Environmental Education Resources: GIS App Information
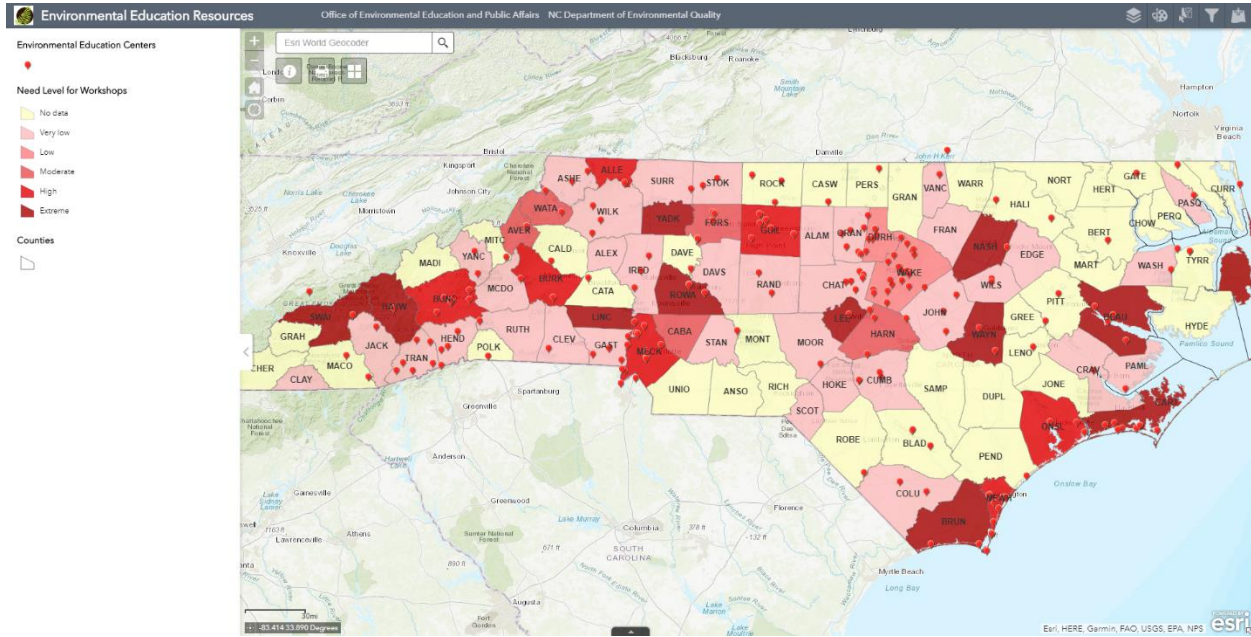

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How to Use

This app of North Carolina helps you find environmental education resources across the state and locate areas to explore around your home, school, or work. The application provides information on environmental education resources in North Carolina that can be utilized in developing programs, locating areas for outreach, or places to complete your North Carolina Environmental Education Certification.

The app has information for public schools and private schools; colleges and universities; and day-care centers. It also gives locations of parks, game lands, public lands, and managed lands. The application has specific information on environmental education centers, county-level needs for environmental education workshops, and locations of public libraries. This information can be found by turning layers on and off; selecting layers and items; searching for locations; and utilizing widgets in the app.

A Way to Begin Utilizing the App

A good way to start using this app is with a question. For example, what is the state of environmental education (EE) in Chatham county? You might start to answer this by looking at the number of EE centers, the ratio of certified educators, and the need level for EE. The first step is turning these layers on. You can click on Chatham county and explore the data. Zooming in, you can see the number of EE centers. Clicking each one, you can learn more about them and begin to answer your question.

All About Layers

What is a Layer?

Think of a layer like a piece of wax paper with shapes drawn on it. Only these shapes (points, lines, or polygons) represent things like the North Pole, rivers, and state parks. Layers do not have much meaning by themselves; they must be placed in context (i.e., on a basemap).

If you click on a feature in a layer, a pop-up will appear with more information about that feature.

