

# Confluence 2020:

## Mapping Your Watershed Online

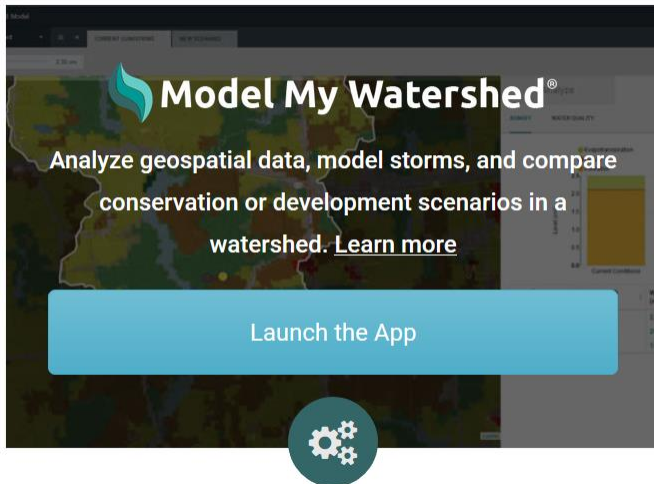
Dr. Chris Kodani, Clayton State University

### Part 1: WikiWatershed

#### Go to Stroud's WikiWatershed

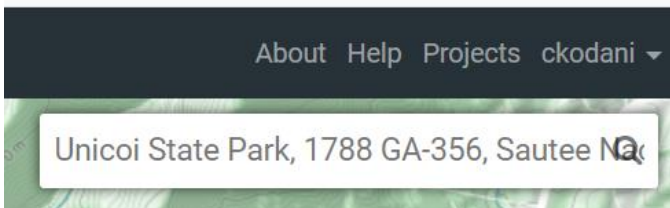
<https://wikiwatershed.org/>

#### Click on Model My Watershed



#### Search for Unicoi State Park

Look for the search box in the upper right corner. If you type "Unicoi State", it will autogenerate the rest for you. Pick the one in Georgia!



Then, once in, click "Get Started" on the left, and choose "Delineate Watershed".

### Part 2: Sign up for ArcGIS Online and Join Our Group

#### Get a Free Public Account

To gain access to ArcGIS Online, sign up for a free "Public Account" at

<https://www.arcgis.com/home/createaccount.html>

This should be totally free (do not give them any credit card numbers or stuff like that).

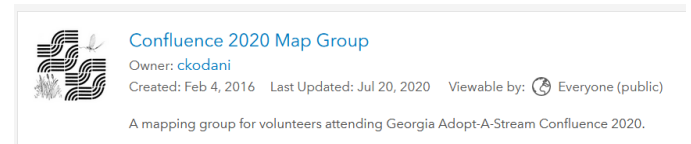
#### Join Our Group in ArgGIS Online

Once you have obtained your free Public Account from ESRI, you'll be able to join a group that I've made for our class. Once in our group, you can see our Web Map. Web Maps can be edited, saved, and even shared with others within the group.

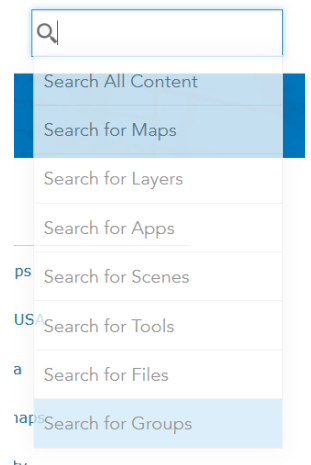
From the main menu at the top of the page, choose the tab **Groups**. It might look like this.

ArcGIS Features Plans Gallery Map Scene Groups My Content

Ask to join this group:

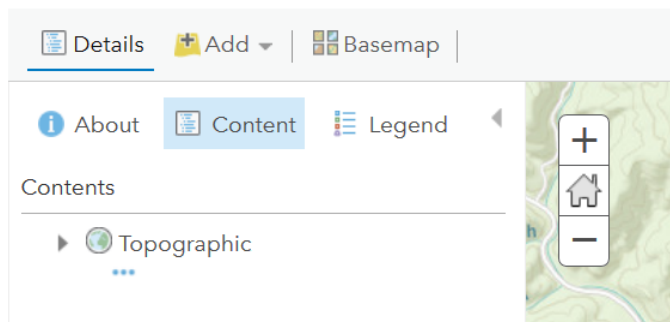


To do this, you'll have to search for our group using the search box in the upper left of your screen. Type in "Confluence 2020 Map Group". Once you have asked to get in, I can grant you access. Alternatively, if you edit your **Profile** to include a statement about "I'm a member of Georgia Adopt-A-Stream" in your **Bio**, then I can easily search for you, and invite you that way.



