

EVALIDator User Guide (Version 1.5.1.05)

The objective of this document is to familiarize the user with how to navigate EVALIDator to create a report. Shaded font indicates specific instructions for you to follow. **EVALIDator keywords are in boldface.**

Users may want to refer to the **FIADB Users Manual**, which describes the Forest Inventory and Analysis Database structure and defines all the variables in the database. The guide can be downloaded from links on the [FIA Data Mart](#) (direct link to the documentation: <http://treesearch.fs.fed.us/pubs/37446>). EVALIDator reports are created using the FIADB.

1. Start the EVALIDator application – From the FIA Data and Tools page (<http://www.fia.fs.fed.us/tools-data/>), click on the **EVALIDator** button to go to the **Retrieval Type** page (Step 1 of 3).

The screenshot shows the USDA Forest Service website for the Forest Inventory and Analysis National Program. The page has a green header with the USDA logo and a search bar. A navigation menu on the left lists various services, with 'FIA Data and Tools' selected. The main content area is titled 'Data and Tools' and contains a 'User Alerts' box with two alerts. Below the alerts are six buttons: FIDO, EVALIDator (highlighted with a red box), FIA DataMart, Other Reporting Tools, Training and Tutorials, and Customer Service. Below the buttons are two sections: 'FIDO Forest Inventory Data Online – Create your own forest inventory tables and maps.' and 'EVALIDator This program allows users to produce a large variety of population estimates and their sampling errors based on the current FIADB.'

2. Step 1 – **Retrieval Type** - this is where you select the type of geographic area and summary attribute of interest.
 - a. Geographic area types are State, Circular, or Polygon.

- i. The default type is **State Retrieval**, so no action is needed if the desired area is State or County.
- ii. For the circle option, check the radio button next to **Circle Retrieval**, and enter the latitude and longitude of point center in decimal degrees, and enter the circle radius in miles. Note: Longitude should be a negative number for the western hemisphere.
- iii. The polygon option can be obtained by adding a SQL filtering clause in the textbox in Step 3.



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Revision date: March 5, 2013

Step 1 of 3 (choosing the retrieval type and estimate type)

User Alert -- July 11, 2013:

We are experiencing problems with our on-line tools FIDO and Evaluator. FIA and the Forest Service Chief Information Officer's staff are working to remedy these problems. Thank you for your patience.

Retrieval Type

The "State(s) retrieval" type is the default. You should only select the "Circle retrieval" type when the area of interest is a circular area around some point. If you choose the circle option you must also enter the latitude and longitude of point center in decimal degrees (the latitude and longitude of Duluth, for example, is latitude=46.78 and longitude=-92.12) and enter the circle radius in miles. A location's latitude and longitude can be obtained using [Google Maps](#) (1. locate the point of interest using Google Maps, 2. right click on the location, 3. select "What's here?", 4. click on the green arrow to get the coordinates).

State(s) retrieval
 Note: Polygon retrievals can be run by adding a SQL filtering clause via the textbox in Step 3.

Circle Retrieval
 Latitude:
 Longitude:
 Radius(miles):

Please choose an attribute from the dropdown list below (this will be the numerator in a ratio estimate).

```

===AREA ___===
Area of sampled land and water, in acres
Area of forest land, in acres
Area of timberland, in acres
===NUMBER OF TREES OR SEEDLINGS ___ ON FOREST LAND===
Number of live trees (at least 1 inch d.b.h./d.r.c.), in trees, on forest land
Number of growing-stock trees (at least 5 inches d.b.h.), in trees, on forest land
Number of standing-dead trees (at least 5 inches d.b.h./d.r.c.), in trees, on forest land
Number of live seedlings (less than 1 inch d.b.h./d.r.c.), in seedlings, on forest land
===NUMBER OF TREES OR SEEDLINGS ___ ON TIMBERLAND===
Number of live trees (at least 1 inch d.b.h./d.r.c.), in trees, on timberland
Number of growing-stock trees (at least 5 inches d.b.h.), in trees, on timberland
Number of standing-dead trees (at least 5 inches d.b.h./d.r.c.), in trees, on timberland
Number of live seedlings (less than 1 inch d.b.h./d.r.c.), in seedlings, on timberland
===VOLUME ___ ON FOREST LAND===
          
```

There are 130 types of population attributes.

Show all available inventories
 Limit retrieval to only most recent inventories

Population estimate Standard estimate (forest area, or volume, or...)
 Ratio estimate Ratio of Means (volume/acre, or growth/volume, or...) **New!** To generate shaded county maps choose "Ratio Estimate" here in step 1 and then pick "County code and name" for the classification variable in step 3.

b. Choosing an attribute of interest. This is the estimate that will be reported in the table.

i. There are 130 summary attributes available for forest land and timberland estimates in these major categories:

1. Area
2. Number of Trees/Seedlings
3. Tree Volume
4. Tree Biomass
5. Carbon
6. Average Annual Tree Growth
7. Average Annual Tree Removals
8. Average Annual Tree Mortality
9. Number of Coarse Woody Debris Material
10. Volume of Down Woody Material
11. Biomass of Down Woody Material
12. Area Change

ii. Scroll through the list and choose **Average annual net growth of live trees (at least 5 inches d.b.h/d.r.c.), in cubic feet, on forest land**, then click on **Show all available inventories**, and click on the **Population estimate** button.

Please choose an attribute from the dropdown list below (this will be the numerator in a ratio estimate).

Average annual net growth of sawtimber trees, in board feet (International 1/4-inch rule), on forest land
===AVERAGE ANNUAL NET GROWTH ___ ON TIMBERLAND===
Average annual net growth of live trees (at least 5 inches d.b.h/d.r.c.), in cubic feet, on timberland
Average annual net growth of growing-stock trees (at least 5 inches d.b.h.), in cubic feet, on timberland
Average annual net growth of sawtimber trees, in board feet (International 1/4-inch rule), on timberland
===AVERAGE ANNUAL MORTALITY ___ ON FOREST LAND===
Average annual mortality of trees (at least 5 inches d.b.h./d.r.c.), in trees, on forest land
Average annual mortality of trees (at least 5 inches d.b.h./d.r.c.), in cubic feet, on forest land
Average annual mortality of growing-stock trees (at least 5 inches d.b.h.), in cubic feet, on forest land
Average annual mortality of sawtimber trees, in board feet (International 1/4-inch rule), on forest land
===AVERAGE ANNUAL MORTALITY ___ ON TIMBERLAND===
Average annual mortality of trees (at least 5 inches d.b.h./d.r.c.), in trees, on timberland
Average annual mortality of trees (at least 5 inches d.b.h./d.r.c.), in cubic feet, on timberland
Average annual mortality of growing-stock trees (at least 5 inches d.b.h.), in cubic feet, on timberland
Average annual mortality of sawtimber trees, in board feet (International 1/4-inch rule), on timberland

There are 130 types of population attributes.

Show all available inventories
 Limit retrieval to only most recent inventories

Standard estimate (forest area, or volume, or...)
 Ratio of Means (volume/acre, or growth/volume, or...) **New!** To generate shaded county maps choose "Ratio Estimate" here in step 1 and then pick "County code and name" for the classification variable in step 3.

- Step 2 – Choose the Geographic Area and Inventory. The next page lists all the available evaluations for the chosen summary attribute. An evaluation is the set of data used to make a particular population estimate. EVALIDator only lists those surveys that can produce an estimate for a given attribute. For example, most of the older, periodic data are functional for Timberland estimates only (versus estimates based on Forest land). Below the list is information concerning the total number of available evaluations, and instructions on how to select multiple evaluations. Also note that, below the **Continue** button, there is a summary of what you have chosen so far.



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Step 2 of 3 (choosing the geographic area)

Note: For analyzing trends choose multiple inventories for a state.