Layers in this App:

- EE Centers: Point location of environmental education centers in NC. Links to websites in pop-up.
- Public Libraries: Location of public libraries in NC.
- Public Schools: Location of public schools in NC. Size, grade level, and more in pop-up.
- Non-Public Schools: Location of non-public (e.g., private, religious) schools in NC. Size, grade level, and more in pop-up.
- Day Care Centers: Location of day-care centers in NC. Rating and more in pop-up.
- Colleges and Universities: Location of colleges and universities in NC. Size, type, and more (e.g., technical colleges, universities) in pop-up.
- *Ratio of Certified Educators to Population:* Ratio of certified educator per 100,000 people in county provided. Ranges from 0 to 124. Number of certified environmental educators by county.
- *Need Level for Workshops:* Need level for workshops by county. Based upon answers to a survey completed by certified environmental educators. Ranges from extreme need to very low need. Counties with no available information on need level are labeled "no data."
- *Gamelands:* Gamelands in NC.
- *Managed Areas*: Managed areas in NC, range from private to federal.
- Counties: Location and size of North Carolina counties.
- APNEP River Basins: Boundaries of APNEP River Basins in North Carolina and Virginia.

*More detail given in following section

Need Level for Workshops

Data compiled from a survey of 217 certified educators from 2013-2017. Educators opted to take the survey on completion of their certification.

Legend

- No data
- Very low
- Low
- Moderate
- High
- Extreme

> No data: No certified educators in this county that completed survey
>
> Very low: Certified educators did complete survey, 0% said they needed more/closer workshops or training
>
> Low: Certified educators did complete survey, 10-12% said they needed more/closer workshops or training
>
> Moderate: Certified educators did complete survey, 25-33% said they needed more/closer workshops or training
>
> High: Certified educators did complete survey, 50% said they needed more/closer workshops or training
>
> Extreme: Certified educators did complete survey, 100% said they needed more/closer workshops or training

Ratio of Certified Educators to Population

Data compiled from data on all certified educators enrolled in the N.C. environmental education certification program in January 2018.

Legend

Certified Educator per 100,000 People in County

27-62

17-27

9-17

4-9

1-4

0

27-62: 27 to 62 educators per 100,000 people in the county

17-27: 17 to 27 educators per 100,000 people in the county

9-17: 9 to 17 educators per 100,000 people in the county

4-9: 4 to 9 educators per 100,000 people in the county

1-4: 1 to 4 educators per 100,000 people in the county

0: No educators in the county

Gamelands

The primary purpose of game lands is the conservation of North Carolina wildlife species and the provision of public hunting, trapping and fishing opportunities. Game lands are important players in the preservation of rare, threatened and endangered species.

The game lands also provide broad expanses of public recreational opportunities. N.C. has more acreage of managed game lands than all states east of the Mississippi, with the exceptions of Florida and Michigan, both of which include lake and ocean frontage as managed land. According to the outdoor recreation industry, over $3.3 billion is spent annually on wildlife related recreation in N.C. alone.

Note: Entry on game lands for purposes other than hunting, trapping and fishing is subject to the control of the landowners.

Legend

Gamelands (zoom in to view)

Type: What kind of game land is this?

- Black Bear Sanctuary
- Game Land
- Restricted Firearms Zone
- Special Regulations
- Waterfowl Impoundment
- Archery Zone
- CURE Area
- Field Trials Grounds
- Restricted Deer Hunting Zone
- Restricted Zone
- Safety Zone
- Wildlife Refuge

Managed Areas

The Natural Heritage Program maintains GIS data on conservation lands throughout North Carolina. These "Managed Areas" are a diverse collection of properties and easements where conservation of biodiversity and ecosystem function are among the goals of the land management programs.

Legend (Category and Ownership combined)

Registered Heritage Area

Dedicated Nature Preserve

Easement

Other Protection

State Ownership

Private Ownership

Local Government

Federal Ownership

Registered Heritage Area: Areas with occurrences of rare plants, animals, natural communities, and animal assemblages

Dedicated Nature Preserve: Private and publicly own natural areas with a lasting conservation commitment

Easement: A legal land preservation agreement like a land trust

Other Protection: Unknown, leases, agreement, etc.

