

VaMPIRE Survey Instrument

Question justifications appear in grey boxes before each question set.

Intro Screen 1

The Bureau of Land Management manages public lands for multiple uses – including recreation, conservation, energy development, livestock grazing, and timber harvesting – to name a few. Land managers are often tasked with maximizing some combination of these uses without reducing the quality of visitors' experiences. To accomplish this, managers must understand: (1) what specific locations people are visiting, and (2) how visitors use and value these lands. The following mapping application and survey is intended to help land managers understand your uses of and values for public lands and waters near [insert location]. It should take around 15 minutes to complete and will work best on a desktop computer, laptop computer, or tablet.

Intro Screen 2

Should you choose to participate, you will:

- 1) Interact with a map to identify locations that you use and that are important to you in the [insert location] area
- 2) Rank your top three locations you have visited and their values based on their importance to you
- 3) Answer a few questions related to these top three locations/values

At no point during this survey will you be personally identified. Additionally, you are under no obligation to participate and may end this survey at any time. This application is designed by the U.S. Geological Survey and the Bureau of Land Management and has been approved by the Office of Management and Budget [Control Number XXXX-XXXX]. Please contact [Name] ([email]) with any questions. Thank you in advance for your thoughtful responses!

PAPERWORK REDUCTION ACT STATEMENT

We are collecting this information subject to the Paperwork Reduction Act (44 U.S.C. 3501) to identify public uses for public lands and waters. Your response is voluntary. We may not conduct or sponsor, and you are not required to respond to a collection of information, unless it displays a currently valid OMB Control Number. OMB has reviewed and approved this survey and assigned OMB Control Number XXXX-XXXX.

The public burden for the collection of information is estimated to be 15 minutes per response, including the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding the burden estimate or any aspect of this collection of information may be sent to the Information Collection Clearance Officer, USGS, 12201 Sunrise Valley Dr., Mil Stop 242, Reston, VA 20192.

Question 1 is used to establish consent and that the participant is an adult.

Q1. Are you 18 years or older and willing to participate in this survey?

- Yes
- No

[If “No”] The respondent is asked: “Would you be willing to answer a few questions as to why?” If they select “no,” the survey ends. If they select yes, they will go to the non-response survey (see separate document).

[If “Yes” - continue below]

Part 1: Experience use history questions

Experience use history questions (Questions 1-3) will be used to understand respondents’ relationship to the place they are mapping values for. People who visit during different seasons, or who have visited the location for a different amount of time, may have different values for a location.

Q1. [Insert location] [and the surrounding area (within [x] miles)] are outlined on the map below. How many years have you been visiting this location?

- 0 - 1 Year
- 2 - 3 Years
- 4 - 5 Years
- 6 - 7 Years
- 8 - 9 Years
- 10 - 14 Years
- 15 - 19 Years
- 20+ Years

Q2. In an average year, how frequently do you visit the [insert location] area?

- Less than once a year
- 1 - 2 times
- 3 - 4 Times
- 5 - 6 Times
- 7 - 8 Times
- 9 - 10 Times
- 10+ Times

Q3. In which season(s) do you most often visit the [insert location] area? (Check all that apply)

- Summer (June, July, August)

- Fall (September, October, November)
- Winter (December, January, February)
- Spring (March, April, May)

Part 2: Values mapping/GIS

The values mapping portion of the survey (Q1 below, to indicate locations they use in the area) will provide information about specific locations people use and value across public lands and waters. This data will be used to create heat maps showing locations people value on the landscape for different values. This data will also be used to generally see the prevalence of different types of values in different locations.

Q1. Please use this mapping interface to indicate the locations you use and value within [[x] miles of] [insert location] – indicated by the black outline. Instructions for using the mapping interface are listed on the next page. Although you can place markers anywhere, the focus of this study is on public lands and waters. There is no limit to how many points you can place, and you can zoom in on the map to indicate specific locations.

