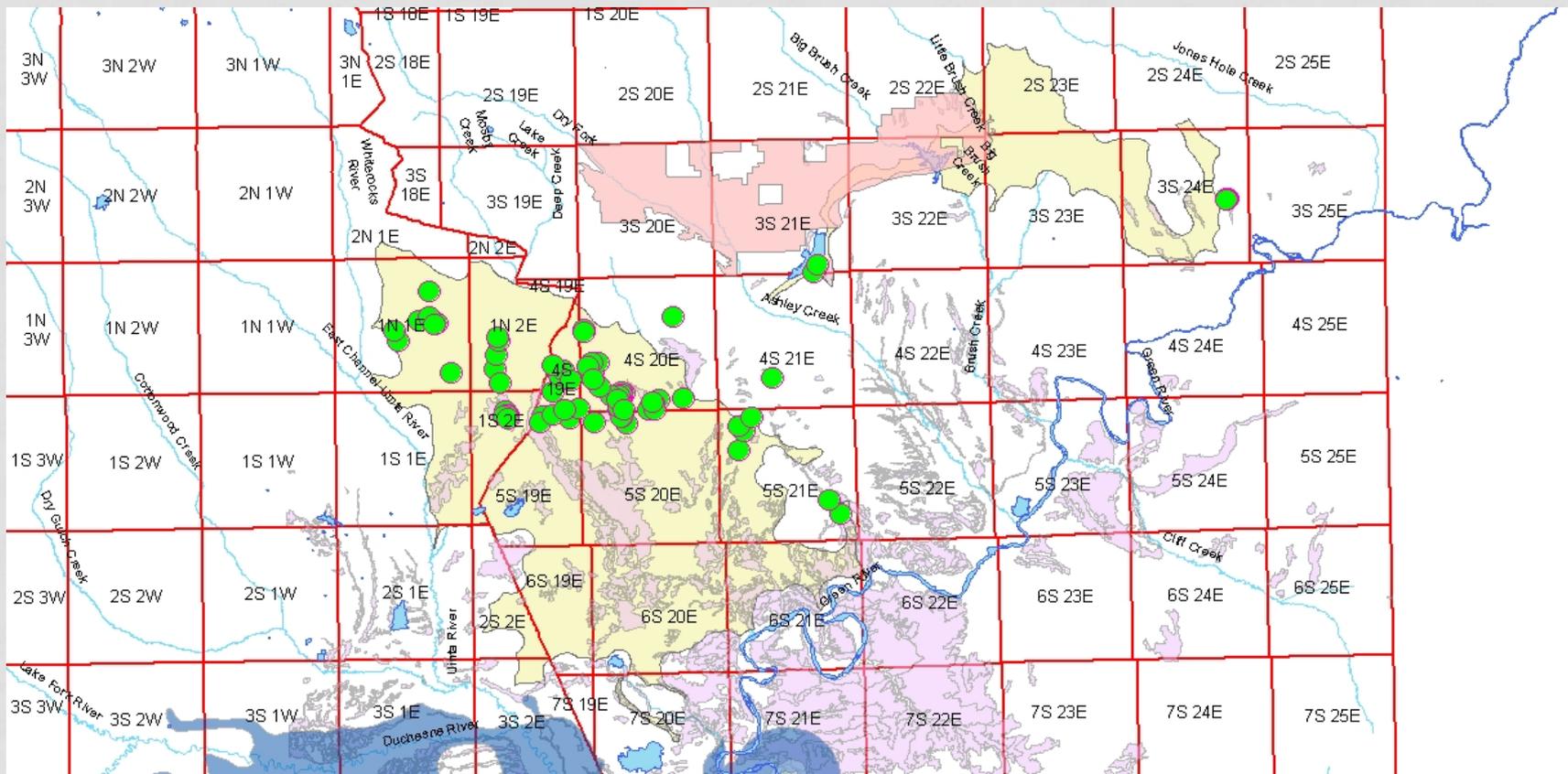
ASLO: flowers 13-20 mm long;
fruit mostly less than 5 mm wide
(in Uinta Basin plants), sometimes
flattened when young

ASTRAGALUS HAMILTONII HAMILTON MILKVETCH

(slide from: S. Goodrich)



Hamilton's milkvetch polygon(s) and locations (yellow = polygon, pink = potential soils). * BLM may request surveys on other locations.

