

EarthNow: Interpretation of Real-Time  
Weather and Climate Data for Spherical Displays  
NOAA grant, Evaluation Process: Report # 4

# **EarthNow Usage and Awareness Study**

for Science On a Sphere Installations

Evaluation by:

People, Places & Design Research

Commissioned by:

University of Wisconsin-Madison's Cooperative  
Institute for Meteorological Satellite Studies, &  
Space Science Engineering Center,  
in collaboration with  
University of Maryland,  
College Park,  
Cooperative Institute for Climate and Satellites



WEATHER & CLIMATE CONNECTIONS FOR 3D SPHERICAL DISPLAYS



# EarthNow Usage and Awareness Study for Science On a Sphere Installations

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## Executive Summary

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This study is fourth in a series of studies commissioned by the University of Wisconsin and the University of Maryland's cooperative project to accompany the development and evaluation of EarthNow data sets, providing current data for Science on a Sphere (SOS) presentations. Previous studies in this series have looked at:

- the desirability of producing current datasets from the point of view of site coordinators and presenters (when EarthNow datasets were just beginning to be developed);
- what kind of content should be in current datasets and the manner in which such datasets should be presented and made accessible to presenters (from the point of view of presenters, reacting to early versions of the EarthNow blog);
- whether on-site training prepared presenters to take full advantage of EarthNow datasets in their SOS presentations (based on an observation of a training session and on pre and post training interviews with presenters).

The purpose of this fourth study was to examine the awareness and use of EarthNow datasets across the SOS network. The point was to understand the place of EarthNow datasets among other Science On a Sphere offerings and inform future development of datasets and other content. The results of the study provide useful information about:

- the level of awareness of EarthNow datasets
- the extent of the use of EarthNow datasets
- awareness, use of, and reasons for using the EarthNow blog
- the themes most addressed by presenters when using EarthNow datasets
- the audience types for SOS presentations
- extent of use of specific datasets
- obstacles to using EarthNow datasets

In addition, the study informs the SOS network about members' interest in features, media and themes in the SOS datasets collection. It also helps identify sites that are good candidates for an in-depth study of audience reactions to EarthNow datasets, which will be the last phase of this evaluation process.

## Research Design

**The SOS network:** There is a total of 100 SOS network sites worldwide. Of these, 56 are in the U.S., 44 are outside the U.S. All 56 American sites and 15 sites outside the U.S. were invited via email to respond to this survey in the fall of 2014. If a site was not invited, it was because no contact information was available for that site in the NOAA list and attempts made to find or to contact people through information found online were unsuccessful. In some cases, sites were clearly not for public display (e.g. the 16 Washington funded Climate Institute sites in Mexico), and they were not invited to participate for that reason.

**The survey sample:** Most American sites were first contacted by telephone and asked to respond to the survey. Reminder phone calls and emails were sent to site representatives who did not respond after the first invitation. In the end, representatives of 53 Science On a Sphere Network sites responded (44 from the U.S., for an 80% response rate, and 9 from outside the U.S., for a 60% response rate). Respondents were mostly management involved in education, outreach or exhibit management, and almost all had decision making power when it came to the content displayed on their Science On a Sphere.

**Follow-up survey:** During the preliminary analysis of the data, it became clear that school groups were a particularly important audience type for many of the SOS network sites. A follow-up short questionnaire was sent, in January 2015, to sites that had indicated that they often or almost always used SOS with school group audiences. The questionnaire asked about whether content development for the sphere was driven by needs of the school groups, the needs of the general public, or whether presentations were developed independently. The follow-up questionnaire also investigated the mode of presentations on SOS (facilitated vs auto-run) and the type of worker (staff, volunteer) giving presentations to each type of audience.

## Summary of findings

### Awareness and Use of EarthNow datasets

Overall, 85% of sites responding to the survey had heard of EarthNow datasets, and about half (45%) reported that they were presenting some of the datasets. EarthNow datasets tended to be presented more in facilitated presentations than in auto-run presentations.

Only nine (9) site representatives reported using the EarthNow Blog (the website that publishes new datasets as they are produced, as well as interpretive content for those datasets). People who visit the blog do so primarily to get some direction about how to interpret the datasets.

### Value of EarthNow datasets

Site representatives indicated EarthNow datasets were most helpful in informing presentations about Climate Change and Current Weather Events.

### Obstacles to using EarthNow datasets

The most cited reason for *not* using EarthNow datasets was lack of time to do so, some respondents mentioning that the datasets required preparation time and some work to incorporate into presentations or into auto-run programs. Some mentioned that the datasets were not engaging enough, or that production values for these datasets were not up to their standards.

## Professional Development

The preferred methods for training employees or volunteers in using EarthNow datasets were a manual or a webinar (as opposed to a training session). Perhaps this is because both preferred methods can be used by educators or docents in their own time, as opposed to the other suggested methods (i.e. on site training, or a session at the SOS national network meeting or live session broadcast on individual SOS sites) which require staff to be at a specific place at a specific time for a period of time. From a management perspective, it may be more feasible logistically for employees to self-direct their learning of EarthNow datasets, perhaps also keeping in mind that there may be some turn-over in presenters, especially among volunteers.

## General Audiences vs School Groups

Comparing presentations to general public audiences vs presentations to school groups, school groups were more likely to be given facilitated presentations than general visitors, and general visitors were more likely to see SOS content in auto-run than school groups.

For half the sites, representatives indicated that playlists of SOS datasets were developed independently for general audiences and for school group audiences. For the other half, more site representatives indicated that school group needs tended to drive the content of the playlists used for general audiences, than representatives who indicated that the needs of the general public drove the content of the SOS. School groups were more likely to get presentations given by qualified teachers on staff, while general audiences were more likely than school groups to be given by part-time volunteers or staff.

## Implications

Sites are generally interested in using the EarthNow datasets, but there are obstacles to using the datasets, chief among them being the sense that it requires preparation and research time to properly integrate the datasets in presentations. Given that the datasets are, by definition, only relevant for a finite period of time, this issue is a chronic problem for many of the sites, especially the smaller ones with limited human resources.

Considering that the few sites that use the EarthNow blog (9) do so to get guidance on how to interpret the datasets, it seems reasonable to surmise that the blog is at least somewhat helpful in this pursuit. Unfortunately, there is a low level of usage of the blog among sites in the SOS Network.

The findings suggests an opportunity for the EarthNow team to do a few things:

- design and implement a communication strategy to make the EarthNow blog better known

- offer regular short webinars, from the blog, on how to present the latest batch of EarthNow datasets in order to reduce the need for additional time to properly integrate the datasets in the museum's presentations
- Another consideration could be to rename the site. A blog, technically, is "a Web site on which someone writes about personal opinions, activities, and experiences."<sup>1</sup> This does not really represent what the EarthNow blog does, which is to provide regularly updated datasets as well as technical information and interpretation of those datasets. Perhaps simply calling it the EarthNow website would be more accurate. Also, giving the site a clear, unambiguous domain name like [www.EarthNow.edu](http://www.EarthNow.edu) or [www.EarthNow.com](http://www.EarthNow.com)<sup>2</sup> (rather than [sphere.ssec.wisc.edu](http://sphere.ssec.wisc.edu)) would help people remember it, find it and communicate it to others (the University of Wisconsin branding could still appear on the EarthNow site).

