



CENTRAL WASATCH VISITOR USE STUDY – PHASE II REPORT

Jordan W. Smith, Ph.D.

October 2, 2023

OUTLINE

1. Objectives

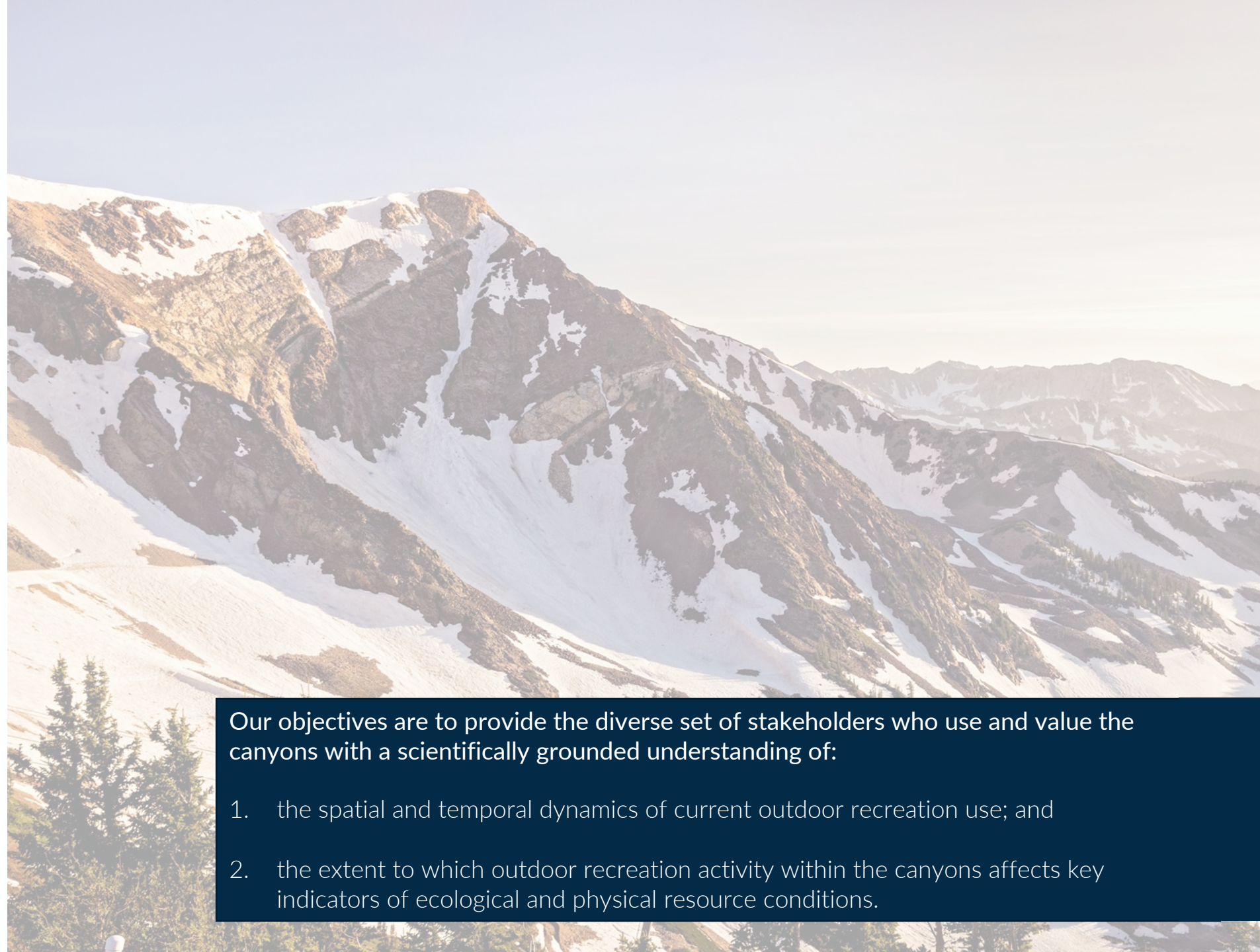
2. Overview of the VUS

1. Phase I – Scoping
2. Phase II – Assessments

3. Phase II – Findings

1. Trail Use
2. Environmental Dashboard
3. Visitor Survey Results

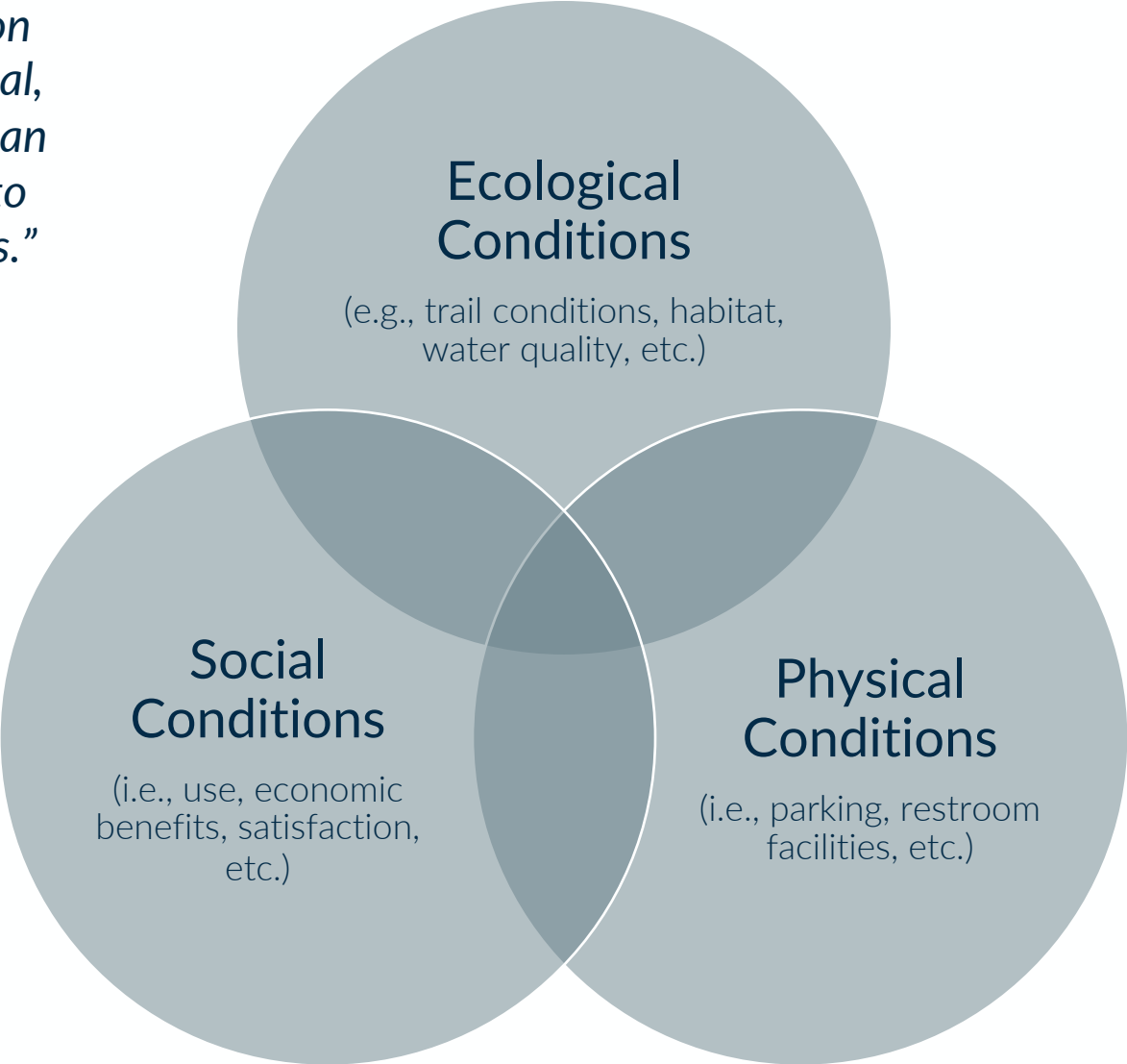
4. Questions



Our objectives are to provide the diverse set of stakeholders who use and value the canyons with a scientifically grounded understanding of:

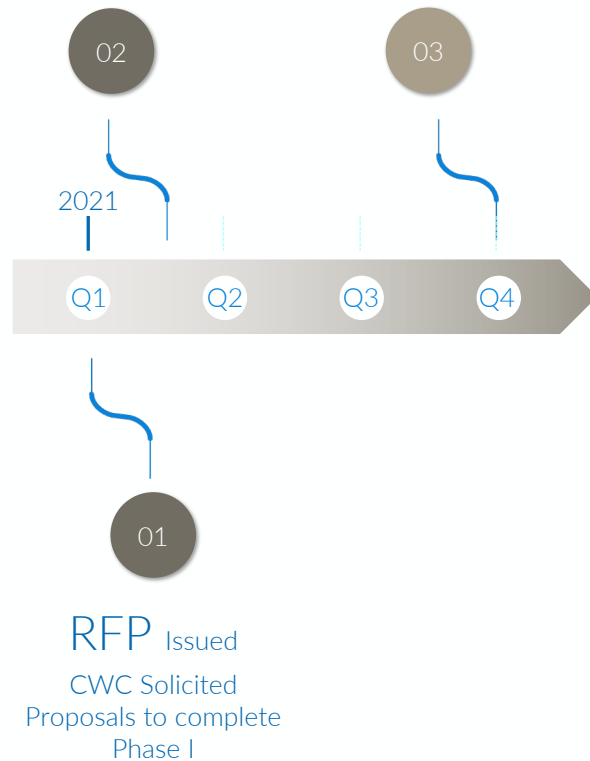
1. the spatial and temporal dynamics of current outdoor recreation use; and
2. the extent to which outdoor recreation activity within the canyons affects key indicators of ecological and physical resource conditions.

The visitor use study focused on indicators of ecological, physical, and social conditions as they can be used by the Forest Service to determine “desired conditions.”