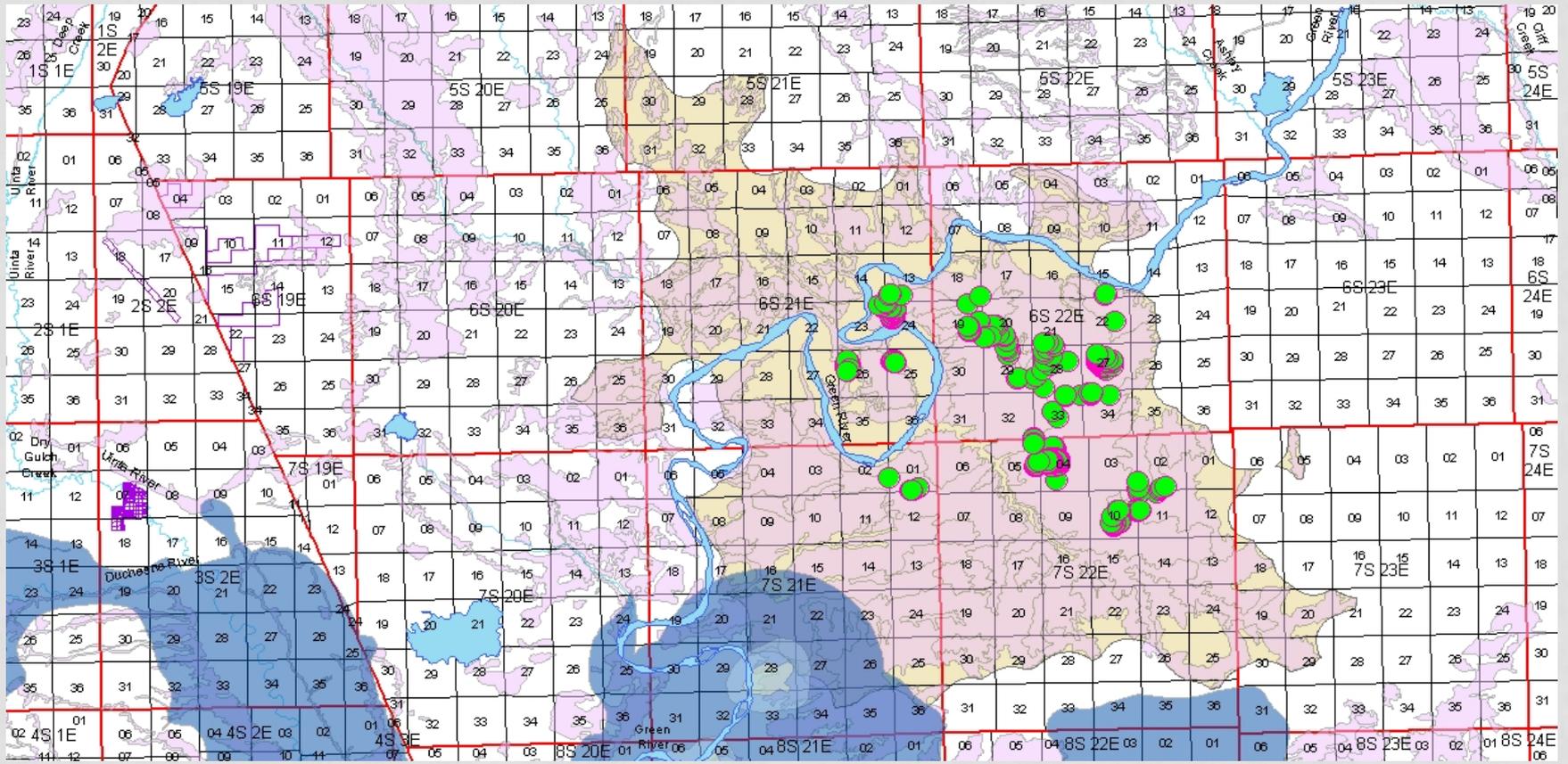


Horseshoe milkvetch



A. equisolensis can be found on previous disturbance sites.

Horseshoe milkvetch polygon and locations (yellow = polygon, pink = potential soils. *BLM may request surveys on other locations.



