

DIGITAL MAPPING TECHNIQUES 2023

The following was presented at DMT'23

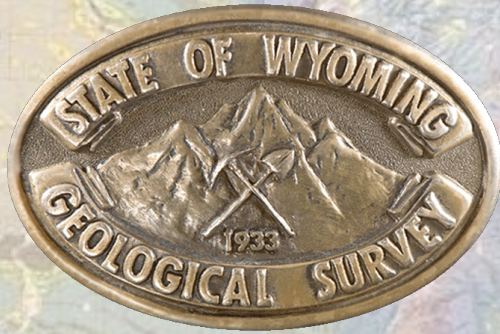
May 21 - 24, 2023

The contents of this document are provisional

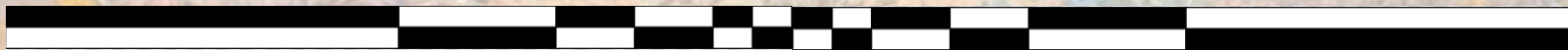
See Presentations and Proceedings
from the DMT Meetings (1997-2023)

<http://ngmdb.usgs.gov/info/dmt/>

The WSGS started having discussions about how its publications (map and reports) are organized on its website, the portals used to access them, the popularity of the different deliverables, and how products are delivered to the public. A survey was created using Google Forms and shared with the public to develop a baseline to assist in future decision making. Over 400 people participated in the survey.



Wyoming State Geological Survey
**“How to best serve the needs of
the public? Take our survey—
motivation, methodology, and results”**



JAMES AMATO
Digital Mapping Techniques 2023

Motivation:

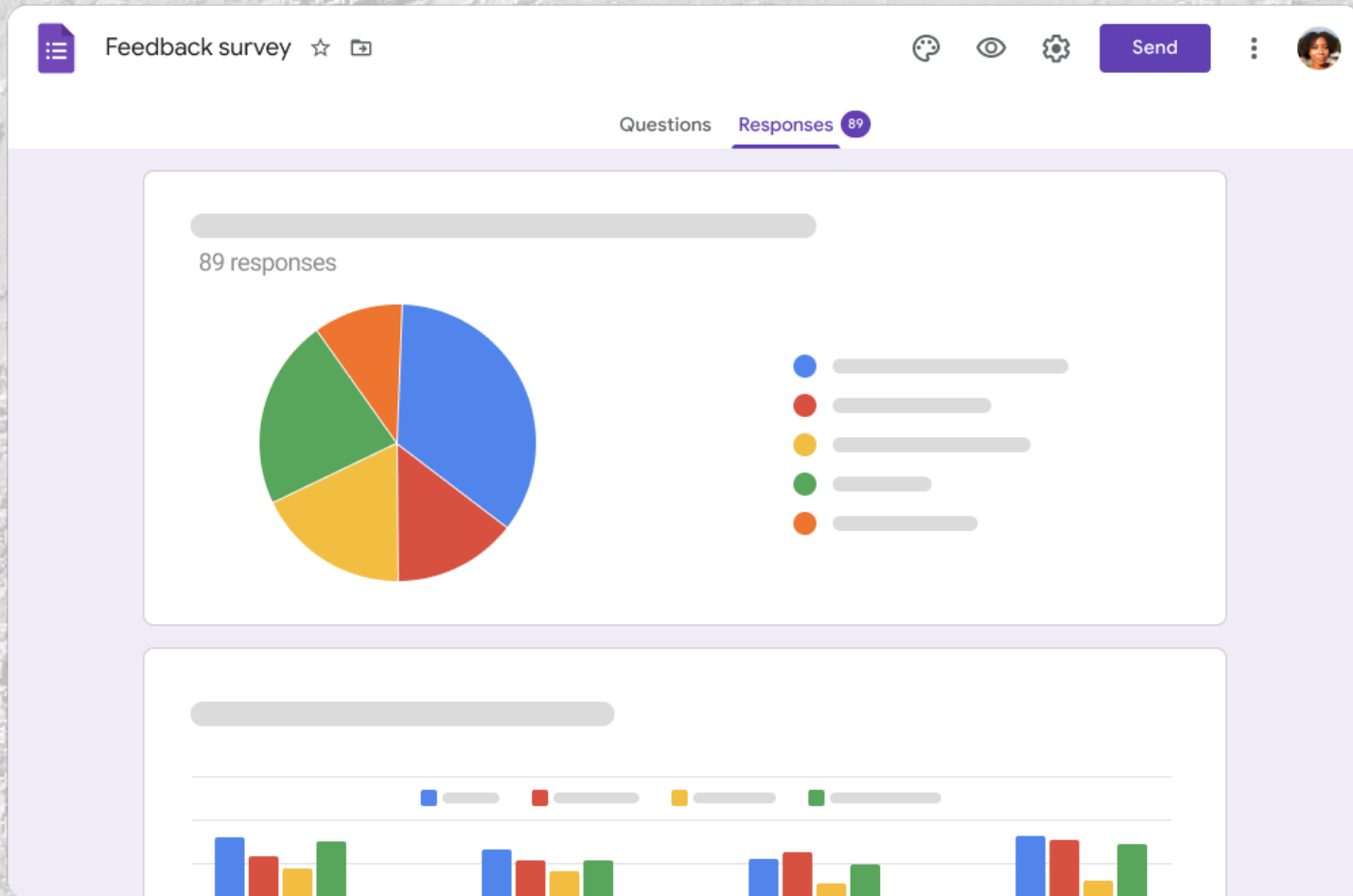
The WSGS started having discussions about how our publications (map and reports) are organized on our website, the portals used to access them, the popularity of the different deliverables, and how products are delivered to the public.

Are people accessing our publications from mobile devices or is everyone using a desktop or laptop? Do zipfiles restrict people from accessing publications or other datasets on mobile devices? Which portals of delivery are the most popular? How many people use the specific products we deliver? What does the public need? Where can the WSGS improve?

Motivation:

Last year was my first DMT in Rolla, MO. One talk that really stuck in my head was a talk that Al Guiseppe from the Pennsylvania Geological Survey gave toward the end of the conference about map products and how to best serve public needs.

It inspired me to share with my colleagues that we are creating and organizing our deliverables based upon our assumptions of what the public wants (how we use the products) vs. really knowing the needs of the public.



**WE WANT
TO HEAR
FROM YOU**

**TAKE OUR
SURVEY**



We put together a survey via Google Forms and passed around the office for input on questions and answers.

The survey was shared with:

- WSGS Email List 5,000+ subscribers
- Social Media (Facebook/Twitter/Instagram) 13,000+ subscribers
- Banner on homepage of www.wsgs.wyo.gov
- Various State Agencies: (e.g., Dept. of Environmental Quality, Engineer's Office)
- Wyoming Geological Association
- Wyoming Geospatial Organization
- University of Wyoming: Department of Geology and Wyoming Geographic Information Science Center
- And any other related channels we could think of

We offered an incentive to participate: All participants will be entered into a drawing to win a geologic map of their choice (5 winners).

A grayscale topographic map of a region, likely a river valley or a similar geographical area. The map shows a network of rivers and streams, with varying elevations indicated by shading. The terrain is more rugged in some areas, particularly along the riverbanks and in the upper portions of the map. The overall appearance is that of a detailed geographical survey or a topographic map.