[Participant is then given instructions to interact with the map – see below].

Instructions

1. Use the mouse to drag and zoom the map to the location you would like to identify
2. Click the balloon icon in the top left corner of the map to select from a list of values
3. Hover over the value to read the definition
4. Check the value and click the SELECT LOCATION button at the bottom of the list
5. Click the map on the specific location in which you would like to place the value
6. Repeat this process as many times as you would like to place values on the map
7. To delete a misplaced value, click the value on the map and select the trash can icon on the top left portion of the map.

[The following values are presented as options to map. The definition for each appears if the user hovers their mouse over the value/term.]

- "Recreation": I value these areas because I use them for recreational activities
- "Subsistence": I value these areas because I use them to collect food and materials that help sustain my life
- "Social": I value these areas because they provide me with opportunities for social interaction
- "Inspirational (Intellectual)": I value these areas because they provide me with opportunities to think creatively and to be inspired by nature
- "Therapeutic (Physical Health Benefits)": I value these areas because I can go there to feel better physically

- "Therapeutic (Mental Health Benefits)": I value these areas because I can go there to feel better mentally
- "Spiritual": I value these areas because they are sacred, religious, or spiritually special to me
- "Wilderness": I value these areas because they offer me an undeveloped, natural area where I can go to experience a sense of solitude or engage in primitive recreation
- "Aesthetic": I value these areas because I appreciate the beautiful scenery
- "Personal Income Opportunity": I value these areas because they provide me with income opportunities that support my livelihood
- "Life Sustaining": I value these areas because they are places that produce, preserve, clean, and renew air, soil and water
- "Education or Learning": I value these areas because I use them to learn about the environment
- "Scientific": I value these areas because I utilize them for scientific research
- "Biodiversity": I value these areas because I can observe a variety of plants, animals, and insects
- "Community Economic Opportunity": I value this place because it provides economic benefits that support my community and bolster the economy
- "Cultural / Heritage": I value these areas because they represent natural and human history or because they allow my culture to continue and pass down the knowledge and traditions of my ancestors

Question 2 on values mapping (below) is used so we can ask follow-up questions about only their top three values. If we asked additional follow-up questions about every value a participant mapped, the survey would be very long and an unnecessary burden to participants. Asking participants to rank their top 3 values allows us to ask additional questions on just a subset of the values/locations that are most important to the participant. We will also use this question to create heatmaps of locations/values that tend to be ranked as the most important to respondents.

Q2. On the next section we will ask you to select and rank your TOP 3 locations that you placed on the map.

[Participant is then given instructions to rank their top 3 locations- see below]

Instructions

1. Click on the dot of your most important value/location. The dot will be highlighted. (Do not click on the label)
2. Click on the ADD SELECTED TO RANK button directly below these instructions
3. The value will appear on the ranking list
4. Repeat this process for your second most important value/location (if applicable), and third most important value/location (if applicable)
5. Click SUBMIT at the bottom of the page once you have ranked your top 3 value/locations

[After the participant clicks "Submit"] In the next section you will respond to survey questions based upon your top selected value/locations: [lists top 3 selected values]

Part 3: Questions based on top 3 value selections

[All of these questions are only asked if the value listed is in the top 3 most important]

Questions 1 and 2 in the section below are asked to better understand the specific activities people are participating in or why they value that location, if they select recreation, subsistence, social, inspirational, personal income opportunity, education, or scientific as their top 3 values.

[If Recreation]:

Q1. You have selected this location as the {most, 2nd most, 3rd most} important and it is valuable to you for recreation. Please select ALL of the recreational activities in which you participate at this location from the list of activities.

