

# BioFinder™ 4.0 Tips and Tools



## Getting Started

Launch the [BioFinder 4.0](#) mapping tool, and click the button on the lefthand menu to begin:

[Click Here To Begin](#)

The Layers Menu on the left lists all datasets available for display.



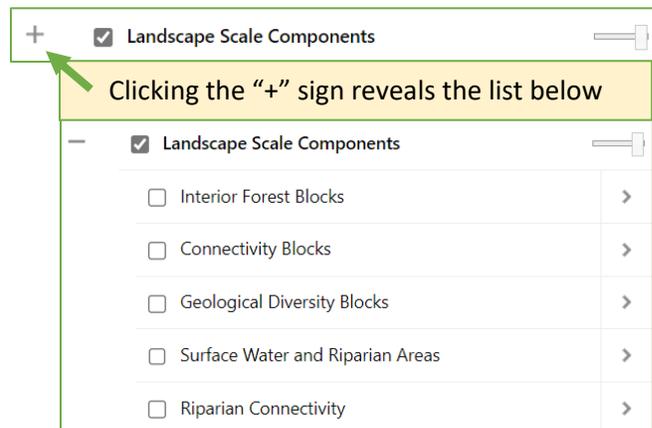
A map of Vermont is shown on the right.

You can build a map to suit your needs by clicking the checkbox next to each layer name to turn that layer on or off. A “√” will appear next to all layers displayed on the map.

Species and Community Scale

Click here

In some cases, several layers are listed together under a common heading. Click the “+” to display all layers; click the “-” to collapse the list. The box next to the heading turns on or off all associated layers that have been checked.





You can also zoom in using the zoom tool on the map. The bookmarks tool appears below the zoom tools; click the book symbol to bookmark a location you might revisit later.

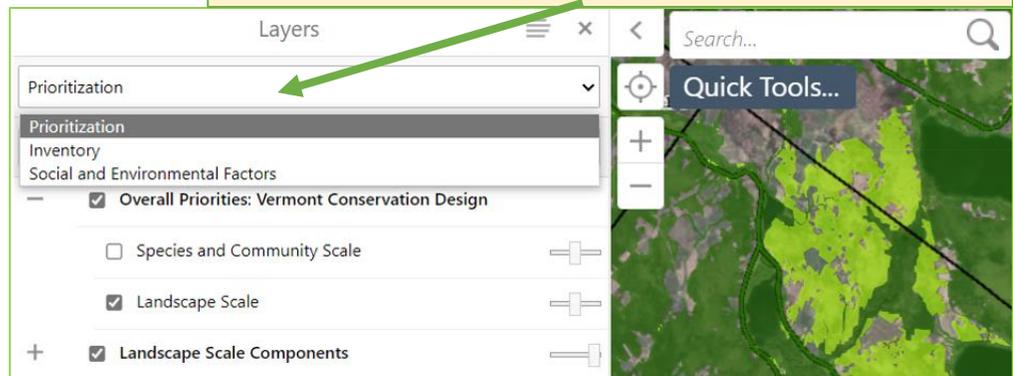
To zoom in, click the “+” sign on the map, beneath the Quick Tools menu

## Changing the Theme

The theme allows you to switch between raw inventory information and prioritized map layers.

BioFinder categorizes information into several *themes*, each with a different list of map layers. The default theme *Prioritization* appears when you open the map tool.

To change themes, click this box. You can select “Prioritization,” “Inventory,” or “Social and Environmental Factors”