State Ownership: N.C. owns property

Private Ownership: Private company, etc. owns property

Local Government: County, city, etc. owns property

Federal Ownership: U.S. Government owns property

Category: What is the protected mechanism for this property?

- Fee: Fee simple ownership (i.e., absolute title to the land, free of any other claims against the title)
- Easement: A legally enforceable land preservation agreement between a landowner and government agency or qualified land protection organization (i.e., land trust)
- Other: Mixed protection, leases, agreements, etc.
- Unknown: Mechanism is not known

Ownership: Who owns this property?

- Federal: The Government of the U.S.A. owns the property
- Local Government: A local government entity (e.g., county, city) owns the property
- Private: A private individual or organization owns the property
- State: State of North Carolina owns the property

All About Widgets

What is a Widget?

Widgets are tools that help you explore the app. They can be as simple as an "About" button to learn about the application or as complex as a "Filter" tool that sorts what data you see on the map. Widgets can be turned on or off within the app. They allow you to better understand and utilize the app than simply viewing alone.

Widgets in App:

- About: Learn about the application.

- Print: Print a screenshot of the app.

- Basemap Gallery: Change the basemap (e.g., topographic, imagery).

- *Layer List:* Turn layers on or off. Access the attribute table for the layer.

- *Draw:* Draw on the map.

- *Select:* Select a rectangle of features on the map.

- *Filter:* Apply filters to see specific data.

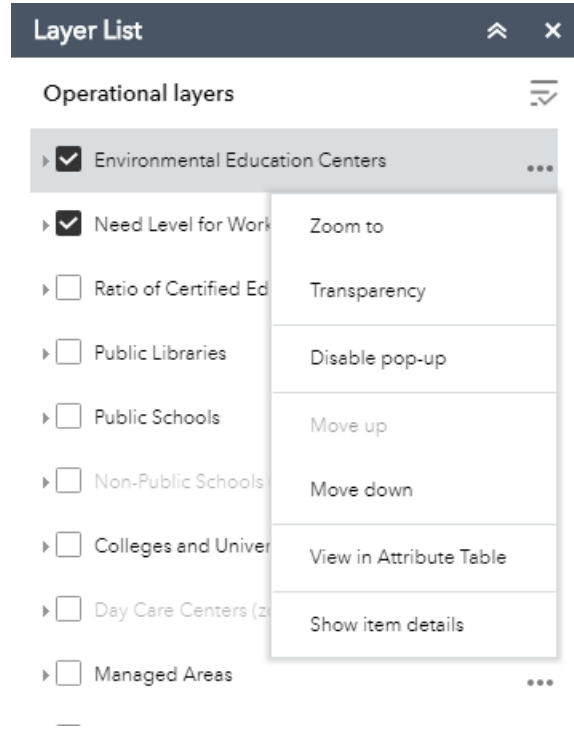- Add Data: Add your own data to the app from your computer, AGOL, or the internet.

More details provided in following sections

Layer List

This widget gives a list of all layers for the app. The checked boxes are "on" (currently visible on the app). To learn more about a layer, click the three dots to the right of the name. This will give a drop-down menu where you can zoom to the layer, change the transparency of the layer, disable the pop-up (aka – when you click on the layer, nothing will come up about it), move the layer up or down (This changes the visibility of the layer. Again, think of a cake, the icing is what you see first because it is on top, other layers underneath are not visible), view in attribute table (see more below), and show item details (takes you to the layers page with metadata, etc.).

Selecting "***View in Attribute Table***" allows you to view the data in another format. The visual data you see on the map (colors, shapes, etc.) comes from a table (the attribute table). This table has information about the layer beyond what you see on the map (side note: this is the same table that the data you see when you click on a layer comes from). For the layer about "Counties" for instance, you may only see the outline of the counties on the map. In the attribute table, you see the county names, area, and population