Over 400 people participated

Wyoming State Geological Survey

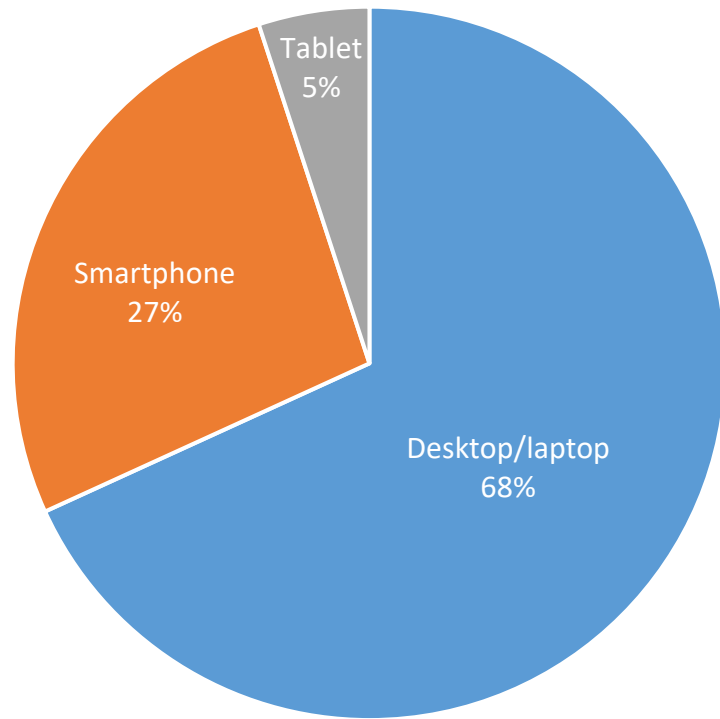
Thank you for taking the time to provide the Wyoming State Geological Survey (WSGS) with feedback on how you use and access the data we provide on our website, wsgs.wyo.gov. Your feedback will help us improve our services. The answers you provide in this survey will remain anonymous unless permission is given. At the end of the survey, you can include your email address to be entered into a drawing for a free WSGS geologic map. Your email address will not be shared.

Which device do you most often access WSGS publications from our website?

Which device do you use most often to access WSGS publications from our website?

- Desktop/laptop
- Smartphone
- Tablet

Which device do you most often access WSGS publications from our website?



418 Participants

68% Desktop/laptop

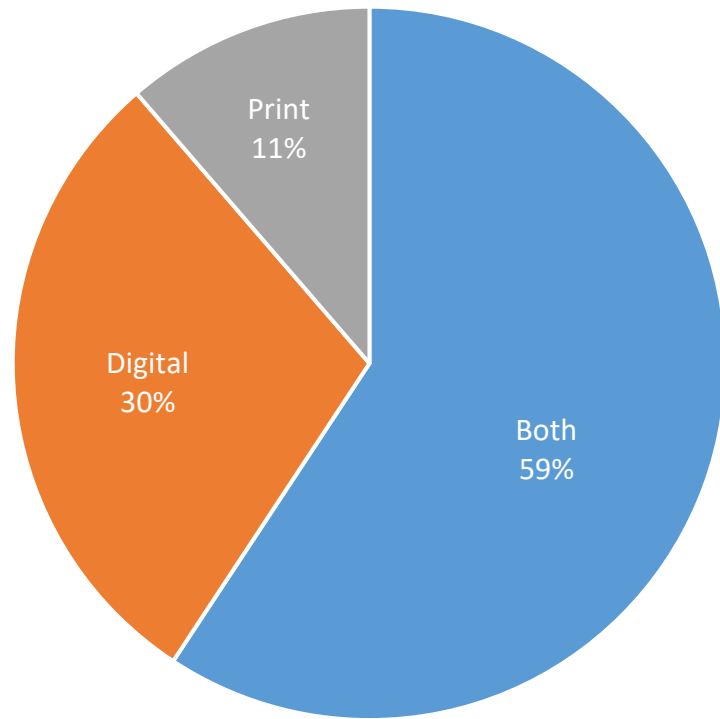
32% Mobile device

Which publication format do you prefer?

Which publication format do you prefer?

- Print
- Digital
- Both

Which publication format do you prefer?



415 Participants

59% Both (Digital and print)

30% Digital

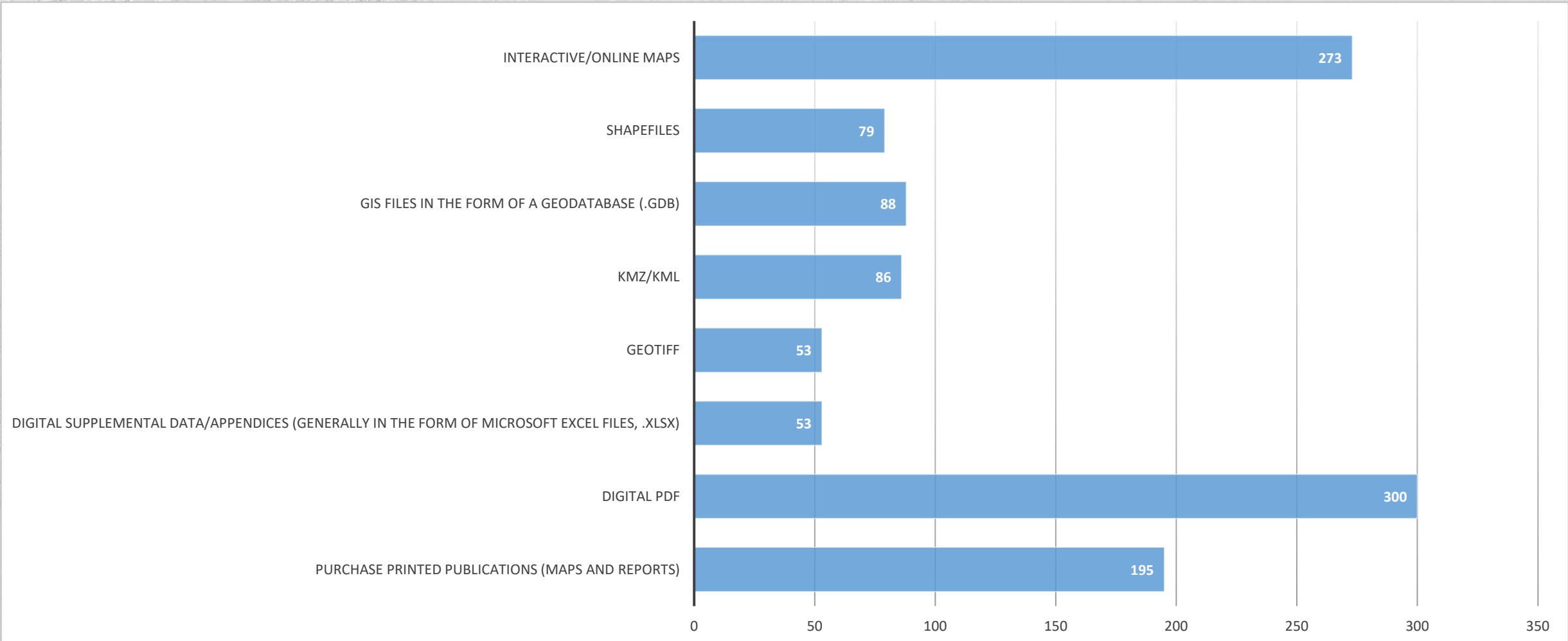
11% Print

Which available format(s) do you use most often? (Check all that apply)

Which available format(s) do you most often use? (Check all that apply)

- Purchase printed publications (maps and reports)
- Digital PDF
- Digital supplemental data/appendices (generally in the form of Microsoft Excel files, .xlsx)
- GeoTIFF
- KMZ/KML
- GIS files in the form of a geodatabase (.gdb)
- Shapefiles
- Interactive/online maps

Which available format(s) do you use most often? (Check all that apply)



What other formats would you like to see the WSGS offer?