Another point to consider is the fact that the themes most cited as reasons to use the EarthNow datasets are Climate Change and Current Weather Events. It would be helpful to have research to examine the impact of using EarthNow datasets on audiences' understanding of global connections, a basis for understanding Climate Change, to help develop future EarthNow datasets.

Finally, knowing that SOS draws a high concentration of school groups as audiences, and that EarthNow datasets are most likely to be shown in facilitated presentations, which are in turn, most likely to be given to school groups, it may be a good idea to make explicit curriculum links in the content of the datasets themselves and/or provide interpretive guides for teachers with curriculum links. Perhaps EarthNow teacher guides could be made available on the education page of the NOAA's SOS site ([sos.noaa.gov/Education/](http://sos.noaa.gov/Education/)) as well as on the EarthNow site.

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<sup>1</sup> Definition from Merriam-Webster online dictionary, Retrieved Feb, 5, 2014 from <http://www.merriam-webster.com/dictionary/blog>).

<sup>2</sup> This domain name appeared to be available as of March 3, 2015: entering [www.earthnow.edu](http://www.earthnow.edu) in a browser returned the message "This webpage is not available", as did entering [www.earthnow.com](http://www.earthnow.com)). Entering the domain name [www.earthnow.org](http://www.earthnow.org) returned to the message "BUY THIS DOMAIN: The domain earthnow.org may be for sale by its owner!".

## **Technical Analysis and Report**

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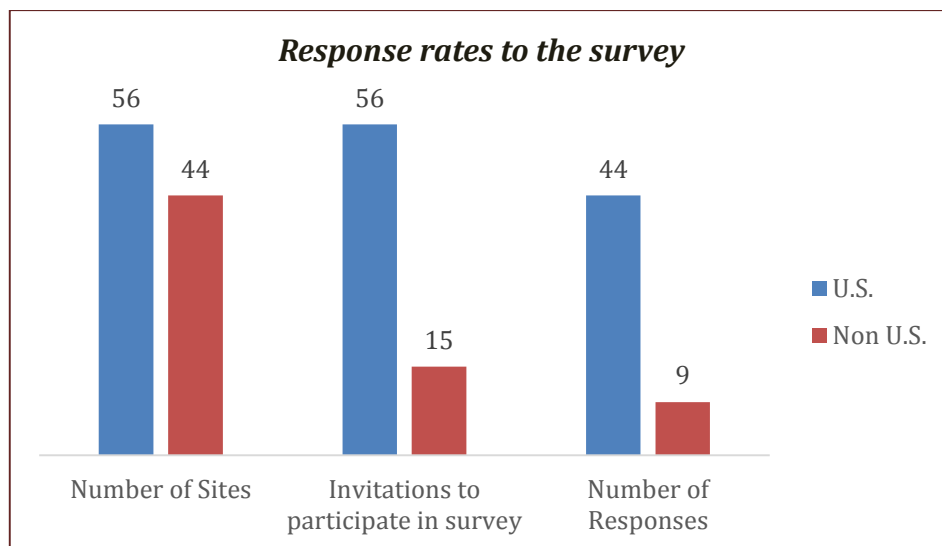
## EarthNow Survey of SOS Installations

### A. The Survey Sample

**OVERVIEW:** A total of 53 site representatives responded to an email invitation to an online survey with the subject line ‘NOAA funded study of how SOS is used’. EarthNow was not specifically mentioned in the subject line or in the body of the message so as to not cue respondents to the specific focus on EarthNow datasets<sup>3</sup>. There were U.S. based sites and 9 sites outside the U.S., yielding response rates of 80% and 60% respectively.

Respondents were mostly management-level museum staff that included museum directors and management staff involved in education, exhibit management, visitor services or outreach, or technological services, and almost all had decision making power when it came to the content displayed on their SOS.

Respondents came from different types of sites, including natural science museums, zoos, aquaria, science centers, space museums, planetariums, children’s museums and discovery museums and centers.



<sup>3</sup> The email invitation, using the subject heading ‘NOAA funded study of how SOS is used’, said: “I am currently conducting a study funded by the American National Ocean and Atmospheric Administration (NOAA) to study how all members of the SOS Networks use their Science On a Sphere. As a member of the network, your experience with using the sphere will provide important insights for future development of programs and content. I hope you will agree to help with our study, whose goal is to describe how SOS Network sites are using SOS. The point is to produce a more coordinated picture regarding audience opportunities and outcomes”. A slightly different version was sent to sites outside the US under the subject line ‘Science-On-a-Sphere: your participation in international study’. The email invitation came from ChristineLarouche@ppdresearch.com.



## Positions of survey respondents

### ***What is your position at your institution?***

[Sample of answers:]

*Director, Exhibits and Education;*

*Director of Community Programs and Partnerships;*

*Director of Visitor Experience;*

*Director of Education;*

*Executive Director;*

*Director, Guest Experiences;*

*Instructional Support Specialist;*

*Senior Coordinator, School and Teacher Services;*

*Science Presentation Specialist;*

*Director of Digital Theaters;*

*Communication/Outreach Coordinator and IT Specialist;*

*Manager of Education Outreach and Programs.*

## Decision-making about SOS content

### ***On your Science On a Sphere, which statement(s) describe your responsibilities regarding the content that is shown? Check as many options as apply to you.***

I make decisions about content that SOS presenters will show	81%
I make decisions about content that is use in auto run mode or in visitor kiosks Content in auto-run	72%
I make decisions about content to include in my own presentations from any source I choose	68%
I make decisions about content to include in my own presentations from a list prescribed by my institution	26%
I do not make any decisions regarding content	4%
Other (Please specify)	13%

#### ***Other: Specify***

*I also make decisions about complementary exhibits and supporting live demos conducted in the same gallery*

*[My institution's] many SOS users make their own decision*

*I try and satisfy requests from school teachers to match up programs to their classroom curriculum.*

*Set content loops. Very occasional addition of new content to that loop. SOS is treated as a fixed exhibit.*

## Institutions represented

Aquarium of the Pacific  
Bay Education Center  
Bishop Museum  
Boonshoft Museum  
Clark Planetarium  
Climate Institute, Puebla, Mexico  
David Skagg Research Centre  
Denver Museum of Nature and Science  
Detroit Zoological Society  
Discovery Cube, Science Center  
E.O. Wilson  
Great Lakes Maritime Heritage Center (Thunder Bay National Marine Sanctuary)  
Great Valley Museum, Modesto Junior College  
Harsco Science Center (Whitaker)  
Houston Museum of Natural Science  
Imagination Station Sci. Mus.  
Imiloa, Astronomy Center of Hawaii  
Indiana U  
Infinity Science Center  
Instituto Oceognografico da Universidade de Sao Paulo, Brazil  
International Museum of Art and Science, tx  
James Madison U.  
Lawrence Hall of Science (The), Berkeley U  
Maryland Science Center  
McWane Science Center  
Museum of Science and Insdustry  
NASA Ames Visitor Center  
NASA Visitor Center, Wallops Flight Facility  
National Museum of Natural History, Sant Ocean Hall  
National Museum of Natural Science, Taichung, Taiwan  
National Zoo, Washington, D.C.  
NOAA HQ  
North Carolina Aquarium on Roanoke Island  
Nova Scotia Museum of Natural History  
Nurture Nature Center  
Ocean Explorium  
Oregon Museum of Science and Industry  
Orlando Science Center  
Our Planet Center, Castries, St. Lucia