Important note: The attribute table is normally set to ONLY shows the items you have selected or can see on the map (i.e., Filter by map extent)! If you are zoomed in, you may not see all of the features in the attribute table.
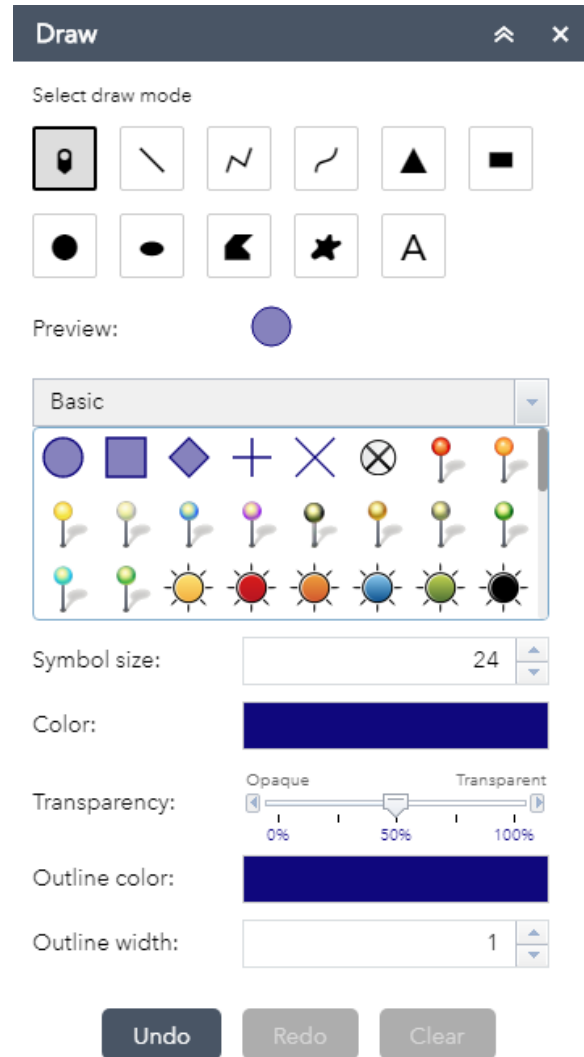
Draw

Use the Draw widget to draw lines and shapes on the app. You can also place text on the app. You can change the symbol type, color, transparency, and size. Features made in Draw will remain on the map regardless if you move the map, zoom in/out, etc. Additionally, the drawn features will appear on the map if you want to print. Select "clear" to get rid of all drawn features.

Note: You can not selectively erase features! There is an "undo" button to get rid of immediate features.

This tool can be highly useful for educators and students as they interact with the map.

Select

Select	⌃ ✕

⊞ Select		▨ Clear

Layer	⩢
☑ Environmental Education Centers	0 •••
☑ Need Level for Workshops	0 •••
☑ Ratio of Certified Educators to Popul...	0 •••
☑ Public Libraries	0 •••
☑ Public Schools	0 •••
☑ Non-Public Schools (zoom in to view)	0 •••
☑ Colleges and Universities	0 •••
☑ Day Care Centers (zoom in to view)	0 •••
☑ Managed Areas	0 •••
☑ Gamelands (zoom in to view)	0 •••
☑ Counties	0 •••
☑ Albemarle-Pamlico National Estuary ...	0 •••

The Select widget allows you to select all features in all layers in a specific rectangular area at once. The layers that are grayed out in the list are NOT turned on and, therefore, are not available to be selected. Similarly, the layers that are black but the box is not checked are also not available to be selected. When you select a region, all features that are on and checked will be selected. The number of items selected in that layer will appear to the right of the layer name.

To learn more about the selected items in each layer, click the three dots to the right of the layer name and number. This allows you to: zoom to the selected features, pan to the features, flash the select features in different colors, show statistics for a feature layer attribute, create a new layer from the selected items, view selected features in attribute table, or clear the selection.

Remember, in order to select more items, you must first clear your selection!

Tip: This widget works best when you are zoomed-in!

Filter

The Filter widget is utilized to visualize specific data. The widget will filter out data in the layer that does not apply to what you want to see. For example, the "public high school filter" only shows the high schools in the Public Schools layer (and attribute table).

To see the Filters in the widget, make sure the layers that the filter correspond with are turned on.

Filters and corresponding layers:

- Example: Filter → Layer
- Areas Managed for Biodiversity → Managed Areas
- Public High Schools → Public Schools
- Public Elementary Schools → Public Schools
- Public Middle Schools → Public Schools
- State Parks → Managed Areas