Phase I Begins

Phase I Complete



PHASE 1

- *Stakeholder interviews*
- *Legislative and policy review*
- *Assessment of potential indicators*
- *Review of previous data and research related to outdoor recreation use in the Central Wasatch*



EXTENSION
UtahStateUniversity



EXTENSION PUBLICATIONS

ALL CURRENT PUBLICATIONS

Outdoor Recreation Use and Indicators of the Ecological, Physical, and Social Characteristics of Recreation Settings in the Central Wasatch: Phase 1 Interim Report

Download

130 DOWNLOADS

Since July 16, 2021

PLUMX METRICS

[Jordan W. Smith, Utah State University](#)

Follow

[Anna B. Miller, Utah State University](#)

Follow

[Chase C. Lamborn, Utah State University](#)

Follow

[Christopher Monz, Utah State University](#)

Follow

[Danya Rumore, University of Utah](#)

Follow

Document Type

Report

Publisher

Institute of Outdoor Recreation and Tourism

Publication Date

7-15-2021

First Page

1

Last Page

84

INCLUDED IN

[Business Commons](#), [Life](#)

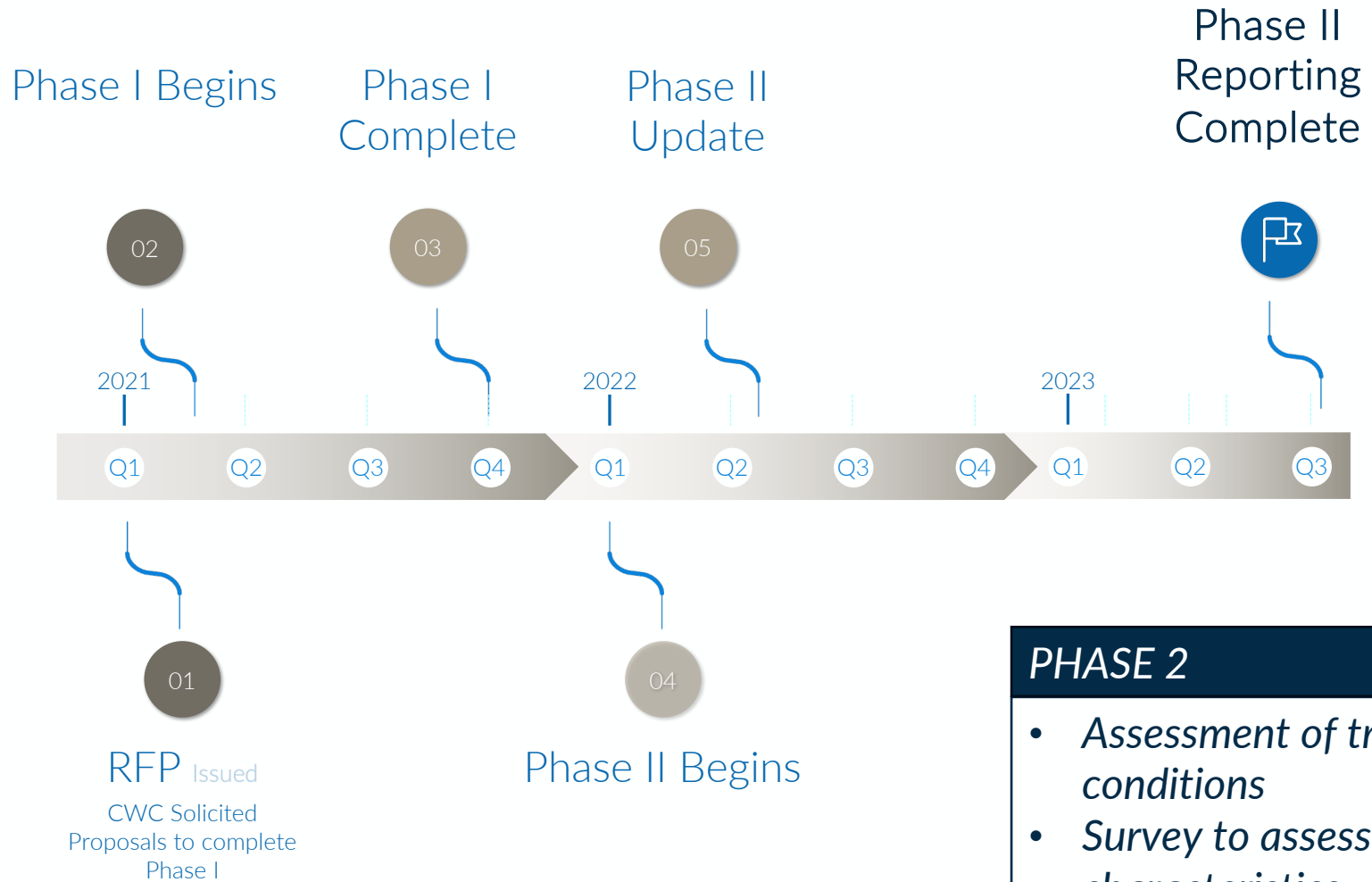
[Sciences Commons](#)

SHARE

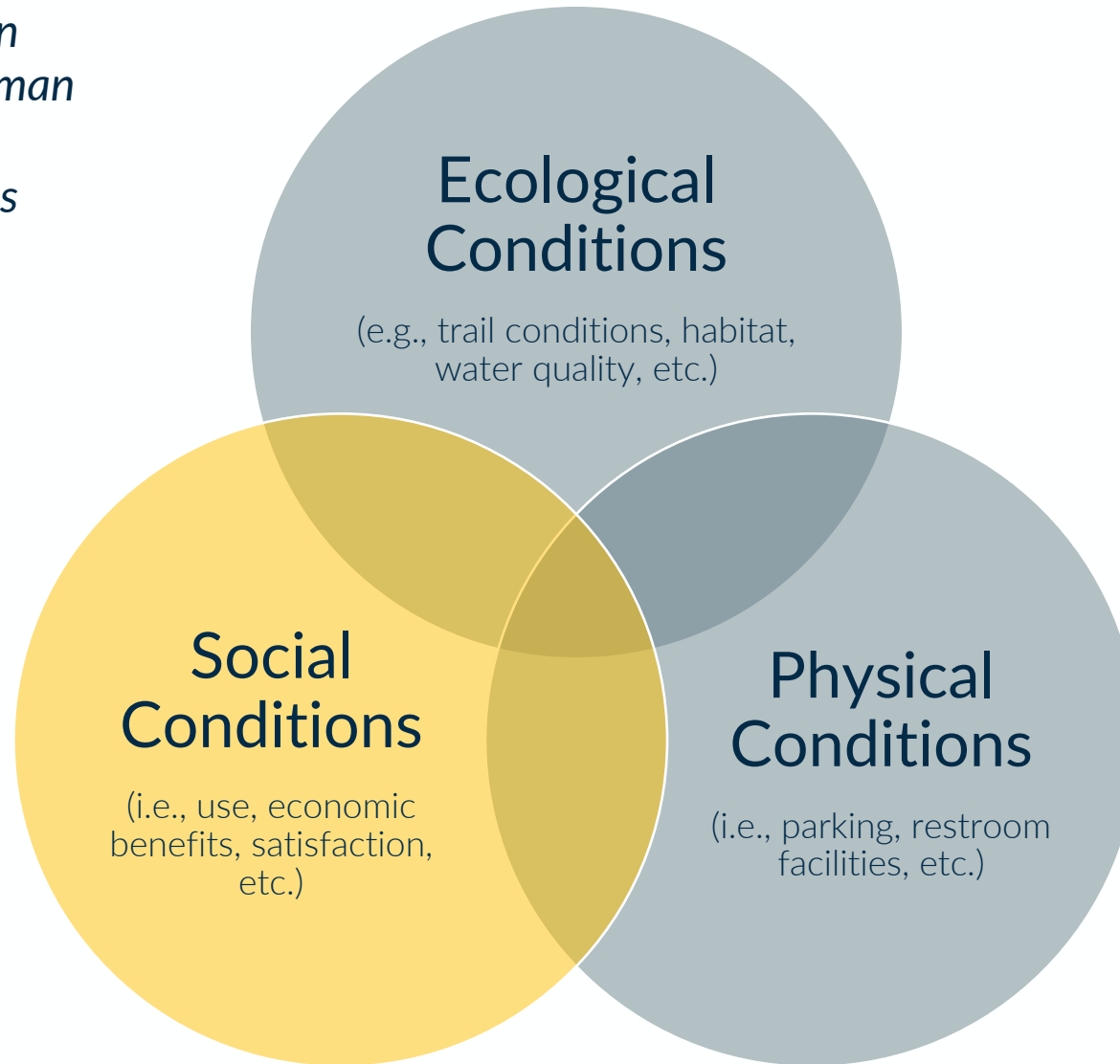


Phase 1 Report Available Here:

https://digitalcommons.usu.edu/extension_curall/2206/



Phase 2 focuses specifically on social conditions (aka the “human element”) as the key driver of changes in resource conditions and visitor experiences.