### Part 3: Make a Map & Share It

In this lesson, you will make your own map, edit it, and share it with the members of our Group (Confluence 2020 Map Group). You should be able to find our Unicoi Starting Map, but if you can't, try this address <http://arcg.is/1nCPDf>

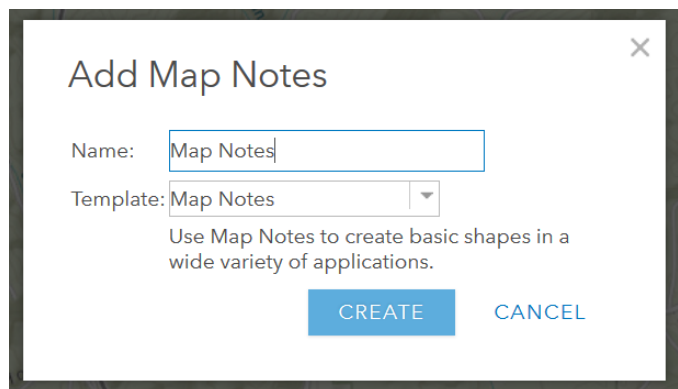


### Save Your Map

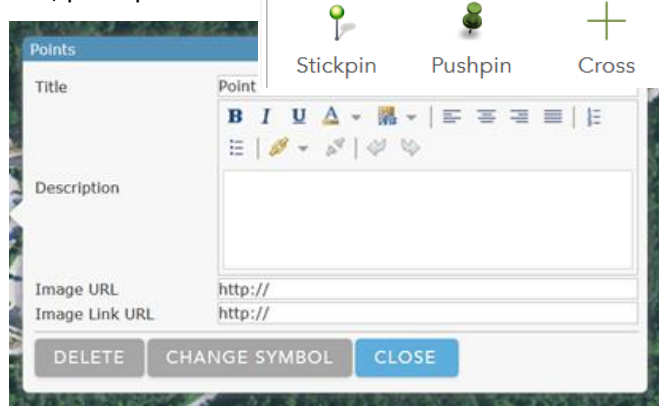
1. The first thing you should do is to save your map. I want you to save it as YourNameConfluenceMap, where YourName = your name! This will enable you to edit your map, and easily share your map with the rest of our group.

2. The base layer for this particular map doesn't have a label for Unicoi State Park Lodge. I want you to add a note for Unicoi to your map, but to do that, you must first add a new layer as a Map Note.

Using the **Add** drop down menu, add an item called **Map Notes**. In the dialogue box for Name, change the name to "Unicoi Map Notes", and then click **Create**.



3. Using the Add Features dialogue box, put a point



feature on the Unicoi layer by clicking on the pushpin. We will name this feature the "Unicoi State Park Lodge". Because this green pushpin won't show up well on our map, we'll change it to a bright red dot using the **Change Symbol** button.

When you're done making changes, save your map (it should already be called "YourNameConfluenceMap"), and using the share button, share it with our entire group (set your check boxes as shown below). When you share your map with the group, be sure to scroll all the way down in the Share dialogue, and click on the blue "Done" button.

### Share

Choose who can view this map.

Your map is currently shared with these people.

☒ Everyone (public)

☒ Members of these groups:

- ☒ Confluence 2020 Map Group
- ☐ CSU Butterfly Gardens
- ☐ Ecology Fall 2019 Map Group
- ☐ MSP 2017 Mapping Group
- ☐ Southeastern EEA Mapping Group
- ☐ The Lunchtime Watershed Mapping Group

