June 2012 - GIS Working Group Update

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Fri, 06/08/2012 - 4:32pm — tvalentine

GIS Working Group annual VTC Update.

Slides: attached [1]

Monday notes:

Led by Adam and Theresa

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video: Adam Skibbe (KNZ), Don Henshaw (AND), M. Gastil-Buhl (MCR),
Jason Downing (BNZ), John Porter (VCR), Margaret O'Brien (SBC), Philip
Tarrant (CAP), Suzanne Remillard (AND), Theresa Valentine (AND)
Kristin Vanderbilt (SEV), James Conners (CCE/PAL), James Brunt (LNO)
phone: Bob Flynn (SGS), _____ Jonathan Walsh (BES), Suzanne Sippel (KBS)

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Adam -
Following along the ppt.
An update what the GIS WG has been doing. LTER Maps and GeoNIS. GeoNIS
was conceived 7 or 8 months ago: some background.

Slide 2: WG Activities listed
∘ Terms Of Reference
∘ LTERmapS workshop (Nov 2011)
∘ GeoNIS workshop (Feb 2012)
∘ Databits GIS edition (May 2012)
∘ ASM workshops
–Data and Tools for the LTER (resources)
–GeoNIS (during IM meeting)
∘ Training proposal
∘ Geospatial Analysis Committee Coordination

Data and Tools for the LTER (resources) is the new proposed ASM Workshop

Slide 3
working on Terms of Reference
Theresa - have a draft; will finalize at ASM. GeoLunch.
Adam -
slide 4 LTERmapS Workshop fall 2011
establish product: back end, front end, all between for LTERmapS 2
The end-user portal for someone to actually use the data
The back-end is a big issue.
Mark Servilla joined our WG to diagram how could work with the NIS in the
back end. That is where GeoNIS was born, to handle geo data, not just secondary
to mapping aspect.
A lot of progress. Got a lot of data together.
Updated version 1 of the maps to the new google version.
Theresa - not yet updated on the LNO site.
Adam - waiting for update to get published at LNO.
Got our own server up and running at LNO.
Got some design of front end. Constrained by back end.

Slide 5 GeoNIS
In discussion with Mark, they (pasta developers) have not designed around a
geo server. More for flat file storage. Geo-oriented users looked at how a geo
service could work for sites, make most accessible to sites in framework already
within nis. How to make all these data accessible in end-user friendly way? As
well as piggy-back our maps initiative on top of that.

Theresa - why wouldn't we do this separately? Want to be able to have gis data
show up during searches (in network catalog) just like any other network data.
So want it to go thru the same or similar path as other data goes thru to be
integrated with pasta and the nis.

Adam - Had Mark in discussion. How to best utilize the current core resources.
Came up with really appropriate ways of getting our geo data into back end
systems. Geo hosting server and stuff running on top of that.

Slide 6
Maps is at a point where cannot go further without _____. Met in Colorado in

Feb. 11 sites attended. Got a lot done in a couple days. Conceptualized the geonis. broke down into key components necessary. a lot of this is in upcoming slides. Also see notes from that meeting.

Developed Best Practices for documenting spatial data. Worked on EML. Began developing BP for workflows to ingest site data into the geoNIS. Will break if shape is in zip on website... unzip, ingest shape, ... ultimately creates on the fly via a workflow to create a new service to add that shapefile into a geo something.

Slide 7 Whiteboard sketch
Slide 8 - diagram

Theresa - because pasta only takes flat files, and were not sure when pasta would be ready for geo data,... had to go ahead and mimic what it would do if in pasta, giving same output. See the red lines in slide 8. Do things to by-pass pasta until ready to take geo files.

Adam - intermediate workflows are not as simple as for tabular files. Bring in zip, unzip, check data type, ingest data into special geo database. Accommodates for projections and setup, making sure there IS a projection. Things specific to geospatial data.

There is more info than shown on this diagram.

Theresa - next slide, slide 9, is taken from DataBits article which explains, more regular diagram. Site data at left, move thru system, at right some web services and data portal. The flow.

Slide 10 - more color
Workflows ar important. What kind of value-added products can be accessible back to the sites?

Slide 11 - Theresa
Best Practices (at right) areas where want to provide guidance to sites so the data packages we get are more easily ingested.

Adam - Slide 12
Special DataBits edition in May. New contributors. (see slide)

Slide 13 - ASM Workshops
last time it was 'show them what we're doing'. New approach: discuss with them data and tools which both sites and network offer. Tools commonly used. Focusing on synthesis aspect, what is comonly avail accross sites. Regional or global datasets which not all are aware we have access to. Guage interest what we can offer thru geoNIS that would be useful to our audience. What are we overlooking? Learn what the community feels about our products.

Theresa - Spatial Analysis committee (not yet at slide 15) which Bob Waid put together will have workshop on cross-site use of lidar, biomass calculations or such.

Adam - slide 14 Training proposal
something focused on training sites and indiv how can access and use the value-added components of the geoNIS. Suggestions welcome. Want to hear from people who need more help, what you would benifit from. Let us know your needs.

Theresa - slide 14 Spatial Analysis Committee. Theresa is co-chair with no science co-chair at moment.
Workshop at ASM.

Slide 16 Coordination Efforts
Theresa - so why doing this stuff? What is the science?
Earlier 2012 the StreamChemDB group met in Corvallis. They were interested in having a geographic framework for their project. We are coordinating with them. Aaron and Jamie attended the siteDB committee workshop (virtually) because discovered some things in LTERmapS that did not work with SiteDB to reconfigure SiteDB. Also to work with mapping, specifically our LTERmapS application. We rely heavily on SiteDB so need to get it working differently.

Adam - (still slide 16)
Tried to get funds from supplement for GeoNIS development. Not set up for cross-site collab, not easy to pool. Each key player in GeoNIS asked for funds to complete one of the components of the GeoNIS. (Refer to notes from workshop.) KNZ asked for 3 months funds for a programmer to flesh out testing of workflows. The AND requested funding for updating the metadata -> EML 2.1 direct w/o the FGDC step that strips some elements. Also asked sites to request funds to travel to 1 or 2 workshops. BNZ requested 1 month of Jamie's time to work on GeoNIS.

LTER synthesis project on precipitation. Met at AND in May. Defined what would be the geoNIS data, common across N sites, not AND, HBR, SEV, CWT (not including KNZ). Model and precip uncertainty.

Slide 17
Our group is open, not exclusive. Fun meetings. Dont have to travel to be involved. We teleconference to include more participants.

Slide 18 - a map Jamie made for the Atlas which he made for Bob Waide in 2011.

Questions
Suzanne S - about atlas. Will the atlas be hosted at the LNO?
Theresa - there is a link to it on the website. All the data he used to make that will be available on the server at some point. It will be part of the background info that will be available on SiteDB. Besides this atlas, he found a lot of data people might be interested to use as background for cross-site analysis.

JamesB -
it is featured on the new website which is not released yet. Can find it under document archive under . . . atlas.

Margaret -
when looking at slides 8,9,10. In slide 8, the purple is the GeoNIS which you are working on and the gree is what comes from sites, then pasta. . .
"Site GIS Data (shape, kml, Map service)" green cylinder.
Sites have data which is spatial but is tabular. could benefit from map representation. that happens a lot at ucsb because we have researchers which use satellite data analyzed in IDL or matlab, not a GIS. Do those data just stay in pasta.

Adam -
That is effectively an ASCII file but still just a tabular file. Could make it a geo data product. Fine for pasta right now w/o any issue. Couldn't be accommodated well by pasta and useful (as geo data)? Tabular datasets that could be visualized as maps. So old that not raster or vector. Can make a workflow convert these, a transformation.

Margaret -
envisioning a system for storing and delivering data already stored in geo formats, plus workflows to convert.
Do we have among us, . . . a way of discovering all this data, to know which data is inherently spatial, whether GIS or not.

Adam 0
that is what these value-added products like LTERmapS are supposed to accomplish. Study locations. GeoNIS is back end for hosting these specific data types. Services built on top. . . if gave a bounding box asking for data within an area, would return study locations. . . a ways down the road. Ultimately one vision is to make anything with some sort of georeference available.

Margaret -
doesn't metacat already do that?

Jonathan -
this allows metacat to see data in gis formats. Tabular data already handled and visible. Adam means different data types at the attribute level, maybe ArcGIS file types, all spatial data but certain file types.

Margaret -
a dataset that has lat and lon attributes (columns) could be handled by geonis could be handled but a dataset with only site names that reference lat,lon, that cannot go into geoNIS?

Theresa -
if people follow the best practices for putting in site locations, then our applications will be able to use that data to provide more complex Gazetteers. We need to think about dealing with datasets besides shapefiles, ascii datasets that we need to develop into our workflows. Would use keywords or something in the eml to register a datasets as something wanted to be included into the GeoNIS. Associated data tables, a way of specifying the join. You reference it in the EML.

Then we will be able to automate joining the datasets.

Adam -
GeoNIS is a place for files that dont fit in pasta. Can reference tabluar file and display as spatial data w/o residing in the GeoNIS database.

Margaret -
the SBC scientists wanted a way to make our spatial data more manageable. Wanted some geo verbiage for the supplement proposal.

Suzanne -
Examples of value-added products? Search-by-location already in metacat.
Adam -
search-by-location if everything is in a front-end map app and looking at a study location, want closest rain gauge, integrated with the mapping. things that can be integrated in the ... low-level cartography, to make visual appropriate for a slide or a publication but not heavy-lifting GIS.

Theresa -
When we were at LNO fall 2011 we discussed value-added things such as type in a place and get back coordinates to put into your EML document. A sort of web-service returns coord for a site name. Or have coord and want to know the nearest place name. Standard Gazetteers allow such searches; could add for LTER, a controlled vocabulary. Another product might be select a point and have the drains-to-that-point calculated. If doing a grab-sample along a stream, get a polygon of the upstream watershed.

Adam -
just a simple service for these data, for someone using Arc. An all-lter service, a site-by-site service, instant access to all GIS layers on-screen. That is a useful product for GIS people. Things are in the cloud, don't have to store locally, even symbolized properly. Still trying to get the GeoNIS to store the data. See the notes. Our hope is this thing, if we can get it built, that we can plug in modules so becomes more and more useful.

Don -
What we were looking at with SiteDB. Value-added product such as find the nearest rain gauge. We don't have eml currently that would support that question. As modify SiteDB to accommodate SteamChemDB, register sites which show up under a module where can store extra metadata such as what gets measured at sites. Not clear that sites have time to develop to put that kind of information into that kind of SiteDB model to make that all function. If had site info in there, then ability to take advantage of a lot of that type of query or product where really looking for a particular attribute over a set of sites. We have more thinking to do on siteDB and how it connects with the spatial data.

Suzanne R -
currently if you had a system that said find these places a distance within my point, you would get places but would not know what those sites were, whether

they were climate stations, soil pit, or gauging station.

Don -
Could use SiteDB to classify sampling types at site locations. Climate module ot list climate sites. Perhaps store types of measurements. StreamChem module, Hydrology module,... each shows... connects to kinds of data. It all comes back to how we we'll do our attribute ontology, to be able to make specific queries such as give me all sites that collect precip. not enough information in the current eml.

Adam -
ultimately we can only work with what data and metadata is available to us. Some of these questions we wil bring up at ASM. Hope to get more feedback from broader community, what to focus on. Priorities for value-added products.

Suzanne R -
we have rectified air photos, preparing for web-mapping service. need a place to host these. assume geoNIS is a good place to host these. Because within the nis there is nowhere to accommodate an air photo.

Adam -
have to learn how to deal with large dataset and versioning of large datasets. should be able to accommodate those at some point.

Don -
You said you might indicate in EML that a datafile is a shapefile, not tabluar. Is there a BP so clear it is a spatial dataset, not tabular?

Theresa -
Yes that is in our Best Practices for documenting Spatial Data. Relying on and tags, with link to the data package. Still defining what is in the data package, ie a shapefile is actually 5 files so need to zip them up. will point to location of zip file. That is one of our first steps, to pull the data packets together, to ingest those data packets.

Question for Suzanne S, if KBS is developing the map service, just provide the link. LNO does not have to store.

Suzanne R -
We thought we should have the air photos on the network. Just the link is fine so no issue.

Adam -
we considered using other services from other sites within this context, relaying them via a central service.

Suzanne R -
having one central location to look for everything would be great.

Theresa -
JRN was going to be working on developing a portal for us. That is what the

portal would do. If sites have their own web services then the portal would give us a link to those. They have one developed at JRN; there is an article in DataBits. It would look similar to that, but for LTER GIS data.

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Attachment	Size
LTER_GIS_working_group_update_2012.pptx [1]	1.68 MB

- Virtual Updates [2]

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Links:
[1] http://im.lternet.edu/sites/im.lternet.edu/files/LTER_GIS_working_group_update_2012.pptx
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