NOAA Science On a Sphere Users Collaborative Network Workshop
NOTES
Day 2, CREATING NEW CONTENT Session
Bishop Museum
July 30, 2008
Honolulu, HI

New datasets in the SOS library & Discussion

Announcements:

- Beth wants copies of the data sets from all orgs. They will be included in the catalog. Also needs feedback if you want emails when new content is available.

Data Set (North Pole)

- All about Earth's magnetic field. NHL Geophysical Data Center. Compass needles that point to magnetic North Pole and magnetic declination

Q: Can the geographic North Pole be put in?
A: Not with remote, but with software adjustments.

Data Set (Sea Floor age, fires)

- Online there is a large database with script

Q: How up to date?
A: Last 10 days: red = more fires, yellow = less fires; can be last 8 days of data, almost real time.

Comment: Not easily understood, online version has different pixel sizes so it will look different; problem is that there is no legend on the website, and that has been requested. Also, scale issues.

Data Set (Hurricane tracks)
Data Set (Phoenix landing on Mars)

- Pictures are in collage form, taken on May 28, 2008. Source: University of Arizona

Data Set (Moon Landing)

Q: Can you advance PIPs manually?
A: No, they are timed. Automation interference used to change. Limited capacity right now, reworking playlists format, not easily applicable for end users, at least not this year

Q: Can end users write a script for automation?
A: Leon @ Bishop Museum: some are

Data Set (Carbon Tracker)

Q: Proposal: Net carbon for year output of CO2?

A: Would be good addition, but the error margin would be large.

Q: Description of DS on website?
A: Educators can go to website to obtain pictures and paragraphs, and source contact, and download.

Data Set (Black carbon, sulfate aerosols in atmosphere)

- Start: Jan. 1, 2007. Updated online daily. Can be almost real time.

Q: Can event days be shown?
A: Used for looking at sources, volcanic eruptions, watching China now

Q: Any suggested playlist in library?
A: Some-Beth has some, send her the playlists that you are willing to share, under "documents". The SOS site has link that has scripts.

Data Set (Sea Ice Concentrations)

- Not thickness, just area

Data Set (Animal tracking)

- NOAA fisheries is getting SOS, and will develop more data sets regarding animals

Data Set (Climate Change-Ocean Changes and Acidification)

- Color coded

Q: Can we change colors?
A: We're going to change it, it can't be changed by the user. For example, the coral set was sent as jpeg, so we can't alter this.

Q: Is it appropriate to ask for info from the source in an "alterable" format?
A: Although you could ask for an 8-bit grayscale, many researchers would be leery to hand over data with a false color. They need their data to be accurately shown.

Q: How easy would it be to allow users to change colors on data sets?
A: Would be data dependent. Depends on ability of user. We have grants to test scientifically accurate and understandable data adjustments. Changing colors can make a huge difference in visualization. Research is done because there is no consistency in visualizations. We are placing them in a non-scientific community and working on adapting it for educators, and there is no standard. There needs to be an easier and more understandable visualization for the non-science community.
Red-blue color ramp is misleading.

The expertise in the SOS user community would add influence to the scientists. The rainbow color bar is the most commonly used range indicator in the scientific realm, but not always the most appropriate for the learning community. Red = hot, blue = cold to viewers.

A suggestion was made to put thing to Beth in a "new" folder and then have a phone call with the researcher so to verify potential informational understanding and therefore appropriate color schemes for the viewer.

An issue: with different color tables, can change the story. Subtle changes show very different tales.

We're trying to have a cognitive understanding of a non-scientific community. Concern regarding proper representation from scientists. This is good. From and education standpoint, there is no consistency to color schemes. The wow factor is on the technology and on the data set. Things created for the scientific community are given to a less scientific community who then in turn transmit it to an even less scientific understanding group. So it's up to us to say what standard to request data. Standardization is necessary to reduce the learning curve for viewers. For example, put labels on the reefs. There is a difference between a model, an image, and a data set. People don't want to feel stupid, especially in under a minute. So make things standardized that allow them to understand what they are seeing more easily. Research coming out on this topic from Sean Rowe and Molly Phipps, "Seeing Satellite Images" and Nancee Hunter will send along to Carrie once it comes out.