Link to this map

<http://arcg.is/XDrLr>

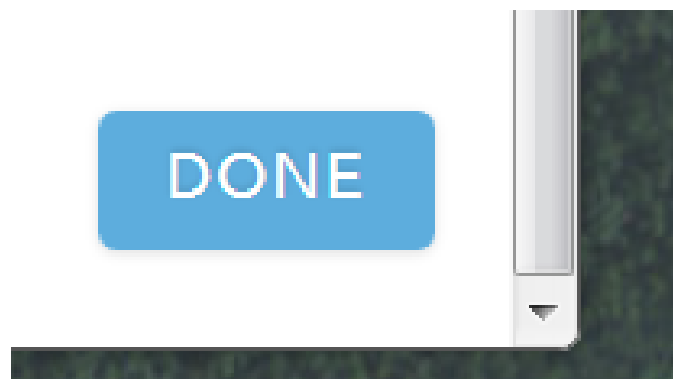
 Facebook

☒ Share current map extent

Embed this map

EMBED IN WEBSITE

CREATE A WEB APP



## Part 4: Mapping Your Watershed

In this lesson, you will make your own map, edit it, and share it with the members of our Group (Confluence 2019 Map Group). You should be able to find our Unicoi Starting Map map, but if you can't, try this address <http://arcg.is/1nCPDf>

Let's review what we've learned!

- You have a map, called "YourNameConfluenceMap".
- Your map already has a layer called "Unicoi Map Notes".
- You learned how to add point features to your layer.

In this lesson, you'll learn how to draw your watershed on your map.

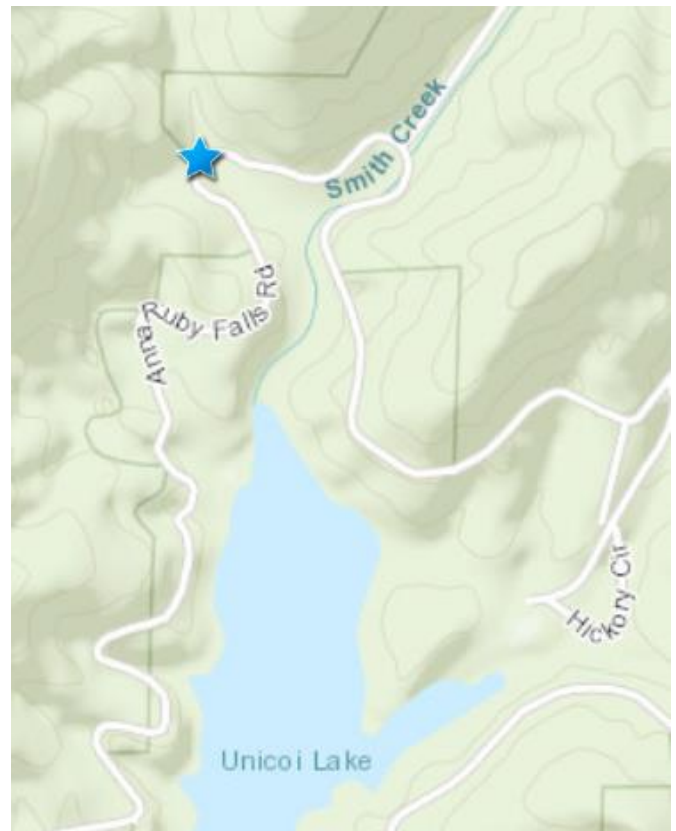
### Changing the Base Layer

Although using aerial imagery as a base layer allows us to see a picture of our area, that's not what we need for drawing our watershed. Instead of using **Imagery**, we need to change our **Basemap** to **Topographic** (also try **USA Topo Maps**). Click on the **Basemap** icon and make the appropriate change.



### Drawing the Creek

Inside the park, on the northwestern edge of the lake, there is a tiny creek, so small that it does not show up on the topo map, like many of the creeks that we monitor. Very often, topo maps only have the major creeks. Our tiny creek, which isn't on the topo layer, feeds into Smith Creek and Unicoi Lake, which we *can* see on the topo map. For convenience, we'll just call this branch "Tiny Creek". Click on the **Edit** icon, and then add a Point Feature on this creek which you can change to a bright blue star. This will be our watershed's pour point, and it's where we would do our monitoring. The pour point helps define the watershed.

