

Paperwork Reduction Act Statement: This information is collected to gather feedback from science community members who have a self-described interest in the use of terrestrial analogs for conducting scientific research into geologic processes that have been or are interpreted to be presently active on planetary (non-terrestrial) surfaces. The survey is intended to identify the obstacles that exist related to training, research, sample collections, and data archiving within analog projects, the need for coordination across the community, and what products and services might be needed to further terrestrial analog use and support exploration. A Federal agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a valid OMB control number. OMB has approved this collection of information and assigned Control No. 1028-xxxx.

Public Burden Statement: The public burden for the collection of information is estimated to be 1 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. Please do not send your form to this address.

Terrestrial Analog Survey

Respondent Details.

*** 1. Your organization?**

- | | |
|---|--|
| ☐ University or College | ☐ Private industry |
| ☐ Federal institution | ☐ Other |
| ☐ Non-teaching, non-governmental research institution | |

*** 2. Your stage of career?**

- | | |
|---|--|
| ☐ Undergraduate student | ☐ Middle career professional |
| ☐ Graduate student | ☐ Late career professional |
| ☐ Post-doc | ☐ Other |
| ☐ Early career professional | |

*** 3. Your discipline? [select up to three]**

- | | |
|--|---|
| ☐ Atmospheric science | ☐ Geomorphology |
| ☐ Biology/Astrobiology/Exobiology | ☐ Geophysics |
| ☐ Education | ☐ Physics and Astronomy |
| ☐ Engineering | ☐ Other processing/archiving/dissemination |
| ☐ Geochemistry/Cosmochemistry/Petrology | ☐ Mission planning/operations |
| ☐ Geographic Information Sciences | ☐ Mission, instrument, or payload concept |
| ☐ Geology | |

*** 4. Your type of work? [select up to three]**

- | | |
|---|---|
| ☐ Research | ☐ Field Mapping |
| ☐ Computer science | ☐ GIS/Cartography |
| ☐ Data Processing/Dissemination | ☐ Public outreach |
| ☐ Education (primary or secondary instruction) | ☐ Programmatic and/or institutional management |
| ☐ Education (university or college) | ☐ Other |

* 5. Your major **funding source(s)**? [select up to two]

- | | |
|---|---|
| ☐ NASA programs | ☐ College/University |
| ☐ Non-NASA U.S. Federal Programs | ☐ NSF |
| ☐ ESA programs | ☐ Other |
| ☐ Non-ESA EU Programs | |

* 6. Your **office geographic location**?

- | | |
|---------------------------------|--------------------------------------|
| ☐ Northeast | ☐ West |
| ☐ Southeast | ☐ Hawaii/Alaska |
| ☐ Midwest | ☐ Outside the US |
| ☐ Southwest | |

* 7. Are you involved in active mission planning, mission operations, and/or specific mission-affiliated research?

- ☐ Yes
- ☐ No

* 8. On a scale from 1 (not at all relevant) to 4 (extremely relevant), please rate how relevant each **planetary bodies/systems** are to your work.

	1-Not at all relevant	2- Tangentially relevant	3- Somewhat relevant	4- Extremely relevant
Mercury	☐	☐	☐	☐
Venus	☐	☐	☐	☐
Earth	☐	☐	☐	☐
Moon	☐	☐	☐	☐
Mars (including Deimos and Phobos)	☐	☐	☐	☐
Main belt asteroids	☐	☐	☐	☐
Jovian system	☐	☐	☐	☐
Saturnian system	☐	☐	☐	☐
Uranian/Neptunian systems	☐	☐	☐	☐
Pluto (including Charon)	☐	☐	☐	☐
Other	☐	☐	☐	☐

Other (please specify)

* 9. On a scale of 1 (not at all relevant) to 4 (extremely relevant), please rate how relevant each of the following **processes** are to your work/teaching?

	1- Not at all relevant	2- Tangentially relevant	3- Somewhat relevant	4- Extremely relevant
Aeolian	☐	☐	☐	☐
Fluvial	☐	☐	☐	☐
Alluvial	☐	☐	☐	☐
Deltaic	☐	☐	☐	☐
Lacustrine	☐	☐	☐	☐
Glacial	☐	☐	☐	☐
Mass wasting	☐	☐	☐	☐
Explosive volcanism	☐	☐	☐	☐
Effusive volcanism	☐	☐	☐	☐
Impact cratering	☐	☐	☐	☐
Metamorphism	☐	☐	☐	☐

10. Please tell us about your field experience. Check all that apply.

- | | |
|---|---|
| ☐ Undergraduate level field techniques class | ☐ Professional (industry-related) field experience |
| ☐ Graduate level field techniques class | ☐ Professional (research-related) field experience |
| ☐ Undergraduate level photogeologic mapping techniques class | ☐ Professional (teaching-related) field experience |
| ☐ Graduate level photogeologic mapping techniques class | |
| ☐ Other (please specify) | |