Data Set (Real Time Earthquakes)

- Source: USGS. Not as many smaller earthquakes shown.

Q: How long are popups?
A: One week time period.

Data Set (Weather Model)

Data Set (Georeference PIPS-where all the SOS are located)

Q: We are not limited to transparent background?
A: No.

Q: Can PIP be related to room?
A: There is a room PIP that stays still.

Q: Mpeg 4 in PIPs? Guidelines? Performance budgets?
A: Have not done research on PIPs, but the PIPs can be movies, but the data animations may overload system; system degrades

Q: PIP fixed for room? Just 1 CPU or node controller?
A: Comes off node controller; each projector is responsible for the quadrant of the sphere. If georeferenced, it will stay put. PIP will not rotate with globe if fixed for room. It will be fixed in pre-production.

Comments: SOS used to be just visualized but try to strike a balance to get "biggest bang for buck" – make everything in pre-production. Majority of museums like well-made, pre-

produced data sets. CU wrote software: power point and visualizations: See Beth if you want it

New Content Modules to be Created (AMNH):
Public has a hard time with the concept of ocean weather and other forms of water

Suggestion: A simple goal: average public is not aware that tax dollars pay for NASA/NOAA satellites, let public know that it is their satellites that are providing this data, especially hurricane tracking.

Q: Schedule?
A: Pre-production next week. 18 months should have some rough drafts, and then live presentations, then full production 2 year estimate

Q: Certain target age groups?
A: Earth system science is not very visual; explaining basics like temp. and water vapor and combining data sets. Explaining climatology of storms. 4-5 grade, upper elementary.

Comment: Denver tested high school freshmen on Earth Science. (1300 students) 3% got As, 87% flunked. Ergo, there is no such thing as starting too low. This is an effective reinforcement tool.

New Content Modules to be Created (Bishop)
Data sets, real time weather data sets, with help from the Advisory Board (NOAA and UH); kiosks in use at Bishop Museum

Comment: "Extreme Weather" traveling exhibit may be interested in the Bishop's weather data sets

New Content Modules to be Created (LHS)
2 Earth Science stories, 2 interactive learning models

No questions.

Group discussion for content guideline production **Comments in bold are what was written on the notepad easel.**

- Ned: there are already a lot of guidelines in place from cartographers, there is literature available that has guidelines, so looking to the scientific community would be reinventing the wheel. We can pool some of these resources and put them on the website and use those to set best practices. **Existing data from cartographers should be referenced.**
- **Relating color schemes for multiple content pieces.**
- A lot of data sets have no explanation of what the color schemes mean. Explanatory material should be optimized for what the data sets detailing means. Showing the

legend/scale bar directly where you are looking on the sphere. **Need scalebars shown where looking.**

- **Phrased for "Aunt Sally"** Transferring information for the layman. **Labeling the continents** and political boundaries, which would help people orient their location to what they are seeing and help them read the map. **Careful not to over-label.** We need to gauge at what point that people get lost geographically. The blue marble becomes unrecognizable when too much data gets mixed in. **Where is the point when labels are needed.** Unless you are formally science-trained, it's all Greek to you, and there are ways that you can label "abstractively" so that you're not insulting intelligence, but leading horses to water. **Use of abstractions as well.**
- **Is message appropriate for sphere audience?** Local and regional stories that are the audience will connect with.
- Auxiliary displays-are they effective? Perhaps the labeling can be off the sphere? **Integrating auxiliary displays.**
- Where do we ask questions about the data sets? Email straight to Beth. She can lead you the right direction.
- How to distribute data sets. Using this time to draw up FAQs.