

Dark sky recreationists' experiences in Utah National Parks



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BURDEN ESTIMATE: We estimate that it will take about 20 minutes to complete and return this short survey. You may send comments concerning the burden estimates or any aspect of this information collection to: Dr. Jordan Smith, Associate Professor, Jordan.smith@usu.edu; or Phadrea Ponds NPS Information Collection Clearance Officer at pponds@nps.gov.

1. Was this trip to [PARK NAME]...
- ...the primary purpose for your trip? [SKIP TO Q3]
 - ...one of several equally important destinations on your trip? [IF SELECTED, SKIP TO TRIP2]
 - ...just an incidental or spur of the moment stop on your trip? [IF SELECTED, SKIP TO DEST5-modified]

2. What were the other destinations that were of equal importance as visiting [PARK]
- | | |
|---|---|
| <input type="checkbox"/> Arches National Park | <input type="checkbox"/> Grand Canyon National Park |
| <input type="checkbox"/> Bryce Canyon National Park | <input type="checkbox"/> Grand Parashant National Monument |
| <input type="checkbox"/> Canyonlands National Park | <input type="checkbox"/> Hovenweep National Monument |
| <input type="checkbox"/> Capitol Reef National Park | <input type="checkbox"/> Monument Valley Navajo Tribal Park |
| <input type="checkbox"/> Dead Horse Point State Park | <input type="checkbox"/> Natural Bridges National Monument |
| <input type="checkbox"/> Fremont Indian State Park | <input type="checkbox"/> Rainbow Bridge National Monument |
| <input type="checkbox"/> Glen Canyon National Recreation Area | <input type="checkbox"/> Zion National Park |
| <input type="checkbox"/> Goblin Valley State Park | <input type="checkbox"/> Other: _____ |
| <input type="checkbox"/> Goosenecks State Park | <input type="checkbox"/> |

3. Is your current trip more than one day?
- Yes [SKIP TO Q5]
 - No

4. What is the total length of your trip to [PARK] in hours?

5. What is the total length of your trip to [PARK] in days?

6. Are you a permanent resident or citizen of the United States? (Please respond "yes" or "no")
- Yes
 - No (skip to Q8)

7. What is your primary zip code?

8. What is your country of origin?

9. Below is a list of activities. Please indicate all activities you have or plan to participate in on this trip to [PARK].

	Have, or plan to, participate in during this trip
Scenic driving	<input type="checkbox"/>
Developed camping	<input type="checkbox"/>
Backcountry camping	<input type="checkbox"/>
Wildlife observation during the day	<input type="checkbox"/>
Wildlife observation at night	<input type="checkbox"/>
Night sky photography	<input type="checkbox"/>
Night sky viewing/astronomy	<input type="checkbox"/>
Hiking	<input type="checkbox"/>
Mountain biking	<input type="checkbox"/>
Road cycling	<input type="checkbox"/>
Horseback riding	<input type="checkbox"/>
Hunting [DISPLAY ONLY IN Antelope Island SP]	<input type="checkbox"/>
Fishing [DISPLAY ONLY IN Antelope Island SP]	<input type="checkbox"/>
Visiting historic or cultural sites	<input type="checkbox"/>
Rock climbing	<input type="checkbox"/>
Rafting or canoeing	<input type="checkbox"/>
Other: _____	<input type="checkbox"/>