- Backcountry Camping
- Developed Camping
- Biking (Mountain)
- Biking (Road)
- Hiking
- Trail Running
- Fishing
- Hunting
- Off Roding (e.g., ATV, OHV)
- Target Shooting
- Bird Watching
- Wildlife Viewing
- Horseback Riding
- Picnicking
- Scenic Driving
- Boating
- River Sports (e.g., Kayaking, Rafting)
- Rock Climbing or Bouldering
- Night Sky Viewing/Astronomy
- Viewing Historical or Cultural Sites
- Photography
- Geocaching
- Skiing or Snowboarding (Frontcountry)
- Skiing or Snowboarding (Backcountry)
- Other – write in

Q2. Please select your PRIMARY activity from the list of recreation activities in which you participate at this location.

- Choices will be populated based on selection above

[If Subsistence]:

Q1. You have selected this location as the {most, 2nd most, 3rd most} important and is valuable to you for subsistence. Please select ALL of the subsistence activities in which you participate at this location from the list of activities.

- Foraging (collecting plant-based foods like mushrooms, herbs, wild edible plants)
- Hunting for food
- Fishing for food
- Collecting wood for energy
- Collecting water for consumption
- Other - write in

Q2. Please select your PRIMARY activity from the list of subsistence activities in which you participate at this location.

- Choices will be populated based on selection above

[If Social]:

Q1. You have selected this location as the {most, 2nd most, 3rd most} important and it is valuable to you for social interaction. Please select ALL of the types of social interaction in which you participate at this location from the list of activities.

- Spend time with friends
- Spend time with family
- Meet new people
- Recreation competitions
- Other - write in

Q2. Please select your PRIMARY activity from the list of social activities in which you participate at this location.

- Choices will be populated based on selection above

[If Inspirational]:

Q1. You have selected this location as the {most, 2nd most, 3rd most} important and it is valuable to you for inspirational reasons. Please select ALL of the types of inspirational activities in which you participate at this location from the list of activities.

- Painting, drawing, etc.

- Photography
- Writing
- Reading
- Meditating
- Thinking
- Other – write in

Q2. Please select your PRIMARY activity from the list of Inspirational activities in which you participate at this location.

- Choices will be populated based on selection above

[If Personal Income Opportunity]:

Q1. You have selected this location as the {most, 2nd most, 3rd most} important and it is valuable to you for income opportunities. Please select your PRIMARY income activity in this area from the following list of common sources.

- Recreation Guiding / Outfitter
- Mining
- Energy Development
- Grazing
- Timber Harvesting
- Other - Write in

[If Education or Learning]

Q1. You have selected this location as the {most, 2nd most, 3rd most} important and it is valuable to you for education or learning. Please select why you value this location for education or learning (select all that apply).

- I have used this location to learn independently (i.e., not part of a school or program)
- I am/was an educator who has used this location to teach
- I am/was a student who has used this location to learn
- Other – write in

[If Scientific]

Q1. You have selected this location as the {most, 2nd most, 3rd most} important and it is valuable to you for scientific purposes. Please select why you value this location for scientific purposes.

- I have personally used this location for scientific research
- I value scientific research conducted in this location
- Other – write in

[If any of the following values, no Q1 or Q2 for this section: Therapeutic (Mental Health), Spiritual, Wildness, Aesthetic, Life Sustaining, Biodiversity, Community Economic Opportunity, Cultural/Heritage, Therapeutic (Physical Health)]

Scenario prompt

"Public lands are managed for multiple uses including recreation, grazing, timber harvesting, mineral extraction, or energy development. As a result, [insert value] activities may occur in the same place as some of these other activities. We would like to ask about how your use of this place may be affected if [choose one depending on the scenario: "other uses were to occur here", "there was an environmental or management change"]. A **hypothetical** scenario will be presented below. Please identify how you would respond."

Possible scenario options [Only 1-3 scenarios would be chosen for any given survey, and the scenario(s) selected would depend on the local context. This is a list of possible options.]

