

Provo River Delta Restoration

Imagine What the Future Can Hold



RiversEdge West Annual Meeting

Fish and Hydrology Session

March 5, 2024

B. Eric McCulley, Project Coordinator

Utah Reclamation Mitigation and

Conservation Commission

Our Partners and key individuals

INDIVIDUALS INTERNAL AND TEAM

- Melissa Stamp
- Richard Mingo
- Paula Trater
- Paul Abate
- Mike Mills
- Mark Holden

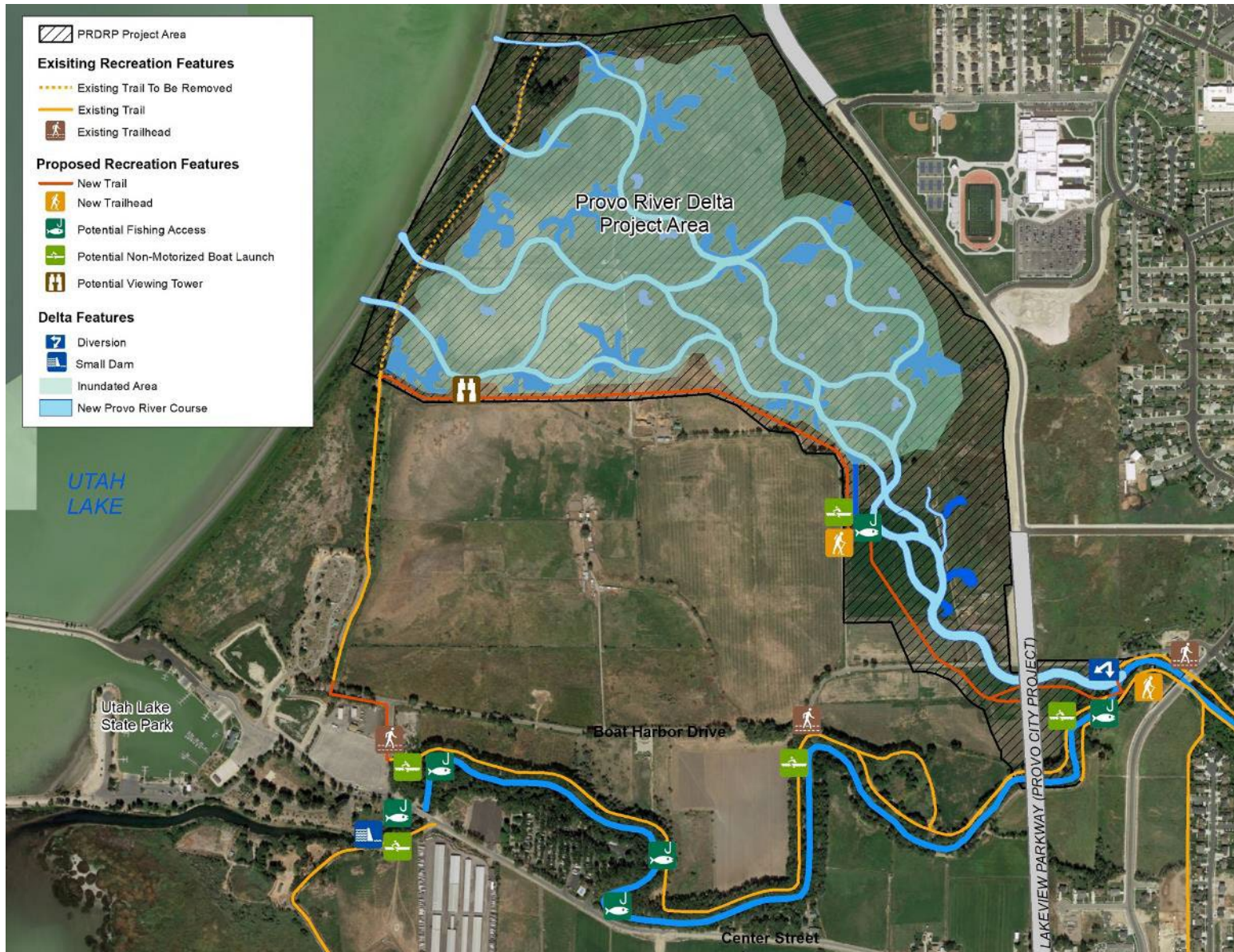
KEY PARTNERS

Central Utah Project Completion Act Office



The [Central Utah Project Completion Act Office in Provo](#), Utah, was created in 1993 to oversee completion of the Central Utah Project. Staffed by a small team of professionals, the office represents the Secretary of the Interior, providing oversight and funding to the Central Utah Water Conservancy District and Mitigation Commission, for completion of the CUP.