ASTRAGALUS EQUISOLENSIS HORSESHOE

MILKVETCH (SLIDE FROM: S. GOODRICH)



ASTRAGALUS
MOLLISSIMUS
WOOLY LOCOWEED



Field look alike – especially post-fruit, dried conditions



5 mm

Astragalus equisolensis

<i>A. equisolensis</i>	<i>A. mollissimus</i>
Pods: hirsute	villose tomentous
Pods unilocular, 10-14mm	Pods bilocular 11-23mm
Pods strigose both sides Hairs stiffer and spiralled	Pods wooly tomentose both sides

HORSESHOE MILKVETCH HABITAT

- Cracks, crevices, and soils weathered directly from the Duchesne River Formation



Horseshoe milkvetch grows in mixed desert and salt desert shrub communities and occurs on three types of substrate: 1) river terrace sands and gravels overlying the Duchesne River Formation; 2) sandy-silty soils that weather directly from the Duchesne River Formation; 3) and in crevices of Duchesne River Formations.

Townsendia strigosa var. *prolixa*

Townsendia strigosa var. *prolixa* **OR** *Townsendia incana*

Photos courtesy S. Goodrich

2014 Update:

- B. Glissen 2011 collections
- 2013-2014 herbarium work by S. Goodrich,
- More collection/voucher with GPS locations, photos needed. *high plasticity



PLANTS OF UTAH

Townsendia incana Nuttall.

UINTAH CO: West-facing slope below rocky knoll ca. 0.2 mi. south of Fidlar Road. Red Wash SW Quad (7 ½ min.). T9S, R22E, Sec. 24. UTM – 636985 m. E by 4431187 m. N (Zone 12).

In black sagebrush/shadscale community with sandy clay-containing soils. With *Gutierrezia sarothrae*, *Hilaria jamesii*, *Tetradymia nuttallii*, and *Spharalcea*. Elev. 5040 ft.