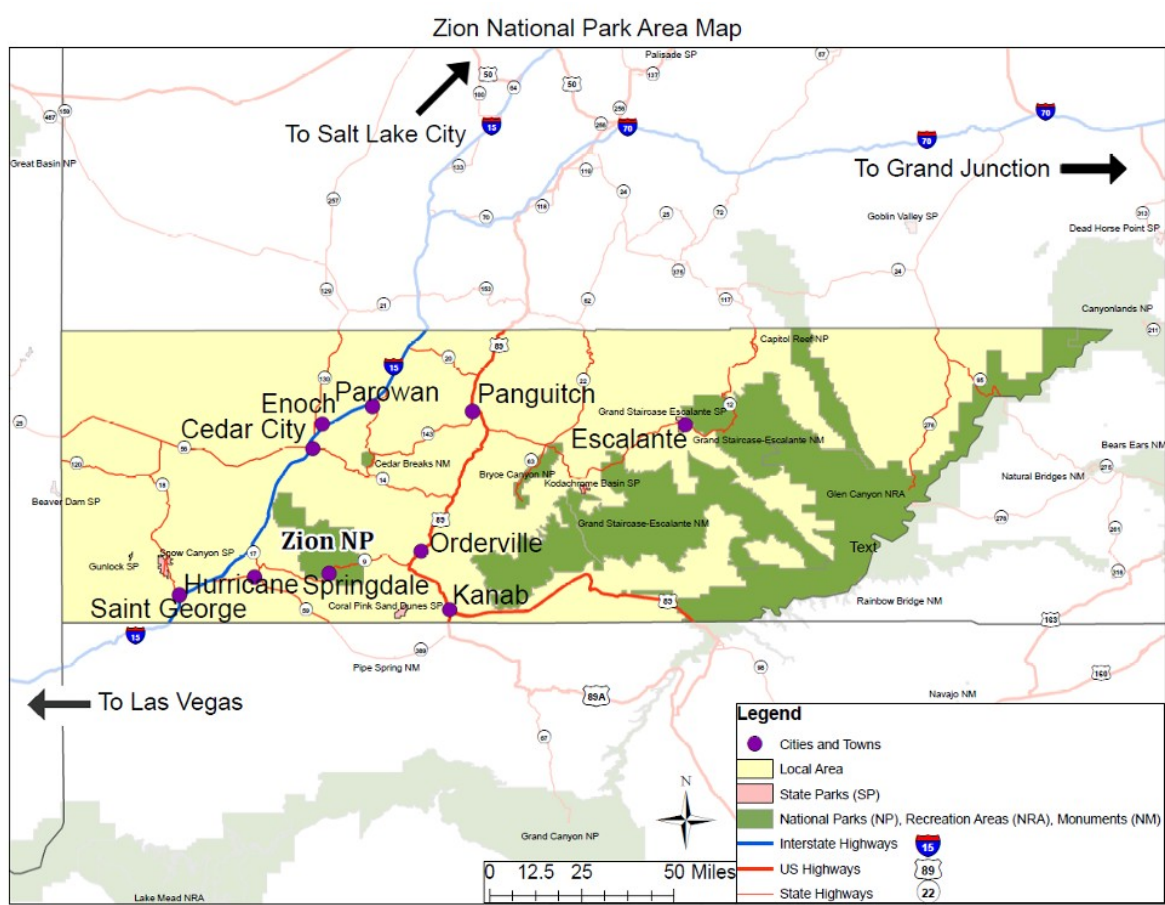
10. From the list above Please indicate your primary activity during this trip to the park:

11. To what extent do you agree or disagree with the following statements?

	Strongly disagree	Somewhat disagree	Neutral	Somewhat agree	Strongly agree
[PARK] is the best place for my night-time activity.	-2	-1	0	1	2
I get more satisfaction out of my night-time activity at [PARK] than any other place	-2	-1	0	1	2
My night-time activity at [PARK] is more important to me than doing it at any other place	-2	-1	0	1	2
I wouldn't substitute any other area for my night-time activity at [PARK]	-2	-1	0	1	2

12. We would like to know about how much you spent in the local area on your trip. When providing estimates, please include only expenses in the area shown below.

(*A map of the area surrounding the park the survey is being conducted in will appear here. An example is provided)



13. Have you or do you plan to spend money in the region indicated on the map above?

- Yes
- No [Skip to Q 17]

14. Please estimate how much you and those with whom you shared expenses (e.g., other family members, traveling companions) spent or plan to spend both inside [PARK] and within the nearby area on this trip.

Estimate expenditures as closely as you can. Please enter 0 if you did/will not spend any money in a particular category. If you don't know how much you spent in any category, please mark the "Don't Know" box.

	Amount spent in [PARK] and nearby area (in US\$)	Don't Know
Park entrance fees	_____	<input type="checkbox"/>
Gas and oil (auto, RV, boat, etc.)	_____	<input type="checkbox"/>
Rental cars	_____	<input type="checkbox"/>
Restaurants and bars	_____	<input type="checkbox"/>
Groceries and convenience foods	_____	<input type="checkbox"/>
Hotels, motels, resorts, lodges	_____	<input type="checkbox"/>
Specialty lodging (e.g., B&Bs, hostels, cabins, vacation rentals)	_____	<input type="checkbox"/>
Camping fees (tent, RV)	_____	<input type="checkbox"/>
Recreation and entertainment expenses (e.g., movies, bowling, miniature golf, etc.)	_____	<input type="checkbox"/>
Souvenirs, clothing, supplies, other retail	_____	<input type="checkbox"/>
Equipment rental	_____	<input type="checkbox"/>
Guides and tour fees	_____	<input type="checkbox"/>
Other (please list below)	_____	<input type="checkbox"/>

15. How many people, including yourself, did you include in the estimates provided above?

	Number
Adults (18 years or over)	_____
Children (under 18 years)	_____

16. Please estimate your non-trip expenditures in Utah **related to night sky recreation** in the past 12 months. For example, did you purchase any equipment such as telescopes, cameras, camping gear, etc.? Please only include expenditures that you paid within Utah.