Pacific Science Center  
Point Reyes National SeaShore Bay  
Science Central  
Science city at Union  
Science Museum of Virginia  
South Florida Science Center  
Space Foundation  
Tause P.F. Sunia Ocean Center, Pago Pago, American Samoa  
Tech Museum of Innovation (The), Sam Jose, CA  
Ted Stevens Marine Research Institute (the), Juneau, Alaska  
Telus World of Science  
Visual Climate Center, Holeby, Denmark  
Visvesvaraya Industrial and Technological Museum  
Wildlife Experience (The), Parker, CO

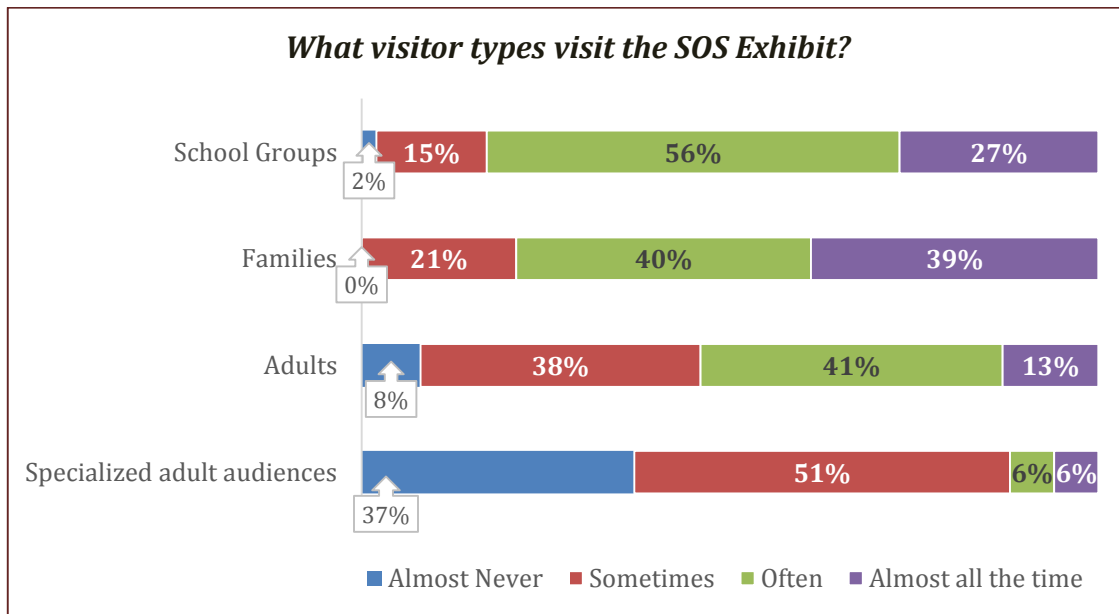
## B. Audiences served by SOS and how it is presented to them

**OVERVIEW:** School groups and families are common audiences for SOS. General public adult audiences are not as common, and special audiences (e.g., scientists, funders, corporate donors) are less common.

Many sites indicate that they usually or always have formal (41%) or informal (33%) presentations. Two thirds of the sites (34 sites) have scheduled daily SOS presentations<sup>4</sup>. This is a positive finding because previous research has shown that people tend to stay longer, see more and learn more from SOS when they are given a presentation than when they observe content on auto-run<sup>5</sup>.

Among the datasets that were mentioned as top ten SOS datasets presented in the different institutions, the EarthNow datasets were rarely mentioned. Only 2 examples were mentioned: Monthly Temperature Anomalies, and Seasonal Outlook (one site each). Sixteen (16) Real Time datasets of NOAA’s SOS collection were mentioned, by seven sites, confirming that current datasets are important to at least some of the SOS network members.

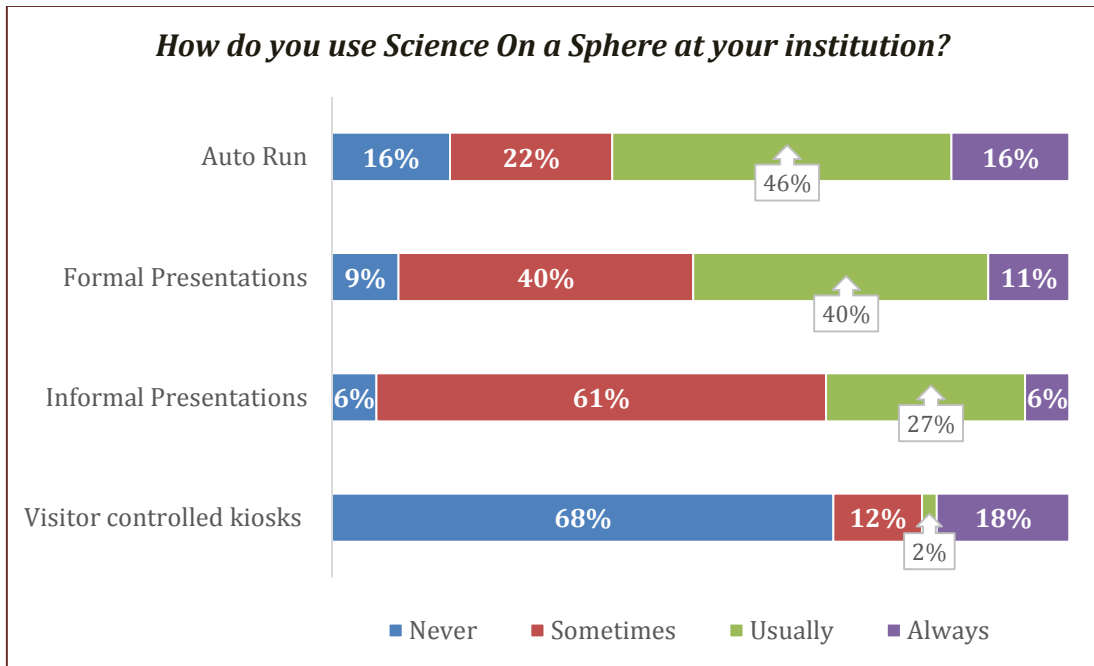
### Four audience types compared



<sup>4</sup> A site was deemed to have daily formal presentations when their website indicated at least one scheduled SOS presentation a day.

<sup>5</sup> Hayward, J. & Hart, J. (2015). *The Value of Educators "on the Floor:" Comparing Three Modes of Presenting Science On a Sphere*. *Journal of Museum Education*, Volume 40, issue 2 (in press).