What other formats would you like to see the WSGS offer?

Your answer

What other formats would you like to see the WSGS offer?

In summary:

- Rest services for streaming
- Elevation data (LIDAR)
- Mobile friendly website

**What page(s) on the WSGS website do you often visit to access our publications and/or datasets?
(Check all that apply)**

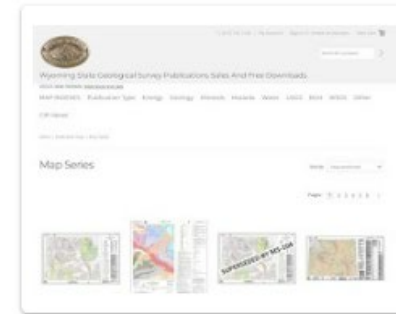
What page(s) on the WSGS website do you often visit to access our publications and/or datasets? (Check all that apply)



a. Map search tool



b. Publication search tool



Publications Sales and Free Downloads website



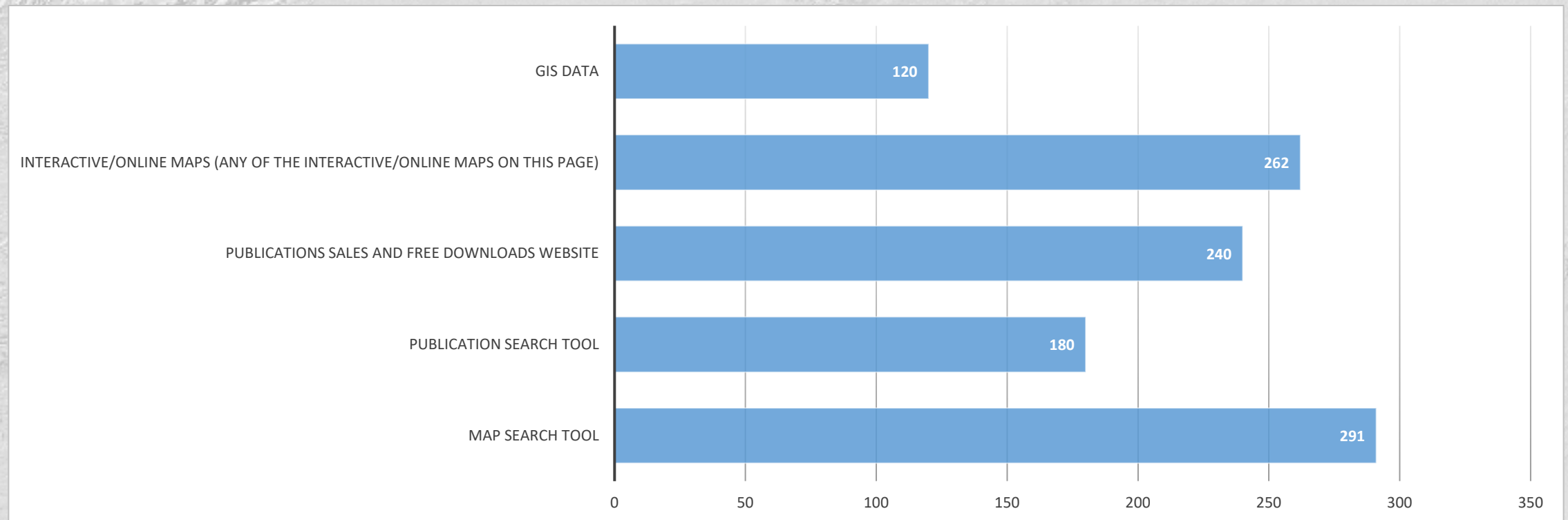
Interactive/online maps (any of the interactive/online maps on this page)

Other:



GIS data

What page(s) on the WSGS website do you often visit to access our publications and/or datasets? (Check all that apply)

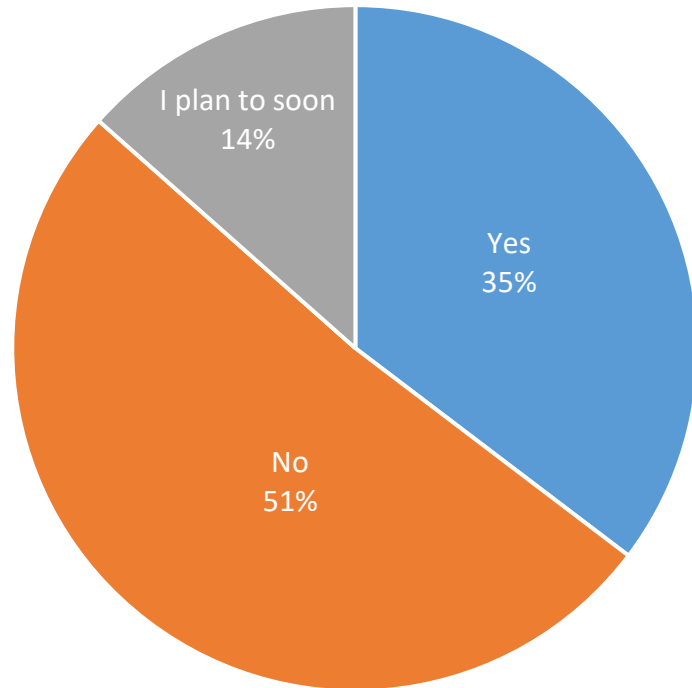


Do you use GIS software?

Do you use GIS software?

- Yes
- No
- No, but I plan to soon.

Do you use GIS software?



416 Participants

51% No

49% Yes, or plan to

If you do use GIS or plan to, what is or will be your primary GIS platform?

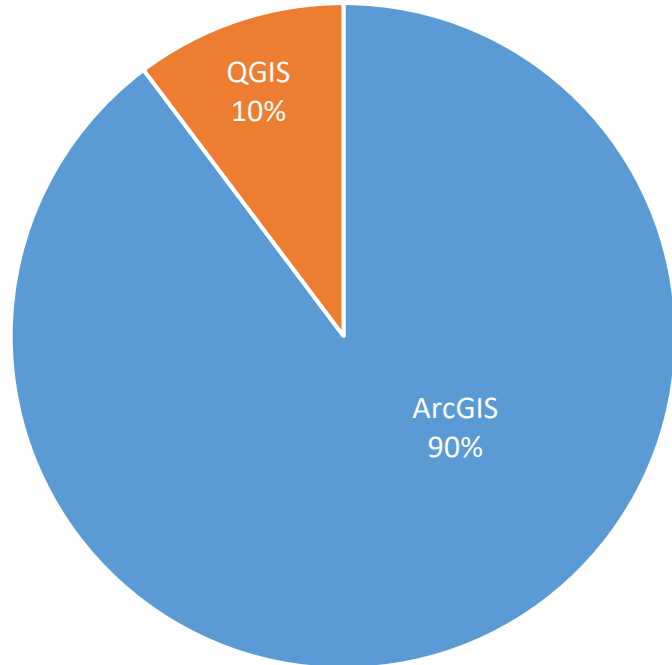
If you do use it or plan to, what is or will be your primary GIS platform?

ArcGIS

QGIS

Other: _____

If you do use GIS or plan to, what is or will be your primary GIS platform?



195 Participants

90% ArcGIS

10% QGIS

Are you aware that you can download data from our interactive/online maps?

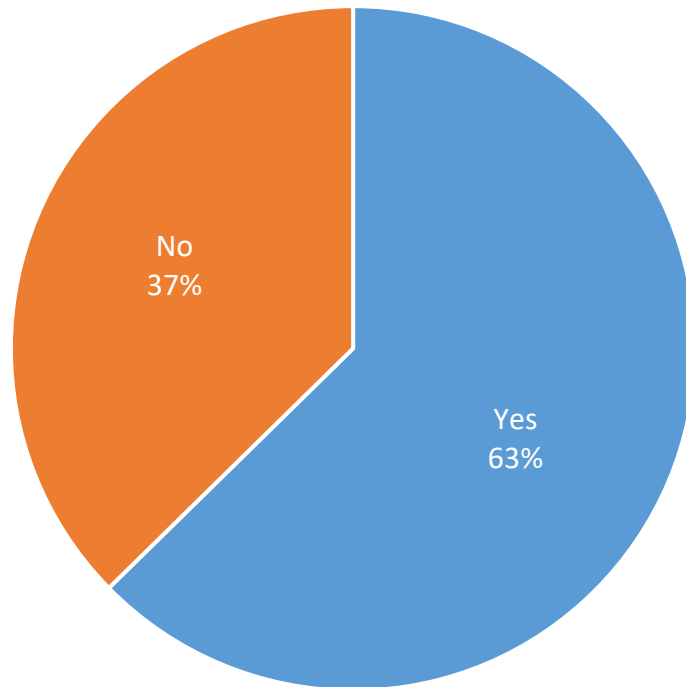
Are you aware that you can download data from our interactive/online maps?

Yes

No

Other: _____

Are you aware that you can download data from our interactive/online maps?



407 Participants

63% Yes

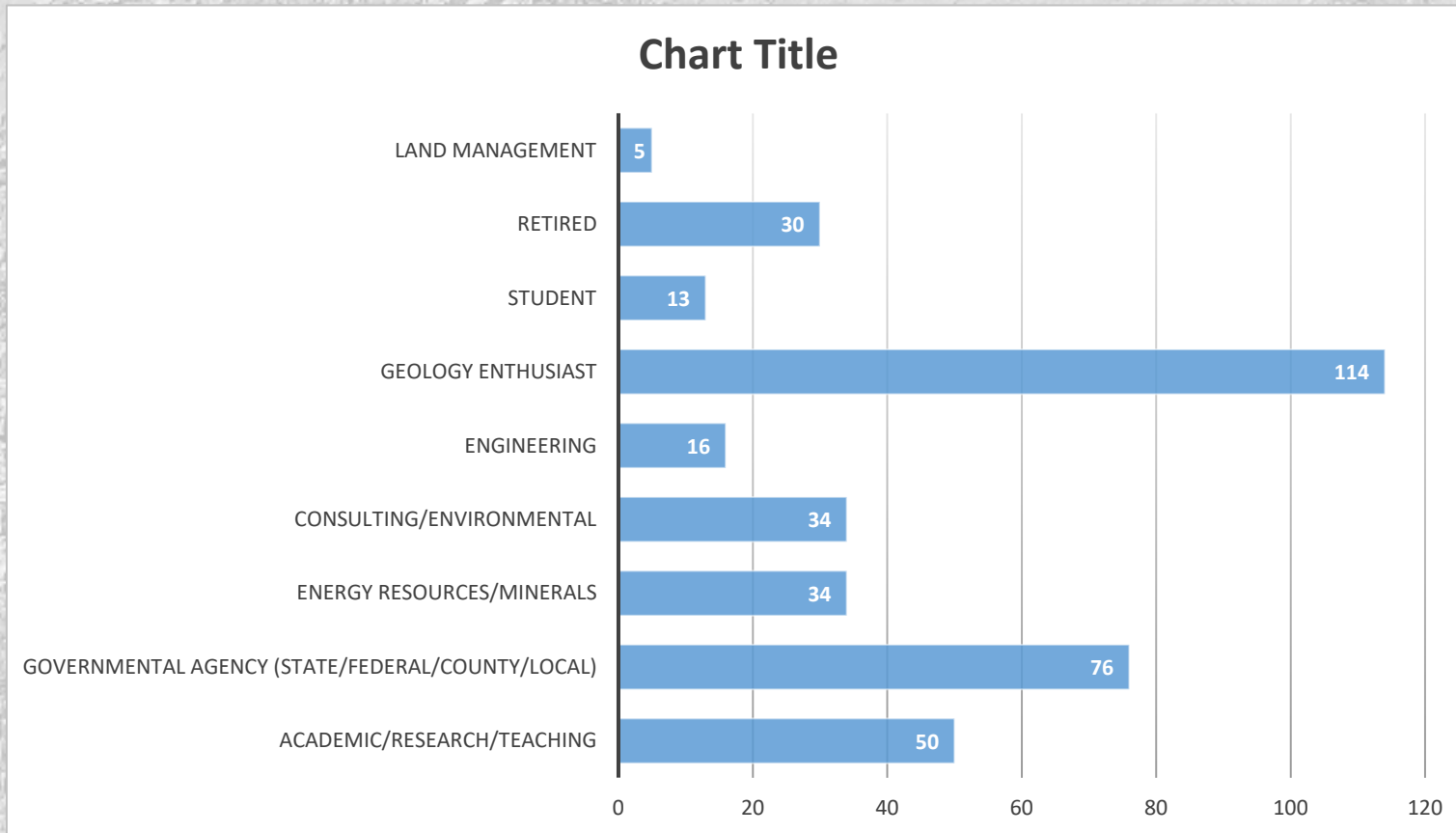
37% No

What industry are you in?

What industry are you in?

- Academic/research/teaching
- Governmental agency (state/federal)
- Energy resources/minerals
- Consulting/environmental
- Engineering
- Geology enthusiast
- Student
- Other: _____

What industry are you in?



372 Participants

31% Geology enthusiast
20% Government agency
13% Academic
9% Energy
9% Environmental
8% Retired
4% Engineering
3% Student
1% Land management

Please share any additional feedback on how the WSGS can improve the delivery of publications and/or datasets to the public:

Please share any additional feedback on how the WSGS can improve the delivery of publications and/or datasets to the public:

Your answer

Please share any additional feedback on how the WSGS can improve the delivery of publications and/or datasets to the public:

In summary:

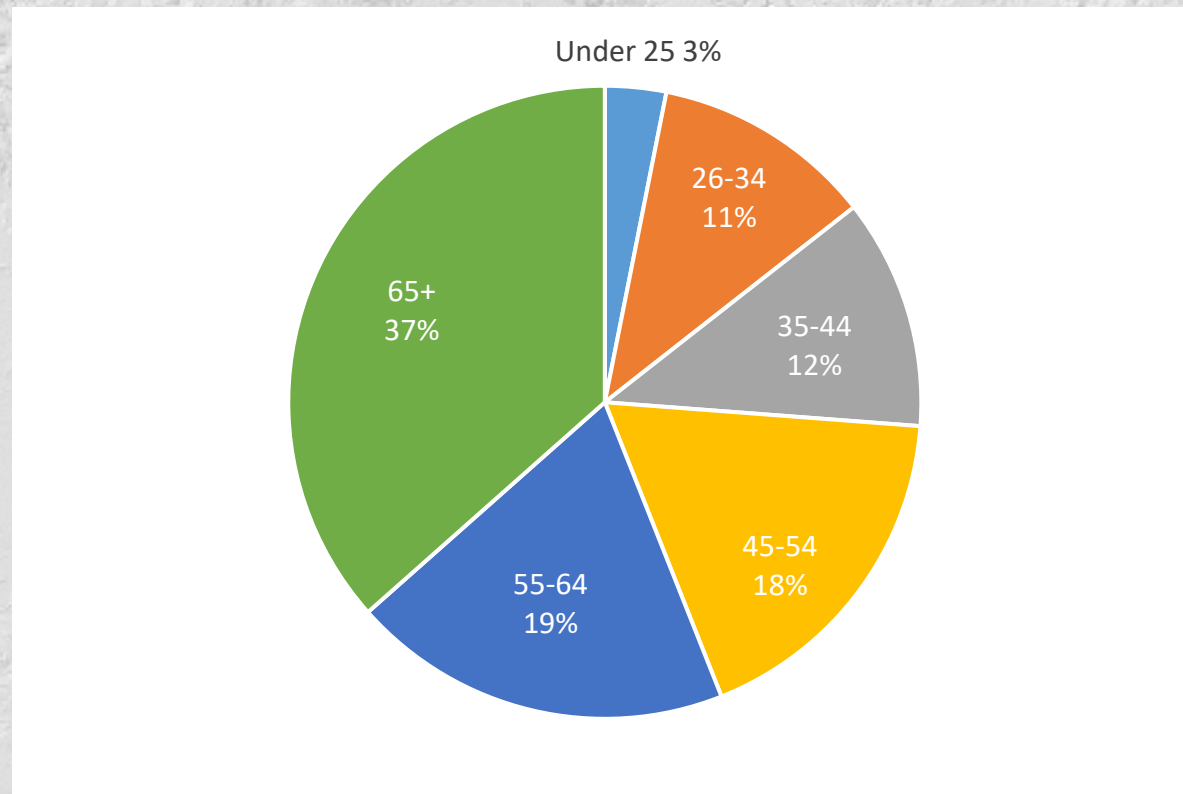
- Better tutorials and instructions for online maps
- More awareness of products and services
- Improving ease of access
- More educational content

What age bracket do you fall in?

What age bracket do you fall in?

- Under 25
- 26-34
- 35-44
- 45-54
- 55-64
- 65+

What age bracket do you fall in?



416 Participants

37% 65+

19% 64-55

18% 54-45

12% 44-35

11% 34-26

3% under 25

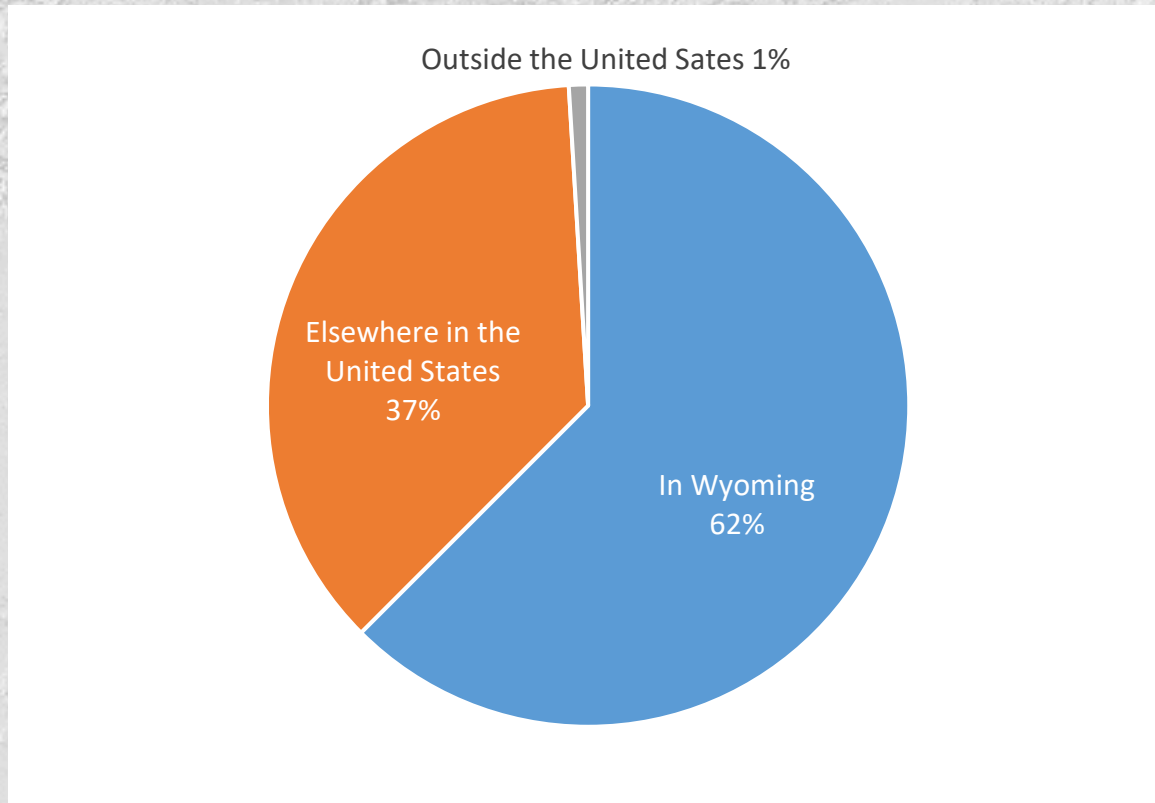
**age breaks derived from Facebook analytics*

Where do you live?

Where do you live?

- In Wyoming
- Elsewhere in the United States
- Outside the United States

What age bracket do you fall in?



416 Participants

62% In Wyoming

37% Elsewhere in the U.S.

1% Outside the U.S.

Other questions

May we follow-up with you if needed?

Yes

No

If you answered "yes" to the question above, please provide your name and email address.

Your answer _____

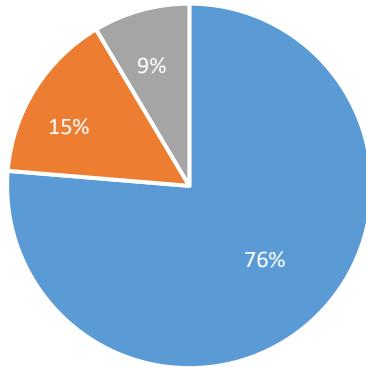
Which device do you most often access WSGS publications from our website?

Desktop / Laptop

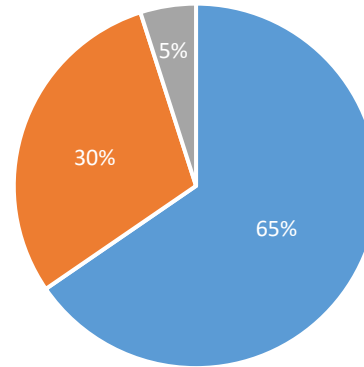
Smartphone

Tablet

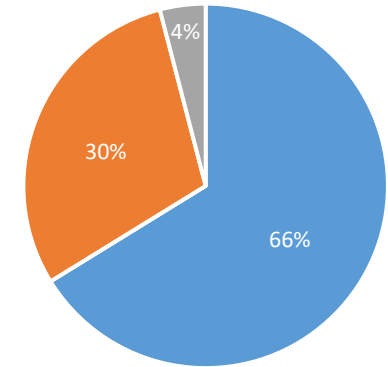
(152) Participants 65+



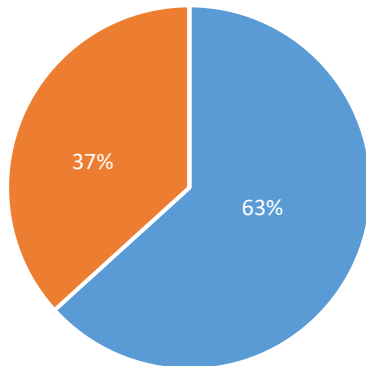
(82) Participants 64–55



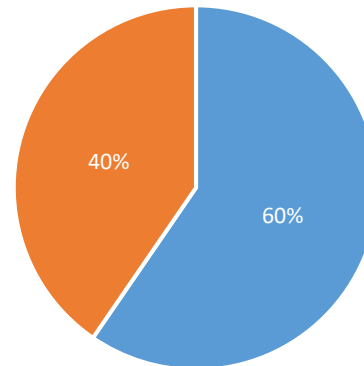
(74) Participants 54–45



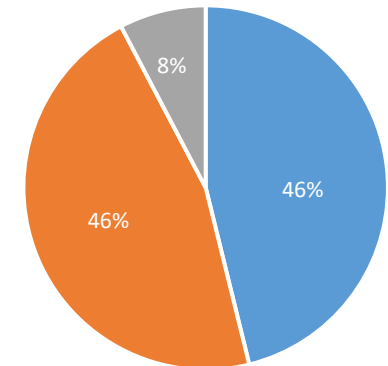
(49) Participants 44–35



(47) Participants 34–26



(13) Participants 25 and younger



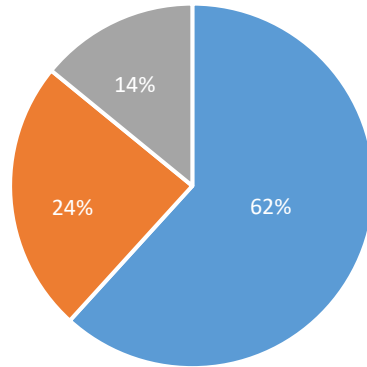
Which publication format do you prefer?

Print + Digital

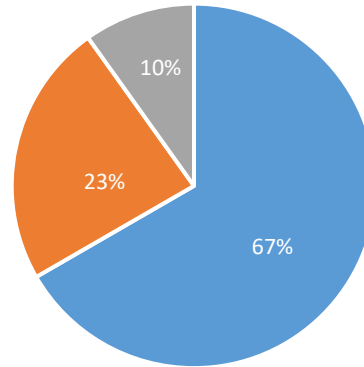
Digital

Print

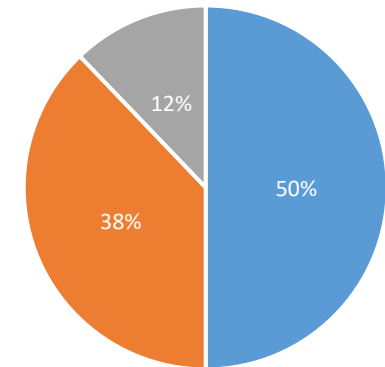
(152) Participants 65+



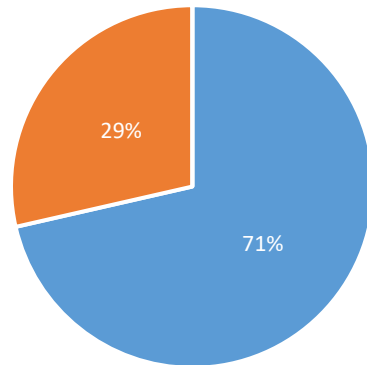
(82) Participants 64–55



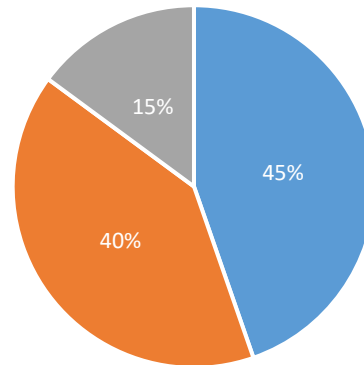
(74) Participants 54–45



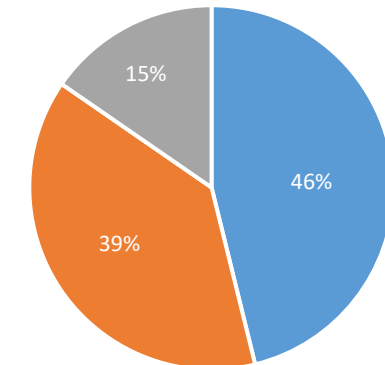
(49) Participants 44–35



(47) Participants 34–26



(13) Participants 25 and younger

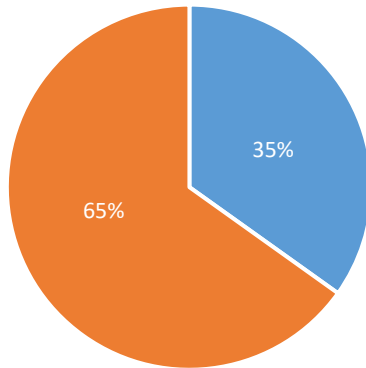


Do you use GIS software?