Energy Extraction

- "In this hypothetical scenario, energy extraction is occurring on the landscape. As a result, while you are benefiting from [insert value/activity] you will occasionally see utilities such as power poles and pipes, access roads, and vehicles. At times you may also hear sounds, or experience changes in air quality (e.g., increased dust / particulates) associated with this work. The specific area you are visiting will remain open for use, but other nearby locations may be closed."

Grazing

- "In this hypothetical scenario, livestock grazing is occurring on the landscape. As a result, while you are benefiting from [insert value/activity] you will occasionally see livestock (e.g., cattle, sheep, goats), fencing, and vehicles using service roads. At times you may also hear sounds, or detect odors associated with this work."

Surface Mining

- "In this hypothetical scenario, surface mining is occurring on the landscape. As a result, while you are benefiting from [insert value/activity] you will occasionally see utilities, access roads, and work vehicles. At times you may also hear sounds, notice reduced air quality (e.g., increased dust / particulates), or modifications to the landscape that are associated with this work. The specific area you are visiting will remain open for use, but other nearby locations may be closed."

Increased Visitor Use

- "In this hypothetical scenario, increased recreational use for a variety of recreational activities are occurring near one another on the landscape. As a result, while you are benefiting from [insert value/activity] you will likely encounter more people, experience longer wait times, and could be exposed to different types of recreational user groups (e.g., mountain bikers, 4-wheelers, kayakers, etc). Additionally, you might experience more compacted trails or other modifications to the landscape that are associated with increased recreational uses."

Recreational Facility Development

- "In this hypothetical scenario, increased visitor use requires the development of new facilities to support camping, information dissemination, restrooms, and other needs. As a result, while you are benefiting from [insert value activity] you will occasionally see utilities, access roads and vehicles, and new development that are associated with this work."

Timber Harvesting

- "In this hypothetical scenario, Timber harvesting is occurring on the landscape. As a result, while you are benefiting from [insert value/activity] you will occasionally see utilities, access roads, and work vehicles. At times you may also hear sounds, notice reduced air quality (e.g., increased dust / particulates) and large cleared lots or other modifications to the landscape that are associated with this work. The specific area you are visiting will remain open for use, but other nearby locations may be closed."

Wildfire smoke

- "In this hypothetical scenario, there is an increased prevalence of wildfire in the region. As a result, while you are benefiting from [insert value/activity] you may experience haziness from wildfire smoke and reduced air quality (e.g., increased particulates). Although there are no closures in this area, the air quality index is above 150 (meaning unhealthy levels for everyone), and people are advised to avoid strenuous outdoor activities."

Harmful algal bloom

- "In this hypothetical scenario, there are harmful algal blooms in the local waterbodies (e.g., rivers, lakes, reservoirs) from June through September. As a result, swimming in these waterbodies is discouraged because it can make people sick and be deadly for pets. You will also experience a musty odor near these waterbodies, the water will appear green, and they are likely to have more dead fish."

Warming temperatures

- "In this hypothetical scenario, there is an increased prevalence of warm temperatures and heat waves. On average, daily high and low temperatures are 4° F warmer than they

are right now. In the wintertime, there would be fewer days with snowfall and less snowpack than usual.”

Allocation/reservation

- “In this hypothetical scenario, there is now a reservation system in place to access this location. To visit this location, you must get a reservation online ahead of time. This will restrict visitation to the area to reduce crowding and will ensure those with reservations get parking spots.”

Restricted lake/river access

- "In this hypothetical scenario, there are limits on recreational use near lakes or rivers in the area. These limits are designed to help conserve wetland habitat areas, but this means camping would not be allowed near lakes and rivers in the area, and boating would require a permit. Because of this, you may see fewer campers or boaters in these areas."

