

Night Skies in National Parks



We are conducting a short visitor survey about experiencing the night sky in national parks. Your answers will inform the National Park Service and others about visitor experiences in parks. This survey is voluntary and anonymous. It will take approximately 15 minutes to complete.

Thank you for your participation.

PAPERWORK REDUCTION ACT STATEMENT: The National Park Service is authorized by 16 U.S.C. 1a-7 to collect this information. This information will be used by park managers to understand the needs of the public in order to provide high quality nighttime experiences in parks. Response to this request is voluntary. No action may be taken against you for refusing to supply the information requested. The permanent data will be anonymous. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number.

BURDEN ESTIMATE statement: Public reporting burden for this form is estimated to average 15 minutes per response. Direct comments regarding the burden estimate or any other aspect of this form to: Chad Moore, Night Skies Program Manager, Natural Sounds and Night Skies Division, 1201 Oakridge Drive, Suite 100, Fort Collins, CO, chad_moore@nps.gov.

Topic Area 5: VERP. Part (a.) of this question will inform park managers of how many visitors in the sample population have spent time in that park at night, during that visit or previously. Responses to parts (b.) and (c.) will be used to identify indicators of quality for night time experiences. A variation of this question has been approved for use in previous studies to identify indicators of quality.

1. a. Have you spent time in this park at night?

- Yes
- No (Skip to Question 4.)

b. What things do you like most about the nighttime environment in this park?

- 1. _____
- 2. _____
- 3. _____

c. What things do you like least about the nighttime environment in this park?

- 1. _____
- 2. _____
- 3. _____

Topic Area 5: VERP. Part (a.) of this question will inform park managers of how many visitors in the sample population have viewed the night sky/stargazed in that park at night, during that visit or previously. Responses to parts (b.) and (c.) will be used to identify indicators of quality for night sky viewing/stargazing. A variation of this question has been approved for use in previous studies to identify indicators of quality.

2. a. Have you stargazed or viewed the night sky in this park?

- Yes
- No (Skip to Question 4.)

b. What things do you like most about stargazing or viewing the night sky in this park?

- 1. _____
- 2. _____
- 3. _____

c. What things do you like least about stargazing or viewing the night sky in this park?

- 1. _____
- 2. _____
- 3. _____

Topic Area 3: ACT3

3. Please check all of the following things you've done in this park **after dark** on this trip. (*Check all that apply.*)

- Attended a ranger program
- Camped
- Walked/hiked somewhere in the park other than the campground
- Stargazed/viewed the night sky
- Other (*Please specify*): a. _____
 b. _____
 c. _____

I've never visited this park after dark.

Topic Area 5: VERP1

1. Stargazing or viewing the night sky can be affected by human-caused light. For example, the lights of cities and street lights can make stars more difficult to see. We would like to know your opinion about how the night sky should look for stargazing or viewing. To help judge this, we have a series of images that show different night sky conditions. Please look at these images and answer the following questions.

- a. Please rate each image by indicating how acceptable you think it looks for stargazing or viewing the night sky. A rating of -3 means the image is "very unacceptable" and a rating of +3 means the image is "very acceptable". (*Circle one response for each image.*)

	Unacceptable ←————→ Acceptable						
	Very	Moderately	Slightly	Neutral	Slightly	Moderately	Very
Image A	-3	-2	-1	0	1	2	3
Image B	-3	-2	-1	0	1	2	3
Image C	-3	-2	-1	0	1	2	3
Image D	-3	-2	-1	0	1	2	3
Image E	-3	-2	-1	0	1	2	3

Topic Area 5: VERP2

- b. Which image shows the night sky you would prefer to see in this park?

Image letter: _____

Topic Area 5: VERP3

- c. Which image represents the maximum amount of human-caused light the National Park Service should allow in and around this park?

Image letter: _____

OR The National Park Service should not try to control human-caused light in and around the park.

Topic Area 5: VERP. This question will be used to address potential **displacement** of park visitors **from a park** and the importance of the condition of the night sky to visitors experiencing that park.

- d. Which image is so unacceptable that you would no longer come to this park to stargaze or view the night sky?

Image letter: _____

OR None of the images are so unacceptable that I would no longer visit this park to stargaze.

Topic Area 5: VERP. This question uses the same images to address potential displacement of park visitors from **an activity** (stargazing) in that park.

- e. Which image is so unacceptable that you would not stargaze or view the night sky when visiting this park?

Image letter: _____

OR None of the images are so unacceptable that I would no longer stargaze at this park.

Topic Area 5: VERP4 variation

- f. Which image looks most like the night sky that you typically saw in this park during this trip?

Image letter: _____

OR I have not noticed the night sky in this park during this trip.

Topic Area 5: VERP. Responses to this question will inform park managers about what visitors perceive as a “natural” night sky.

- g. Which image looks most like the night sky that you think is “natural” in this park?

Image letter: _____

Topic Area 5: VERP. This question will inform park managers how visitors perceive the condition of the night sky in their communities. Managers can determine how many visitors perceive a higher or lower quality night sky than what they've seen in the park.

h. Which image looks most like the night sky you typically see from your home?