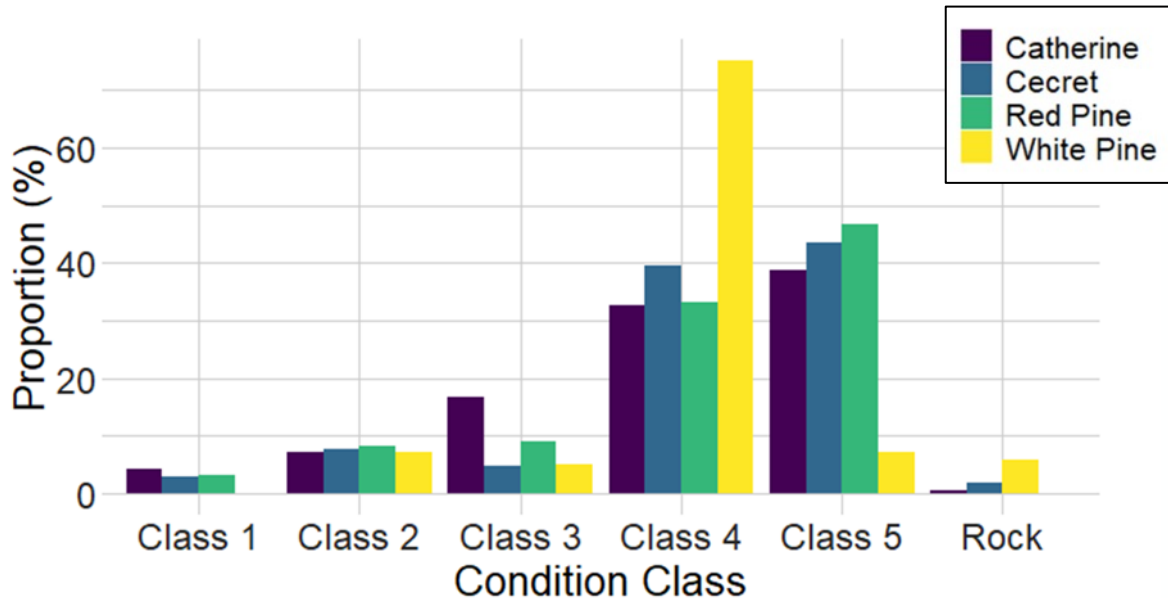
Assessment of ecological and social conditions

Class	Description
1	Trail distinguishable; slight loss of vegetation cover and/or minimal disturbance of organic litter.
2	Trail obvious; vegetation cover lost and/or organic litter pulverized in primary use areas.
3	Vegetation cover lost and/or organic litter pulverized within the center of the tread, some bare soil exposed.
4	Nearly complete or total loss of vegetation cover and organic litter within the tread, bare soil widespread.
5	Soil erosion severe, as indicated by exposed roots and rocks and/or gullying.
R	Trail is predominantly on rock surfaces, so the effects of trampling are difficult to see/assess.

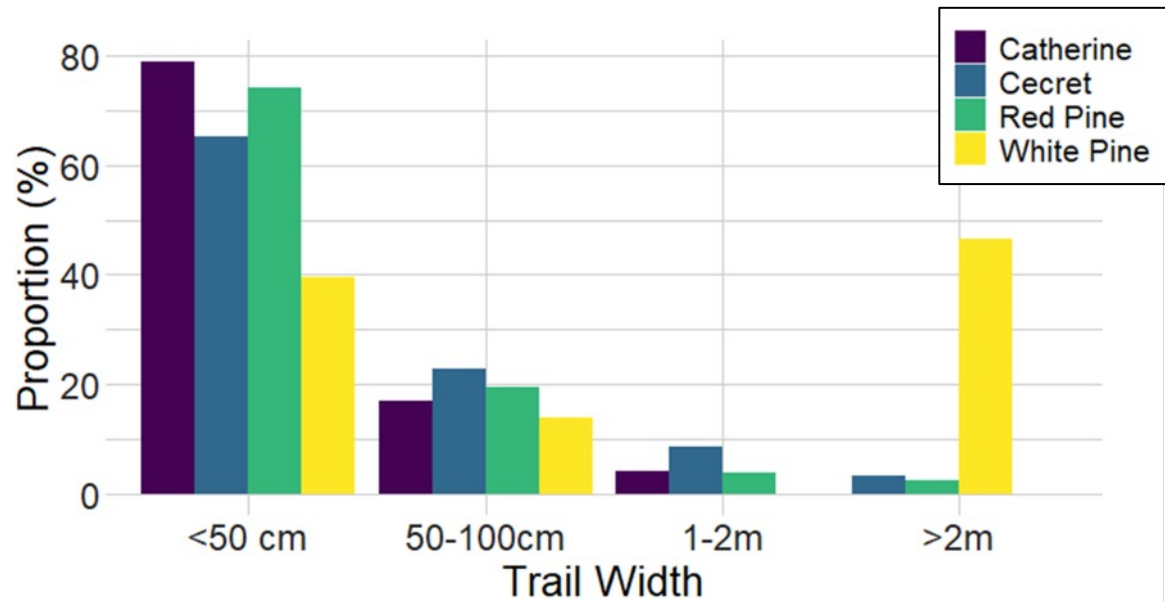
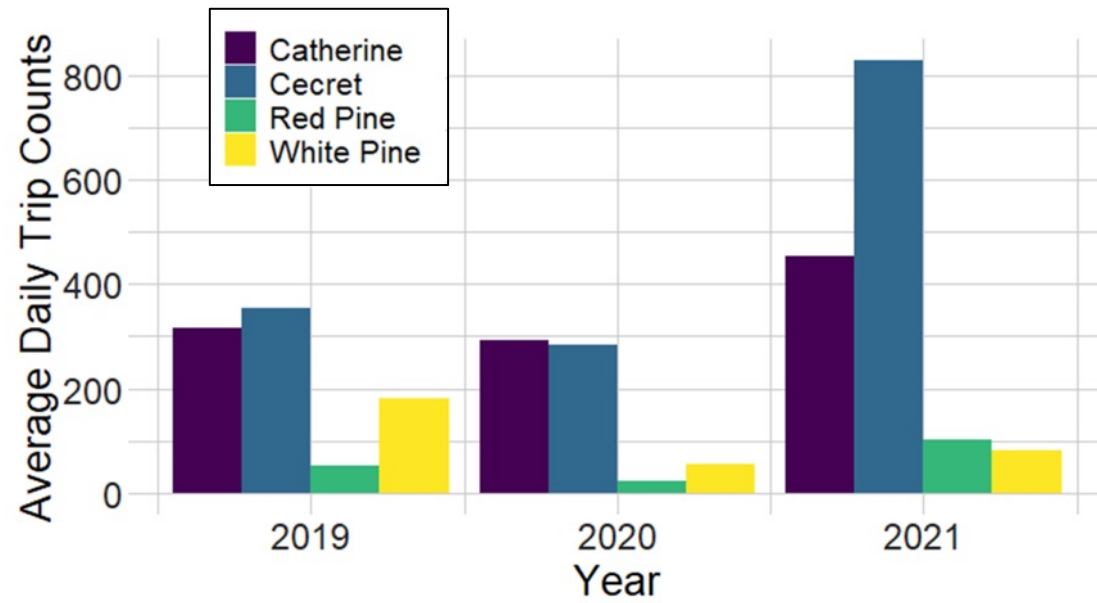


Assessment of ecological and social conditions

Class	Description
1	Trail distinguishable; slight loss of vegetation cover and/or minimal disturbance of organic litter.
2	Trail obvious; vegetation cover lost and/or organic litter pulverized in primary use areas.
3	Vegetation cover lost and/or organic litter pulverized within the center of the tread, some bare soil exposed.
4	Nearly complete or total loss of vegetation cover and organic litter within the tread, bare soil widespread.
5	Soil erosion severe, as indicated by exposed roots and rocks and/or gulying.
R	Trail is predominantly on rock surfaces, so the effects of trampling are difficult to see/assess.

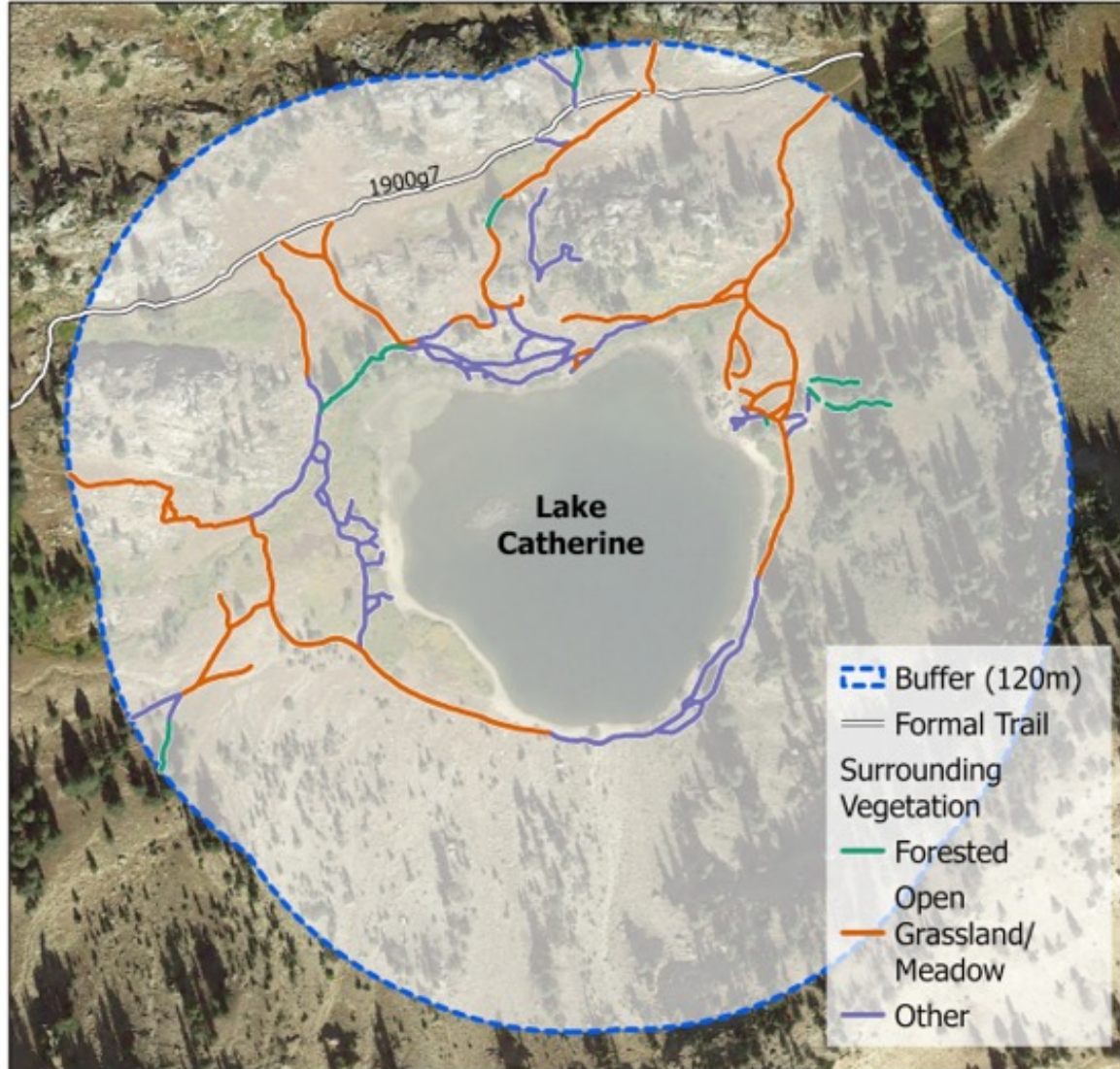


Assessment of ecological and social conditions



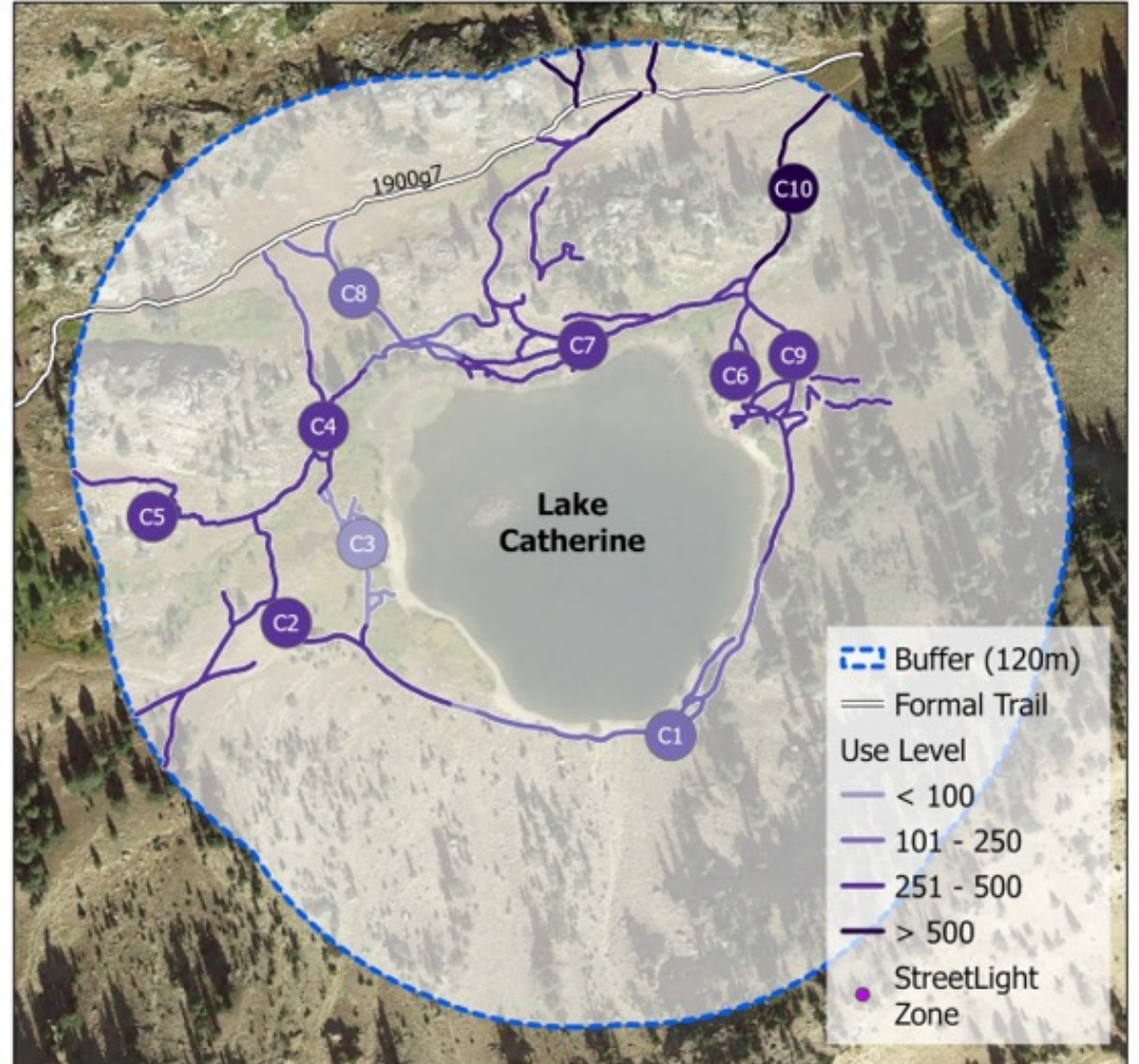
Assessment of ecological and social conditions

