



COEUR D'ALENE TRIBE INFORMATION TECHNOLOGY

GIS Program

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GIS Program Completes Web GIS

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What is web GIS?

Web GIS is ESRI's move to a internet based software solution that will get the power of GIS into the hands of more users. It will help simplify many mapping, data collection and editing, and analysis of spatial data tasks for users who are less interested in learning the whole desktop GIS software interface than getting real work done quickly and efficiently.

Web GIS Advantage?

Unlike desktop GIS, **Web GIS** is intended for a broader audience. Using **Web GIS** is designed to be as simple as

accessing a regular website. No extensive training is necessary as with the **ArcGIS** desktop software, **ArcMap** and **ArcGIS Pro**. It is available anywhere you have a web browser whether at work or out in the world and it is platform independent. Any browser on any operating system from Windows to Linux to Apple's Mac to Android to iOS on everything from the most powerful workstation to today's smart phones.

ArcGIS Collector



This great FREE app works on the Windows 10, as well as on the iOS and Android platforms. You must have an ArcGIS organizational account like the Tribe's Portal.

With this app you can use your smartphone or tablet to collect and update information in the field, connected or disconnected! You can even capture photos and attach them to the features.

Collector's sync process pushes updates from your device to the feature service and pulls up changes that others have made. Simply collecting new data and not

caring about changes others have made? Turn on a new synch setting called "Push Only". This will then not download features or related data each time you sync. Call for more info!

Portal for ArcGIS

Portal for ArcGIS is the centerpiece of ESRI's **Web GIS** architecture. It centrally manages and organizes all GIS content from data to outside web content to maps and web apps. It allows easy sharing of this content with the ability to control who can and can not see the content. We now have a