17. To be better informed on future visits, I would like to learn more about:

	Strongly disagree	Somewhat disagree	Neutra l	Somewhat agree	Strongly agree
Night sky viewing/astronomy	-2	-1	0	1	2
Viewing wildlife at night	-2	-1	0	1	2
Native American connections to the night skies	-2	-1	0	1	2
Ways to improve night sky viewing	-2	-1	0	1	2
Other: _____	-2	-1	0	1	2

18. How would you prefer to learn about the following activities? Please select all that apply.

	Ranger-led programs	Programs organized by local clubs	Interpretive displays	Smartphone applications	Other (please describe)
Night sky viewing/astronomy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Viewing wildlife at night	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Native American connections to the night skies	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Ways to improve night sky viewing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____

19. Please indicate the degree to which you oppose or support the following management actions designed to protect the night sky quality at [PARK]

	Completely oppose	Somewhat oppose	Neither oppose nor support	Somewhat support	Completely support
Setting lights to the minimum necessary brightness	-2	-1	0	1	2
Reducing the number of outdoor lights in the park	-2	-1	0	1	2
Restricting the number of lights visitors can use at night	-2	-1	0	1	2
Creating shields on lights that direct light only to intended areas	-2	-1	0	1	2
Adjusting hues of lights to be wildlife friendly	-2	-1	0	1	2
Adjusting hues of lights to preserve human's night vision	-2	-1	0	1	2
Installing sensors/timers that turn lights on only when needed	-2	-1	0	1	2

Email Survey - skip to Q 22

On-site Activity (Only)

LOOK UP! Now, we would like you to take 30-seconds to look up at the night sky and then answer a set of questions.

20. Please indicate the degree to which you disagree or agree with the following statement about the experience you just had viewing the night sky.

	Completely disagree	Disagree	Slightly disagree	Neither	Slightly agree	Agree	Completely agree
I sensed things momentarily slow down	-3	-2	-1	0	1	2	3
I noticed time slowing	-3	-2	-1	0	1	2	3
I felt my sense of time change	-3	-2	-1	0	1	2	3
I felt my sense of self become somehow smaller	-3	-2	-1	0	1	2	3
I felt small compared to everything else	-3	-2	-1	0	1	2	3
I felt my sense of self shrink	-3	-2	-1	0	1	2	3
I had the sense of being connected to everything else	-3	-2	-1	0	1	2	3
I felt closely connected to humanity	-3	-2	-1	0	1	2	3
I had a sense of complete connectedness	-3	-2	-1	0	1	2	3
I felt that I was in the presence of something grand	-3	-2	-1	0	1	2	3
I experienced something greater than myself	-3	-2	-1	0	1	2	3
I perceived vastness	-3	-2	-1	0	1	2	3
I felt in the presence of greatness	-3	-2	-1	0	1	2	3
I felt challenged to mentally process what I was experiencing	-3	-2	-1	0	1	2	3
I found it hard to comprehend the experience in full	-3	-2	-1	0	1	2	3
I struggled to take in all that I was experiencing at once	-3	-2	-1	0	1	2	3
I felt my eyes widen	-3	-2	-1	0	1	2	3
I felt myself smile	-3	-2	-1	0	1	2	3
It gave me the chills	-3	-2	-1	0	1	2	3

21. Viewing the night sky can be affected by artificial light. We would like to know your opinion about how the night sky should look for stargazing or viewing. Please take a moment to look at the conditions of the night sky and answer the following question:

	Completely unacceptable	Unacceptable	Slightly unacceptable	Neutral	Slightly acceptable	Acceptable	Completely acceptable
How unacceptable or acceptable do you think the current conditions are in [PARK] for stargazing or viewing the night sky?	-3	-2	-1	0	1	2	3

22. Prior to this trip to [PARK], were you aware that this park is certified as an International Dark Sky Park/Place?

- Yes
- No [Skip to Q 24]

23. Please select one answer below.

	Not important at all	Slightly important	Somewhat important	Very important	Extremely important
How important was it for you to visit a park certified as an International Dark Sky Park/Place?	1	2	3	4	5

Socio-demographics

24. What is your age?

25. What is the highest level of formal education you have completed?

- Less than high school
- Some high school
- High school graduate
- Vocational/trade school certificate
- Some college
- Associate degree (AA, AS, etc)
- Bachelor's degree (BA, AB, BS, etc.)
- Master's degree (MA, MS, MEd, MSW, MBA etc.)
- Professional degree (MD, DDS, DVM, LLB, JD, etc.)
- Doctorate degree (PhD, EdD, etc.)

26. What is your gender?

- Male
- Female
- Self-Identify _____

27. For you only, are you Hispanic or Latino?

- Yes
- No

28. Which of these categories best indicates your race? Answer only for yourself. Please select all that apply.

- American Indian or Alaska Native
- Asian
- Black or African American
- Native Hawaiian or other Pacific Islander
- White

29. Which category best represents your annual household income?

- Less than \$25,000
- \$25,000 to \$34,999
- \$35,000 to \$49,999
- \$50,000 to \$74,999
- \$75,000 to \$99,999
- \$100,000 to \$149,999
- \$150,000 to \$199,999
- \$200,000 or more

30. How many people are in your group, including you?

Thank you for completing this survey. We appreciate your time and responses