Questions based on scenarios – (Asked up to 3 times, once for each of the top 3 values selected)

Scenario questions (questions 3 and 4 below) will be used to better understand how a potential management action, land use change, or environmental/social change would affect the public’s uses of the landscape and their overall quality of experience. The specific scenarios we ask about will be things that land managers perceive could happen in the future or are starting to be a concern (e.g., increased visitor use). We specifically ask if they would change the location they are visiting and what factors are important in deciding to substitute locations to better understand how use and value of the landscape may change spatially. We also ask about quality of experience (question 4 below) because land managing agencies want to provide quality experiences to visitors, so any potential changes to the quality of experience would be important to note.

[If Recreation, Subsistence, Social, or Inspirational]:

Q3. Considering this hypothetical scenario, which of the items listed below best reflects how your use of this area for [insert value] would change?

- Continue to do this activity, with no changes to how often or where I do it
- Substitute a different activity in the same location
- Continue to do this activity in this location, but change how often
- Continue to do this activity in this location, but change the timing (e.g., visiting in a different time of year or time of day)
- Do the same activity in a different location
- Do a different activity in a different location

- Stop doing this activity

Q3.a. [If options 1-4 selected]: Would you be willing to substitute locations under any of the following circumstances? (Select all that apply)

- Yes, if there was a similar travel time
- Yes, if there were similar costs
- Yes, if it was a similar setting
- Yes, if it had a similar recreational challenge
- Yes, if it had similar visitor use levels
- No, I would not be willing to substitute locations
- Other - Write in

Q3.b. [If options 5-6 selected]: What factors are important in deciding to substitute locations?

- Similar travel time
- Similar costs
- Similar setting
- Similar recreational challenge
- Similar visitor use levels
- Other - Write in

Q4. How would the overall quality of your experience be affected if [insert scenario name] happened in this location?

- There would be no effect on the overall quality of my [insert value] experience
- There would be a slight effect on the overall quality of my [insert value] experience
- There would be a moderate effect on the overall quality of my [insert value] experience
- There would be a substantial effect on the overall quality of my [insert value] experience but I would **keep visiting** this place
- There would be a substantial effect on the overall quality of my [insert value] experience and I would **stop visiting** this place

[If Therapeutic (Physical Health Benefits), Therapeutic (Mental Health Benefits), Aesthetic, Spiritual, Wildness, Education/Learning, Scientific, Life Sustaining, Biodiversity, Cultural/Heritage]:

Q3. Considering this hypothetical scenario, which of the items listed below best reflects how your ability to receive [insert value] benefits from this area would change?

- My ability to receive this benefit from this location will not change
- Substitute a different benefit in the same location
- Continue to receive this benefit in this location, but change how often

- Continue to receive this benefit in this location, but change the timing (e.g., visiting in a different time of year or time of day)
- Receive the same benefit in a different location
- Receive a different benefit in a different location
- Stop receiving this benefit

Q3.a. [If options 1-4 selected]: Would you be willing to substitute locations to receive this benefit under any of the following circumstances? (Select all that apply)

- Yes, if there was a similar travel time
- Yes, if there were similar costs
- Yes, if it was a similar setting
- Yes, if it had a similar recreational challenge
- Yes, if it had similar visitor use levels
- No, I would not be willing to substitute locations
- Other - Write in

Q3.b. [If options 5-6 selected]: What factors are important in deciding to substitute locations?

- Similar travel time
- Similar costs
- Similar setting
- Similar recreational challenge
- Similar visitor use levels
- Other - Write in

Q4. How would the overall quality of your experience be affected if [insert scenario name] happened in this location?

- There would be no effect on the overall quality of my [insert value] experience
- There would be a slight effect on the overall quality of my [insert value] experience
- There would be a moderate effect on the overall quality of my [insert value] experience
- There would be a substantial effect on the overall quality of my [insert value] experience but I would **keep visiting** this place
- There would be a substantial effect on the overall quality of my [insert value] experience and I would **stop visiting** this place

[If Personal Income Opportunity]:

Q3. Public lands are managed for multiple uses including recreation, grazing, timber harvesting, surface mining, or energy development. As a result, an individual's income opportunities within a given location may be affected by these other land uses within the same area. If your Personal Income Opportunities were to become limited by shifts in landscape management priorities, please indicate how you might respond.