Image letter: _____

OR I do not notice the night sky from my home.

Topic Area 3: Activities. This question will determine if visitors stargaze/view the night sky during special conditions. It will inform park managers of visitor interest in viewing the night sky during these conditions and can guide educational/interpretive programming efforts.

5. Do you participate in stargazing/viewing the night sky during any of the following special conditions? (*Check all that apply.*)

- During a full moon
- When there is no moonlight
- During special celestial events (e.g., meteor shower, comets, Northern Lights, eclipse)
- Other (*Please specify*): _____
- I've never participated in stargazing activities.

Topic Area 3: ACT3 variation

6. Which of the following activities do you participate in and where? (*Check all that apply.*) For each activity that you check, indicate approximately how many times per year you participate in that activity.

	<u>In this park</u>	<u>In other parks or recreation areas</u>	<u>In other places</u>	<u>How many times per year in total?</u>
Attending educational programs at night or about night, including park ranger programs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Night photography	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Stargazing with telescopes or binoculars	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Stargazing without telescopes or binoculars	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Visiting planetariums	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Visiting observatories	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Hiking or walking at night	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____

Topic Area 4: Recreation Preferences. This question includes statements that will inform park managers of the importance of the night sky to visitors and their park experiences and the role of stargazing as a motivation for visiting that park. These statements also address expectations for night sky quality and perceptions of night sky quality.

7. Please indicate the degree to which you agree or disagree with the following statements.
(Circle one number for each statement.)

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Viewing the night sky (“stargazing”) is important to me.	-2	-1	0	1	2
One of the reasons I chose to visit this park is to view the night sky.	-2	-1	0	1	2
This park has a good reputation as a place to view the night sky.	-2	-1	0	1	2
I would visit this park less if it became more difficult to see the night sky.	-2	-1	0	1	2
I planned to spend time outdoors in this park at night.	-2	-1	0	1	2
I expected to see a “starry night” in this park.	-2	-1	0	1	2
One reason for visiting this park was to experience a natural night environment.	-2	-1	0	1	2
Observing the night sky is an important part of my experience in this park.	-2	-1	0	1	2
The night sky in this park is pristine (i.e., free of light pollution).	-2	-1	0	1	2
Bright lights in the community I live in make it difficult for me to stargaze at home.	-2	-1	0	1	2

Topic Area 4: PREF1. This question will inform park managers of the relative importance of different resources to visitors in that park. This can guide management and educational efforts for these resources.

8. Please rate your level of importance for each of the following resources at this park. *(Circle one number for each item.)*

	Not all important	Slightly important	Moderately important	Very important	Extremely important
Vegetation in the park (trees, plants, wildflowers, etc.)	1	2	3	4	5
The scenery in daylight	1	2	3	4	5
The cultural history of the park	1	2	3	4	5
Wildlife in the park	1	2	3	4	5
Natural night environment	1	2	3	4	5
The sounds of nature <u>in daylight</u>	1	2	3	4	5
The sounds of nature <u>at night</u>	1	2	3	4	5
The night sky (stars, Milky Way, etc.)	1	2	3	4	5
Clean air	1	2	3	4	5
Clean water	1	2	3	4	5
[Park specific resource 1]	1	2	3	4	5
[Park specific resource 2]	1	2	3	4	5
[Park specific resource 3 and so on as needed]	1	2	3	4	5

Topic Area 6: OPMGMT4 variation

9. Please rate your level of concern for the following visitor-caused impacts to resources in this park. *(Circle one number for each item.)*

	Not all concerned	Slightly concerned	Moderately concerned	Very concerned	Extremely concerned
Trampling tree roots and fragile plants	1	2	3	4	5
Eroding soils	1	2	3	4	5
Polluting water	1	2	3	4	5

Feeding or otherwise disturbing wildlife	1	2	3	4	5
Making noise that masks the sounds of nature	1	2	3	4	5
Littering	1	2	3	4	5
Causing crowding and congestion	1	2	3	4	5
Causing conflicts among visitors	1	2	3	4	5
Creating human-caused light that dims the night sky	1	2	3	4	5
Vandalism	1	2	3	4	5
[Park specific impacts of concern?]	1	2	3	4	5

Topic Area 6: OPMGMT4 variation

10. Please rate your level of concern for the following things outside this park that can impact resources in this park. (Circle one number for each item.)

	Not all concerned	Slightly concerned	Moderately concerned	Very concerned	Extremely concerned
Air pollution from cities, roads, etc.	1	2	3	4	5
Water pollution from cities, roads, etc.	1	2	3	4	5
Changes in climate caused by CO ₂ emissions from cities, roads, etc.	1	2	3	4	5
Light pollution from cities, roads, etc.	1	2	3	4	5
Noise pollution from cities, roads, etc.	1	2	3	4	5

Topic Area 6: OPMGMT4 Statements in this question address visitor attitudes towards park management of night skies. Managers can use this information to guide interpretation/education programming, facility development/site design, and collaboration with entities outside of the park.