Surrounding vegetation



Lake Catherine Surrounding Vegetation

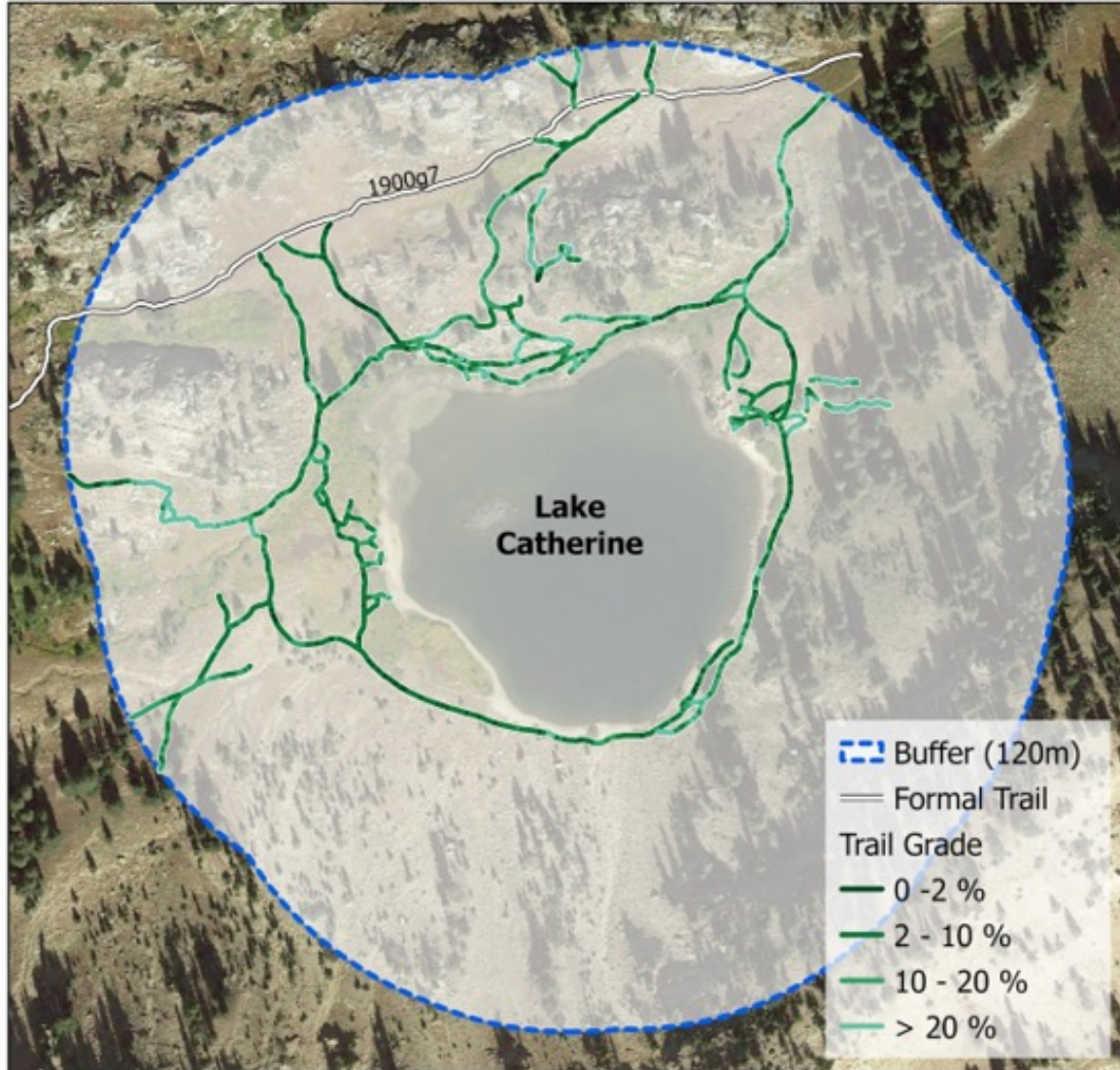
Use levels



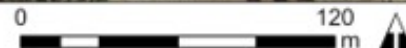
Lake Catherine Use Level

Assessment of ecological and social conditions

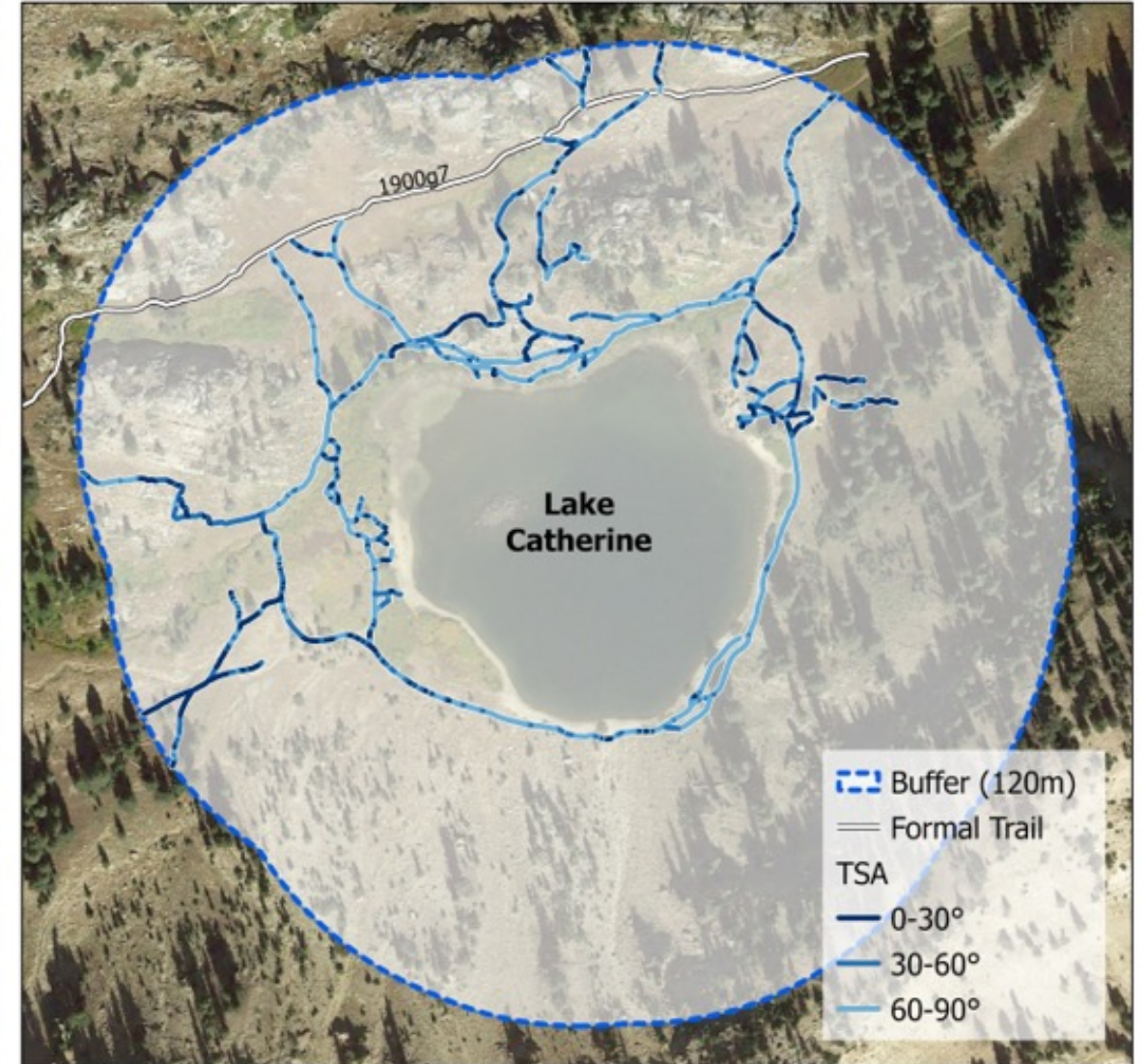
Trail grade



Lake Catherine Trail Grade



Trail slope alignment

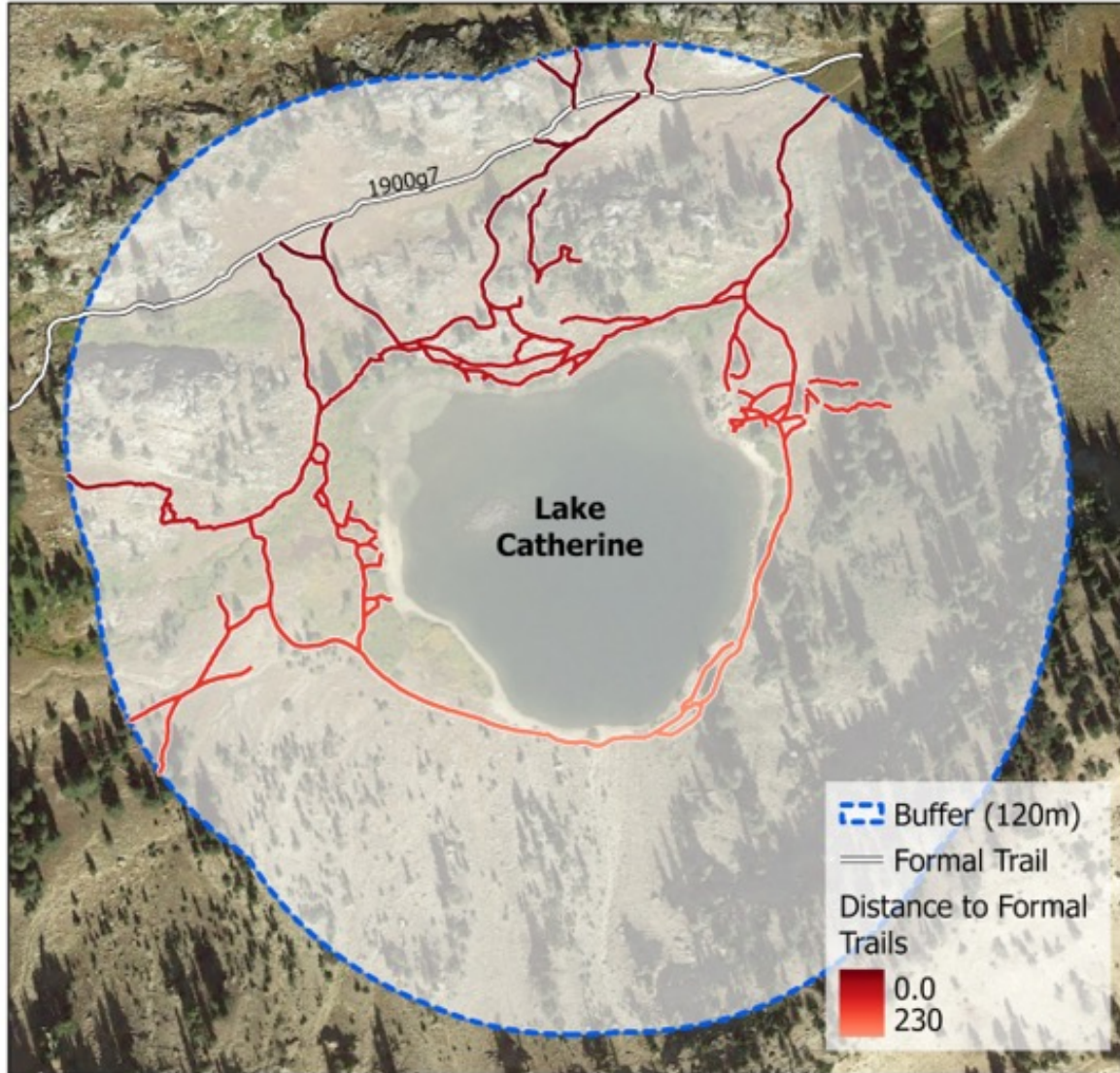


Lake Catherine Trail Slope Alignment

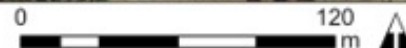


Assessment of ecological and social conditions

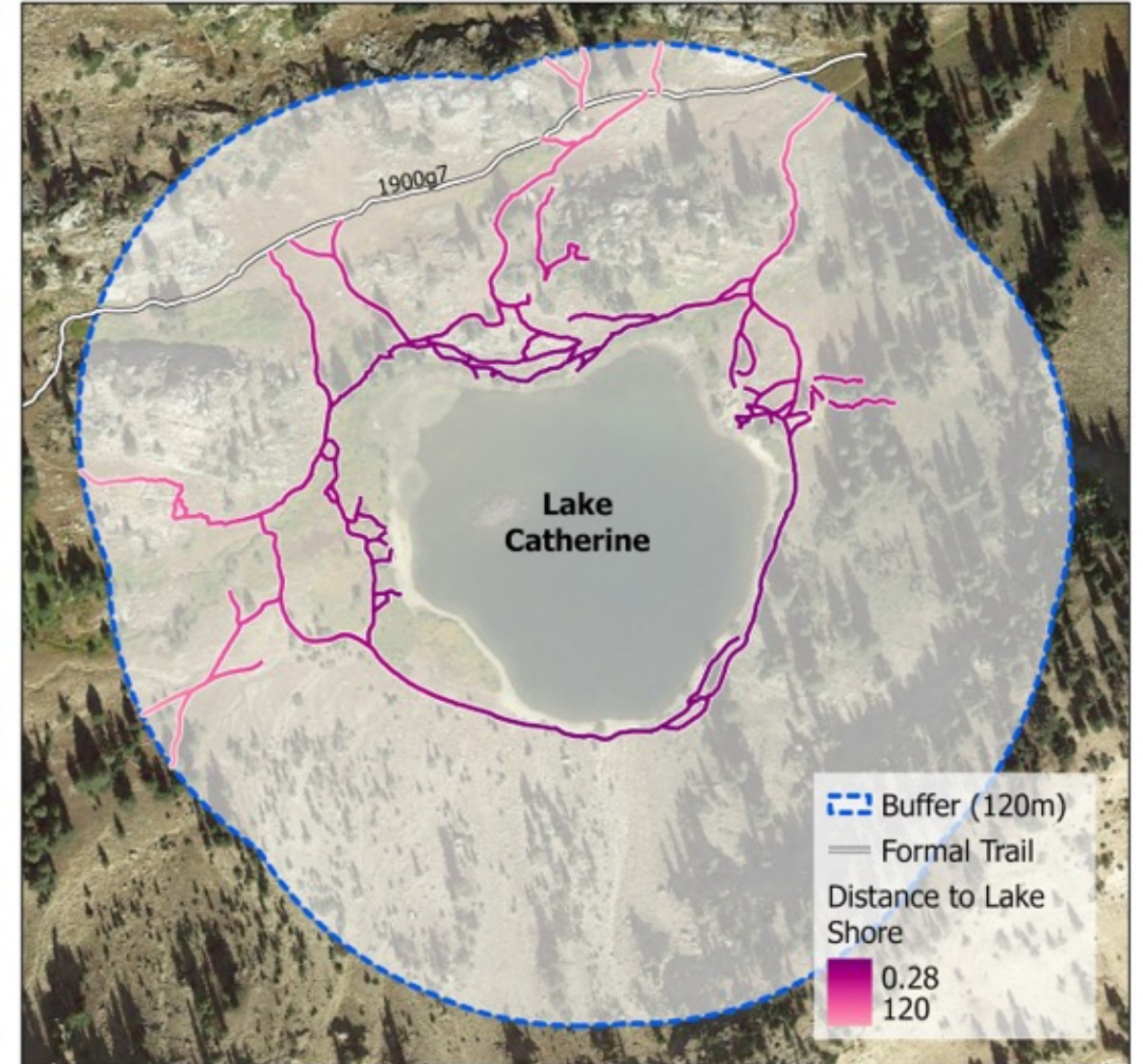
Distance to formal trails



Lake Catherine Distance to Formal Trails



Distance to lakes



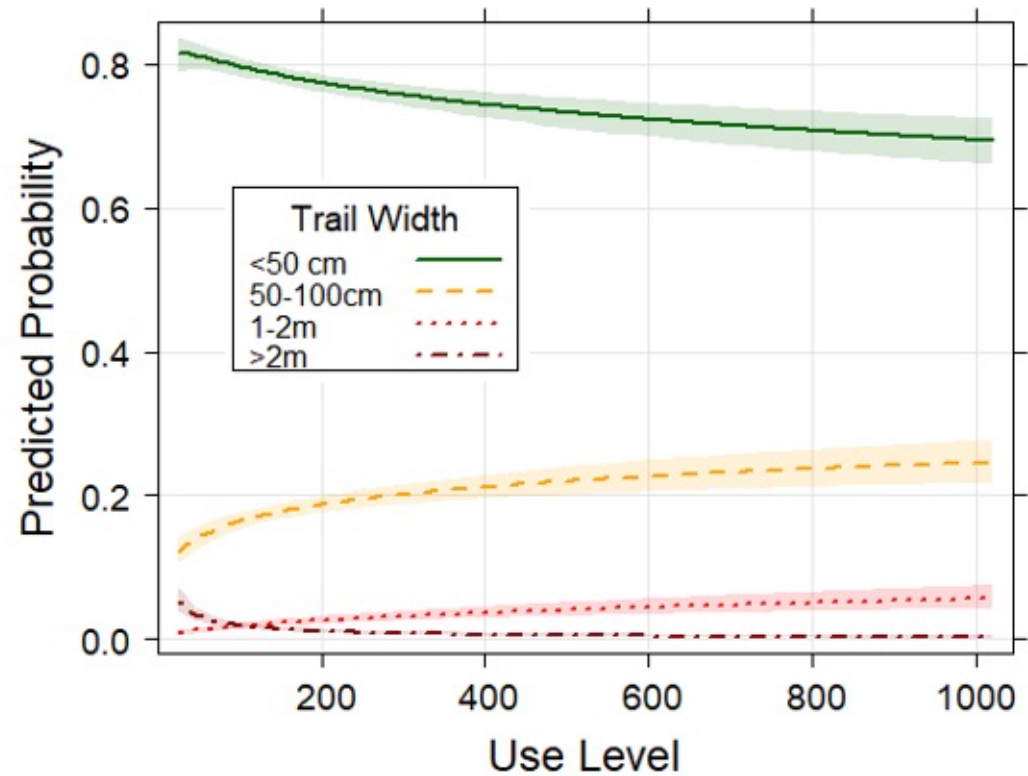
Lake Catherine Distance to Lakeshore



Assessment of ecological and social conditions

Statistical analyses allows us to disentangle effects of different factors influencing trail conditions.

- *Use level is more predictive of worse trail conditions at lower use levels.*



Assessment of ecological and social conditions

What does this mean for recreation and resource management?

Surface and Location: Visitors should be concentrated on durable, but walkable, surfaces when available and trails close to waterbodies should be hardened where possible.