- I would be able to continue my income opportunity in a different location nearby
- I would be able to transition to a different income opportunity in the same area or nearby
- I would be able to transition to a different income opportunity in the same area or nearby
- I would not be able to find another income opportunity but there are other financial situations that would allow me to stay in my community (e.g., spouse/partner has income, have savings, etc.)
- I would need to leave my community

Q3.a. [If options 1-4]: How would the overall quality of your life be affected if this were to happen?

- There would be no negative effect on my overall quality of life or livelihood
- There would be a slight negative effect on my overall quality of life or livelihood
- There would be a moderate negative effect on my overall quality of life or livelihood
- There would be a substantial negative effect on my overall quality of life or livelihood

[If they chose "Community Economic Opportunity," no Q3 or Q4 in this section]

Part 4: Demographics

Demographic questions 1 - 8 below will provide basic demographic information about survey respondents. These questions will be used to understand how uses and values across the landscape may differ between certain demographic groups (e.g., gender, age, education). Additionally, demographic data will provide the ability to compare the sample to Census data for the general public, or to any local datasets on the demographics of public lands visitors. Additionally, home zip code or country will allow us to discern any differences in landscape values between people who live in the area and visitors.

In this final section of the survey, we would like to ask you some questions about your personal background.

Q1. In what year were you born?

Q2. Gender: How do you identify?

- Woman
- Man
- Non-binary

Q3. Are you of Hispanic, Latino, or Spanish origin?

- Yes, I am of Hispanic, Latino, or Spanish origin
- No, I am not of Hispanic, Latino, or Spanish origin

Q4. How would you describe your racial origin(s)? (Please check all that apply)

- American Indian or Alaska Native
- Asian
- Black or African American
- Native Hawaiian or Other Pacific Islander
- White / Caucasian
- Other - write in

Q5. What is the highest degree or level of school you have completed? (if you're currently a student, please indicate the highest degree you have received)

- Some High School or Less
- High School Degree or Equivalent (e.g. GED)
- Some College, No Degree
- Associates Degree
- Bachelor's Degree
- Master's Degree
- Professional Degree (e.g., MD, JD)
- Doctorate (e.g., PhD)

Q6. What is your current employment status?

- Employed Full Time (40 or more hours per week)
- Employed Part time (up to 39 hours per week)
- Unemployed and currently looking for work
- Unemployed and not currently looking for work
- Student
- Retired
- Homemaker
- Self-employed
- Unable to work

Q7. Which of the following broad categories best describes your total annual **household** income for the last calendar year?

- \$25,000 or less
- \$25,001 - \$50,000
- \$50,001 - \$75,000
- \$75,001 - \$100,000
- \$100,001 - \$125,000
- \$125,001 - \$150,000
- More than \$150,000

Q8. Do you currently live in the U.S.?

- Yes
Q8.a. [If Yes] Please enter the zip code for where you currently live
- No
Q8.b. [If No] Please enter the country where you currently live

Question 9 below will allow us to better understand how the respondent heard about the survey and potentially remove responses if there is bias in who is responding. For instance, if we are purposefully emailing a certain population or sample, and people in that sample forward the survey link to others, we would potentially need to remove any respondents that were not in the original sample to maintain representativeness of a certain population.

Q9. How did you hear about this survey?

- I met someone outdoors doing surveys
- I was emailed the link (with no personal contact)
- Family, friend, or colleague forwarded it
- Other - Write in

Question 10 below will allow users to input any other comments they have related to the survey or topic. We do not intend to analyze these comments, but we will use any comments related to the user interface, usability of the application, and wording on the survey to improve the VaMPIRE application for future use. Comments related to BLM lands will be compiled and shared with BLM partners at the field office.

Q10. Do you have any other comments related to this survey? [Open ended]