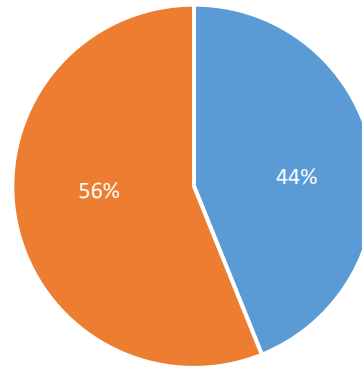
Yes, or plan to

No

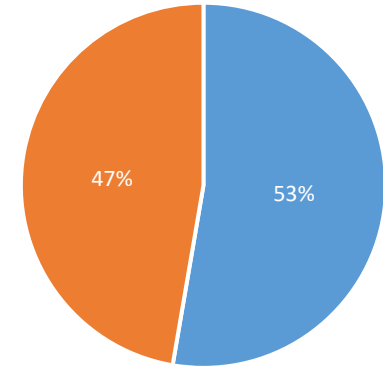
(152) Participants 65+



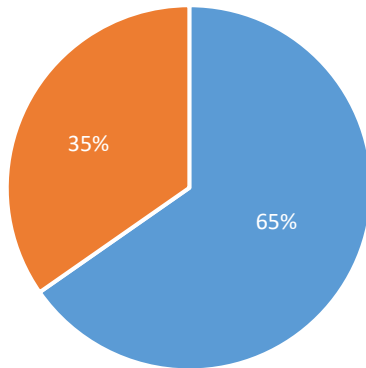
(82) Participants 64–55



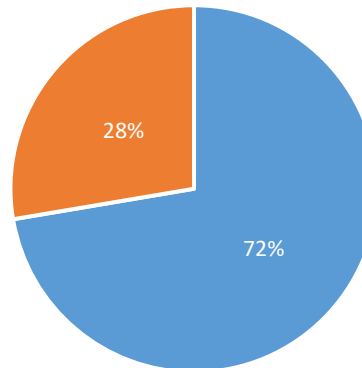
(74) Participants 54–45



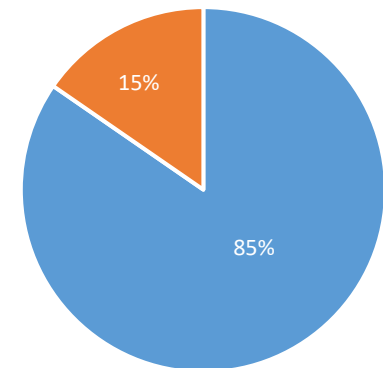
(49) Participants 44–35



(47) Participants 34–26

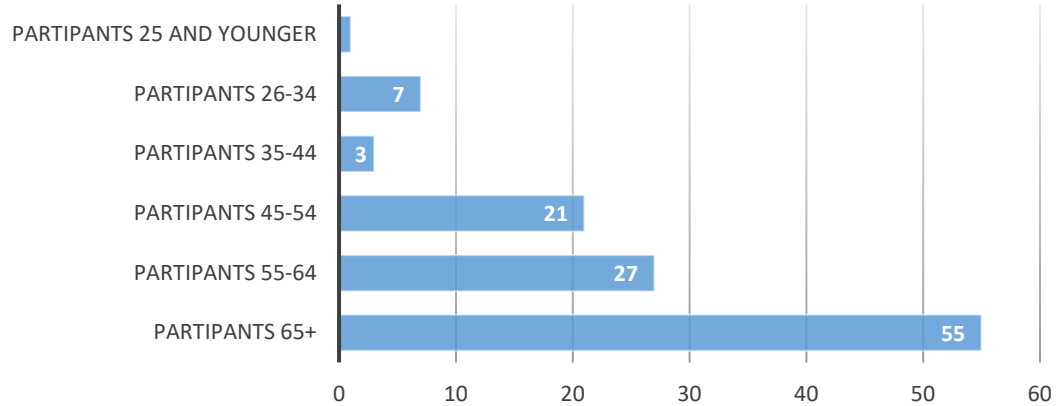


(13) Participants 25 and younger

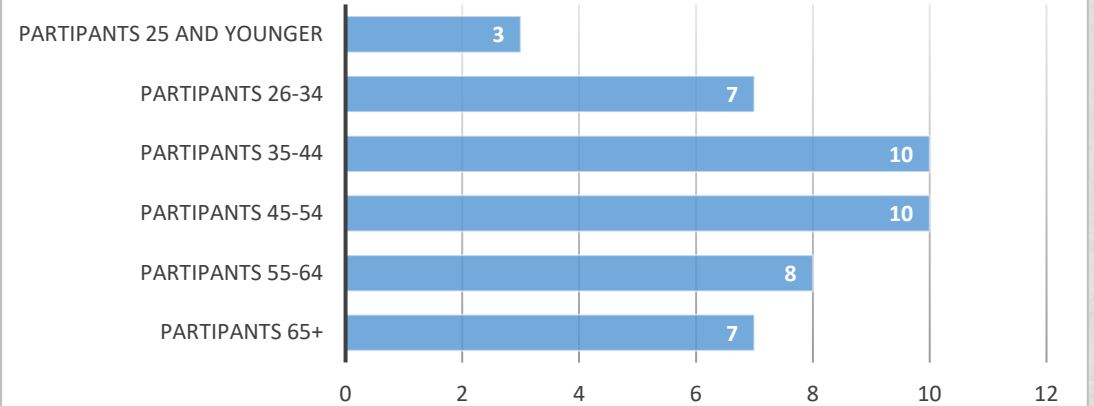


What industry are you in?