The Vision







Changing a Landscape to a Riverscape





The making of a River

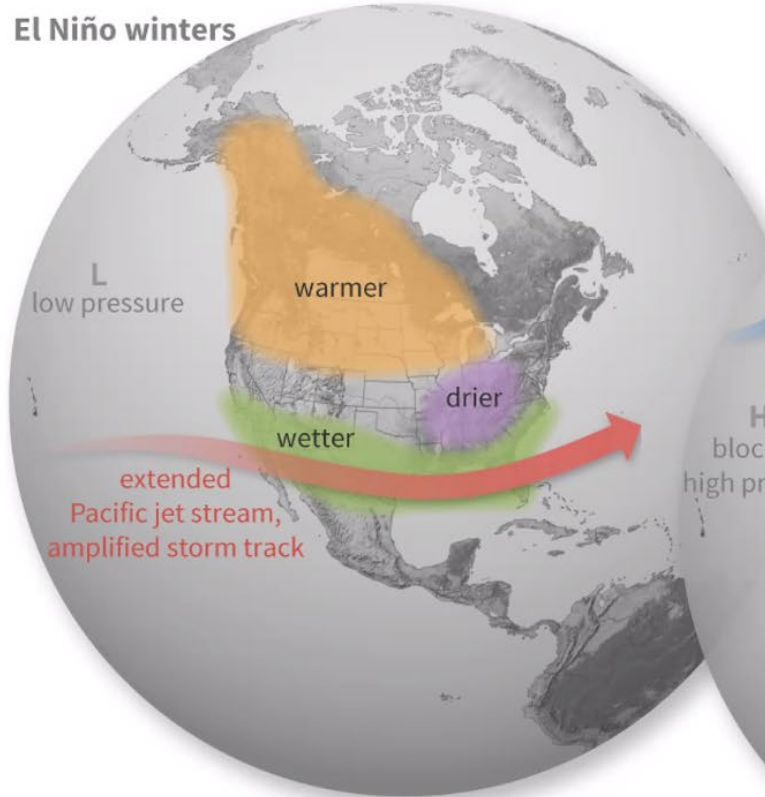


It's a Process

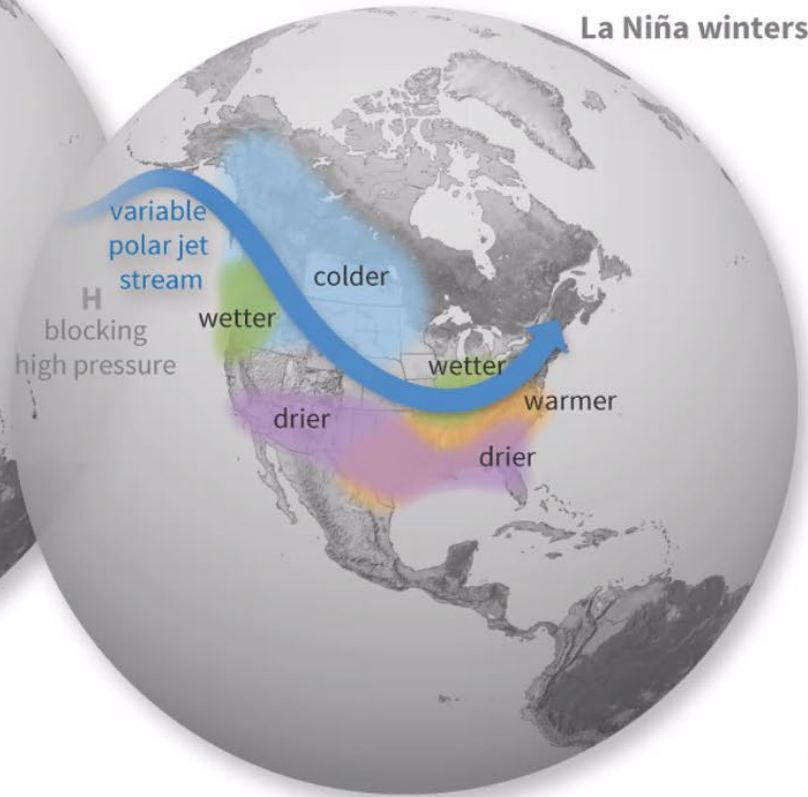




El Niño winters



La Niña winters



It's a LONG process!