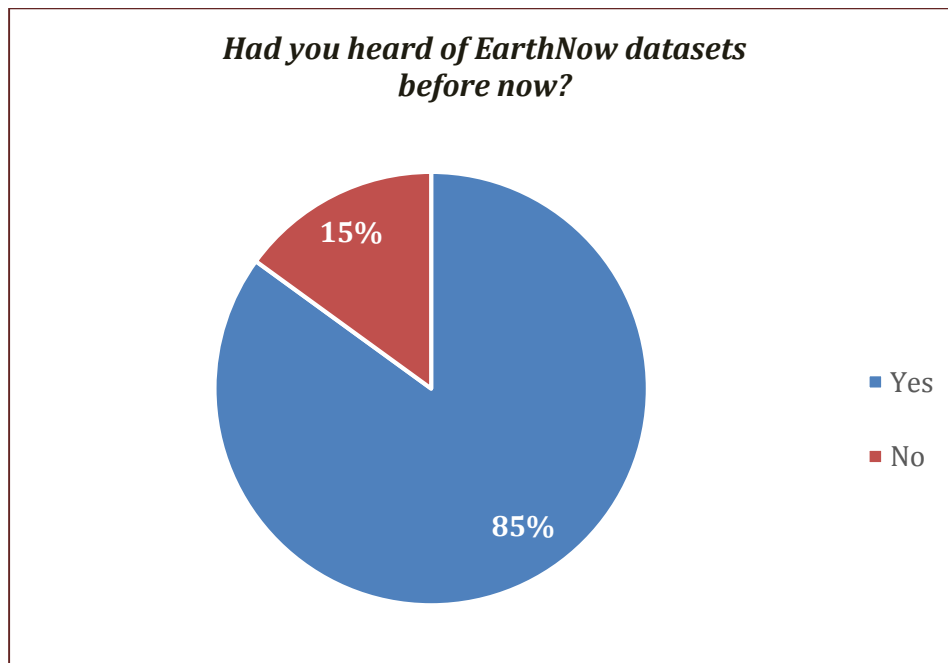
Four presentation modes compared



### C. EarthNow Datasets: awareness and extent of use

**OVERVIEW:** Overall, 85% of site representatives had heard of EarthNow datasets and 45% (or 25 sites) reported that they were presenting some of the datasets. EarthNow datasets tended to be presented more in facilitated presentations than in auto-run presentations. A little over half the site representatives (53%, 28 sites) had heard of the EarthNow blog, but most (19) were not using it, saying that they did not have time to devote to this and that their datasets were automatically updated<sup>6</sup>. Those who did use the blog (9 sites) were doing so primarily to get some direction about how to interpret the datasets.

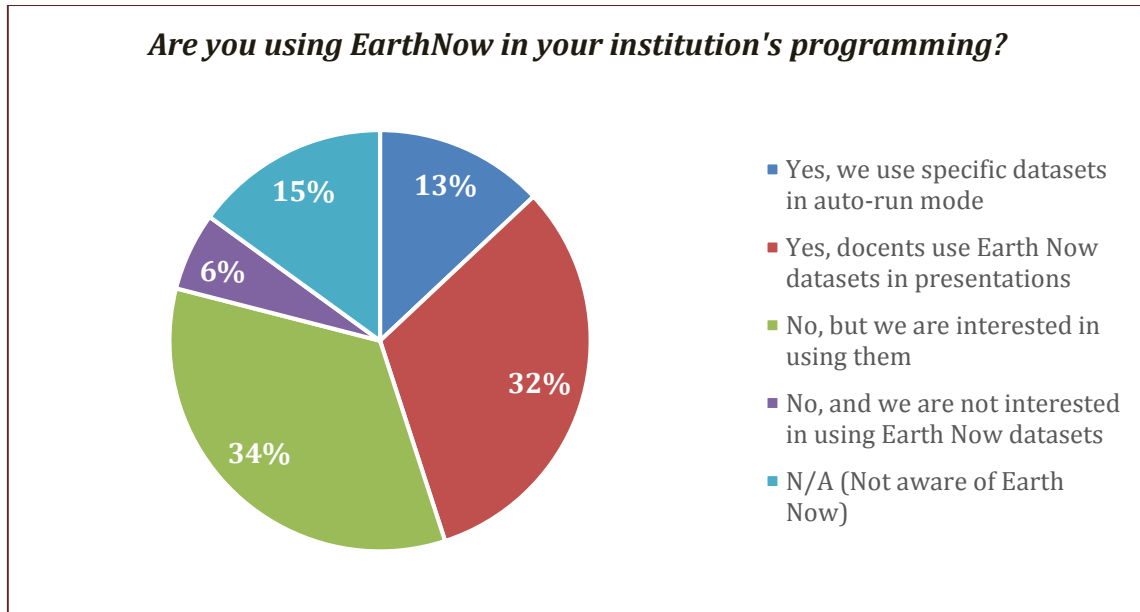
#### Awareness of EarthNow datasets



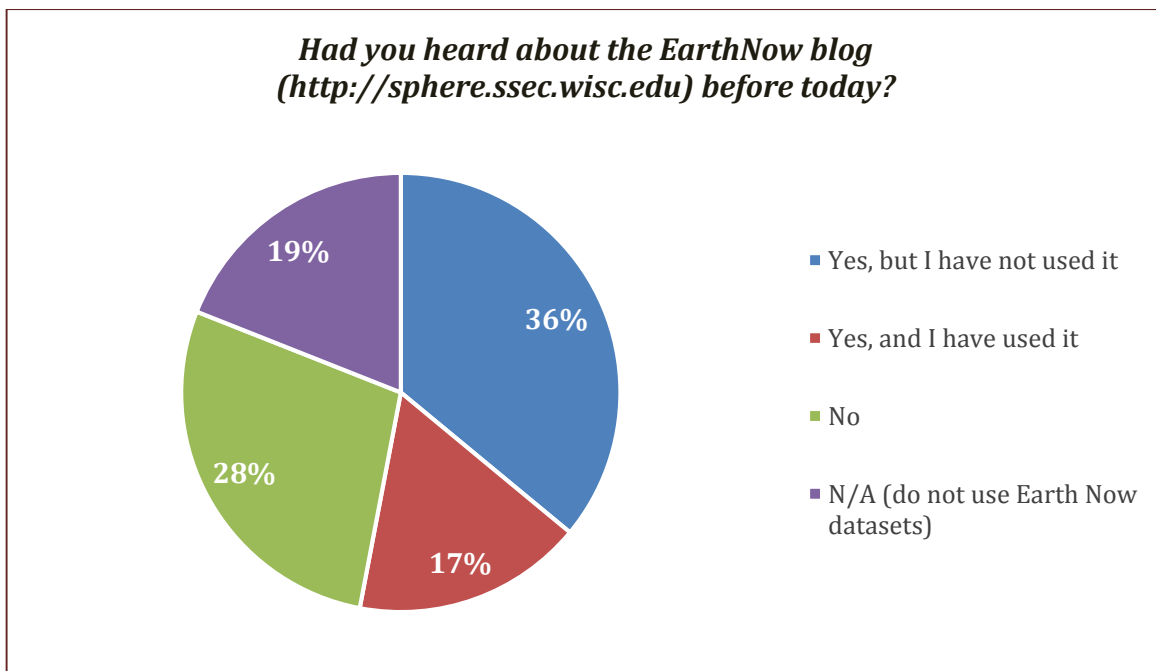
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<sup>6</sup> The question asked the representative if they were using the EarthNow Blog. It is possible that, even if they themselves had not used it, some SOS presenters at their institution had.