11. Please indicate the degree to which you agree or disagree with the following statements. (Circle one number for each statement.)

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
The National Park Service should modify its lighting (e.g., use less lighting, direct lighting downward) to allow visitors to see the night sky.	-2	-1	0	1	2
The National Park Service should work with nearby communities and businesses to modify lighting (e.g., use less lighting, direct lighting downward) to allow visitors to see the night sky.	-2	-1	0	1	2
The National Park Service should conduct more programs to encourage visitors to view the night sky with telescopes.	-2	-1	0	1	2
The National Park Service should conduct more programs to encourage visitors to view the night sky without telescopes.					
The National Park Service does a good job of letting its visitors know about stargazing activities.	-2	-1	0	1	2
The National Park Service does not provide enough lighting for visitors (e.g., marking restrooms, lighting paths) in this park.	-2	-1	0	1	2
The National Park Service provides too much lighting for visitors (e.g., makes it harder to see the night sky) in this park.	-2	-1	0	1	2
Protection of natural nighttime conditions (e.g., darkness, sounds) is important in preserving this park	-2	-1	0	1	2

for future generations.

Preserving a natural night environment is as important as protecting other resources in this park.	-2	-1	0	1	2
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Topic Area 6: OPMGMT6 variation

12. Please indicate the degree to which you oppose or support the following management actions designed to protect the quality of stargazing/viewing the night sky at this park.

	Strongly oppose	Oppose	Neither oppose nor support	Support	Strongly support
Restrictions on times when lights are allowed (or not allowed) to be used by visitors or campers	-2	-1	0	1	2
Restrictions on types of lights allowed to be used by visitors or campers	-2	-1	0	1	2
Restrictions on the number of lights used by visitors or campers	-2	-1	0	1	2
Lights that draw attention to, or accent, something specific	-2	-1	0	1	2
Lights that are set to the minimum necessary brightness	-2	-1	0	1	2
Outdoor lights that are motion activated	-2	-1	0	1	2
Reducing the number of park lights	-2	-1	0	1	2
Policies that restrict visitor use or activities in the park at night	-2	-1	0	1	2
Lights that are shielded to direct light to only intended areas	-2	-1	0	1	2
Outdoor lighting ordinances or policies in communities near the park	-2	-1	0	1	2

13. If management actions were taken to improve stargazing at this park, how concerned would you be about the following? (Circle one number for each item.)

	Not all concerned	Slightly concerned	Moderately concerned	Very concerned	Extremely concerned
Light restrictions may make the park less safe	1	2	3	4	5
Light restrictions may increase the risk of crime	1	2	3	4	5
Light restrictions may make it more difficult for me to do other night time activities in the park	1	2	3	4	5
The management actions may divert the park's budget from addressing other issues that I care about	1	2	3	4	5
Neighboring communities may oppose restrictions on lighting	1	2	3	4	5

Topic Area 6: OPMGMT12 variation

14. Is there anything you would like to see changed in the way this park manages its activities, visitors' activities, stargazing/viewing the night sky, lighting or park resources at night?

Topic Area 6: OPMGMT12 variation

15. Is there anything you would not like to see changed in the way this park manages its activities, visitors' activities, stargazing/viewing the night sky, lighting or park resources at night?

Topic Area 1: VISITHIS1

16. Have you visited this park before today? *(Check one.)*

- Yes
- No → Approximately how many times have you visited in total? _____

Topic Area 3: TRIPC33 variation

17. Are you staying in a hotel, cabin, or lodge in this park during this visit? *(Check one.)*

- Yes
- No

Topic Area 3: TRIPC33 variation

18. Are you camping in this park during this visit? *(Check one.)*

- Yes
- No (If “No”, please skip to question 19)

Topic Area 3: TRIPC3(c)

19. Which of the following are you using for camping? *(Check all that apply.)*

- Tent
- RV
- Car/truck
- Other *(please specify):* _____

Topic Area 1: GR3 variation

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

Less than age 18: _____ Age 18+ : _____

Topic Area 1: RES3

21. Do you live in the United States? *(Check one.)*

- Yes. What is your U.S. zip code? _____
- No. What country do you live in? _____

Topic Area 1: AGE2

22. In what year were you born? _____

Topic Area 1: GEND1

23. What is your gender? *(Check one.)*

- Male Female

Topic Area : RACE/ETH2

24. Are you Hispanic or Latino?

- Yes No

Topic Area 1: RACE/ETH4

25. What is your race/ethnicity? *(Check all that apply.)*

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

Topic Area 1: ED2

26. What is the highest level of formal education you have completed? *(Check one.)*

- | | |
|--|---|
| <input type="checkbox"/> Less than high school | <input type="checkbox"/> Two-year college degree |
| <input type="checkbox"/> Some high school | <input type="checkbox"/> Four-year college degree |
| <input type="checkbox"/> High school graduate | <input type="checkbox"/> Master's Degree |
| <input type="checkbox"/> Vocational/trade school certificate | <input type="checkbox"/> Ph.D., M.D., J.D., or equivalent |
| <input type="checkbox"/> Some college | |