Balance in Nature











Provo River Delta Monitoring - 2023

1. June sucker, Common Carp, Northern Pike, and Other Nonnative Fish Monitoring
2. Aquatic Vegetation Monitoring
3. Avian Monitoring
4. Mosquito Monitoring
5. Ute Ladies'-tresses and Bog Violet Monitoring
6. Water Quality Monitoring



June sucker, Common Carp, Northern Pike, and Other Nonnative Fish Monitoring

- Keith Lawrence and Andrew Nagy – Utah Division of Wildlife Resources.
- Larval June sucker – determine densities, spatial distribution, and habitat use
- Age 0-2 June sucker – same as for larval JS, also determine overwinter survival.
- Adult June sucker – estimate abundance and timing of JS spawning.
- Nonnative species monitoring.

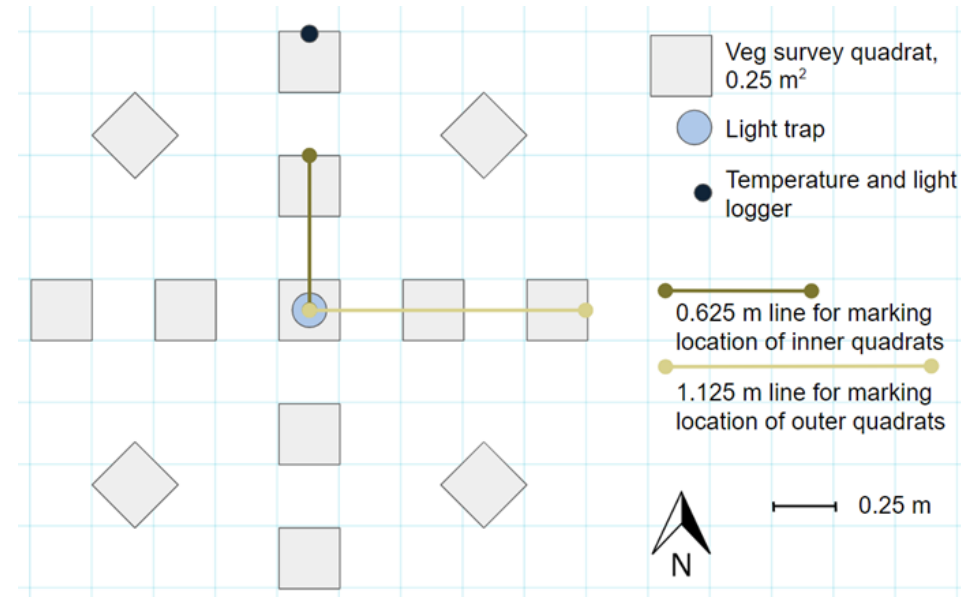


June sucker, Common Carp, Northern Pike, and Other Nonnative Fish Monitoring

			March				April				May					June				July				August				
Activity	Gear	Water Body	W1	W2	W3	W4	W1	W2	W3	W4	W1	W2	W3	W4	W5	W1	W2	W3	W4	W1	W2	W3	W4	W1	W2	W3	W4	W5
June Sucker Larvae	Light traps, tows, seines	Provo/Hobble																										
June Sucker Age 0	Minnow traps	Provo/Hobble																										
June Sucker Age 0,1,2	Seines, efishing, trap nets	Provo/Hobble																										
June Sucker Adult Spawning	Portable antennas	Provo																										
June Sucker Adult Spawning	Live video feed	Provo																										
Nonnative Large Bodied Juveniles, Small Bodied	Seines, efishing, trap nets, minnow traps	Provo/Hobble																										
Large Bodied Nonnative Adults	Gill nets, efishing	Provo/Hobble																										
Large Bodied Nonnative Ingress/Egress	Trap nets	Provo																										
Northern Pike Monitoring and Control	Gill nets, efishing	Provo/Hobble/Utah Lake																										