G. R. Glisson (GG-12-02) May 10, 2012
& B. T. Glisson Asteraceae



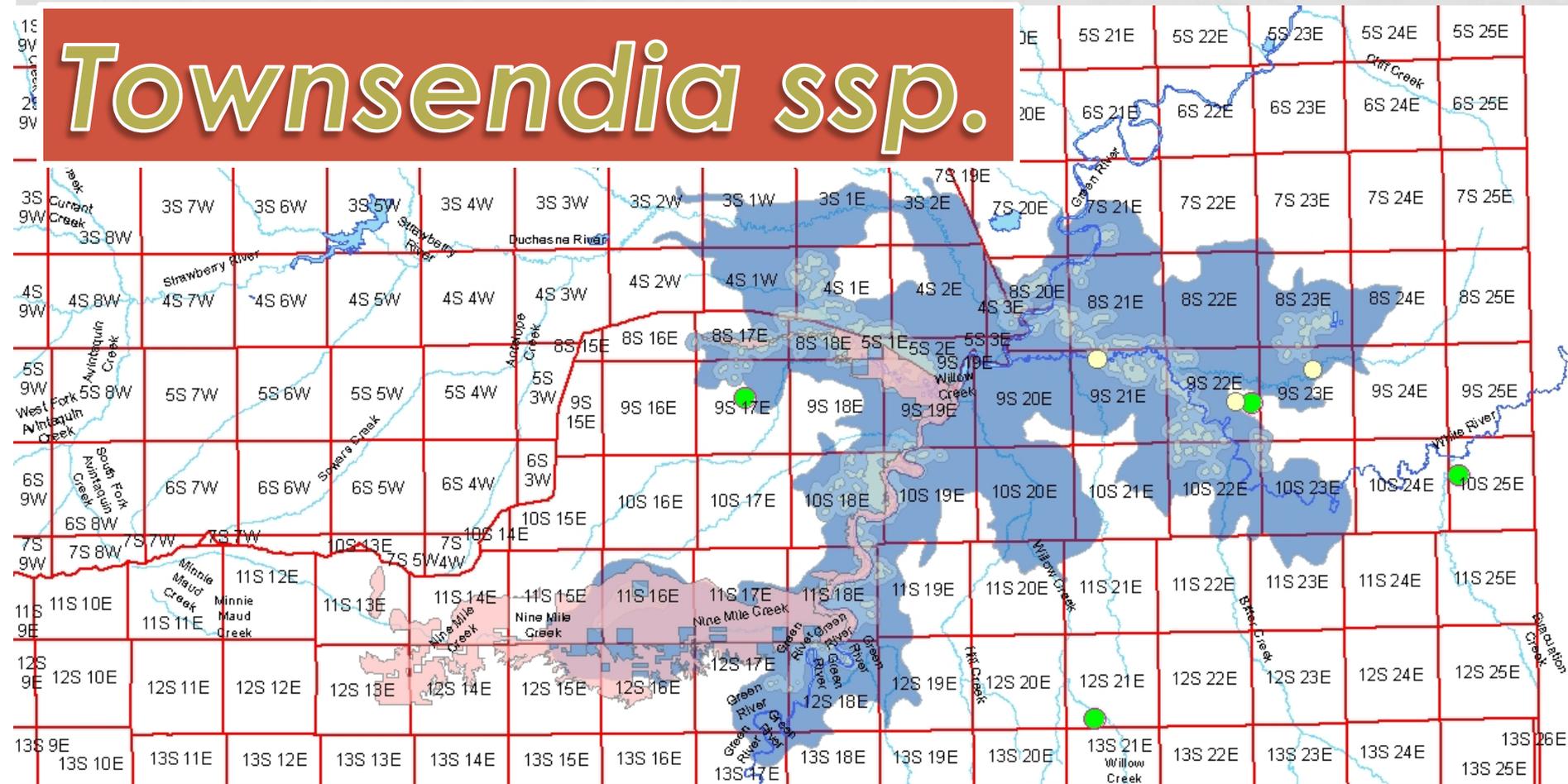
Townsendia ssp. specimens

USU Vernal herbarium
BLM Vernal herbarium
UC Berkely herbarium
BYU/USU Wasatch Front

T24, R19E S.20
T8S, R21E S.5
T9N, R23S S.10
T9S, R22E S. 24

B. Glissen

Townsendia ssp.



Green Dots = VFO GIS

Yellow Dots = B. Glissen Collection

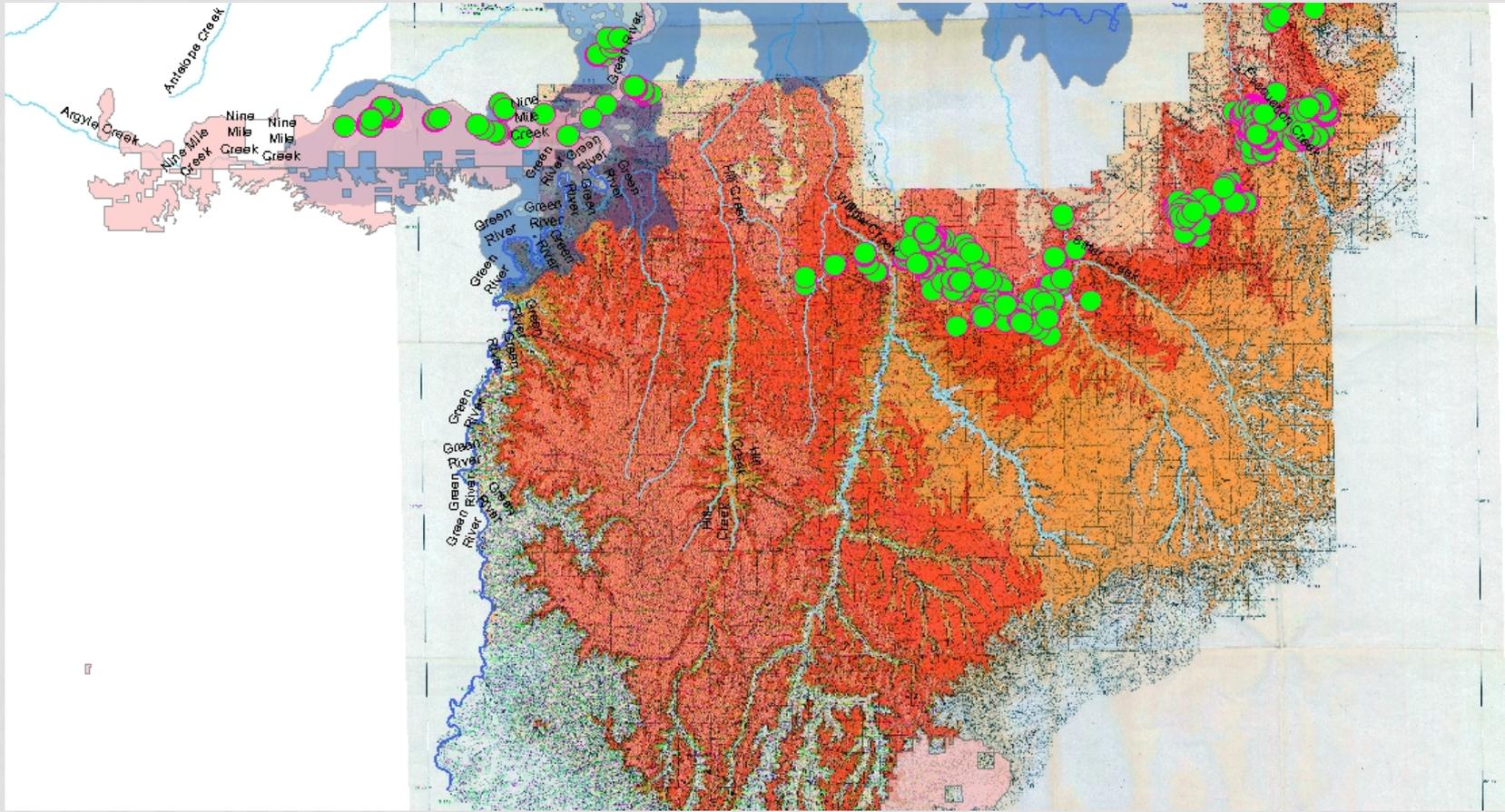
More collection of potential *T. strigosa* var. *prolixa* is needed.