ResearchStationCode/Evalid/State/YearsDataCollected
(this list of evaluations was obtained from the POP_EVAL_ATTRIBUTE table based on the attribute selected in step 1)

RSCD=33	EVALID=10303	ALABAMA	2001;2002;2003
RSCD=33	EVALID=10403	ALABAMA	2001;2002;2003;2004
RSCD=33	EVALID=10503	ALABAMA	2001;2002;2003;2004;2005
RSCD=33	EVALID=10603	ALABAMA	2001;2002;2003;2004;2005;2006
RSCD=33	EVALID=10703	ALABAMA	2001;2002;2003;2004;2005;2006;2007
RSCD=33	EVALID=10803	ALABAMA	2001;2002;2003;2004;2005;2006;2007;2008
RSCD=33	EVALID=10903	ALABAMA	2001;2002;2003;2004;2005;2006;2007;2008;2009
RSCD=33	EVALID=11003	ALABAMA	2001;2002;2003;2004;2005;2006;2007;2008;2009;2010
RSCD=33	EVALID=11103	ALABAMA	2001;2002;2003;2004;2005;2006;2007;2008;2009;2010;2011
RSCD=33	EVALID=11203	ALABAMA	2006;2007;2008;2009;2010;2011;2012

There are 264 geographic/temporal areas for which this attribute can be calculated. Please click on the geographic/temporal area(s) of interest to highlight it/them and then click on the Continue button

Note: To add or subtract to the list of selected items hold down the control key while clicking on individual items in the dropdown list.

In step 1 you selected:
Average annual net growth of live trees (at least 5 inches d.b.h./d.r.c.), in cubic feet, on forest land as the attribute of interest.
State as the report type.

In step 3 you selected as:
the filter string.

sessionId=EABF98A4658735810B539D95EDA11E0B

- You may choose as many evaluations as you want for the same attribute by holding the Ctrl key and clicking on the evaluation on the list, however for this example, choose only one evaluation, Minnesota 2008;2009;2010;2011;2012 . When you are done, click on the **Continue** button.

RSCD=23	EVALID=270803	MINNESOTA	2004;2005;2006;2007;2008
RSCD=23	EVALID=270903	MINNESOTA	2005;2006;2007;2008;2009
RSCD=23	EVALID=271003	MINNESOTA	2006;2007;2008;2009;2010
RSCD=23	EVALID=271103	MINNESOTA	2007;2008;2009;2010;2011
RSCD=23	EVALID=271203	MINNESOTA	2008;2009;2010;2011;2012
RSCD=33	EVALID=280603	MISSISSIPPI	2006
RSCD=33	EVALID=280903	MISSISSIPPI	2009
RSCD=33	EVALID=281003	MISSISSIPPI	2009;2010
RSCD=33	EVALID=281103	MISSISSIPPI	2009;2010;2011
RSCD=33	EVALID=281203	MISSISSIPPI	2009;2010;2011;2012

4. Step 3 – **Select Page, Row, and Column classification variables**

Here you select **Page, Row, and Column Classification variables** and **basis**, as well as optional filters. The choices for Classification variables and basis are dependent on the estimation type and are outlined as below.



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Step 3 of 3 (choosing classification variables)

Select Page, Row, and Column classification variables

Estimate type	Classification variables derived from	Classification basis (temporal and physical)
Area	PLOT and COND records.	Based on CURRENT stand characteristics.
Area change	PLOT and COND records.	Based on PREVIOUS inventory values, CURRENT inventory values, PREVIOUS IF AVAILABLE ELSE CURRENT, or CURRENT IF AVAILABLE ELSE PREVIOUS for stand characteristics. For Area Change retrievals you should generally choose the same variable for both the row and column but report the rows by previous value and the columns by current value. A common area change retrieval is selecting previous "Land Use - Major" for the rows and current "Land Use - Major" for the columns. This retrieval shows how land has moved in and out of forest land over the remeasurement period.
Numbers of trees, volume, and biomass	PLOT, COND, and TREE records.	Based on CURRENT stand or tree characteristics.
Numbers of seedlings	PLOT, COND, and SEEDLING records.	Based on CURRENT stand or seedling characteristics.
Growth	PLOT, COND, and TREE records.	Based on PREVIOUS inventory values, CURRENT inventory values, PREVIOUS IF AVAILABLE ELSE CURRENT, CURRENT IF AVAILABLE ELSE PREVIOUS, or ACCOUNTING values for stand or tree characteristics. The accounting method uses information from both the previous and current plot visits to assign growth on survivor trees. It uses the current plot visit information on ingrowth and reversion trees. For cut, diversion, and mortality trees, a calculated midpoint value is used if available, otherwise the previous value is used for the accounting method.
Removals and mortality	PLOT, COND, and TREE records.	Based on PREVIOUS inventory values, CURRENT inventory values, PREVIOUS IF AVAILABLE ELSE CURRENT, or CURRENT IF AVAILABLE ELSE PREVIOUS, or ACCOUNTING values for stand or tree characteristics. For cut, diversion, and mortality trees, a calculated midpoint value is used if available, otherwise the previous value is used for the accounting method.