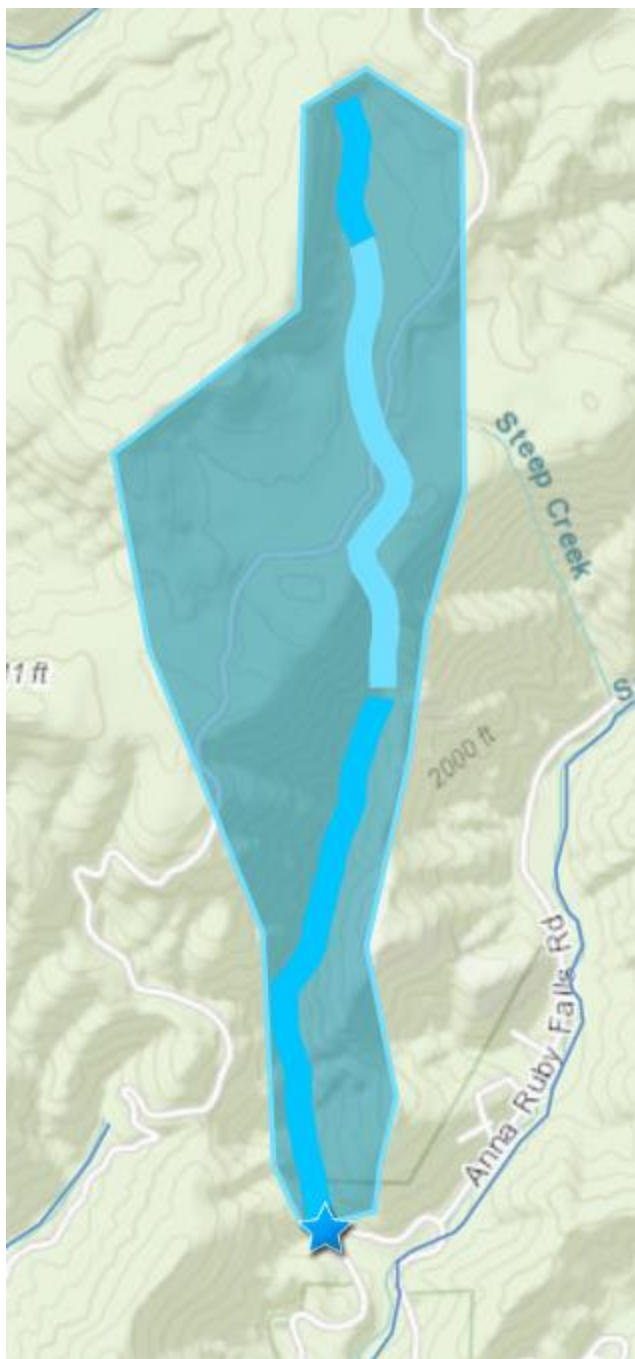


If you know how to read topo maps, then you'll see that our little creek runs north to south (Cibola Search and Rescue has a great guide to topo maps at [http://www.cibolasar.org/minilessons/nav\\_lesson/land\\_nav.shtml](http://www.cibolasar.org/minilessons/nav_lesson/land_nav.shtml)). Add that unseen stream reach to your map, using the **Freehand Line** tool, changing it to a blue color. Make it **WIDE** so that you can see it!

The upper reaches of our creek may be dry, and may only be wet during rain events, but that's ok, because we're only using the blue lines to help us see our watershed. All of the water that falls on the hills in our watershed flows down these little valleys and down to our pour point. Remember, the pour point is one of the points that defines the watershed, and it is the watershed's lowest point. When we sample at our monitoring site (pour point), then we are getting water from all the upstream, uphill areas.

### Drawing the Watershed

Look around the two branches of our tiny creek, and you'll notice several high points. They might be peaks represented by circles on the topo map, or ridges represented by parallel U shapes. You can use the **Area** tool to add a polygon shape that encircles the tiny creek, and connects all the high points and the pour point.



### **Dr. Kodani's Adopt-A-Stream Publications**

Kodani, Christopher H. (2018) "Impervious Surface and Macroinvertebrates in the South Atlanta Metropolitan Area," Georgia Journal of Science, Vol. 76, No. 2, Article 1. Available at:

<https://digitalcommons.gaacademy.org/gjs/vol76/iss2/1>

Stahley, Anne and Kodani, Christopher H. (2011) "Assessing Small Streams in the Upper Ocmulgee Watershed Using the Georgia Adopt-a-Stream Macroinvertebrate Monitoring Protocols," Georgia Journal of Science, Vol. 69, No. 2, Article 6.

Available at:

<https://digitalcommons.gaacademy.org/gjs/vol69/iss2/6>

When you are finished, be sure to save your map. Your newly delineated watershed will now be available for our group to see!

### **Want More?**

A Free Public Account with ArcGIS Online is fun, easy, and free. We can use it to make maps, manually draw watersheds, and share them with others. Keep in mind, however, another, more powerful type of account enables the user to AUTOMATICALLY draw a watershed, in just seconds!!! If you would like Georgia Adopt-A-Stream to try to procure this kind of account for our volunteers in the future, please let me know.