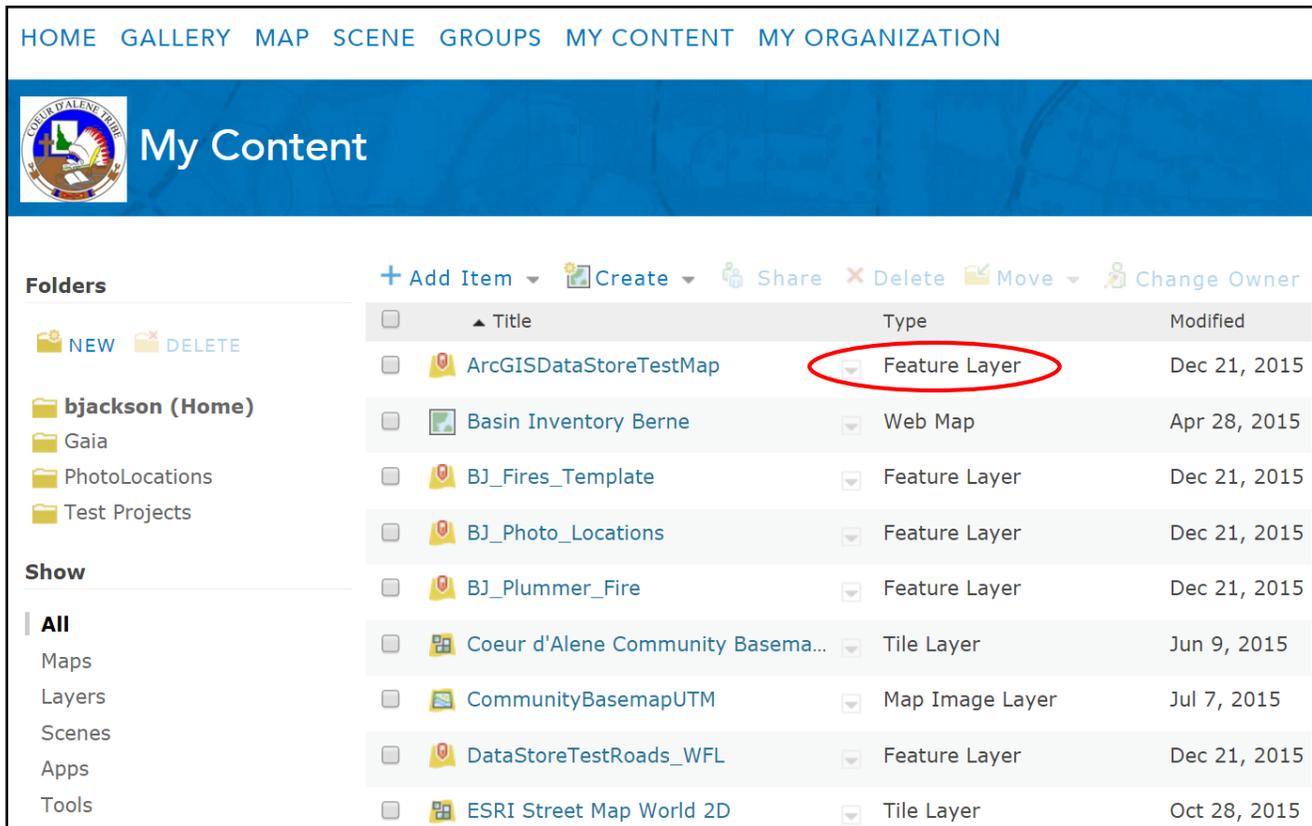


fully functioning enterprise class **Portal** site available to Tribal employees. This includes a new functionality:

ArcGIS Data Store....

Web GIS Cont'd

HOME GALLERY MAP SCENE GROUPS MY CONTENT MY ORGANIZATION



My Content

+ Add Item Create Share Delete Move Change Owner

Title	Type	Modified
ArcGISDataStoreTestMap	Feature Layer	Dec 21, 2015
Basin Inventory Berne	Web Map	Apr 28, 2015
BJ_Fires_Template	Feature Layer	Dec 21, 2015
BJ_Photo_Locations	Feature Layer	Dec 21, 2015
BJ_Plummer_Fire	Feature Layer	Dec 21, 2015
Coeur d'Alene Community Basema...	Tile Layer	Jun 9, 2015
CommunityBasemapUTM	Map Image Layer	Jul 7, 2015
DataStoreTestRoads_WFL	Feature Layer	Dec 21, 2015
ESRI Street Map World 2D	Tile Layer	Oct 28, 2015

Folders

NEW DELETE

bjackson (Home)

- Gaia
- PhotoLocations
- Test Projects

Show

All

- Maps
- Layers
- Scenes
- Apps
- Tools

ArcGIS Data Store

ArcGIS Data Store gives **Portal** the ability to have at its users disposal, an enterprise class SQL database for data storage. Its data is managed through **Portal** by its users. Adding data to your **Portal - My Contents** page will add data to **Data Store** as real ESRI **geodatabase data**. Management of this data is highly automated on the server back-end and reduces the workload of the GIS system manager. The upcoming **10.4** release will add new functionality which will complete the geodatabase management abilities of **Portal**.

Geodatabase data stored in the **Data Store** appears as **Feature Layers** in **My Content** (see the above graphic). Currently, it can only be imported from existing data like file based geodatabases, shape-files or comma delimited text. Creating data from scratch is coming in the next revision. You will be able

to add and delete attribute fields from within **Portal**. **Feature Layers** can be added to maps and web apps and their symbology is managed much as it is using **ArcMap**. Also, these **Feature Layers** are fully editable using either maps or web apps built in **Portal** or even **ArcMap**. The owner controls who can see this data by using **Portal's** built-in user security and **Groups**.

There are three short exercises that demonstrate real-world applications of using **Portal** and the **Data Store**. They are sequential and build upon skills learned in the previous task. They are the three Microsoft Word files found at, [\\gis-ims2\Training\PortalDataStoreTutorial](#) or <http://gis.cdatribe-nsn.gov/outgoing/PortalTutorials>. Feel free to use your **Portal** individual or program login and try them out.

Drones. Here to Help!

By Giovan Alcala

Love them or not, autonomous aerial vehicles (aka, drones) are currently being used in many different applications which help with many facets of everyday life. In an article by Brian Handwerk, for **National Geographic**, Handwerk looks at five different uses for a drone.

Drones can now be mounted with cameras and other types of sensors to collect data to be processed and analyzed for use in many different kinds of natural resource projects.