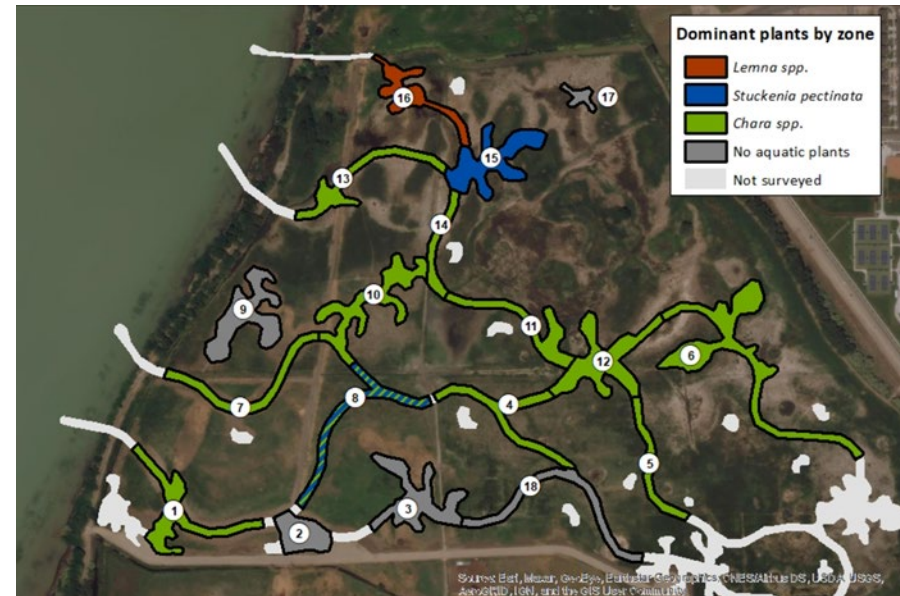
Aquatic Vegetation Monitoring

- Meghan-Grace Slocombe – Utah State University
- Increase our understanding of the relationship between larval June sucker and vegetation.
- Increase our understanding of the impacts of the invasive, *Potamogeton crispus*, on native plants.
- Collect data on the vegetation surrounding each of the larval light traps deployed by Utah DWR



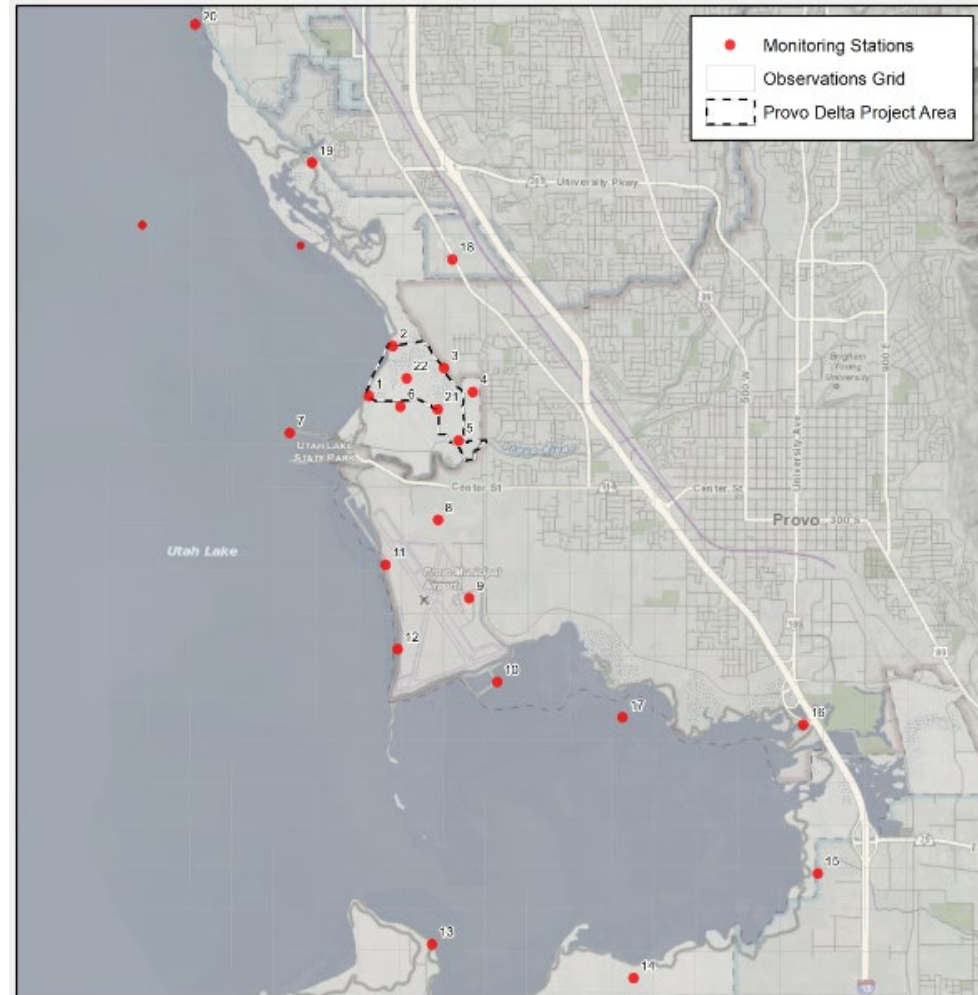
Aquatic Vegetation Monitoring

- Survey the delta for aquatic vegetation and their abundances.
- Identify and monitor monocultures of different aquatic plant species.
- Specifically interested in *P. crispus* (curly-leaf pondweed), *Stuckenia pectinata* (sago pondweed), and *Zannichellia palustris* (horned pondweed)
- Collect water quality metrics throughout the delta (DO, pH, temperature)