Extent of use of EarthNow datasets



Awareness of EarthNow blog



***The EarthNow Blog, what use is it to you? Please check all options that apply.***

To get guidance on interpretation of datasets	8 sites
To stay informed of new datasets	4 sites
To retrieve new datasets	3 sites

***Why have you not used the EarthNow Blog?***

I have not had time to do so	11 sites
EarthNow datasets are regularly updated without my intervention	2 sites
Other (please specify)	4 sites

***Other (please specify)***

*I have only worked with the globe for one week*

*No interest*

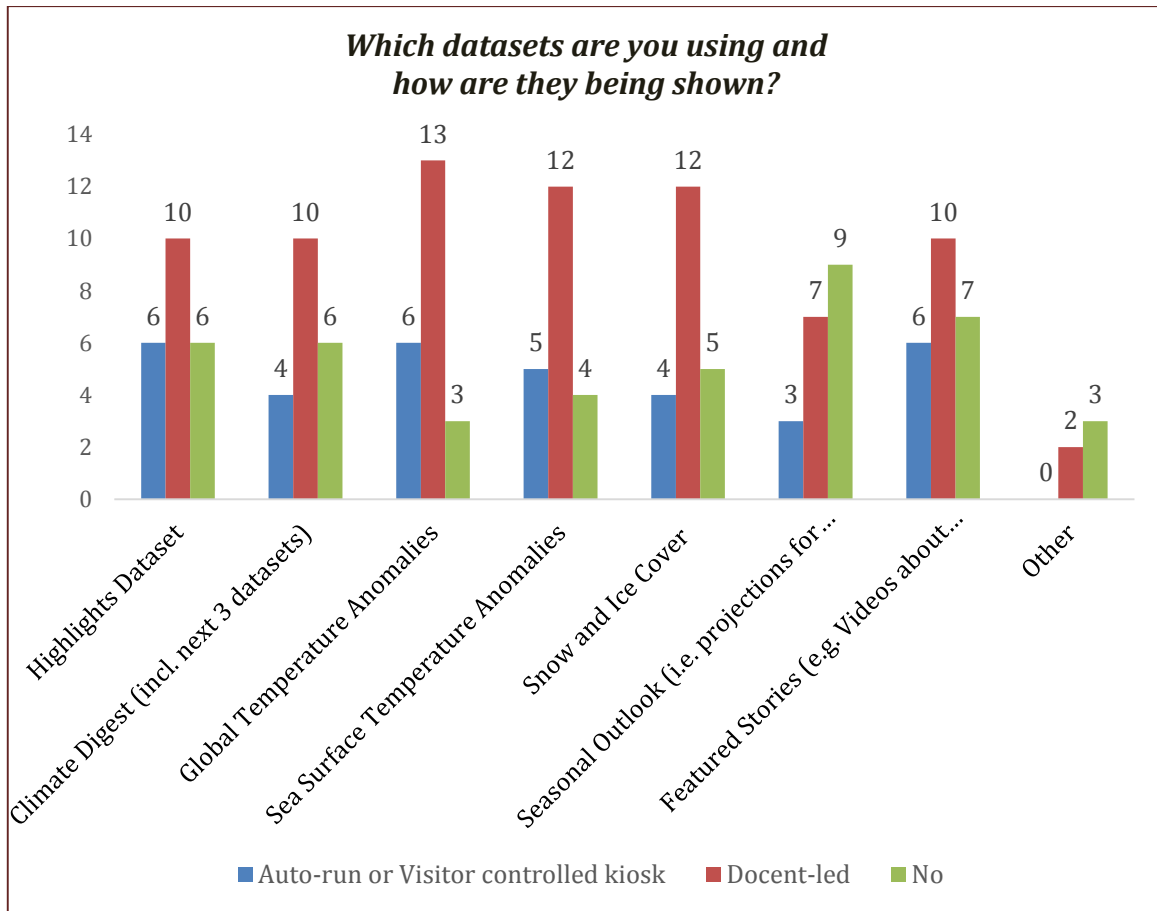
*The blog presents USA data in North America with animations and highlights stopping at Canadian and Mexican borders.*

*No but we might be, moving forward.*



### D. How EarthNow datasets are used

**OVERVIEW:** EarthNow datasets tend to be used more in facilitated presentations than in auto-run presentations, and all EarthNow datasets are utilized in both modes of presentations. The least utilized seems to be the Seasonal Outlook (projections for the next month). Climate change and current weather events are the most cited themes that people say they cover when they present EarthNow datasets.



<sup>7</sup> The data values in the graph represent the numbers (not the percentages) of individuals who report using each type of dataset (due to the small sample size of people who use each type of datasets). The categories are not mutually exclusive: the same person could have checked both the “Auto-run” and the “Docent-led” categories for any given dataset. Further, individuals need not have clicked on any answer for any given type of dataset, which explains why the total number for each category does not equal the number of people who do use EarthNow datasets.

***What themes or topics is EarthNow used for most?***

[themes that emerged from open-ended answers]

Climate change	7 sites
Current weather events	4 sites
Weather anomalies	2 sites
Other	2 sites

Answers:

*I use EarthNow when the features help explain current events. For example, during the polar vortex I used an older EarthNow dataset that explained this phenomenon.*

*We do not use in docent led presentations. They sometimes use the highlights dataset to locate these events on the IR Sat. dataset to present to the public.*

*We are planning to launch more climate based shows. We have a new iPad so a whole new world is open to us, that upgrade happened in October 2014.*

*Drought, especially in California. Also, climate change (discussions of climate vs. weather)*

*Fresh water programs are often requested by middle school teachers*

*Weather and Climate Change presentations, and general docent times with the public*

*Weather and climate events for weather themed programs for elementary school students as well as high school audiences.*

*Current Events Weather Climate Change We will often head in with a group and show them a few "highlights" in general and let them pick what they are interested in learning about. Or, we have a specific scheduled presentation where a docent talked about current and projected weather patterns.*

*To help explain climate change*

*We use it for weather anomalies and extreme weather. Being in a hurricane-prone region & a state with many potential risks due to rising sea levels, these are always of interest.*

*Climate impacts on Amphibian crisis, Chesapeake Bay conservation, and Smithsonian Science.*

*Climate Change had become a big topic at my institution and the Sphere is, I feel, the best way to showcase it. The EarthNow datasets does a lot of the work for me show what is going on now with weather and climate. During significant weather patterns we also use EarthNow datasets to illustrate what is going on.*

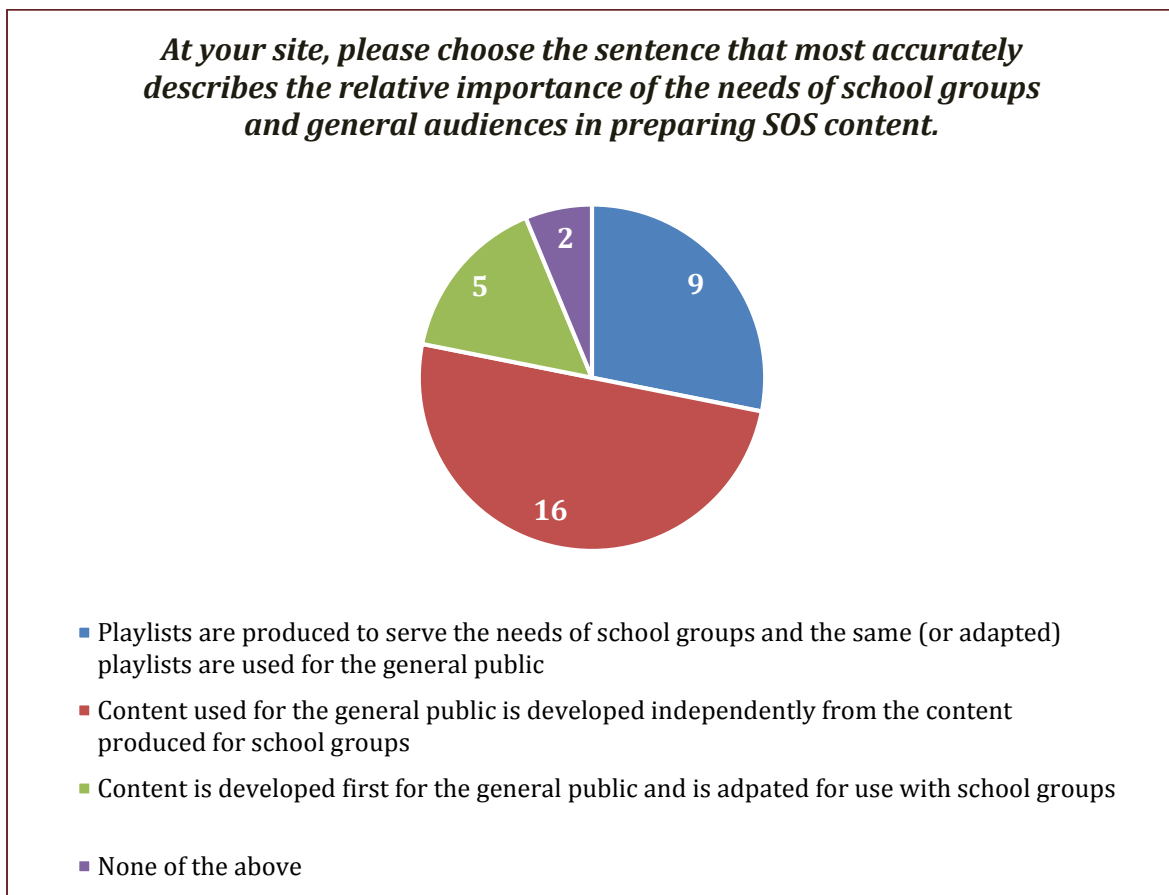
*We use EarthNow: What does fracking mean to you?, in a show on energy and whenever someone raises the issue. It is unbiased and a good place to begin a conversation.*