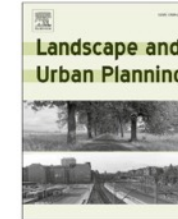
**LAKE
CATHERINE**



Contents lists available at [ScienceDirect](#)

Landscape and Urban Planning

journal homepage: www.elsevier.com/locate/landurbplan



Factors influencing informal trail conditions: Implications for management and research in Urban-Proximate parks and protected areas



Bettina S. Spornbauer^{a,b}, Christopher Monz^{a,b}, Ashley D'Antonio^c, Jordan W. Smith^{a,b,*}

^a Institute of Outdoor Recreation and Tourism, Utah State University, Logan, UT 84321, USA

^b Department of Environment and Society, Utah State University, Logan, UT 84321, USA

^c Department of Forest Ecosystems and Society, Oregon State University Corvallis, Oregon 97331, USA

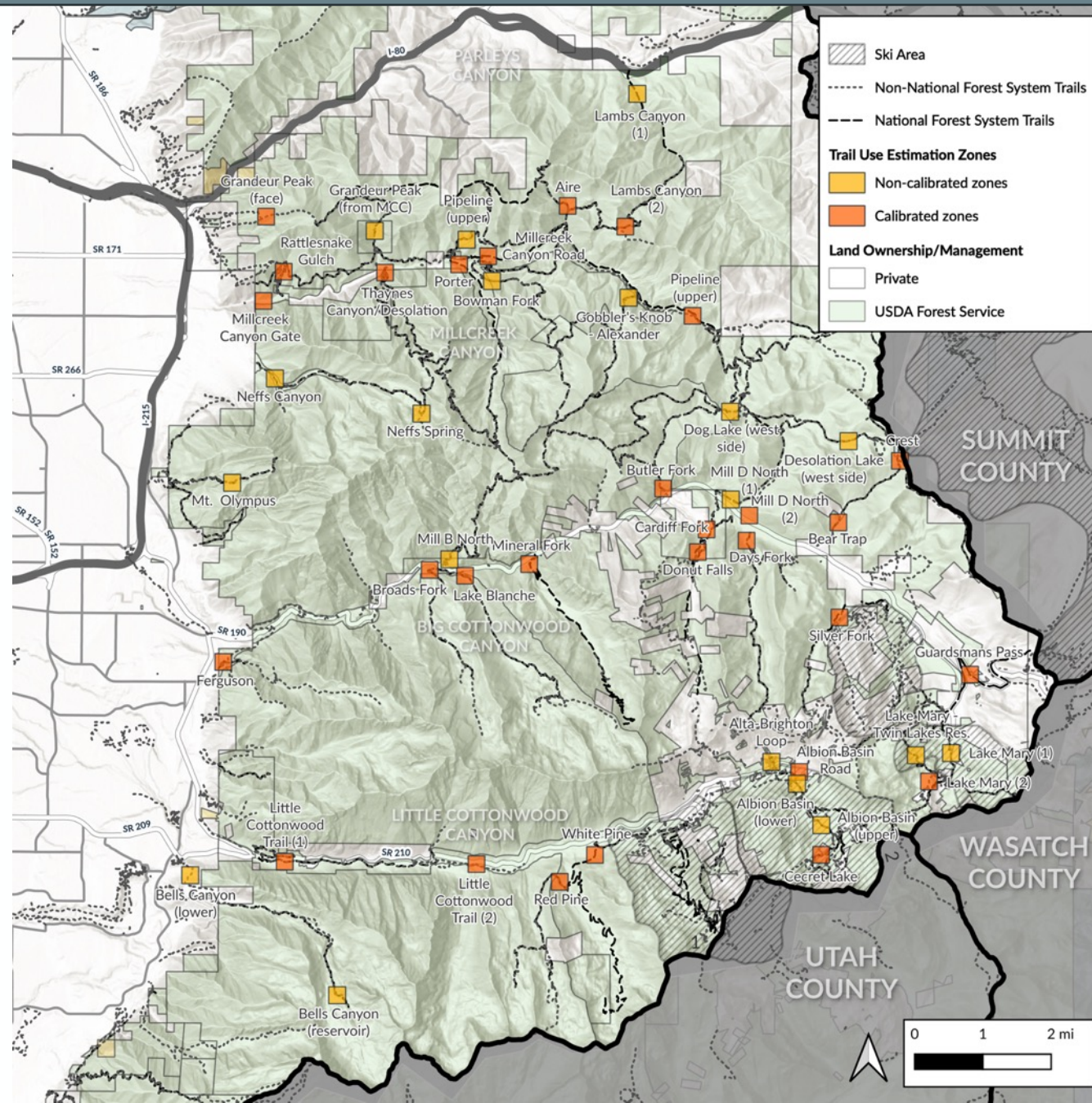
HIGHLIGHTS

- Informal trail networks in urban-proximate parks can cause extensive resource impacts.
- Rapid assessment trail data can be analyzed with predictor effect plots.
- Visitor use should be concentrated considering factors influencing trail conditions.
- Sampling protocols for more precise indicator measures on informal trails are needed.

Effects of use on informal trails around high-elevation lakes:

<https://doi.org/10.1016/j.landurbplan.2022.104661>

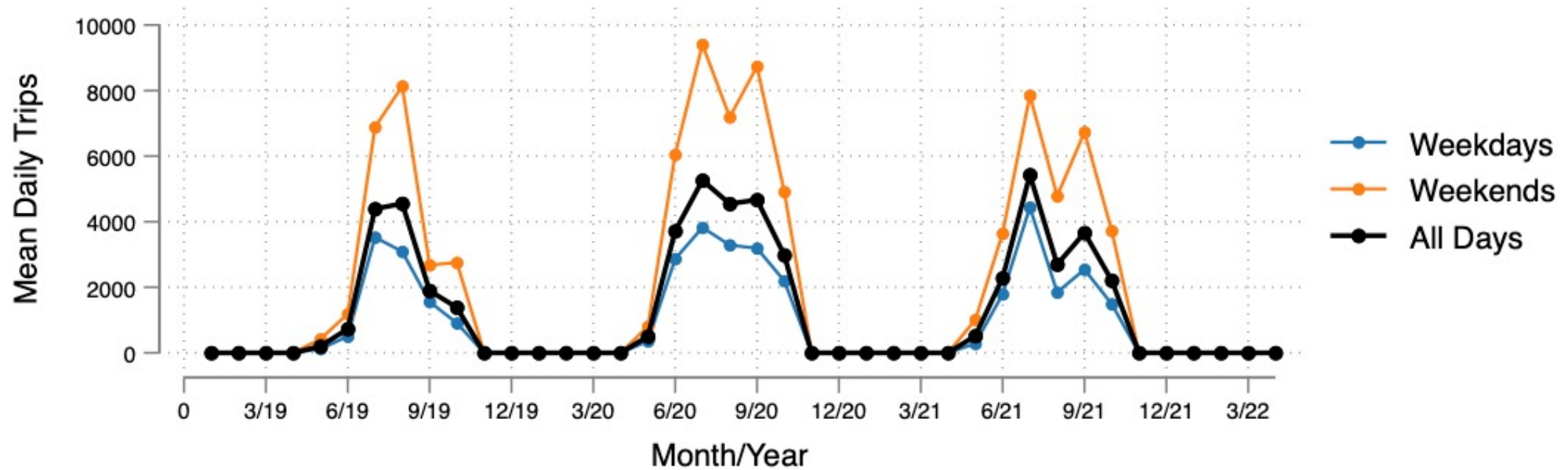
Assessment of social conditions



Assessment of social conditions

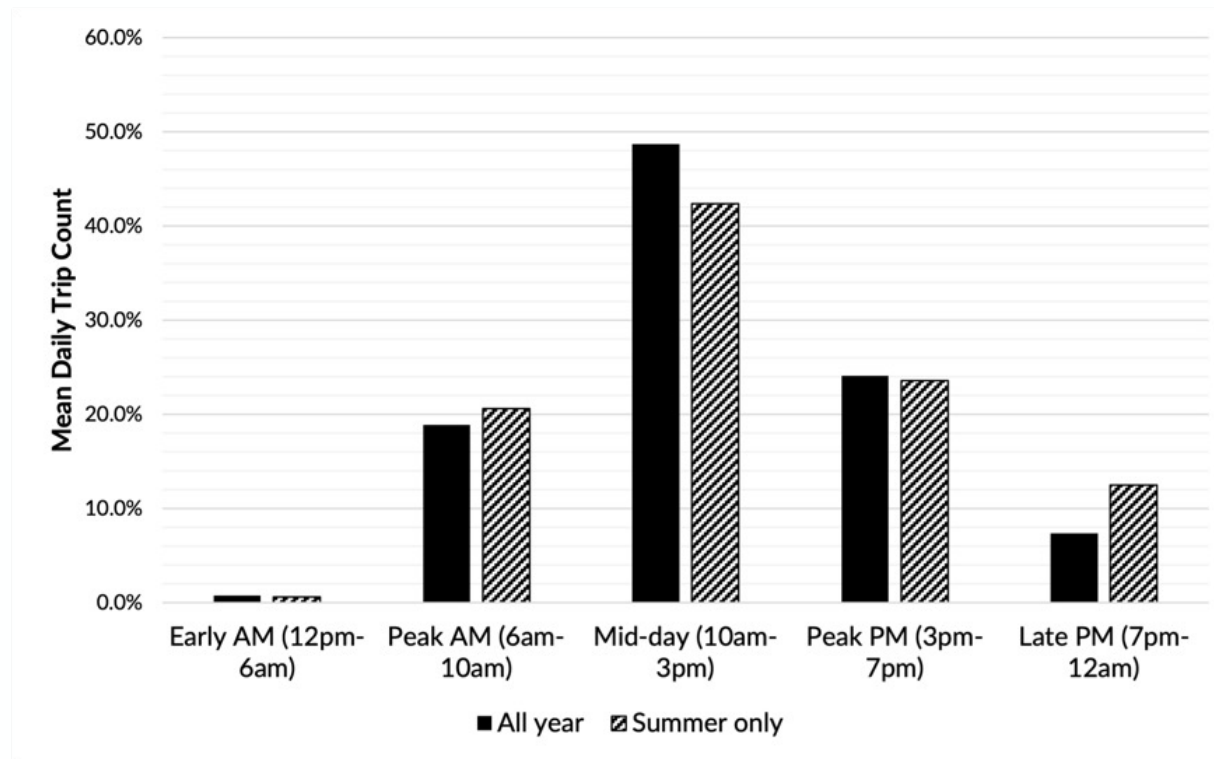
Use distribution by
type of day

Brighton Lakes



Assessment of social conditions

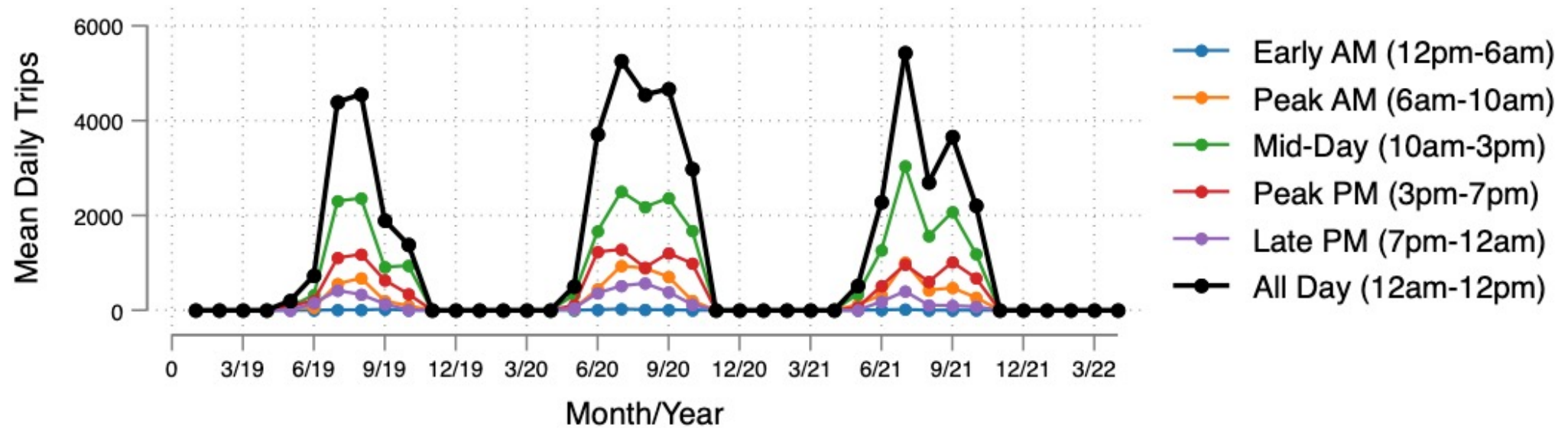
Use distribution
across the day



Assessment of social conditions

Use distribution across the day

Brighton Lakes



Assessment of social conditions

INTEGRATION OF TRAIL USE DATA INTO CWC ENVIRONMENTAL DASHBOARD

WELCOME TO THE CWC ENVIRONMENTAL DASHBOARD

The Environmental Dashboard is a tool for the public, land managers, policy makers and technical users. Explore the six main elements (air quality and climate, geology and soils, vegetation communities, water, wildlife and human) to learn about the historic and current environmental conditions of the Central Wasatch.



AIR QUALITY AND
CLIMATE



GEOLOGY AND
SOILS



VEGETATION
COMMUNITIES



WATER



WILDLIFE



HUMAN ELEMENT

Assessment of social conditions

VISITOR USE SURVEY



COMPLETED SURVEYS

UWC

1,404

MCC

1,197

BCC

692

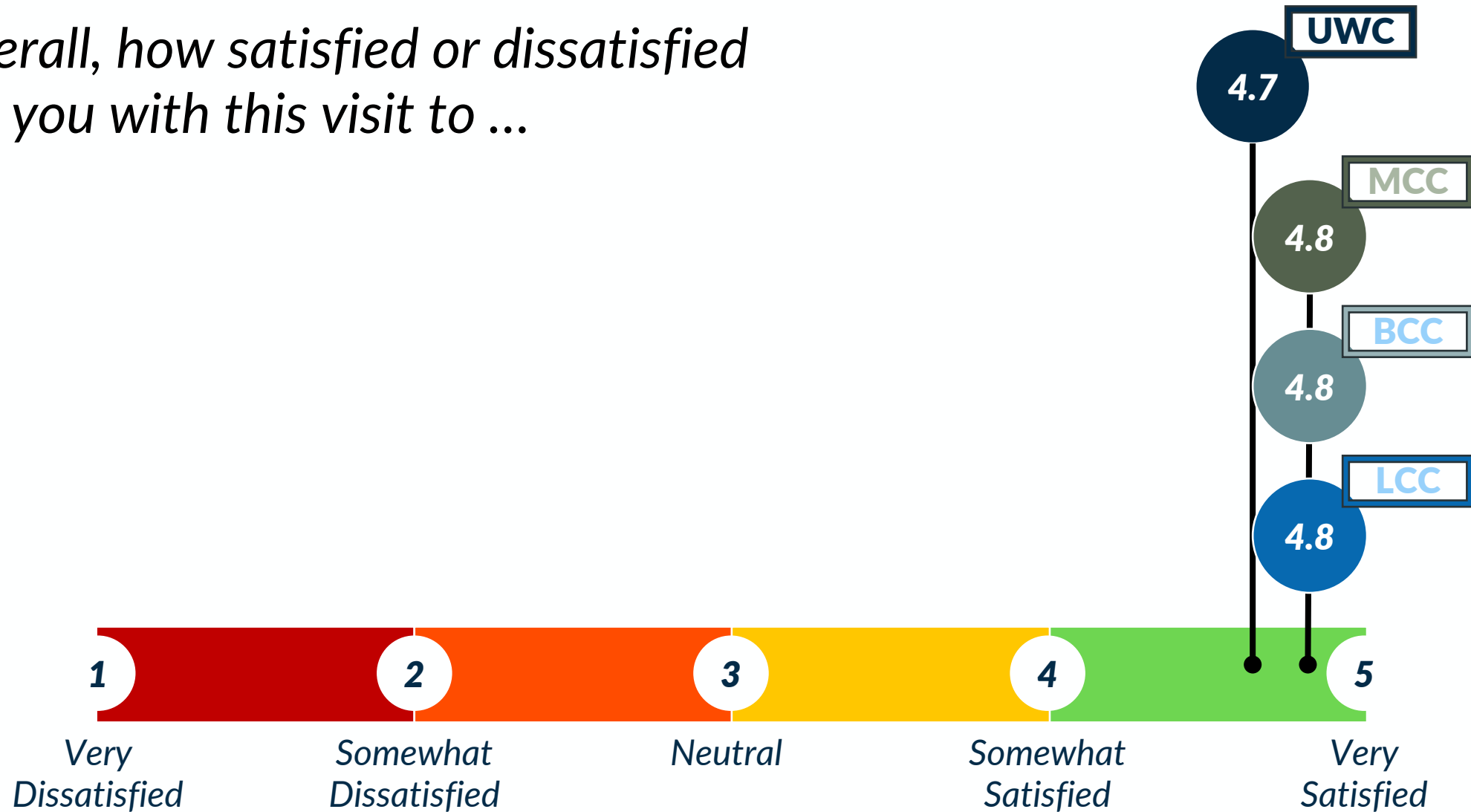
LCC

408

Assessment of social conditions

VISITOR USE SURVEY

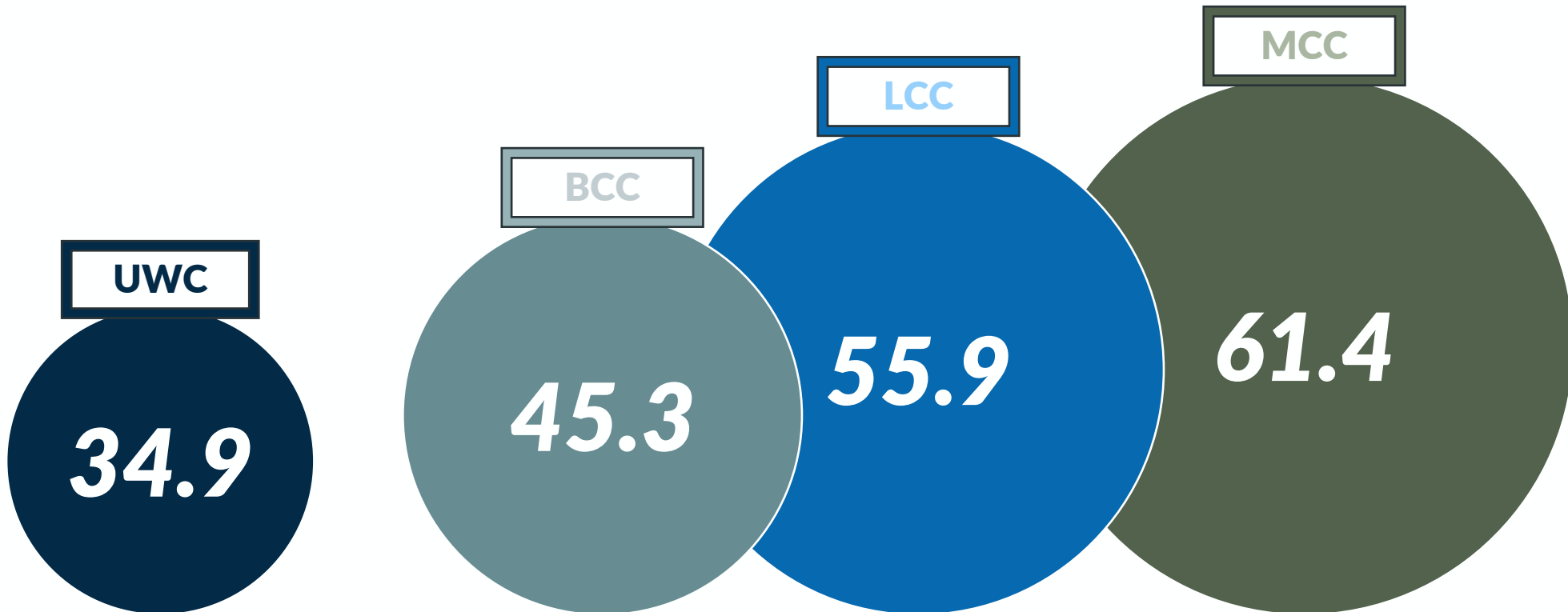
Overall, how satisfied or dissatisfied are you with this visit to ...



Assessment of social conditions

VISITOR USE SURVEY

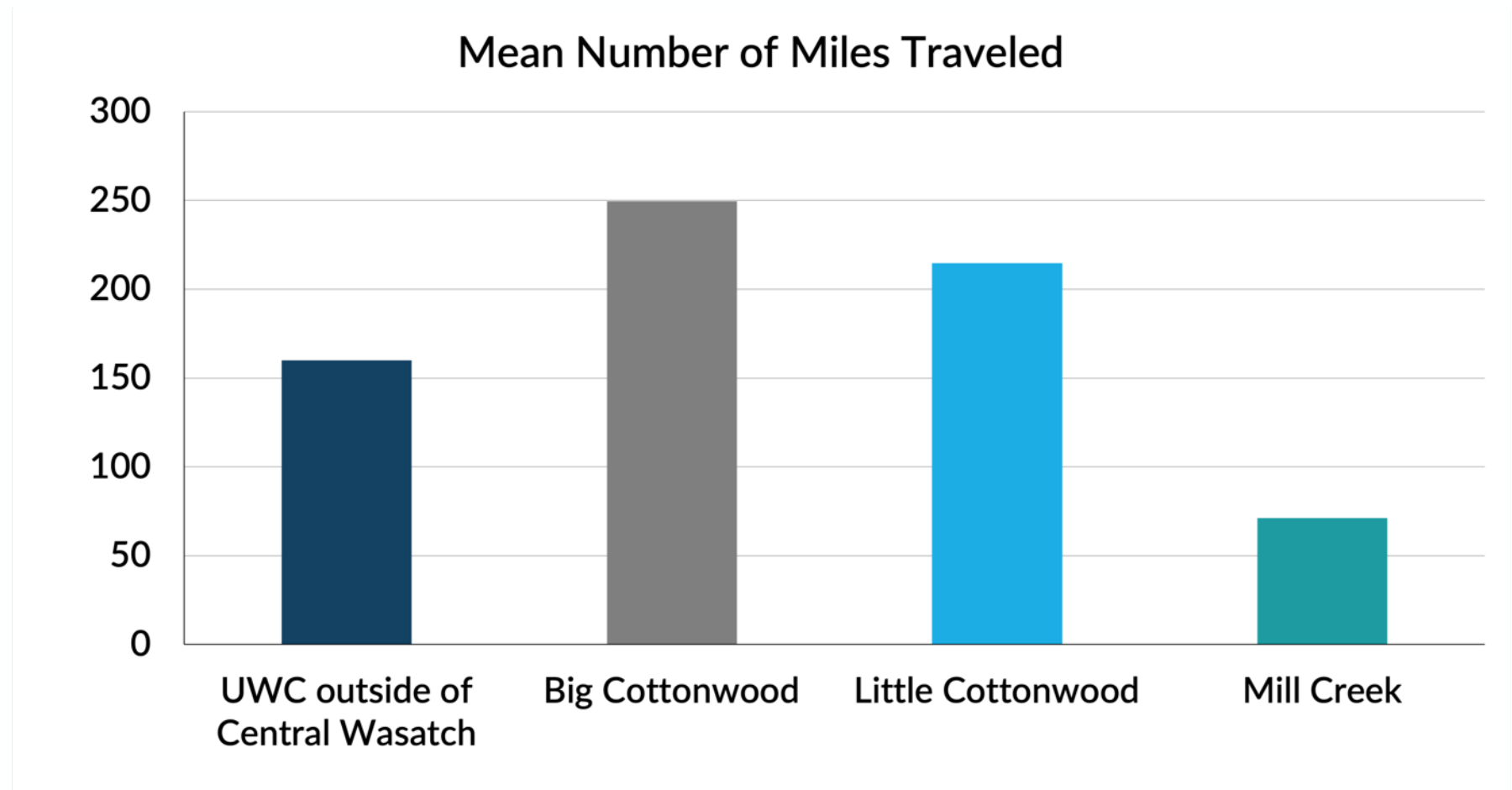
Visits to forest unit in previous 12 months...



Assessment of social conditions

VISITOR USE SURVEY

Distance traveled to reach recreation site...



Areas of improvement?

Rate the importance and satisfaction of each factor...

Road Conditions

Adequacy of Signage

Restroom Cleanliness

Quality of developed facilities

Interpretive Displays

Helpfulness of Forest Service staff

Condition of the Environment

Parking Availability

Parking Lot Conditions

Information about Recreation Opportunities

Feeling of Safety

Trail Conditions

Value of Fee Paid

Scenery

Factors where importance exceeds satisfaction...

MCC

Road conditions
Adequacy of signage
Restroom cleanliness
Quality of developed facilities
Interpretive displays
Helpfulness of Forest Service staff
Condition of the environment
Parking availability
Parking lot conditions
Information about recreation opportunities
Feeling of safety
Trail conditions
Value of fee paid
Scenery

BCC

Road conditions
Adequacy of signage
Restroom cleanliness
Quality of developed facilities
Interpretive displays
Helpfulness of Forest Service staff
Condition of the environment
Parking availability
Parking lot conditions
Information about recreation opportunities
Feeling of safety
Trail conditions
Value of fee paid
Scenery

LCC

Road conditions
Adequacy of signage
Restroom cleanliness
Quality of developed facilities
Interpretive displays
Helpfulness of Forest Service staff
Condition of the environment
Parking availability
Parking lot conditions
Information about recreation opportunities
Feeling of safety
Trail conditions
Value of fee paid
Scenery

What does this mean for recreation and resource management?

Existing trail use patterns within the Central Wasatch offer opportunities to spatially concentrate and temporally disperse use to accommodate more use without degrading recreation experiences.



Assessment of social conditions

VISITOR USE SURVEY

What does this mean for recreation and resource management?

Strategic efforts can be taken to improve highly important aspects of the visitor experience

- *Cleanliness of restrooms*
- *Expectations for parking availability*
- *Education and messaging on the value of use fees*



QUESTIONS

Jordan W. Smith – jordan.smith@usu.edu