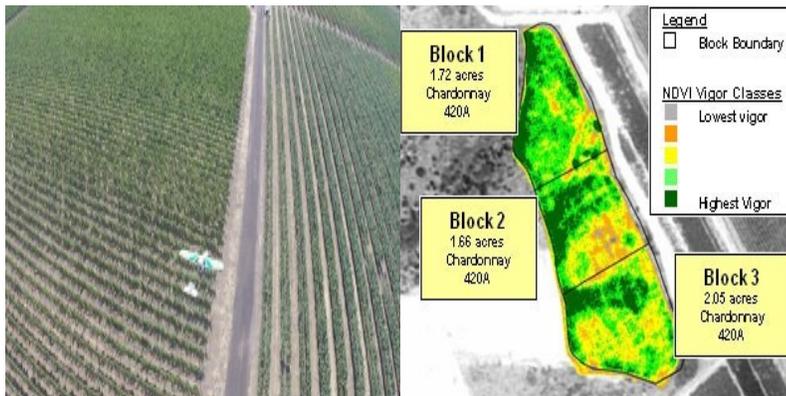


It's a Bird!

It's a Plane.....

It's a Drone?!

When looking into the field of agriculture, the website, **3DR**, published an article about a drone that can create a Normalized Difference Vegetation Index (NDVI) image which can show the growth rate and health of crops. These kinds of images can show within an individual field where growth is good or bad.



In the fire protection field, after a fire occurs, drones can be sent in for search and rescue and/or to assess damage to property without having to subject humans to environmental dangers.



Can't see through a forest or can't get through thick tall brush but need to know more about the vegetation of an area?

Send in a drone to get a better look.

Cloud cover too low to send in standard human piloted aviation with imagers? A drone works close to the ground and doesn't care about navigational visibility.

The data retrieved by drones could help just about everyone at some point in time. The list of their many uses is up to the imagination of the user. Drones are fast becoming another essential tool in the GIS utility belt.

Sources:

<http://news.nationalgeographic.com/news/2013/12/131202-drone-uav-uas-amazon-octocopter-bezos-science-aircraft- unmanned-robot/>
<https://3dr.com/drones-will-help-us-grow-better-food-wine/>
<http://www.fs.fed.us/pnw/research/fire/index.shtml>

Recent Projects

What have we been doing?

New Member on our GIS Staff

Come over and meet our newest team member, **Giovan Alcala**, aka Gio. (or, with a more fitting GIS spelling, “Geo”) He is taking over Terri’s responsibilities as our new analyst.

Gio recently moved from Southern California to Athol, Idaho, with his wife Meghan.

He is bringing a lot of great background. At college he had two fields of study: Anthropology (Physical and Archaeology) and GIS.

He is excited to get started on some of our projects and already has many great ideas.

When not making maps, he likes spending time with family, and going camping and fishing.



2015 International User Conference

In July, James Twoteeth, Berne Jackson and Sabine Krier took a trip San Diego, California to attend the 2015 International User Conference.

We were able to attend many interesting training sessions and learn about the newest technology innovations in the GIS field. Much was presented on the new and the improved mobile apps already available or being developed. Another interest we had was in learning more about the features found in a new and very powerful new ArcGIS interface called **ArcGIS Pro**. We are excited to have this software and have been using it on certain projects.



As always the conference was also a good opportunity to meet old acquaintances, make new contacts and connect faces to people we had interacted with by email, phone and/or in online workshops/conferences.



Recent Projects cont'd.

Tribal offices and phones online

Our web app to easily locate Tribal employees, find their phone number and program/department name and even email or call them directly from within the app is moving along. Sabine and Giovan will be finalizing it to be published.

If any department would like a map of their building showing escape exits, contact skrier@cdatrIBE.org.

New Server

GIS was able to purchase a new, high-end Dell server last Fall. It was virtualized as all of the Tribe's servers are now and the GIS database virtual servers migrated over to it. The older servers were re-tasked to spread out the increasing demands of the **Web GIS based Portal for ArcGIS** and its other web data server components.

Education's VDI

GIS worked closely with IT in the re-build of the Department of Education's Virtual Desktop Infrastructure (VDI) system that provides Windows desktops for their student labs. With a VDI, the actual "computer" is virtualized and run on a centralized server. The user sits at, what is known as a terminal, and this virtual Windows computer is displayed at the terminal. It looks like a regular computer, but all of the computing is all happening at the server. When Education finishes their new lab on the first floor, this system will be providing 25 of these virtual desktops. The advantage is that these 25 computers are all managed off a single Windows image thus cutting down on maintenance and updating.

Apps, maps and more

The **official Tribal wall map** was revised this Fall taking into consideration all of the new Tribal land acquisitions. It should be available in early 2016 after Legal's vetting.