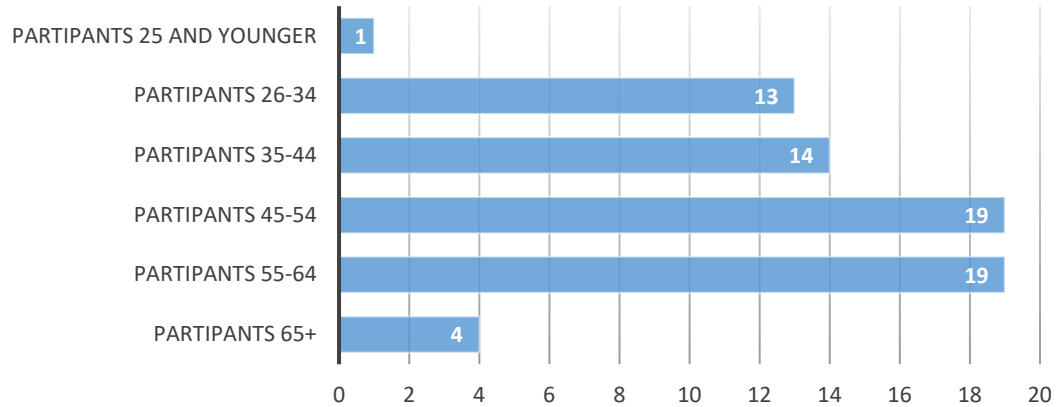
(114) Geology enthusiast



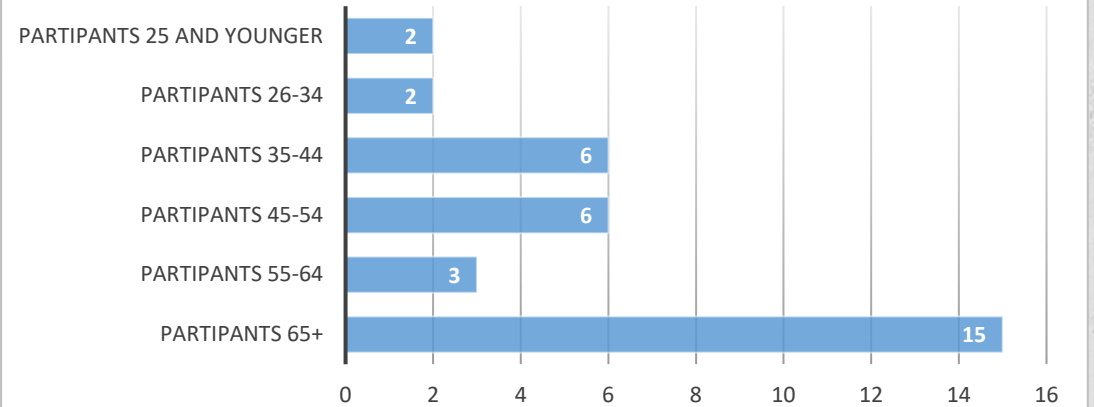
(45) Academic and research



(70) Government agency

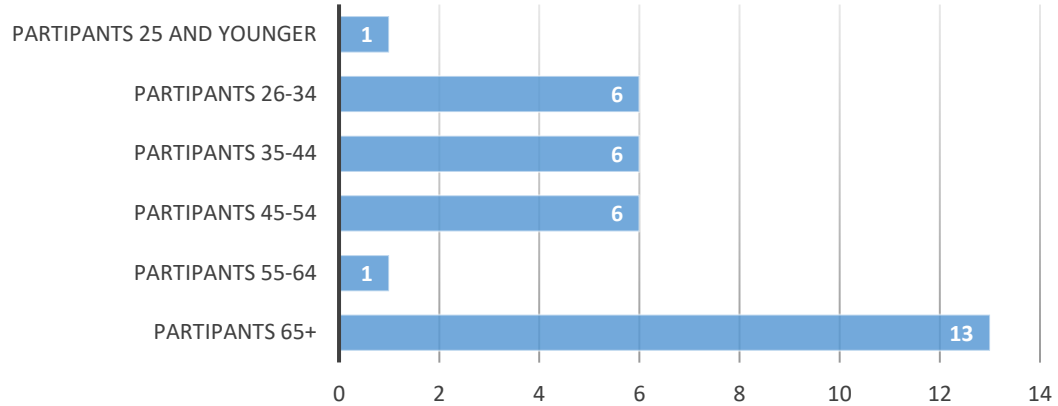


(34) Energy

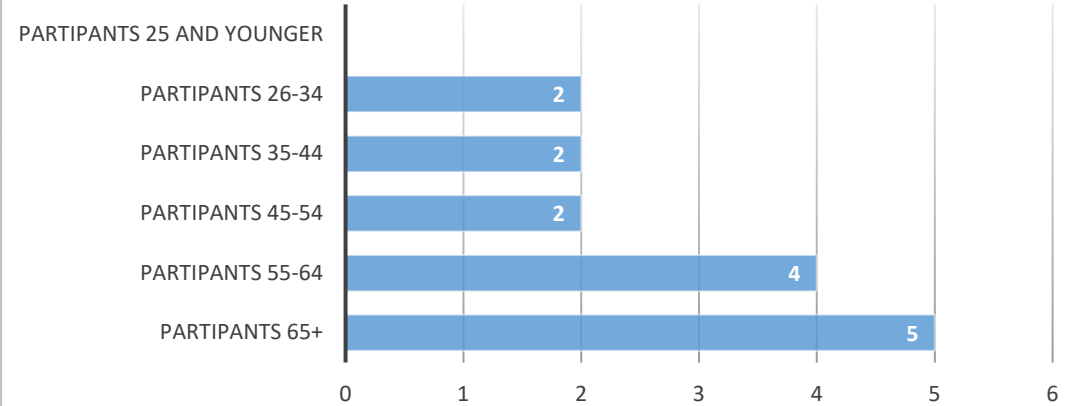


What industry are you in?

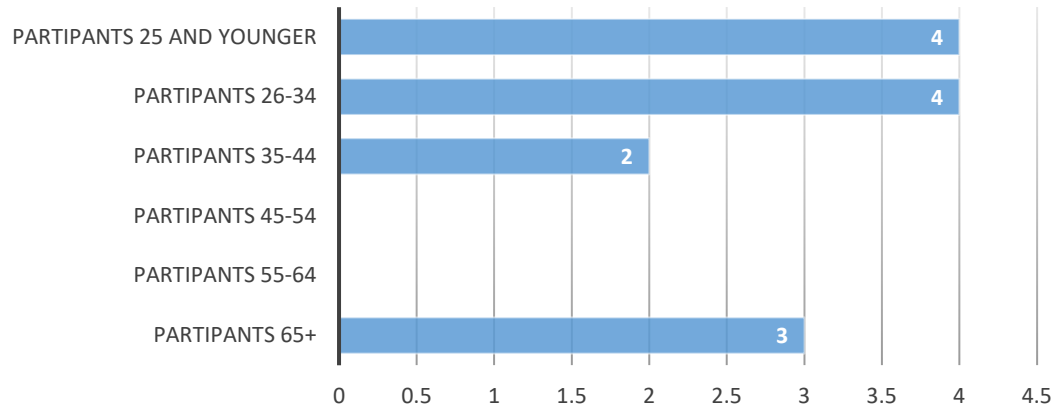
(33) Environmental



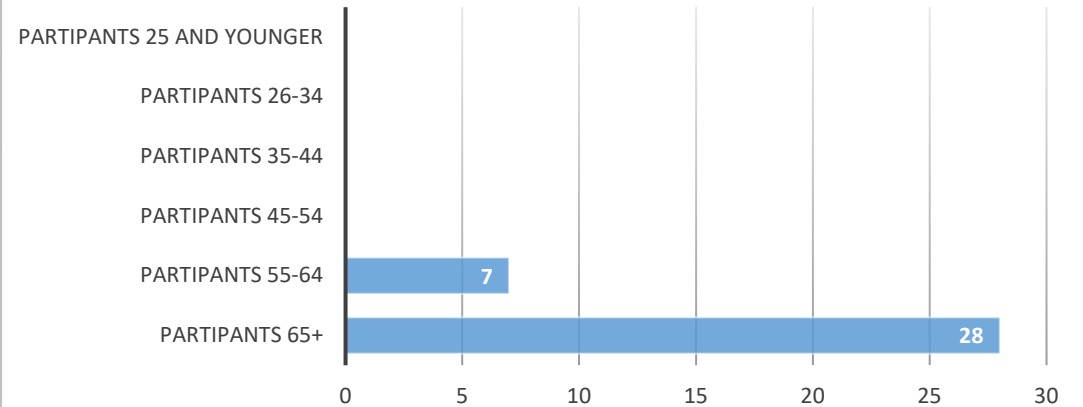
(15) Engineering



(13) Student



(35) Retired



Preliminary conclusions:

- ~1/3 of participants primarily access our website using a mobile device (smartphone or tablet). Use of smartphones to access our website increases in popularity among younger generations
- ~2/3 of participants prefer both digital and print publications. Use of digital only products slightly increases in popularity among younger generations
- ~1/2 of participants use or plan to use GIS; 90% of which use ArcGIS platforms. Use of GIS significantly increases in popularity among younger generations
- ~2/3 of users live in Wyoming, ~1/3 of users live elsewhere in the U.S
- Our Map Search, Interactive Maps, and Big C are the most popular “portals” to access publications and datasets via the WSGS website
- Our interactive/online maps are extremely popular, but more work needs to be done to educate users on how to use these ESRI web apps more efficiently

Zipfiles:

Do zipfiles prohibit or restrict people from easily accessing publications or other datasets on mobile devices (smartphone / tablet / GPS)?

Are people able to easily open zipfiles on their mobile device or are they required to install an additional app, or take additional steps to have this functionality? Are people aware of how to do this?

As cloud hosted endpoints (storage), cloud optimized products, and GIS streaming are increasing in popularity, zipfiles are becoming more obsolete. Cloud optimized datasets (COG and COPC) can't be zipped as it prohibits range requests in the cloud. This is why when you download a raster such as a DEM (GeoTIFF) or topographic map (GeoTIFF) from the USGS its not zipped.

Unfortunately, much like the shapefile, we can't fully move away from some file types being zipped as a bulk download option.

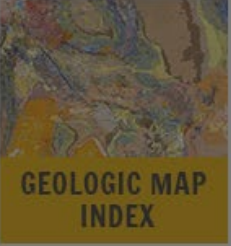


À la carte map products:

Map Search

Below you will find maps published by the Wyoming State Geological Survey. Search for maps by using the main search field (this will search all columns and some un-displayed information such as keywords, counties and product SKU numbers). A single column may be searched using the blank field at the top of each column. Simply click "Available Formats" and you will be provided links to the map in multiple formats. All maps are not available in all formats.

Additionally, the [Interactive Geologic Map Index](#) can be used to search for published maps.



GEOLOGIC MAP INDEX

RESET SEARCH

Pub#	Locality	Map Scale				Available Formats
MS-109	Phantom Lake	1:24,000				Available Formats
MS-108	Ragged Top Mountain	1:24,000				Available Formats
MS-107	King Mountain	1:24,000				Available Formats
OFR-2022-5	Wyoming	1:500,000				Available Formats
OFR-2022-4	Jackson Lake (East Half)	1:100,000	Surficial	2022	East Half of the Jackson Lake 30' x 60' Quadrangle, Teton, Fremont, and Park Counties, Wyoming (2022)	Available Formats

Phantom Lake ×

[Print \(\\$25.00\)](#)

Free Downloads

- [PDF](#)
- [Geotiff](#)
- [KML/KMZ](#)
- [Geodatabase](#)
- [Shapefile](#)
- [Supplemental Data](#)

[PermaLink](#) **Close**

Questions / Discussion



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James Amato

Wyoming Geological Survey

Map Editor & Geospatial Technical Principal

james.amato@wyo.gov

307-766-2286 ext.250