Terrestrial Analog Survey

Field Analog Use

11. Do you conduct planetary analog field studies?

- | | |
|---|---|
| ☐ Yes, analog field studies are a central part of my planetary science research | ☐ No, but I am interested in such studies and would like to be involved in them |
| ☐ Yes, I have done my own analog studies, but it has been secondary to my main research interests | ☐ No, they are not an interest for my research |
| ☐ Yes, but only as an assistant or student in a class | |

12. Frequency that you conduct analog fieldwork for your **research**:

- | | |
|--|--|
| ☐ Weekly | ☐ Once every few years |
| ☐ Monthly | ☐ Never |
| ☐ Several times per year | ☐ Not applicable |
| ☐ Once per year | |

13. Frequency that you conduct analog fieldwork for your **teaching**:

- | | |
|--|--|
| ☐ Weekly | ☐ Once every few years |
| ☐ Monthly | ☐ Never |
| ☐ Several times per year | ☐ Not applicable |
| ☐ Once per year | |

14. Frequency that you use data and/or results from others' analog field studies:

- | | |
|--|--|
| ☐ Weekly | ☐ Once every few years |
| ☐ Monthly | ☐ Never |
| ☐ Several times per year | ☐ Not applicable |
| ☐ Once per year | |

15. I do not do my own analog field studies because: (check all that apply)

- | | |
|--|--|
| ☐ It is not relevant for my research/teaching | ☐ I do not know where to find relevant field data |
| ☐ Analog sites are too difficult to get to | ☐ I do not know where relevant sites might be for my work |
| ☐ I do not have funding for analog work | ☐ Not applicable, I do analog field work |
| ☐ Other (please specify) | |

16. What factors are most important to you in choosing a field location?

Please rank the following from 1 to 5, where 1 is the most important factor and 5 is the least important factor.

Each number can only be used once.

(Skip if not relevant)

	1	2	3	4	5
Relevant geologic processes	☐	☐	☐	☐	☐
Proximity to my location	☐	☐	☐	☐	☐
Logistics (including ease of getting permits and time to get to the location)	☐	☐	☐	☐	☐
Funding	☐	☐	☐	☐	☐
Interesting/cool location	☐	☐	☐	☐	☐

17. When I conduct fieldwork for research and/or teaching, the primary audience is: (check all that apply)

(Skip if not relevant)

- | | |
|---|--|
| ☐ Undergraduate students | ☐ Managers |
| ☐ Graduate students | ☐ Mission teams |
| ☐ Engineers | ☐ Myself and my peers |

18. The field sites that I use are places that I visited before beginning a formalized project:

(Skip if not relevant)

Strongly disagree	Somewhat disagree	Somewhat agree	Strongly agree
☐	☐	☐	☐

19. If the USGS Astrogeology Science Center produced easily accessible, topic specific field guides, I would use guides from the following analog locations (please rank them in order of importance, with 1 being most important and 7 being least important):

	1	2	3	4	5	6	7
SP Crater, AZ	☐	☐	☐	☐	☐	☐	☐
San Francisco Volcanic Field, AZ	☐	☐	☐	☐	☐	☐	☐
Verde Valley, AZ	☐	☐	☐	☐	☐	☐	☐
Grand Canyon, AZ	☐	☐	☐	☐	☐	☐	☐
Sedona Area, AZ	☐	☐	☐	☐	☐	☐	☐
Hawaii	☐	☐	☐	☐	☐	☐	☐
Iceland	☐	☐	☐	☐	☐	☐	☐

20. I would use USGS field guides for the following location(s):
(write in response)

Terrestrial Analog Survey

Data Portal Use

21. What kinds of field data do you **collect**? (check all that apply)

- | | |
|---|---|
| ☐ Field notes/sketches in a notebook | ☐ Field photos |
| ☐ Rock samples | ☐ Short range remote sensing (e.g., field spectrometers) |
| ☐ Water samples | ☐ Geomechanical measurements (e.g., shear strength) |
| ☐ Biologic samples | ☐ Weather/climate measurements (e.g., wind speed, rain fall) |
| ☐ Air/gas samples | ☐ Long term monitoring data (>1 field deployment) |
| ☐ Geophysical measurements (e.g., gravity, magnetics, seismic) | ☐ Drone or unoccupied aerial system data |
| ☐ Topography | ☐ Geochemistry/Petrology |
| ☐ Other (please specify) | |

22. What have you done with the data and samples you have collected during analog field studies? (check all that apply)

- | | |
|---|--|
| ☐ Placed them in a long-term publicly accessible archive that meets the standards mandated by Federal law or international organizations | ☐ Have them sitting in your office/home |
| ☐ Made them publicly available via personal or institutional web sites or portals. | ☐ Lost them |
| ☐ Made them available to colleagues who request them | ☐ Not applicable |
| ☐ Put all the important data in peer-reviewed publication | |
| ☐ Other (please specify) | |

23. How easy is it to locate data from field studies previously conducted by others?

- | | |
|--|---|
| ☐ Very easy. My research has moved forward efficiently due to my ability to build upon previous studies. | ☐ Very difficult. I have to collect everything myself because previous studies are not useful to me. |
| ☐ Easy. While I do not have access to everything I want, I am generally able to get what I need from previous studies. | ☐ I do not know how to locate existing field data. |
| ☐ Somewhat difficult. While I have access to some previous studies, I spend a lot of time trying to find what others have done. | ☐ Not relevant |

24. Ideally, how would you prefer to search for data collected by previous planetary analog studies (Please rank, 1 is most preferred, 4 is least)

	1	2	3	4
Data type specific databases (e.g., petrology, topography)	☐	☐	☐	☐
Location specific database (e.g., geographic locations/field sites)	☐	☐	☐	☐
Planetary body specific database (e.g., Moon)	☐	☐	☐	☐
Planetary process specific database (e.g., aeolian)	☐	☐	☐	☐

25. What kinds of field data do you feel are important to **archive digitally**? (check all that apply)

- | | |
|---|---|
| ☐ Field notes/sketches in a notebook | ☐ Geophysical measurements (e.g., gravity, magnetics, seismic) |
| ☐ Field photos | ☐ Short range remote sensing data (e.g., field spectrometers) |
| ☐ Rock sample data | ☐ Geomechanical measurements (e.g., shear strength) |
| ☐ Water sample data | ☐ Geochemical measurements |
| ☐ Biologic sample data | ☐ Weather/climate measurements (e.g., wind speed, rain fall) |
| ☐ Air/gas sample data | ☐ Drone or unoccupied aerial system data |
| ☐ Topography | ☐ Long term monitoring data (>1 field deployment) |
| ☐ Other (please specify) | |

26. What are the **main limitations** you encounter for archiving your data? (check all that apply)

- | | |
|---|--|
| ☐ Lack of funding | ☐ It would be a waste of my time |
| ☐ Lack of technical capabilities | ☐ Guidance is non-existent and/or unclear |
| ☐ I don't have a clue where to start | ☐ There are no appropriate locations to archive my data |
| ☐ Other (please specify) | |

27. I would use an online repository to search for and access analog samples and data:

- ☐ Practically daily
- ☐ Every few weeks
- ☐ Every few months
- ☐ Less than annually

Terrestrial Analog Survey

Geologic Materials Collection Use

28. In your opinion, how much value do analyses of planetary analog rock samples have for the field of planetary science?

- ☐ **High.** Analyses of analog samples provide essential ground truth for interpretations of remote sensing data, planetary geologic mapping, or other aspects of planetary science
- ☐ **Moderate.** Analog sample data provide some constraints on planetary geologic processes, but this is not essential to planetary science
- ☐ **Low.** Analog sample data is rarely relevant to interpretations of remote sensing data, planetary geologic mapping, or any other aspect of planetary science
- ☐ **None.** Analog sample data is not relevant to interpretations of remote sensing data, planetary geologic mapping, or any other aspect of planetary science
- ☐ Other (please specify)

29. How likely would you be to **request** rock samples and/or laboratory data from a USGS-based long-term publicly accessible archive, such as the USGS Meteor Crater Sample Collection?

- ☐ Very likely
- ☐ Likely
- ☐ Unlikely
- ☐ Very unlikely

30. What kinds of **physical** materials are important to archive? (check all that apply)

- | | |
|---|---|
| ☐ Field notes/sketches in a notebook | ☐ Water samples |
| ☐ Field photos | ☐ Biologic samples |
| ☐ Rock samples | ☐ Air/gas samples |
| ☐ Soil samples | |
| ☐ Other (please specify) | |

31. If planetary analog rock samples were available to researchers from a USGS-based publicly accessible archive, what rock types would be most useful to your work? (check all that apply)

- | | |
|---|---|
| ☐ Volcanic (effusive) | ☐ Hydrothermal metamorphic |
| ☐ Volcanic (explosive) | ☐ Other metamorphic |
| ☐ Intrusive igneous | ☐ Impactites (rocks from terrestrial impact craters) |
| ☐ Sedimentary (clastic) | ☐ Meteorites |
| ☐ Sedimentary (chemical) | |
| ☐ Other (please specify) | |

32. How likely would you be to **archive** your physical samples in a USGS-based long-term publicly accessible archive, such as the USGS Meteor Crater Sample Collection?

- ☐ Very likely
- ☐ Likely
- ☐ Unlikely
- ☐ Very unlikely

33. Thank you for completing this survey! If you have any additional comments, please add in here.