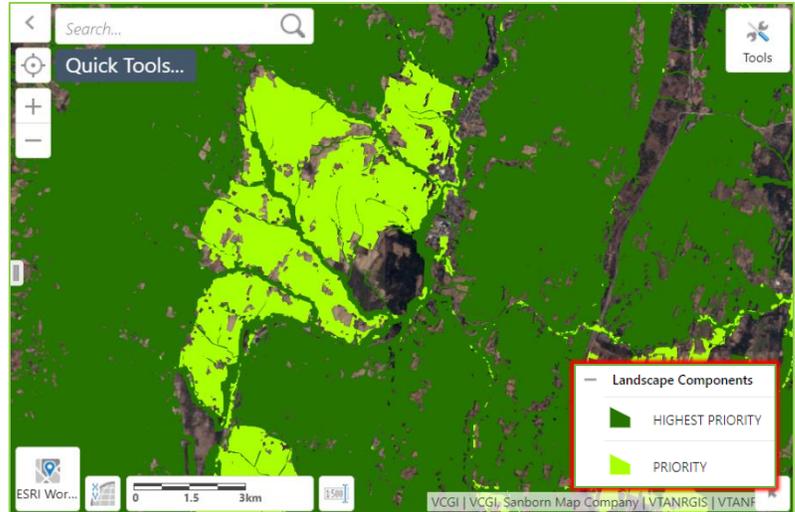
## Prioritization Theme

*Highlights the locations of highest ecological importance.*

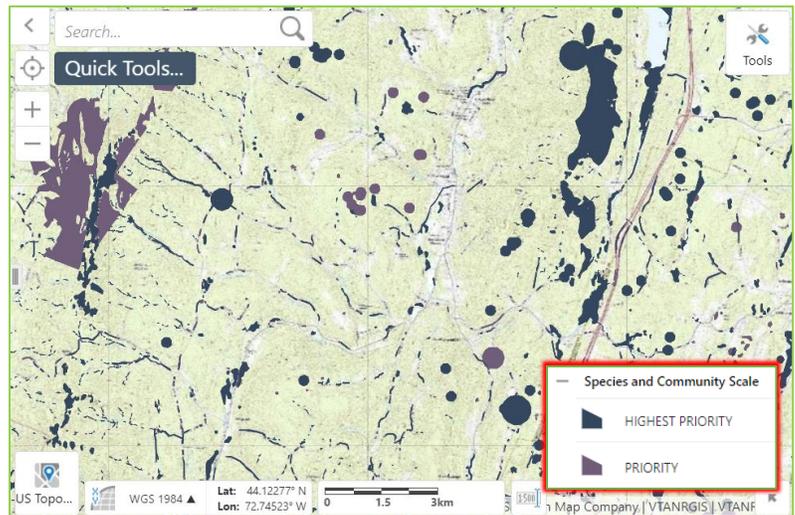
The “Prioritization” theme identifies ecological priorities based on their contribution to **ecological function** — the ability of habitats, plants, and animals to interact as needed to thrive, reproduce, migrate, and move, even as the climate changes.

This theme considers components at two scales — the Landscape Scale (large blocks of forest, water networks, *etc.*), and the “Species and Community” scale (individual wetlands, wildlife road crossings, vernal pools, *etc.*)

*Overall Priorities: Vermont Conservation Design — Landscape Scale* priorities include the forest networks, waterways, and physical landforms that provide habitat to *most* Vermont species. This map lumps all landscape components together to provide a single dataset of overall priorities.

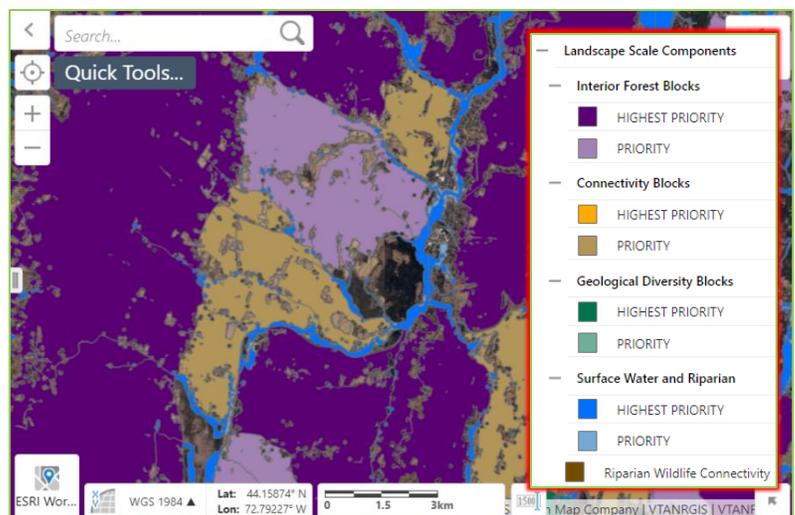


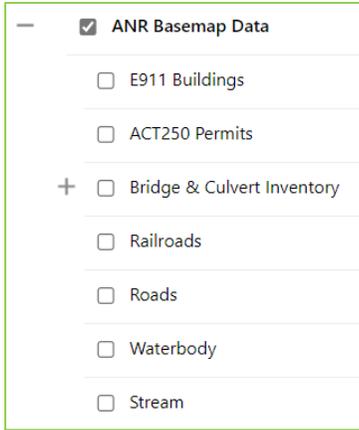
*Overall Priorities: Vermont Conservation Design — Species and Community Scale* priorities are important to individual species or groups of species with known conservation value in Vermont. These habitats are smaller in size but equally important. This layer includes habitat for rare species, vernal pools, locations where wildlife are most likely to cross roads, and more.



**Component Layers:** You can also see the components of the overall priority layers above individually. Click the “+” next to “Species and Community Scale Components” or “Landscape Scale Components” to see the full list of components.

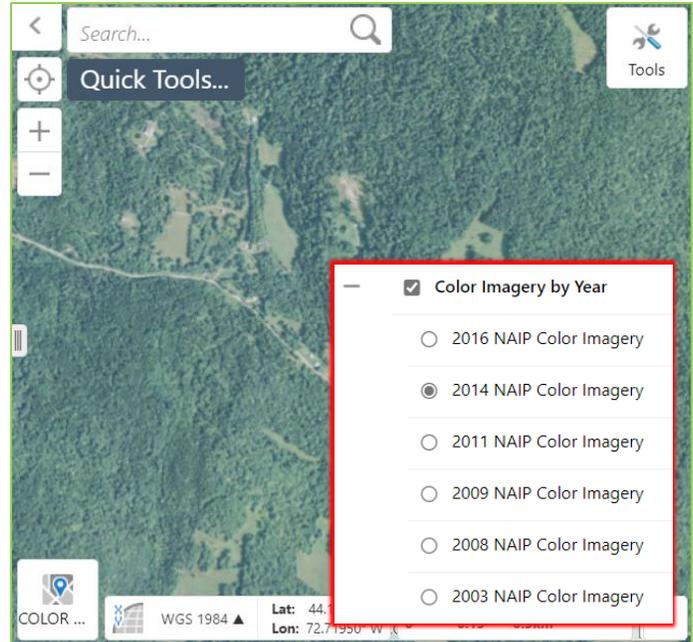
*\*uncheck* the box next to *Overall Priorities: Vermont Conservation Design* to see the individual components. The Overall Priorities maps display *on top of* the individual component layers, meaning they need to be turned off to see the individual components.





**ANR Basemap Data:** This set of layers provides additional information often used for navigation or for finding landmarks such as roads, streams, rivers, and the locations of buildings and parcels.

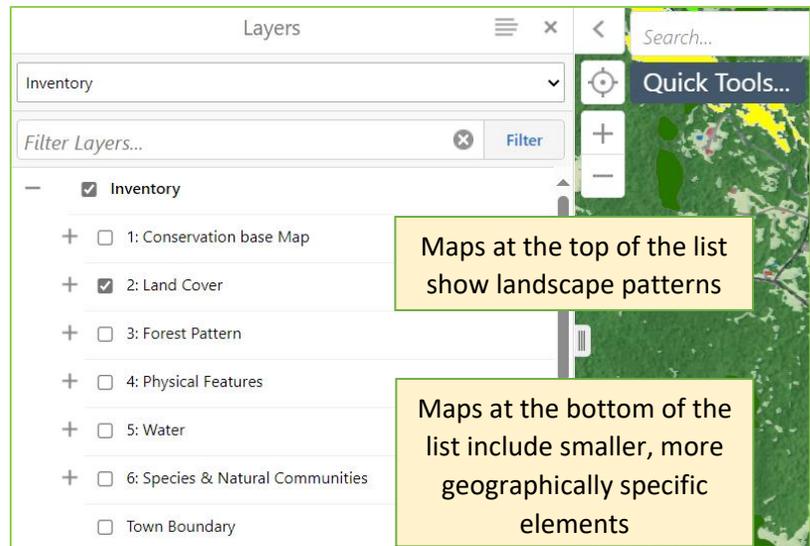
**Color Imagery:** These layers allow you to change the background to aerial photographs taken in different years — between 2003 and 2016 —to see changes to the landscape over time.



### Inventory Theme

*Answers the question: What's here?*

The “Inventory” theme presents basic information about the location of features and natural resources often used in conservation planning. While information in the “Prioritization” theme was chosen by Vermont Fish & Wildlife Department biologists to represent *the most important* ecological locations for conservation planning, most “Inventory” information has not been interpreted in any way. Information in this theme is displayed as a series of already-compiled maps, each showing a different aspect of the landscape.



### Social and Environmental Factors Theme

*Answers the question: How can conservation goals align with the needs of our communities?*

The “Social and Environmental Factors” theme allows you to see how the ecological patterns shown on BioFinder interact with social and economic variables that may impact how different communities access the benefits of nature or are impacted by natural events like storms or heat waves.

## Using Multiple Layers Together

In general, a map found *higher* on the Layer menu is drawn *on top of* a layer found lower on the list. The stack of layers you create can highlight interesting overlaps of features on the landscape, such as a natural community at the south end of a wetland. The layer drawing order may be customized using the panel actions menu at the top right corner of the layers panel.

Change the layer drawing order with the Panel Actions Menu

The “Natural Communities” layer displays on top of the “Wetlands” layer by default

## Identification Box

If you click on a layer in the map window, an Identification Box appears with summary information about the selected feature, as well as links to explanatory documents and additional location-specific details.

When multiple layers overlap at the selected location, the Identification Box creates a separate “page” of results for each one. In the example, three layers are present. This is indicated by the “1 of 3” box with arrows in the upper right-hand corner of the box. Click on the arrows to move between pages.

Quick Tools... Search...

Rare and Uncommon Species 1 of 3

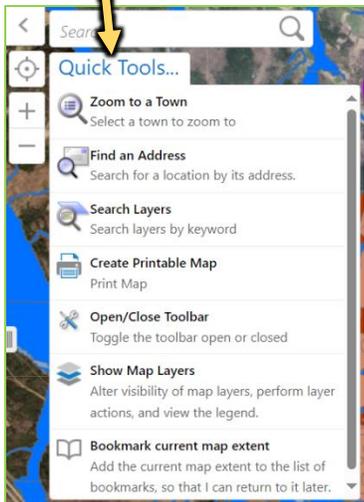
☆ Rare and Uncommon Species

Rare and uncommon species are species tracked by the Vermont Fish & Wildlife Department Natural Heritage Inventory. Uncommon species are defined as facing a “moderate risk of extinction or extirpation due to restricted range, relatively few populations or occurrences (often 80 or fewer), recent and widespread declines, or other factors.” In contrast, rare species face a higher risk of extirpation and generally have 20 or fewer populations statewide.

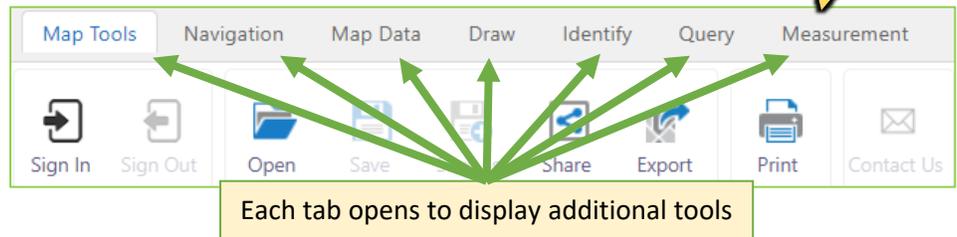
[View Additional Details](#) [Add to Results](#)

ESRI Wor... 0 0.5 1km VTANRGIS | VTANRGIS, VTFWD | VCGI, Earthstar Geogra

## BioFinder Tools

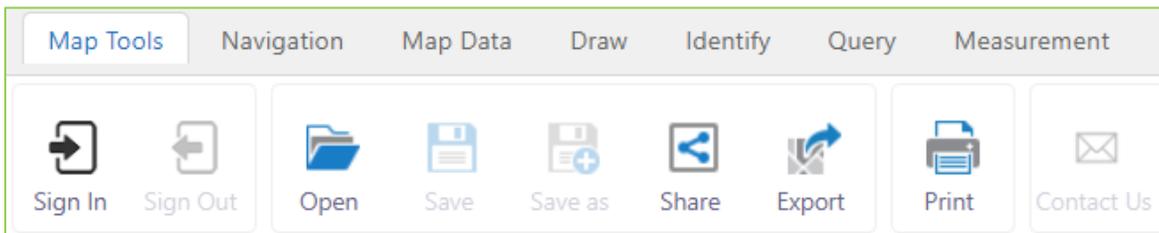


**Quick Tools:** BioFinder offers a short list of useful “Quick Tools” for navigating the map and interacting with data.



**Toolbar:** The Toolbar can be turned on/off by clicking the “Tools” icon at the top right corner of the map screen. This provides access to seven tool tabs, each with its own submenu of tools.

**Map Tools:** Instructions for using each of these tools will appear upon selection.

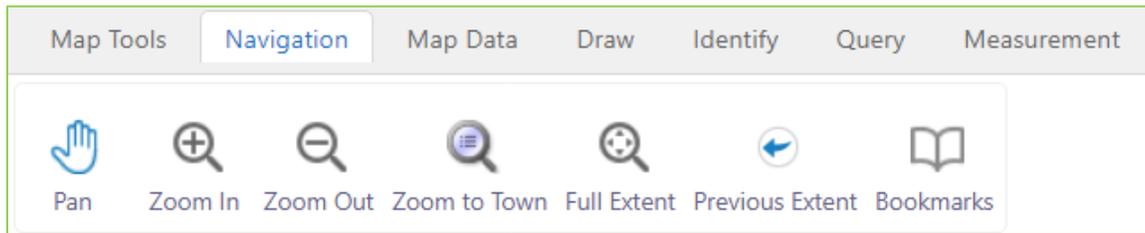


**Share** provides you with a URL of a particular place that you’re zoomed in to and the specific layers that you have turned on or off. Note that any drawings or shapefiles you have added will NOT be included in the URL

**Export** creates an image file that you can save. This option will include drawings that you’ve added or shapefiles you’ve uploaded.

**Print** creates printable version of your map with pre-formatted titles, legends, and other useful notes you can customize.

**Navigation:** Offers tools to help you move around the map.



**Pan** allows you to click on the map and move it around with your mouse.

**Zoom In** and **Zoom Out** allow you to draw a box around an area of interest and change your scale.

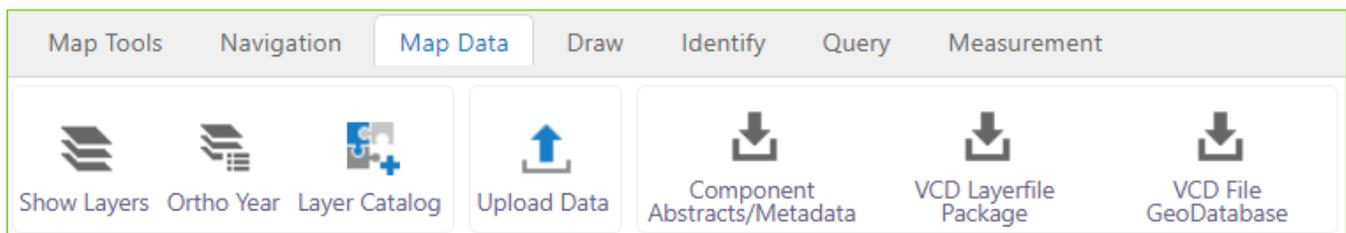
**Zoom to Town** allows you to center the map around any town in Vermont.

**Full Extent** zooms out to the scale of the world.

**Previous Extent** takes you back to the scale you were at before last zooming in or out.

**Bookmarks** allows you to pin a map area you would like to revisit later.

**Map Data:** Upload and download information with this tab.



**Show Layers** turns the Layers Menu on if it has been closed.

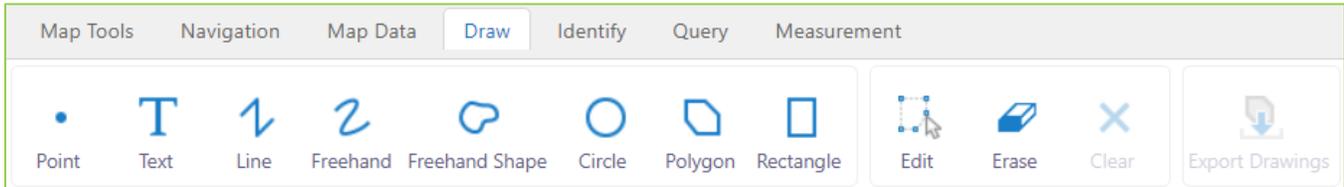
**Ortho Year** allows you to select a background aerial photo from a year between 2003 – 2014.

The **Layer Catalog** tool allows you to add other map layers from the **ANR Atlas** from the Agency of Natural Resources, or you can add GIS shapefiles of your own creation.

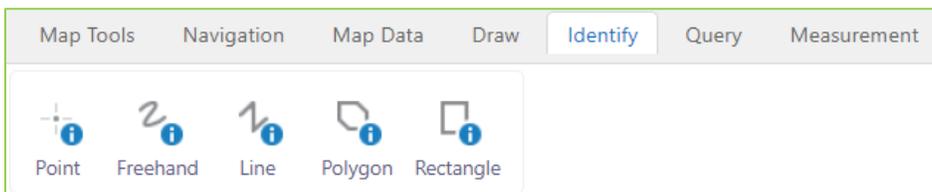
**Upload Data** allows you to add files stored on your computer.

You can also download data packages and written abstracts for the different BioFinder and Vermont Conservation Design layers using the download tools.

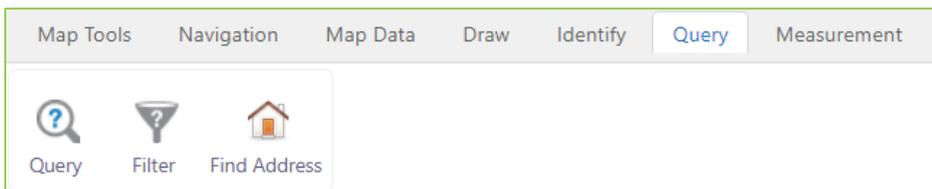
**Draw:** The tools under this tab help you customize your maps. The drawings you create (i.e. if you circle or mark an important spot) can be exported to create shapefiles (the geographically-specific files used by most mapping programs). These may be uploaded back into BioFinder using the “Upload Data” tool under the Map Data tab. The advantage of turning your drawings into a shapefile is that you can easily turn them on and off without losing them.



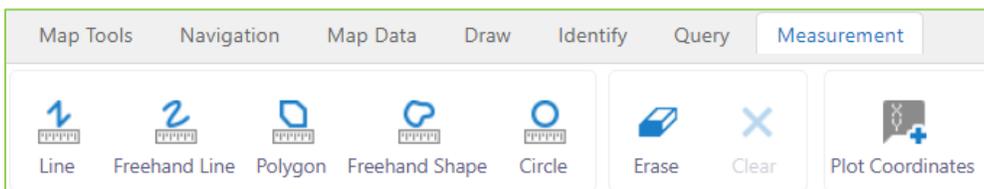
**Identify:** Instructions for using each of these tools will appear upon selection. They can be used to extract map information for a particular area of interest.



**Query:** Instructions for using each of these tools will appear upon selection. They are used to help you locate features containing criteria that you select.



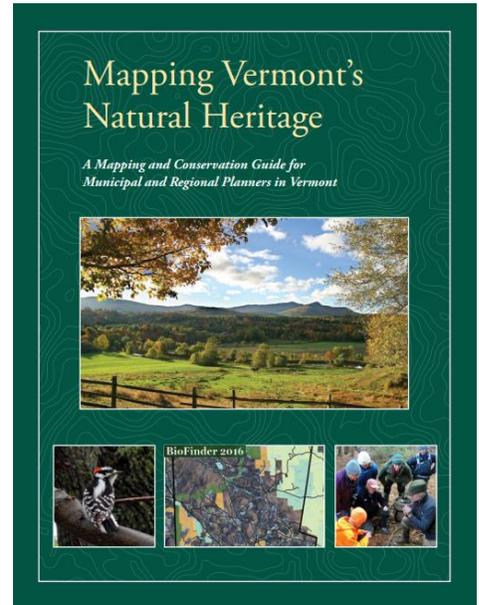
**Measurement:** These tools measure both distance and area on your map. Measurements are added in increments as you draw, allowing you to capture distance for each small segment that contributes to a larger distance or area.





Interested in learning more about mapping Vermont's conservation resources with BioFinder?

Download a copy of **Mapping Vermont's Natural Heritage** at <https://anr.vermont.gov/mapping-vermonts-natural-heritage>



Looking for additional help or training with BioFinder or Vermont Conservation Design?  
Contact us at:



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Community Wildlife Program**

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BioFinder 4.0 was created by the Vermont Agency of Natural Resources.  
For more information, visit <http://biofinder.vermont.gov>.