*Seasonal outlook - particularly anything associate with drought and temperature*

## E. School groups vs general audiences

**OVERVIEW:** A follow-up short survey was conducted after preliminary results showed that school groups represented a very important audience for 39 of the 53 sites that responded to the original survey. Thirty-two (32) of 39 invited respondents responded, representing a response rate of 82%. Half of those sites indicated that SOS content was developed independently for the two types of audiences. In the other half, more sites (9) indicated that Education drove the content than sites (5) who indicated that the needs of general audiences drove the content. School groups were more likely to be given either formal or informal presentations than to view auto-run content, whereas general audiences were more likely to view content on auto-run than in either mode of facilitated presentation. When given facilitated presentations by museum representatives, general audience members were more likely than school groups to be given presentations by part-time volunteers or staff, and school groups were more likely than general audiences to be given presentations by full time staff with an education background.

### What audience drives the content?



## Descriptions of how content is developed for the two audience types

### ***Please describe your specific situation***

*Content is developed for the school groups based on the state/national standards. Content is then modified and simplified for the general public based on results/feedback from school group sessions. However, we have a limited number of presentations for the general public (under a dozen) as opposed to the nearly 70 for school groups.*

*We do not have the staff available or the technical expertise to develop data sets, so we are dependent on others' datasets. More importantly, at this time we do not have the staff to develop a new curriculum-based program centered on using the Sphere.*

*School Groups, mainly middle school and through college, are really starting to recognize how amazing Science on a Sphere is and how it can show various data in a new and captivating way. The various programs we use the sphere for are about Geology, Weather, Climate Change, Urban Ecology, and talking about our zoo animals using the sphere.*

*School groups sign up, and pay extra, for 30-minute subject-specific SOS lessons on various science topics. It would not be fair to have the same programs offered to the public without the fee, and we like to keep our general docent led presentations to a shorter time frame without iClicker questions.*

*Our public days are only the first Saturday of every month and we tailor our SOS presentations to the theme of that Saturday. Our school groups have a completely different set of playlists.*

*Since our education programs have to be designed with provincial curriculum in mind, we create our education playlist specifically for the grade and subject. We will sometimes use those playlists (or an adapted version) for a public program.*

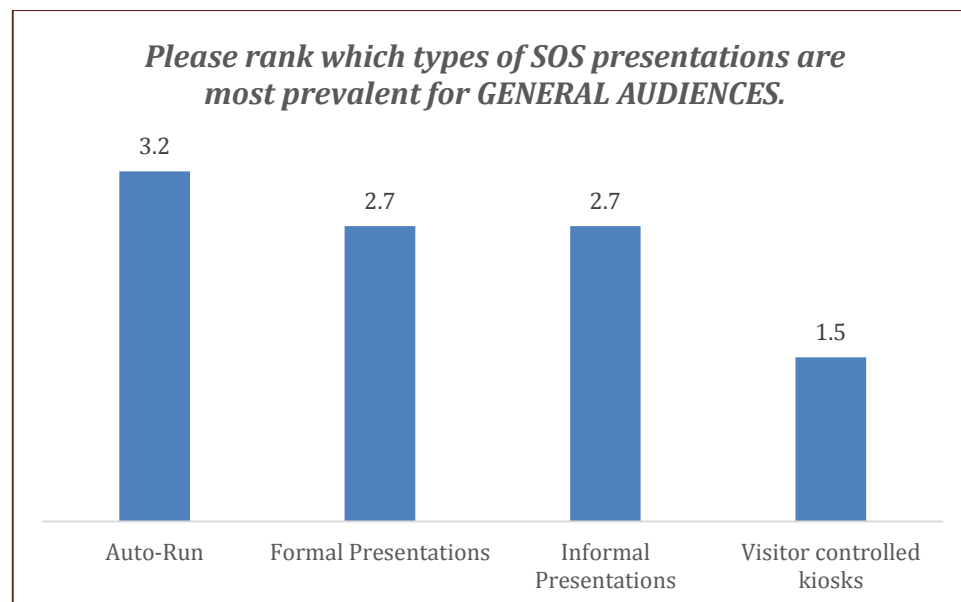
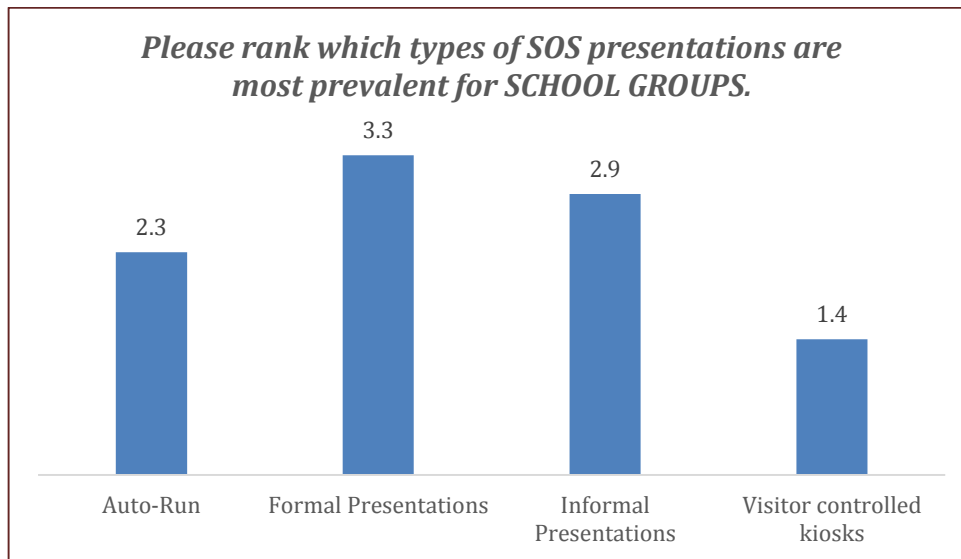
*Our SOS runs a series of 5 programs on a loop. It is currently treated as an exhibit and is not changed for any particular group.*

*Occasionally there is some overlap but usually we put together playlists or programs with a specific audience in mind - school groups or general public.*

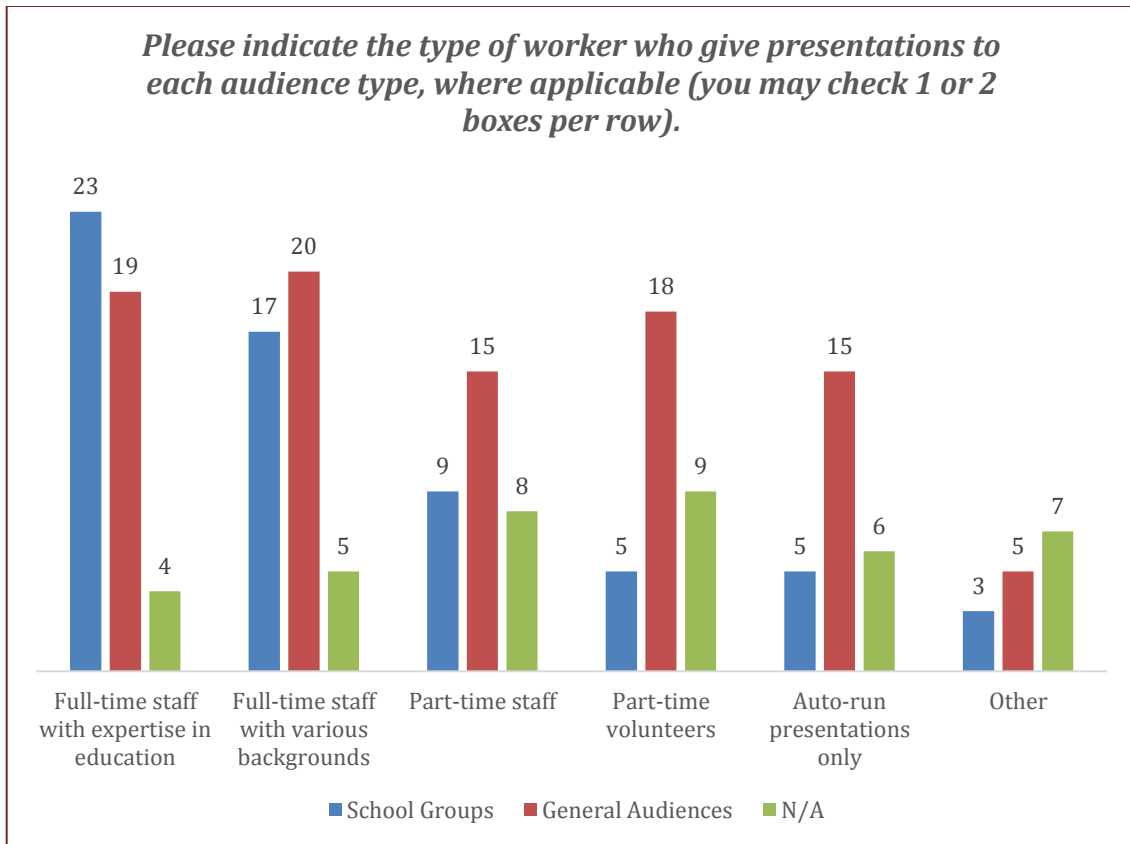
*We have many school group (age or grade specific) playlists which could be adapted for public audiences but many are very standards specific and probably wouldn't be of interest to the public. Often a more general and separate approach is taken with developing public programs*

### Audience types and mode of presentation

The data values in the following two graphs represent the mean ranking for each of the presentation modes for school groups and for general audiences. The higher the number, the better the ranking: e.g., for school groups, formal presentations were the most prevalent presentation mode, followed by informal presentations, auto-run and visitor-controlled kiosks.



Audience type and type of museum presenter<sup>8</sup>



<sup>8</sup> Respondents could choose more than one type of audience for each type of worker. Therefore, total numbers for each type of worker can be greater than the total number of respondents (32).

## F. Obstacles to using EarthNow, training and suggestions for improvement

**OVERVIEW:** The most cited reason for not using EarthNow datasets was lack of time to do so, some respondents mentioning that the datasets required preparation time and some work to incorporate into presentations or into auto-run programs. Some suggested that the datasets were not engaging, or that the production values were not up to their standards. Also mentioned was the idea that EarthNow datasets moved too quickly and were hard to follow. The methods that respondents preferred for the training of presenters on how to use EarthNow were a manual or a webinar (as opposed to an on- of off-site training session). Given the fact that the evaluation study of the EarthNow on-site training<sup>9</sup> provided at certain sites indicated that only full-time staff were able to integrate some EarthNow content into their presentations following their training, it makes sense to provide more flexible methods for people to learn how to use EarthNow datasets on their own time. Suggestions for improvement of the datasets made by respondents included simplifying the content, providing easy-to use scripted playlists that would not require much staff preparation, and improving the production values (e.g. better narration) of the datasets.

### Reasons for not using EarthNow Datasets

#### *Why are you not using EarthNow datasets in your programming?<sup>10</sup>*

I have no time or resources to dedicate to this endeavor	7
I do not think that EarthNow datasets are pertinent to my institution	0
I do not know how to interpret EarthNow datasets	2
It is not possible for us to integrated new content into our system	0
Other (please specify)	13

#### *Other (Please specify):*

*No interest in the Exhibits department.*

*I've used a few datasets before, but haven't had time recently to check out the datasets and website.*

*They are timely and take a little bit of preparation to use therefore, we don't use them much.*

*We have a set rotation of datasets and it takes a committee to change it, however we are very interested in the EarthNow datasets and plan on putting it into our school groups' rotation.*

*We just got the EarthNow dataset for not long because recently updating the version of SOS.*

*Our SOS functions as an exhibit with looping videos-- with some dataset content incorporated into the videos. We do not anticipate changing our "regular" SOS programming, but do have some interest in investigating possibilities of occasional evening programs or PD that would use the SOS in a more interactive fashion.*

*We occasionally use them. (Not a choice I could make on the last screen.)*

<sup>9</sup> Evaluation of EarthNow Training at Four Sites, Research report produced by People, Places & Design Research for the University of Wisconsin, July 2014.

<sup>10</sup> The numbers represent numbers of sites that chose each option.