There was a major **data reorganization** during the summer to bring our GIS data structure into the standards set by ESRI. The change was designed to reduce the number of connections to our SQL Server database server when connections to data within Feature Datasets were used. As usual when we have a major data structure change, it caused some pain. We thank our users for their patience during that transition.

GIS completed the first round of as-built data from the **Fiber to the Home** Project in late Summer and began some initial field trothing of the data provided by the fiber installers.

GIS's new analyst has been working on a new **geoprocessing tool** (beta stages) to allow an end user the ability to place a tower at any point in the reservation. The result is a line-of-sight analysis displaying which residences are within the Wi-Fi signal area and which are not. Hopefully this tool can help with determining how to reach individuals that do not have Fiber or Wi-Fi at this point.

GIS worked with the Forestry Department to create **maps** and tables assisting with forest management record-keeping, data analysis and planning. The Fuels program's geospatial data is being formatted and submitted to the National Fire Plan Operations and Reporting System (NFPORS). Fire is creating a management plan integrating maps produced by GIS. Similarly, a wall map for the reservation area was created for the Tribal Police Department's use. We have also produced maps as booklets or an atlas for various Tribal departments like Fire, Pesticides and the Police. On just under 40 pages these show the Reservation area broke up by Public Land Survey System (PLSS) sections and the four individual municipal zones zoomed in for better detail.

GIS News, Tips and Tools

ArcMap Upgrade to 10.3.1 – Helpful Features

ESRI's ArcMap 10.3.1 includes new products, improved functionality, and stability improvements.

Unless you have this update installed, you cannot access data by using the **layer files** we stored for all users. These make creating maps and managing your layers a little easier.

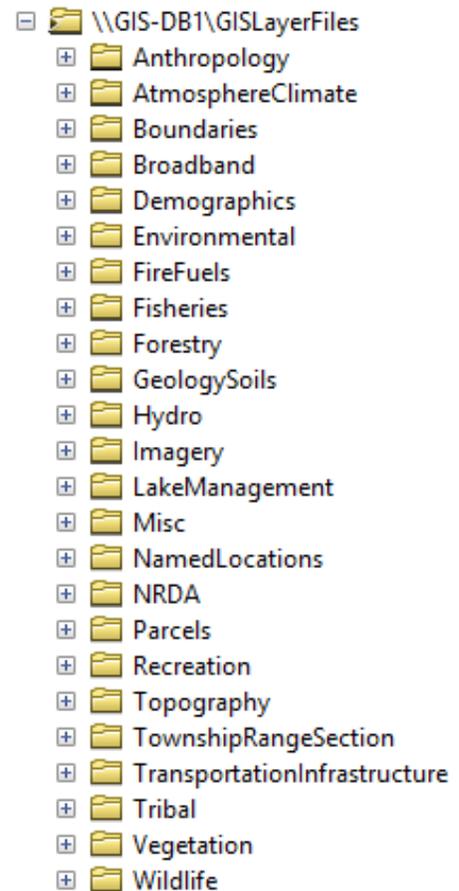
We have already upgraded some workstations and are planning to **upgrade everyone to 10.3.1** in the near future. Please contact us if you would like the upgrade now.

Layer Files – Sweet Deal!

We store data connections in another more logical way rather than trying to locate them directly in **Database Connections**. Create a “New Folder Connection” by typing: [\\GIS-db1\GISLayerFiles](#). This is where you will find the **Layer Files**.

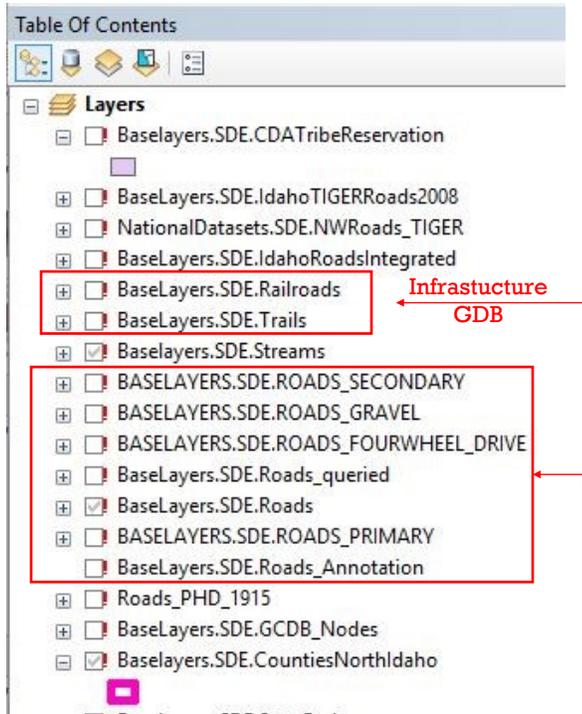
There are many advantages using Layer Files:

- Layer Files can be dragged and dropped from ArcCatalog, just like before.
- Layer Files contain not only the connection information, but also symbology and other formatting information for that database layer.
- Layer Files come into your project with a very basic default symbology, but you can change that.
- Layer Files to which you made changes within ArcMap could be used by others as a better default symbology. Right-click on it in your Table of Contents and Save as a Layer File. You can send that file to someone in GIS for review and then it can replace the existing one in our folders, thus saving people a lot of time symbolizing it every time they add that layer to a new project.
- Layer Files can be stored multiple times for the same data, so there can be one for each purpose.



GIS News, Tips and Tools

ArcMap Disconnection – Do what?



Oh no!

Last August we sent out information on how to fix this. It can get tedious and frustrating. But eventually data management and map manipulation will be simpler.

Please refer to **detailed instructions** for fixing this problem here:

<\\gis-ims2\Training\CDA Tribe GIS Enterprise ArcSDE Geodatabase Reconfiguration.docx>

<\\gis-ims2\Training\CDA Tribe GIS Enterprise ArcSDE Geodatabase Reconfiguration - Views.docx>

<\\gis-ims2\Training\Fix ArcMap Tribal Ownership View in Existing Projects.docx>

Should you have any questions or problems, please do not hesitate to contact

the GIS Help Desk @ 686-1279

or email: jtwoteeth@cdatribe-nsn.gov

Here are some tips:

For Feature Classes:

1. Create a New Folder Connection in



by typing:

"\\GIS-DB1\GISDatabaseConnections", the location of the new connections.

2. Now EITHER **Set Data Source...** under the **Source** tab in the layer's **properties**

TIP: Double-click the layer in the Table of Contents to access the layer's properties.

OR you can right-click on the broken layer and choose **Data > Repair Data Source**.

TIP: In order to avoid switching back and forth between databases, do all of the layers from one database at a time, regardless of what order they are in the Table of Contents.

For Views this procedure changes and can be more complicated. (To determine whether the layer is a view: Under the Properties > Source tab = you see "Change Query") Refer to detailed instructions. (see link on left) Or....

.... an easy **ALTERNATIVE** is to bring this layer into your map again. Then just **match the symbology** from your existing disconnected layer.

TIP for Matching Symbology:

In Properties>Symbology tab of your new connected layer click **Import...**. In the dropdown menu for "Layer" find your matching (disconnected) layer. This will match the symbols as you like them.

Once satisfied, just delete the disconnected layer from your map project.

Contact us:

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GIS Help Desk System

The GIS Program has implemented “Track-It” workflow system to help manage and document GIS work and data requests. Briefly, all requests will formulate at the Help Desk, and if the GIS Technician is able to assist, they will do so; however, if they are unable to assist an email will be sent to the GIS Manager, who will then assign the work to other GIS staff based on the work requests level of complexity.

Please contact us with any questions or comments. If you have any GIS user questions for the next newsletter’s “Tips and Tools” section, please submit them.

GIS Program websites:

Internal: <http://intranet/Pages/GIS.aspx>

External: <http://gis.cdatribe-nsn.gov/>

GIS Trivia Quiz

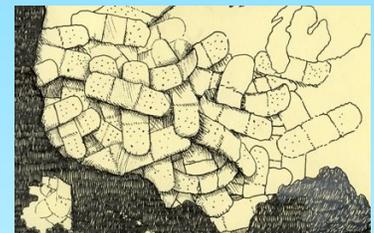
What do you call a map to Alcatraz?



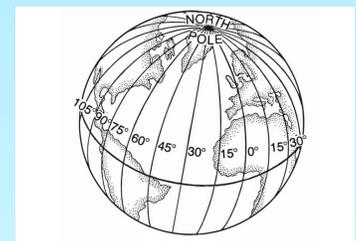
What is the tidiest element on a map?



Why did the cartographer put a band-aid on the map?



Why was longitude boiling mad?



- A con-tour map
- The neckline
- Because it had a bleeding edge
- Because it was 360 degrees

Trivia Quiz answers: