State of Oregon
GIS PROGRAM LEADERS (GPL) COMMITTEE
Date: Tuesday, March 14, 2023
Time: 1:30-3:30 pm

Roll Call and Introductions

GPL Attendees:
Rachel Smith - GEO
Willow Crum - GEO
Dave Mather - GEO
Melissa Foltz - GEO
Christine Shirley - DLCD
Tonya Haddad - DLCD
Susan Millhauser - DLCD
Thom Yorke – DOR (Chair)
Phil McCellan - DOR
Randy Sounhein - DSL
Myrica McCune - INR
Diana Walker - ODA
Malavika Bishop - DEQ
Don Pettit - DEQ
Steve Timbrook - ODF
Jon Bowers - ODFW
Ariel Low - LPRO
Phil Smith - ODOT
Eric Main - OHA
Roberta Robles - SOS
Brady Callahan - OPRD
Joe Severson – OSMB (Scribe)
Bob Harmon - OWRD
Tad Larson - OWRD
Lacey Summers - ESRI
Nate Herold – NOAA

Not Present:
DHS, DOGAMI, OEM, OMD, OSFM, OWEB, ODOE

Announcements

Rachel Smith – GIS In-Action located in Portland on April 17-19th - Full three-day conference with keynotes, map gallery. $200 Full Registration. Look for announcement that was sent out by Rachel. Carpool opportunities might be possible – look for discussion at the next GPL meeting.
https://www.orurisa.org/GISinAction

OGIC Update

Rachel Smith, GEO

January meeting OGIC approved 3 new committees. Working to draft charters and get the groups established. Talk to Rachel if you have an interest in participating in a committee.

1. Data Sharing and Governance
    a. Working on processes OGIC requires to meet data sharing mandate (ORS 276A)
    b. Working with Melissa Foltz, framework coordinator, on framework program
        i. providing input on prioritizing data sets.
2. Legislative Coordination
3. Outreach and Communications

All committees are meeting twice a month - OGIC is recognizing the need to represent the GIS community and move the work of OGIC forward

OGIC Policy Advisory Committee - Looking for members that have GIS management/policy experience. Two vacancies for state agency reps. Chris Wright – ODOT and Ed Flick – DHS became OGIC members creating the vacancies. If you or you are aware of someone who has the management/policy experience let Rachel know as she is looking to fill these vacancies.

Next OGIC meeting is April 19th - GPL will provide an update.

GEO Update

Rachel Smith, GEO

GDMS project is wrapping up. Plan is to launch GEOHUB in June, a one-stop shop for GIS datasets - wrapping up testing this month. Appreciation given to the testers and feedback provided.

Working on terms of use. Goal is to move away from data sharing agreements. Draft terms of use document sending to DOJ for legal review. Reviewed multiple times by OGIC Policy Advisory Committee and Technical Advisory Committee.

Willow is leading effort to polish the content for GEOHUB. Think of this as a website for framework program and relevant materials. Finalizing now through June.

Set of volunteers established to participate in supply chain workflow documentation – this is designed to create a template for documenting various workflows of how statewide datasets are created. Hope to be done in May.

Approved for procurement of a 1-Spatial product. Plan to purchase an enterprise license. Goal is to procure the product between now and end of biennium – with a goal to start using it in July. Product is designed to review and check against OGIC approved data standards and facilitate data aggregation.

Rachel is meeting regularly with County Assessors and Department of Revenue to work towards a goal of getting rid of data sharing agreements. Goal is to produce a statewide parcel layer that is publicly available. Goal is to update this layer regularly - will use 1-Spatial. Active work by a group of assessors on this effort. Rachel will provide an update during a monthly meeting of assessors this week.

Dave Mather, GEO
Two open spots for the July ESRI user conference. 12 of 14 complimentary spots are taken. If you are interested contact Dave and he will help.

Imagery FIT Update
Brady Callahan, OPRD

Been in discussions with USDA about 2022 collection. Received some products - QC in progress. 9-10 state agencies and BLM helping with QC. Goal is to review 5% of data doing a visual assessment. Separately running a horizontal accuracy assessment.

Partnered with USDA - FPAC - same as NAIP. Farm Production and Conservation (FPAC) Business Center Flying Oregon at 60 cm. Started discussions in Sep-Nov 2021 - about partnership. Oregon bought 30cm 4 band imagery. Also acquired the statewide DSM, photogrammetrically derived point cloud and raster.

Hexagon is the vendor, money required up-front. GEO provided funds and is now collecting reimbursements. Timing has been a challenge. Confusion with specs and deliveries.

Received aerial photography - received in UTM. OPRD projected to Oregon Lambert, it was expected that the vendor would provide it in Oregon Lambert. Requesting vendor to do this projection from the source data. Issues receiving the data in a timely way. Imagery generally looks good.

Don (DEQ) - overexposed in desert area. Usual distortions with trees.

Once QC is done, imagery will be hosted – Rachel is putting together the contract. Vendor is waiting on work order to set up the hosting but has the data on hand.

Bob (OWRD) - Provides the updated Oregon NAIP nationwide image service (60 cm):
https://gis.apfo.usda.gov/arcgis/rest/services/NAIP/USDA_CONUS_PRIME/ImageServer

Brady cautions the quality and speed of the NAIP image service.

Weekly discussions with FPAC to resolve issues - hoping to have a service for the 30 cm data in April. Plan to make it available at the box site for individual tile downloads. Contributing agencies can request hard copy of data. Contact Brady.

Contract for statewide image hosting expires in June – discussions about where to go next for a vender. Hope to go with RFP in July. Hope to have this resolved in the next year. Desire to meet imagery resolution requirements and oblique imagery.

Framework Program Update
Melissa Foltz, GEO

Framework leads are working on the data inventory – leads are wrapping up these efforts. Final QC on the inventories. One goal of this is to provide baseline metrics, and to begin tracking the health of the framework program. The data inventories are important for multiple processes coming up.

Framework inventory has shown that there are data elements that have an identified need but don't yet exist. This will be a future topic at FIT lead meetings. How do we prioritize these?

OGIC Committees are beginning to set up and will provide input to the framework program.

The framework grant program when the new biennium begins. Discussions are happening, similar to previous years. Discussions about foundation vs secondary elements – do we divide these up further? Timeframe might be delayed when compared to previous years – changes may be coming about the review process for the grant program. Discussion at the next OGIC meeting in April.

Planning for the spring framework forum. 20+ people already registered. Please register ASAP, don't miss out on the free lunch.
April 13th - Columbia Gorge Museum. Register for the forum here:
https://survey123.arcgis.com/share/ed63353aa8b847ffa9455eba22b51cc0

GPL Poll

Thom provided a poll to the group asking if GPL members would like to meet in-person twice a year. Hybrid would be an option. GPL previously would meet at a different state agency each month – the hosting agency typically provided a presentation from their agency to showcase their GIS happenings.

Poll results??

NOAA Imagery Update

Nate Herold, NOAA

Provided a presentation:
Coastal Change Analysis Program (C-CAP)
Next Generation High-Resolution

Regional C-CAP Land Cover 30m

Authoritative source for land cover data within the US. Historically used landsat based imagery at 30-meter, working closely with USGS on the NLCD mapping efforts. Coordinate with other federal agencies through a MRLC (Multi Resolution Land Characteristics Consortium). Several products produced once every 5-years – and the next product based on the 2021 NLCD is coming out later this year in the Fall.

High-Resolution C-CAP Land Cover

High-Res being produced for 10 years, historically limited by high cost which has limited the geographic areas to areas like the Pacific, Caribbean or project based locations.

Over the last 2-3 years technology advances such as hardware, software, cloud storage, deep learning has made this process better, faster, and cheaper.

Old saying is pick two between fast, cheap, and good. Looking for a balance between fast and cheap. Good quality is always a priority. Many lessons learned, worked with many different companies. In a position now to put these lessons into action. Received some bi-partisan legislative funding at NOAA to

really provide a foundation to build out a high-resolution version of the C-CAP data. Developing data based on 2020-2021 imagery. 2020 in Oregon.

Long-term goal to build out an up-to-date full C-CAP 1-meter product to replace the past 30-m products.

Comparison of Resolutions
1-meter vs 30-meter provides additional detail. Higher resolution provides much improved detail to be utilized at the local and site level – where the 30-m products were not applicable. Classification details much improved for all feature types. Wetlands classification is very much improved with higher resolution. 30-m doesn't provide the needed detail. At 30-m, land changes such as erosion won't show up until the affected area is much larger.

1-m Land Cover Production Goals
Phase 1 products
CONUS impervious, tree and shrub canopy, and waterbodies in the lower 48 where it has been historically mapped: June 2023
Alaska impervious, canopy, water, and ice/snow – late summer 2023
Pacific and Caribbean updates: Fall 2023

Phase 2 data products (full C-CAP scheme land cover)
Immediate pilot project – Tampa, Florida – spring 2023
Secondary pilots (Houston, Puget, and Maine – summer 2023

Phase 3 (land cover change)
Massachusetts, New Hampshire, Puget, ***Coos County – OR***, Ohio.
Connecticut, Rhode Island, New Orleans, Charelston.

Goal to have 4–6-year update cycles for high resolution products – targeting every other NAIP year collection.

- *Buy-up price for Oregon is 250k 1-m raster dataset through NOAA.*

Upcoming High-Resolution Mapping
Refer to presentation to see a map showing high-resolution mapping areas being released in June '23
Buy-up options such as the interior areas of Oregon are available for full statewide cover (*see map in presentation*) - discounted prices are available. Ecopia *(sp?)* is the vendor.

Refer to presentation showing detail examples and specs for impervious product
Minimum mapping units (basis for work- 30cm or better imagery)

- Building – greater than 100 sq ft
- Road – greater than 8 ft wide and 100 feet long
- Railway – greater than 4 ft wide
- Pavement – greater than 400 sq ft

These categories rolled up into a single impervious 1-m product publicly available impervious product available from NOAA built into the C-CAP product.

Buy-up options are available to improve detail of existing products. Such as additional impervious detail like the 4 categories example above. Can provide up to 12 detail categories. Can be customized to map crosswalks, sidewalks, driveways, swimming pools, and turn-lanes – for example.

Improved Impervious Mapping
Deep learning vs object-based machine learning.

Deep learning provides much greater detail and doesn't need as much cleanup as object-based machine learning.

Presentation provides examples of different products like canopy.

Minimum Mapping Units (CONUS)
Tree and shrub (5-meter height threshold) – greater than 5,000 sq ft, minimum 7ft wide.

Canopy and impervious mapping is completely separate. So partial covered areas are picked up in both products. NOAA will combine these as part of the C-CAP land cover, detail is kept by having additional categories.

Presentation provides examples of different products like water.

Minimum mapping units (CONUS)
Water – greater than 5,000 square feet

Data Interoperability – conversations with States, as well as federal agencies like USFWS and the USGS. 1-m product picks up ponds and waterbodies that isn't included in the national wetlands inventory and the NHD inventories. Some of which is because the ponds are newer than those datasets originated from.

C-CAP Land Cover Categories:
Impervious, impervious under canopy, open space developed, cultivated, pasture/hay, grassland, upland forest/tree, scrub/shrub, bare land, snow/ice, palustrine forested wetland, palustrine scrub/shrub wetland, palustrine emergent wetland, estuarine forested wetland, estuarine scrub/shrub wetland, water, palustrine aquatic bed, estuarine aquatic bed.

C-CAP maps 9 categories of wetlands – NLCD condenses this down to 3.

Presentation provides examples of different products:
1-meter 2017 C-CAP vs National Wetland Inventory
1-meter 2017 C-CAP vs 30-meter 2016 C-CAP
    30 m overestimate wetland areas, much larger pixels.

Presentation provides map showing upcoming high resolution mapping areas by phase.
Note – had started work in Coos, could not finish. They will return to this area and complete with a 2021 dataset and a 2016 dataset to show change.

Comments:
Nate (NOAA) - Buy up options preferred through NOAA – for consistency and hosting options.

Eric Main (OHA) - It would be great to have the data for a heat island indicator in the EJ Mapping Tool.

> *Nate (NOAA) – This is a big application that is generating interest for both the impervious and canopy products. Talking to the American Forest Group – has a Tree Equity Score Tool – looking to incorporate the data into this tool.*
>
> *Coastal GeoTools Conference, NOAA and the association for state flood plain mappers host every other year. Landcover 101 session – City of Charleston used products to see areas that were hot, low-income, but had open areas available for tree planting. Reach out to Nate if interested in slides from this conference.*

Tonya (DLCD) - We have also have had people wonder if this product could be useful with determining proximity of structures to vegetation for Wildfire risk planning.

> *Nate (NOAA) – The NOAA product won't have structures – but the impervious details will be there. Hope to work with wildfire groups. Building footprints are a standard buy-up option.*

Rachel (GEO) - If purchased, can the buy-up 1M product be publicly available? Any restrictions on use?

> *Nate (NOAA) – Can not be used to train other AI classifiers for a period of 5 years after its production. This is to protect intellectual property rights. Vector version for feature type mapping tend to be licensed at the state agency or the municipal government level.*

Thom (DOR) – Can you expand on machine learning and AI when it comes to this dataset?

> *Nate (NOAA) – Ecopia has their own network of deep learning AI, more advanced then the machine learning technology that has been around longer. Cannot provide much more information on their process.*

Tonya (DLCD) – Wondering about how the classification determines types of wetlands when comparing NWI and Ecopia product, in particular aquatic beds.

> *Nate (NOAA) – constrained by imagery. NAIP doesn't consider tide when flying. NOAA likes to have leaf on and leaf off imagery. They will utilize low tide data. But if the imagery doesn't show the aquatic bed then they can't classify it. NOAA focus in on with comparisons on the NWI – NOAA map a simplified scheme. NOAA maps the modifiers; the aerial extents can be similar. NOAA tends to map the structural elements first. Forested, shrub, grass, or bare – and then make wetland determinations. This causes a difference because of the technology and structural distinctions separately to the wetland distinctions. A big difference is the features that might have been mapped in a combined category like estuarine/emergent shrub category in the NWI would be classified separately in the NOAA products.*

Eric Main (OHA) – If the state invests in the buy-up areas, when it comes time for the data updates would a similar investment be required to obtain the updated layer?

> *Nate (NOAA) – Most likely there would be a modified price – might be 40-50% of the last mapping cost. But this depends on a lot of factors like the area involved. Hopes to update the*

interior areas – hopes other federal agencies join this effort to help fund updating the products. NOAA focus is the coastal area products. But a buy-up for the interior portion of the state would be required.

Roberta (SOS) - In Coos, I would look at beach grass land use cover changes as it pertains to protection zones from tsunamis.

Nate (NOAA) – This is an area where the higher resolution will be helpful in providing the additional detail.

Rachel (GEO) - If folks are interested in an Oregon buy-up and can contribute $$, let me know. Our office can work on an enterprise product/buy-up.

Roundtable

Tonya (DLCD) - Updating statewide UGB layer.

Christine (DLCD) – Working on a hazard risk assessment project and would like to stay involved with GPL meetings.

Thom (DOR) - Transition to Pro, Enterprise, Parcel fabric and branched versioning. Annual aggregating of ORMAP is going on with some delays. To understand some of the delays – an example for reason of delays last year a county was hacked which slowed the data delivery. Another example this year, regular contact left the county and there was no process/knowledge internally to deliver the data which delayed the delivery. Highlights the importance of improving technology and systems with automating systems for sharing. Which can help with turnover of staff. Some counties already do this. Would like to see more frequent updates from the counties which would help improve the tax lot data.

Phil (DOR) - Spending time on legislation cycle. Working on the cadastral framework standard, hoping to have it updated for the spring FIT forum. Tech group meeting coming up to discuss OR map agreements. Updating administrative rules for OR Map.

Randy (DSL) – Working on enterprise, looking into collaborations. SQL work. Field maps work - staying busy. Increased use of GIS in the agency which keeps them busy.

Lacey (ESRI) - Reminds group to reach out to Chris and Lacey if questions arise. ESRI academy - retiring tutorials and updating new content. ArcGIS Labs – the new format starts today. Defined step by step scenario based training with a quiz at the end. Provides a certification for passing the quiz. ArcGIS Survey123 March webinar (1hr)
https://community.esri.com/t5/arcgis-survey123-events/arcgis-survey123-what-s-new-webinar-on-march-28th/ec-p/1258525#M7

Next GPL meeting will have a presentation on Experience Builder.

Diana (ODA) - Working on a GIS strategic plan. Several ODA programs are creating data with field maps - having issues working offline. Asking others if they are having issues between this year and next year when downloading data in field maps.

Randy (DSL) Choose the right tool for the right job. Asset vs status – field maps is not field GIS. Keep it simple. Consider Survey123 for asset status updates.

Brady (OPRD) - Base maps are problematic. We find the biggest issues with downloads are due to connectivity and devices having competing Wi-Fi/cell connections. Field Maps doesn't like that.

Steve (ODF) - One thing that helps the end user is prebuilt offline areas.

Steve (ODF) - Development of synthetic streams datasets is wrapping up, PFA requirements. Working on a small forestland owners' dataset, another requirement of the PFA. Field Maps project for Grant tracking of fuels mitigation, creating the spatial data to provide reporting and dashboard capabilities. ArcGIS Pro updates. 32-bit driver is not recognized. 64-bit required for using Excel add-on. Need to use .CSV in the interim.

Jon (ODFW) - Coordinating with ODF on PFA efforts, reviewing required data with contractor. Coordinating with DEQ for refining fish habitat distribution mapping. Rules require more specificity. Assisting with DEQ efforts. Continuing to prepare for transition off NHD to the 3DHP and to manage the linear referenced data. How to address issues such as modifying stream geometry.

Ariel (LPRO) - Working on three public facing interactive maps, legislative request driven. Request for business analyst infographics. How to make the maps and data available to all leg districts.

Eric (OHA) - Thanked Thom for delivery of tax lot of morrow county data. Crucial data for domestic well outreach for the lower Umatilla groundwater management area. Setting up field survey tool to collect information on domestic wells. Debating between Orion tool (FEMA) and Survey123. Attempting to get well tags in the field and exact locations of the wells.

Roberta (SOS) - 6 counties with precinct splits completed and 7 more precincts reporting, more counties need help. Received the election GIS needs assesment which was prepared in 2011. Game plan for moving forward is forming.

Brady (OPRD) - Agency downsizing centralized footprint of their office. Scanning document project, including maps as part of the downsizing. Piloting internal application for determining drone take-off and landing areas and forming rules in state parks. Working with ocean shore team for digitizing project, 100 miles of high-res aerial photography. Launch for internal survey123 hazard tree inspection form – all parks inspect their trees for hazards. Moving to ArcGIS Pro.

Joe (OSMB) – Working on reporting tools for boater examination reports (BER). Utilizing experience builder, field maps, and survey123 to create a package of tools for this. Using focused GIS mapping application to present information about boating access sites in the Yamhill River basin.

Bob (OWRD) - Nothing new, wrapping up projects for the biennium. Requesting GIS data from anyone who collects well data.