*Have not had time to put them on the kiosk*

*They are not personalized for our specific location and they are also not engaging. Although the content is valuable for a teacher, it is just another boring lecture for our students. There are also too many to navigate through and choose from.*

*Didn't know about it and don't know how to use it.*

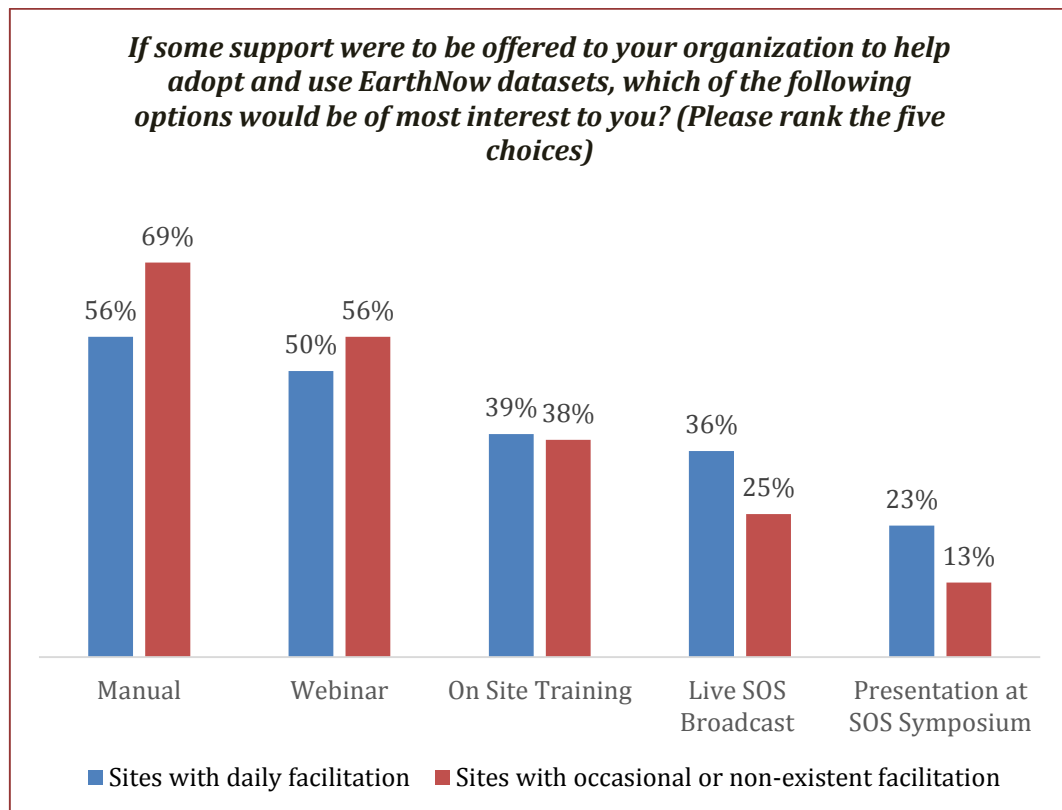
*Just busy. We are doing a lot and working on a lot. It's on the list of things to do we just have not gotten to it. We have looked at it. But in honesty we are not looking that closely. Some staff may do it more than others. It is not a concerted institution or departmental effort though*

*Two reasons: 1) by the time EarthNow datasets are released, they are slightly outdated and my superiors consider them no longer relevant, and 2) we currently cannot integrate them into our autorun system and we do not have the staff available to switch to EarthNow every time we want to show it.*

*We have yet to integrate the datasets into any of our current SOS experiences.*

### Training preferences

This chart shows percentages of respondents' who chose each option either as their 1<sup>st</sup> or 2<sup>nd</sup> choice.





## Suggestions for improvement

### ***Do you have any suggestions as to how EarthNow dataset of the EarthNow blog could be improved?***

*Sometimes the datasets move too quickly for the level of content provided. It might be better to further simplify explanations or take more time to explain the concepts.*

*YES, include Canada in your renderings. Why do the animations stop at the Canadian border? The Audio versions are of interest to us although the quality of the recordings are not suitable for our standard of presentation. The quality of the sound is very poor, narration is very dry and monotone.*

*More movie datasets*

*I don't dig the birds in the audio.*

*I don't know enough about it to suggest improvements.*

*They are great. For us, however, it is the task of trying to fit the topics into what we present.*

*More movies would be helpful. We don't always have staff time to get updated on all the new EarthNow datasets. Having one or two that the whole staff can learn about, then a movie they can play for audience members, would be best!*

*I haven't enough experience with the datasets to suggest improvements yet.*

*Offered as a prepackaged play list with interpretive information in a script format*

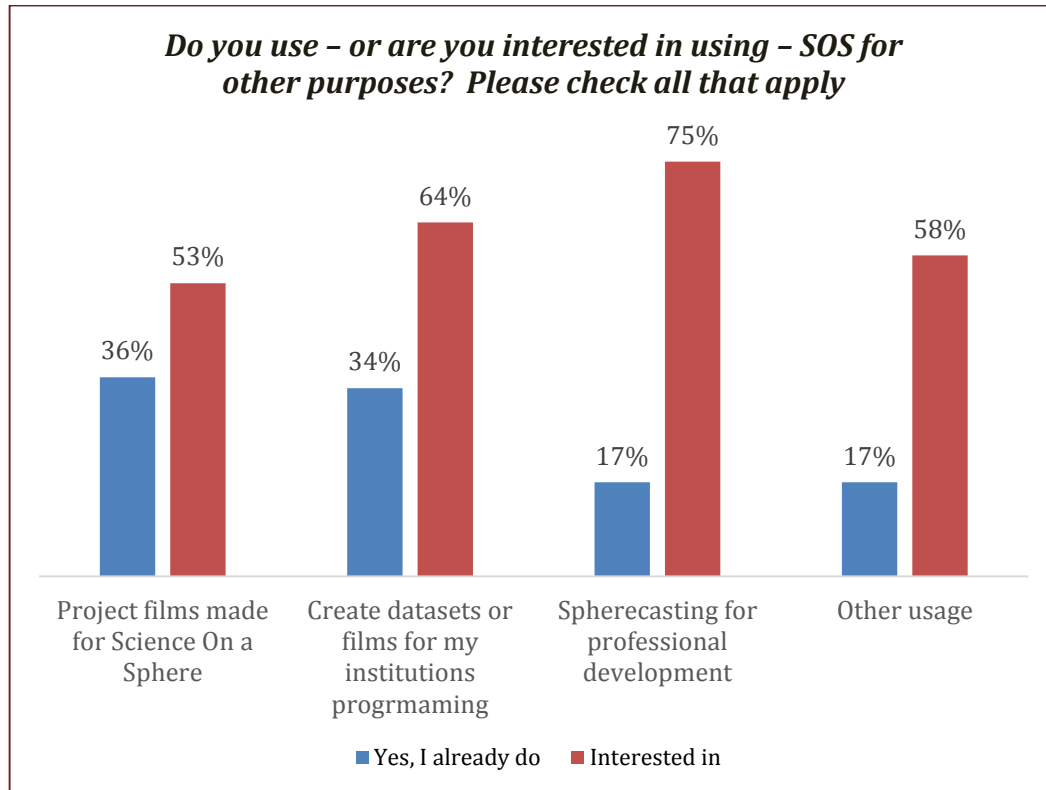
*They work well for us--*

*Nope, I am happy with it.*

*I have to experience it first... we are actually closed in St. Lucia, but building up Cancun, Mexico, French Guyana and Chile. In all these places we have SOS planned.*

## G. Interest in other uses for SOS

**OVERVIEW:** Site representatives expressed a strong interest in spherecasting for professional development, but few had already experienced this type of usage. Many were interested in creating their own datasets or movies for their institution (a third having done so), and about half were interested in projecting films (a third having done so).



### **Other usage specified:**

*One of our professors already prepared a model of air circulation*

*FaceTime with School Groups as a Pre-Visit, NESO, Camp & Design, Planning FaceTime with Camper and SOS with other centers.*

*Would be interested in thematic datasets that could be used for special events*

*We would be interested in offering more interactive programs, i.e., programs that ask the audience to actively participate in the program*

*Training of teachers in environmental issues and climate*

*Integrating data sets and live presentations/demos.*