Avian Monitoring

- Wyatt Carter – Project Coordinator - U.S. Bureau of Reclamation.
- Determine avian movement, distribution, and habitat use in and around the Delta Project as it relates to potential strike risks at PVU.
- Three phases: Pre-project (2017-2020), Construction (2020-Present), and Post-project.
- Surveys initiated in 2017.



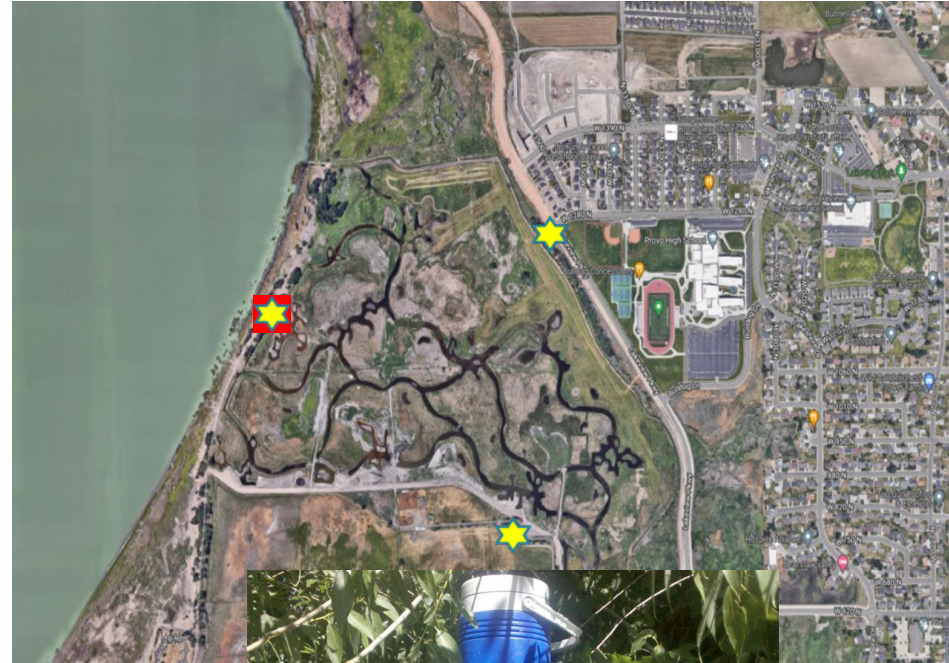
Avian Monitoring

- For Years 1 to 5:
- 9,250 Hours conducting surveys
- Over 1.5 million birds observed
- Over 90,000 records added to the dataset
- 180 species observed in study area
- Loads of survey information and analysis is available on the Delta restoration website.



Mosquito Monitoring

- Dan Miller – Utah County Health Department
- Have about 10 years of mosquito monitoring data from Delta area.
- More during wet years results in more mosquitos.
- Permanent water mosquitos are the ones that carry West Nile Virus, Saint Lewis Encephalitis , Western Equine Encephalitis (vs. flood water).



Mosquito Monitoring

- Treatment includes drone application of Vectomax – a larvicide which can be applied to water bodies w/o harm to aquatic life.
- Zenivex E4 – for adult control and applied by spraying from ground or air.
- Zenivex E4 is toxic to aquatic organisms and care will be taken to apply according to label and not spray directly over water.



