



RECREATION PERCEPTION SURVEYS TO ESTABLISH WATER QUALITY OBJECTIVES FOR UTAH LAKE

Utah Lake Steering Committee Meeting | Virtual |
Thursday, March 17, 2022

Jordan W. Smith, Ph.D. & Anna B. Miller, Ph.D.



ABOUT

- Founded in 1998 by the Utah State Legislature
- Housed in Extension
- Mission:
 1. Provide data for the Legislature and state agencies in their decision-making processes on issues relating to tourism and outdoor recreation
 2. Assist community officials as they attempt to balance the economic, social, and environmental tradeoffs in tourism development
 3. Lead interdisciplinary approach of research and study on outdoor recreation and tourism



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PROGRAMS



SERVICES



Visitor Use Monitoring and Management



Mobile Location Analytics



Needs Assessments

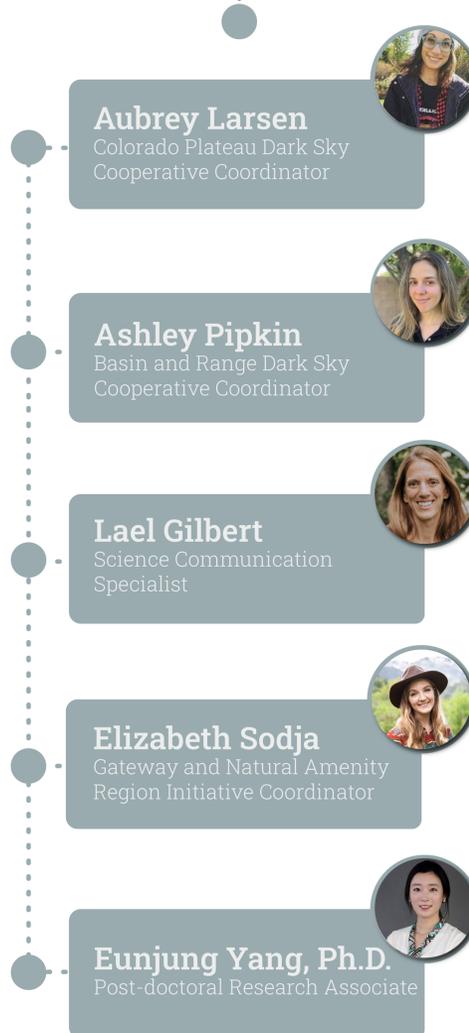


Recreation Economics

LEADERSHIP



STAFF



FACULTY FELLOWS



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AND TOURISM**
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Jordan W. Smith, Ph.D.

- Social psychology
- Recreation economics
- Geospatial analysis

Research examines the adaptive behavior of outdoor recreationists and natural resource dependent communities affected by climate change, natural hazards, and crisis events.



Anna B. Miller, Ph.D.

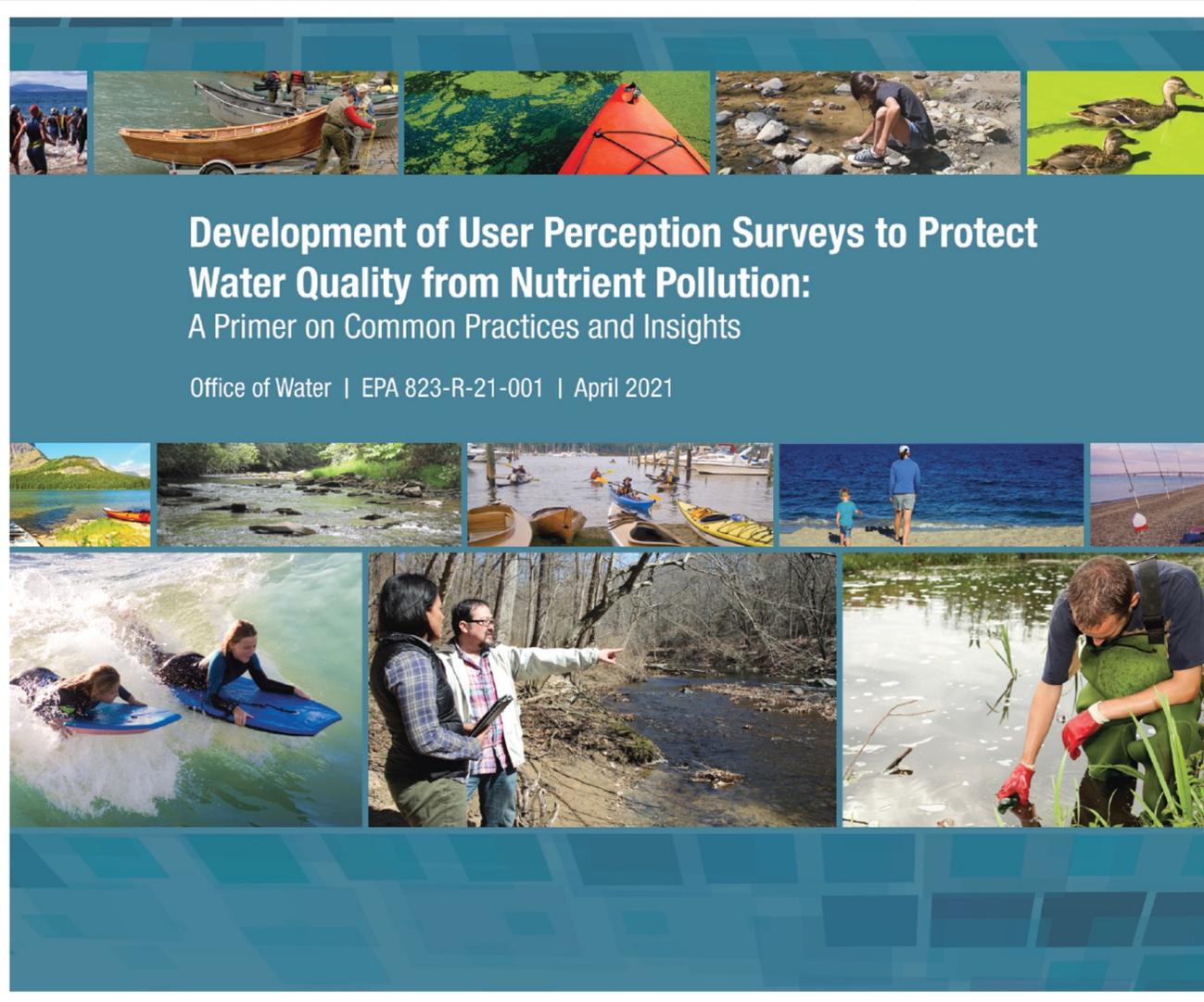
- Ecology
- Wildlife dependent recreation

Research integrates concepts and data from the natural and social sciences to understand how recreationists affect biophysical characteristics of recreation settings.



Our vision is to use well-established methods from the fields of survey research and recreation economics to develop an empirically grounded and scientifically defensible understanding of the various preferences for water clarity and quality amongst those who currently do or potentially could recreate on Utah Lake.

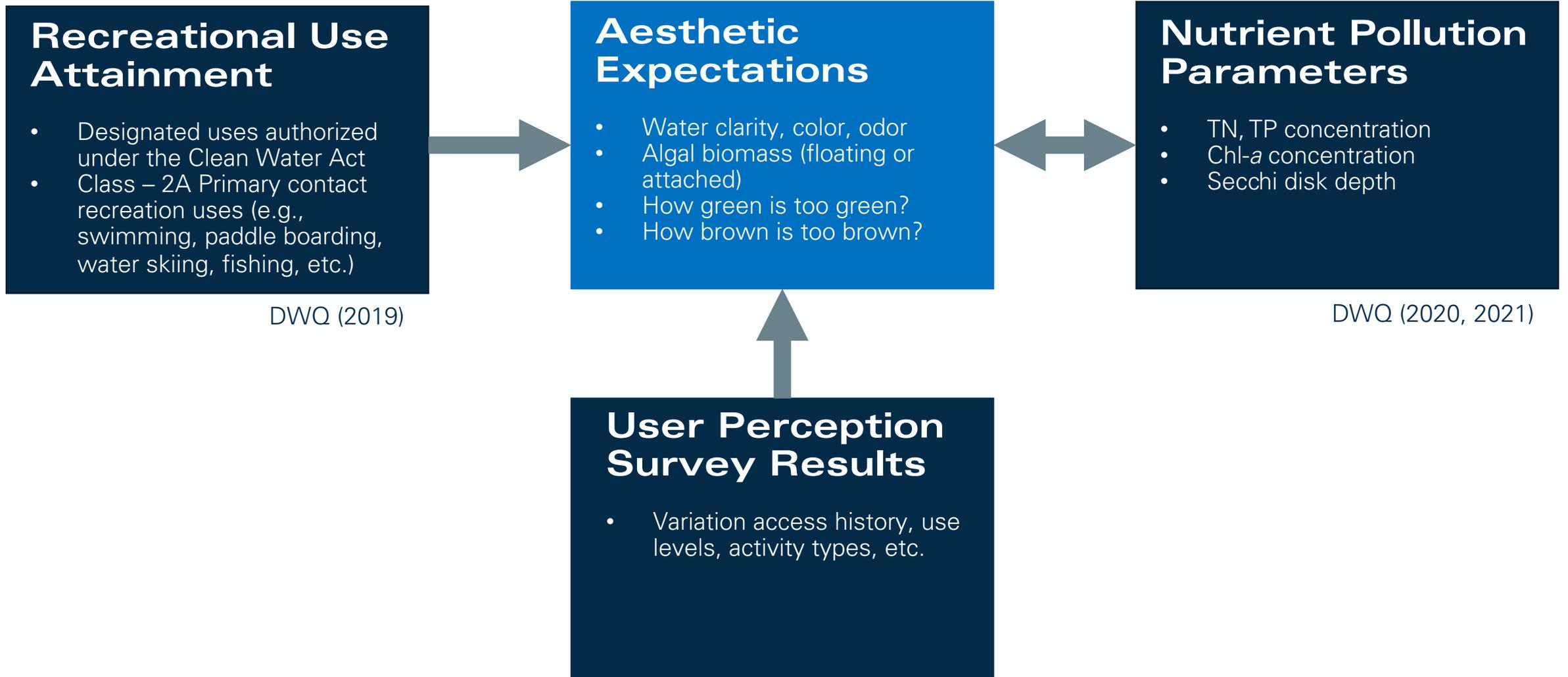
EPA Guidance

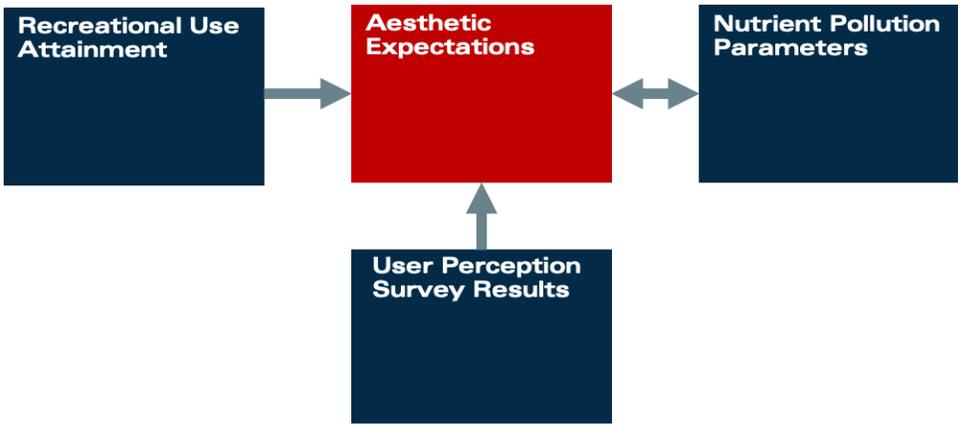


**Development of User Perception Surveys to Protect
Water Quality from Nutrient Pollution:
A Primer on Common Practices and Insights**

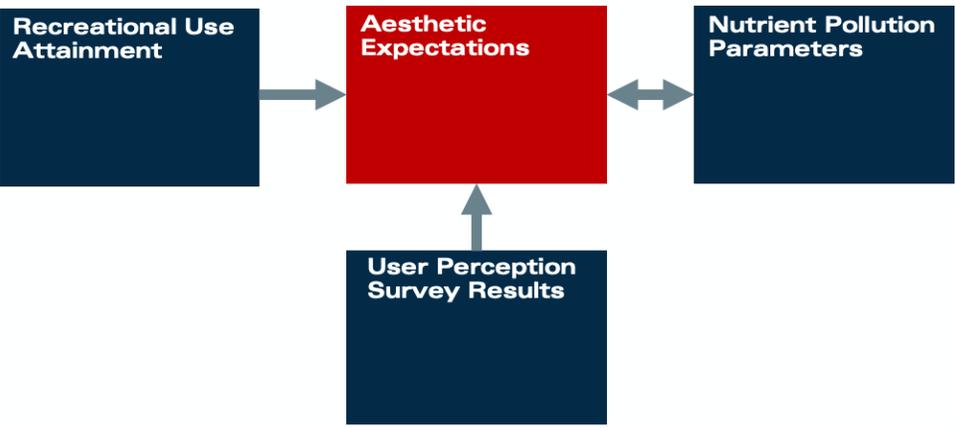
Office of Water | EPA 823-R-21-001 | April 2021

The Relationship Between Aesthetic Expectations and Nutrient Criteria





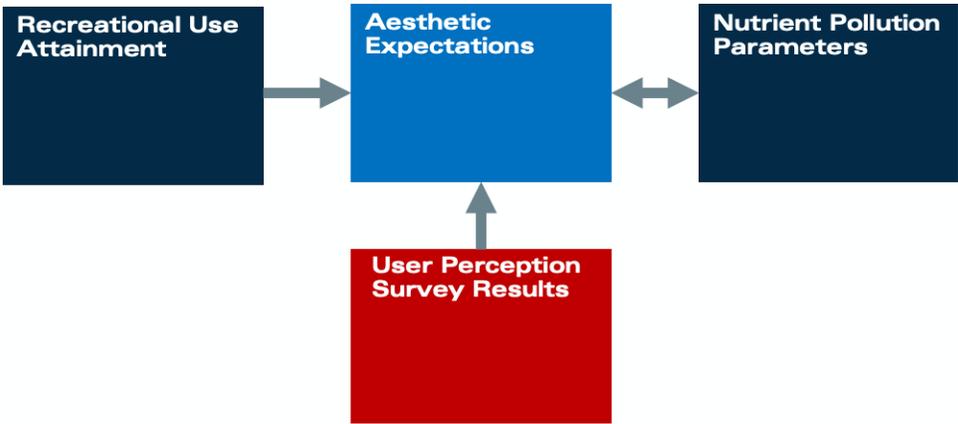
How to determine how green is too green and how brown is too brown.



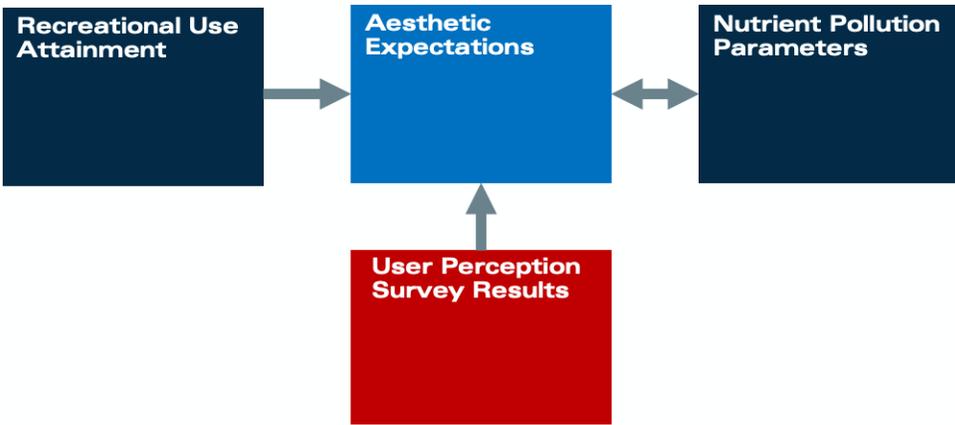
How to determine how green is too green and how brown is too brown.

Range of Chl-*a* and clarity

Image Type	Very low	Medium low	Medium	Medium high	High
Landscape					
Beach					
Water only					
Water with prop					
Water in flask					



Who's determining aesthetic expectations? And how are we controlling for factors that might bias their opinions?



Who's determining aesthetic expectations?

Sample 1 – Residents Living Near The Lake

Mail/online survey

- Salt Lake County
- Utah County

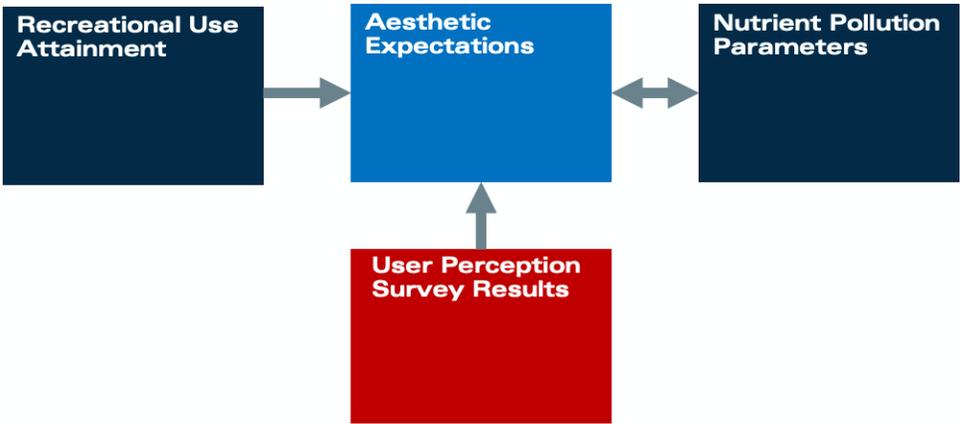
Maybe within a smaller proximity of the Lake dependent upon input from the steering committee.

Sample 2 – Recreationists Using the Lake

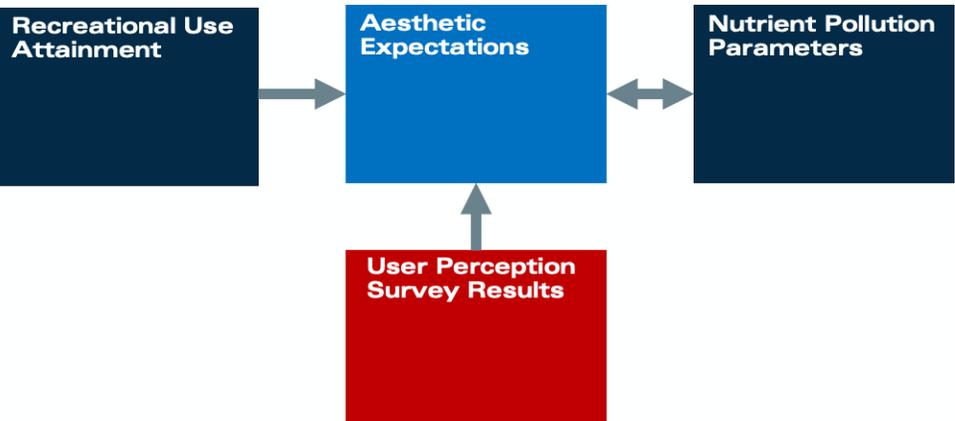
On-site intercept survey

- At select access points
- 2-weeks of surveying in late spring 2022

Access points to be determined by input from steering committee.



And how are we controlling for factors that might bias their opinions?



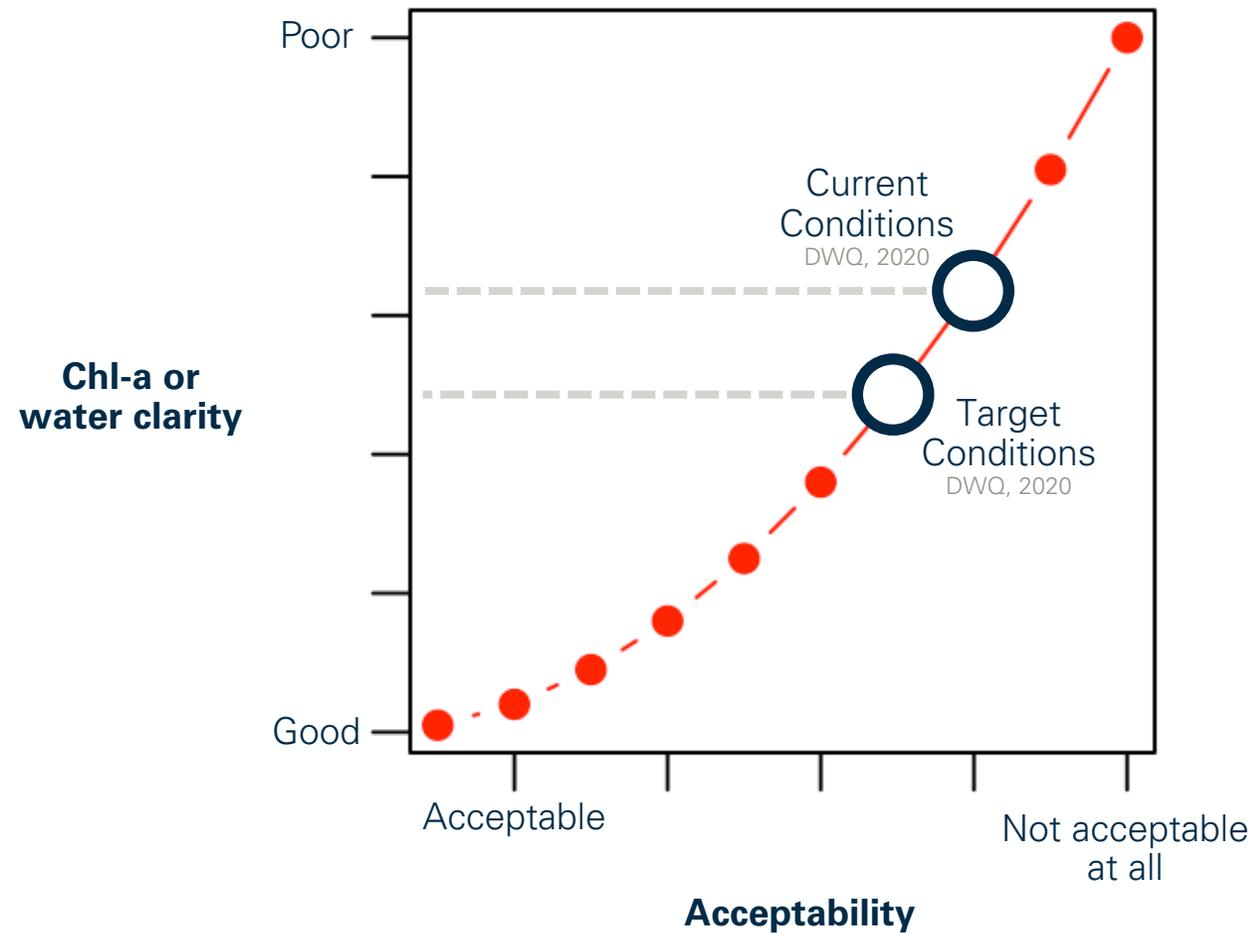
And how are we controlling for factors that might bias their opinions?

Factors known to affect perceptions of water quality	Sample	
	Mail/online survey	On-site intercept survey
Outdoor recreation participation	✓	✓
Geographic proximity to the waterbody	✓	✓
Length of residence proximate to the water body	✓	✓
Prior experience with warnings about, and/or closures to, the water body	✓	✓
Age	✓	✓
Education	✓	✓
Gender	✓	✓
Income	✓	✓
Race	✓	✓
Religion	✓	✓

Connecting the Data Back to Nutrient Criteria



Connecting the Data Back to Nutrient Criteria



Timeline

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug
Sample Analysis Plan development	✓	✓	✓					
Survey development			✓					
Data collection				✓	✓			
Data analysis					✓	✓		
Reporting							✓	✓

References

DWQ. (2019). *Water Quality Assessment and Analysis: Utah Lake Water Quality Study*. Available online (accessed 5/16/22): <https://documents.deq.utah.gov/water-quality/locations/utah-lake/DWQ-2019-001841.pdf>

DWQ. (2020). *Utah Lake Management Goals, Assessment Endpoints, Measures, and Targets*. Available online (accessed 5/16/22): <https://documents.deq.utah.gov/water-quality/locations/utah-lake/DWQ-2020-024762.pdf>

DWQ. (2021). *Utah Lake Water Quality Study – Numeric Nutrient Criteria Technical Framework: FINAL REPORT*. Available online (accessed 5/16/22): <https://documents.deq.utah.gov/water-quality/locations/utah-lake/DWQ-2020-023700.pdf>



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QUESTIONS

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