*2 individuals with roots, leaves, flowers, GSP location to USU Vernal, or BLM.

GREEN RIVER SHALE AREAS

- Green River Shale habitats in Energy Field surveys.

Green River shale - *energy field exclusion is needed or **survey** for T. E. S. P. C. is necessary. White bands of shale-derived soils from Green River formations (Jessi covered in her presentation. *Just a reminder.)



SUITABLE HABITAT SURVEYS

Site inventories conducted within suitable habitat to determine occupancy:

- **By qualified individuals.**
- **In all suitable habitat, usually during peak flowering. ***
- **Within 300 feet of disturbance (pipeline distances -see Table A)**
- **Include plant species lists, habitats, photos, and distance/disturbance tables.**
- **Generally valid 4 years**
- **Annual spot checks not used for BLM sensitives at this time.**



BLM SENSITIVE ENERGY REPORTS

- Maps – area surveyed, plant locations, date, surveyors, area description, results. (SOP to date)
Suitable and occupied habitats.
- Summary tables with disturbance types, distance to plants.
- Utah Heritage report forms, attached or appendix.
- **Photos** of habitats (quality counts)

Table A

Pipeline type	Where Is It?	Survey distance	Additional requirements or explanation
Surface	Next to road	ROW plus 50 feet from edge of ROW on pipeline side of road only	Additional impacts from a pipeline placed next to a road may be considered discountable and insignificant compared to road impacts, therefore reduced survey distances are appropriate.
	a. Vehicle-free temporary ROW	ROW plus 50 feet from edge of ROW on both sides	Some surface lines may be laid by hand with minimal disturbance and no vehicles in the ROW—such pipelines can have a shorter survey distance.
	a. All other cross-country ROWs	ROW plus 300 feet from edge of ROW on both sides	Pipelines where any mechanized travel will be used for maintenance, installation, or other related activities need to maintain a 300-foot buffer.
Buried	Next to road	ROW plus 300 feet from edge of ROW on pipeline side of road only	The primary impacts with this type of disturbance are direct impacts to plants—indirect effects may be considered discountable and insignificant compared to road impacts. Thus, surveys are needed only on the side of the road where the pipeline will be buried.
	Cross-country	300 feet from edge of ROW	These pipelines create the most disturbance compared to other types of pipelines. Therefore, requiring maximum survey distance and buffer.