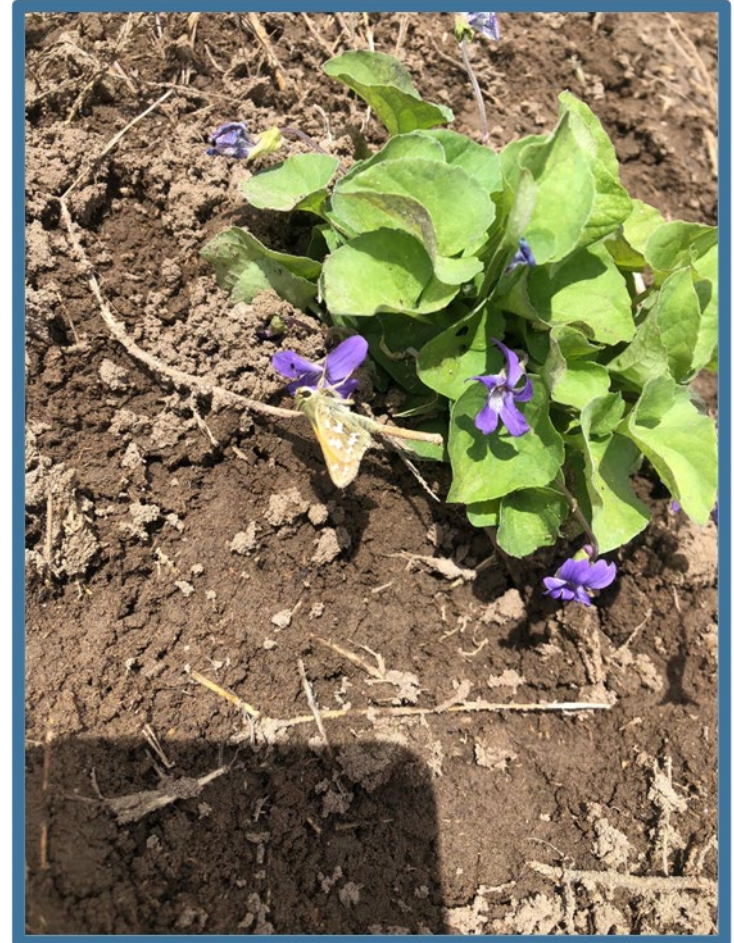
Ute Ladies'-tresses and Bog Violet Monitoring

- Mindy Wheeler – Utah State University and Utah Department of Natural Resources
- ULT – ESA listed as threatened.
- Surveys conducted in August during blooming period.
- Survey required as part of ESA section 7 consultation with USFWS.



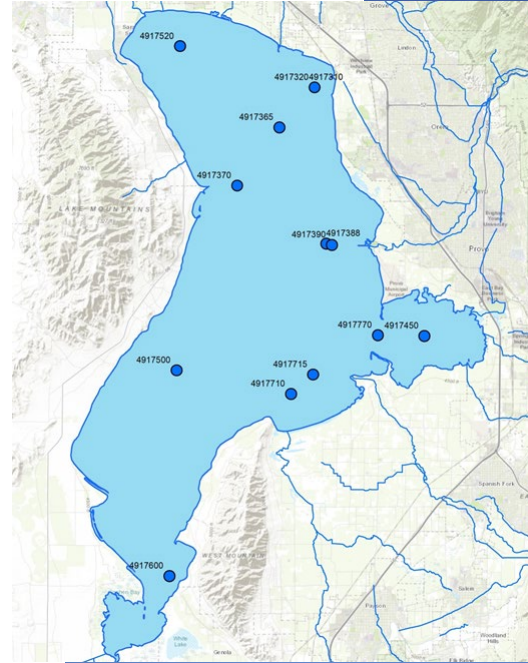
Ute Ladies'-tresses and Bog Violet Monitoring

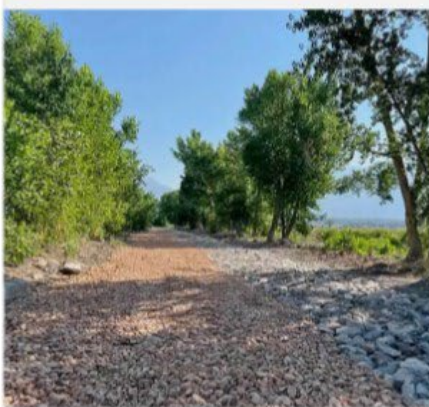
- Bog Violet – best time to survey is in April but can be detected later in the growing season.
- Generally found in moist soils throughout Utah – in the Utah Lake area, historically found on spring mounds.
- Host plant (larval foodplant) for silverspot butterfly (*Speyeria nokomis nokomis*) which is proposed for listing under the ESA.



Water Quality Monitoring

- Scott Daly – Utah Division of Water Quality
- DEQ has had a comprehensive WQ sampling protocol for Utah Lake which is part of a larger WQ study.
- Now need to incorporate the Delta area into their sampling design.
- Scott Daly is coordinating with a subgroup to determine how to best incorporate Delta WQ monitoring.





Thank you!

Questions?