For Area estimates, EVALIDator lists only **Plot** (Geographic) and **Condition** level attributes for table classification variables and filters. **Plot, Condition, and Tree** level classifications are available for tree estimates. Change estimation types may be based on **Current, Previous, or Accounting** inventory values, while point in time estimations are based on **Current** inventory values.

- a. Select an attribute for the **Page** (table) break. The default break is "None" (to produce one table). For this demo, use the default, **None**.
- b. Select a **Row Variable** - the default, **Trend analysis**, provides just one row for the geographic area. Note that if you choose more than one survey per geographic area, the default, **Trend analysis**, should be used, otherwise the report will add the estimates for the same area together (a nonsensical estimate). One advantage to using the default, **Trend analysis**, is that the Oracle SQL script is also provided along with the estimates. For this demo, use the defaults, **Trend analysis and Accounting**.

c. Select a **Column Variable** – Except for **Trend analysis** and **County code and name**, the same attributes are available as for the **Row variable**. For this demo, use the defaults, **All live stocking and Accounting** .

d. At the bottom of this page, you have the option of using filters to further refine your

<p>Page variable</p> <ul style="list-style-type: none"> None All live stocking AppalachianRegionARC Artificial regen species Aspect Azimuth of tree from subplot center Basal area all live Cause of death Condition number Condition proportion 	<p>Temporal basis</p> <ul style="list-style-type: none"> Accounting Previous Current Previous if available else current Current if available else previous
<p>Row variable</p> <ul style="list-style-type: none"> Trend analysis - StateInventories for rows...no pages All live stocking AppalachianRegionARC Artificial regen species Aspect Azimuth of tree from subplot center Basal area all live Cause of death Condition number Condition proportion 	<p>Temporal basis</p> <ul style="list-style-type: none"> Accounting Previous Current Previous if available else current Current if available else previous
<p>Column variable</p> <ul style="list-style-type: none"> All live stocking AppalachianRegionARC Aspect Azimuth of tree from subplot center Basal area all live Cause of death Condition number Condition proportion Crown class Crown ratio 	<p>Temporal basis</p> <ul style="list-style-type: none"> Accounting Previous Current Previous if available else current Current if available else previous

There are 63 classification variables.

Show results

ADD/CLEAR Filters

In step 1 you selected:

Average annual net growth of live trees (at least 5 inches d.b.h./d.r.c.), in cubic feet, on forest land as the attribute of interest.

State as the report type

In step 2 you selected:

RS CD=23 EVALID=271203 MINNESOTA 2008;2009;2010;2011;2012

as the geographic/temporal area(s) of interest.

In step 3 you selected as:

the filter string.

sessionId=2665230E84AA85D5D54FD40326D178B1

report. To see what is available, choose **ADD/CLEAR Filters** and then click on **Continue**.

5. The table at the top of the filter page explains how polygon retrievals can be run, and provides 2 examples, for users to edit and customize for their area of interest.

 <h2 style="text-align: center;">EVALIDator Version 1.5.1.05</h2> <p style="text-align: center;">Revision date: March 5, 2013</p> <p style="text-align: center;">Step 3 of 3 continued (choosing filters)</p>	
<p>Note: Polygon retrievals can be run by adding a SQL filtering clause via the textbox in Step 3.</p>	<p>Filtering clauses using Oracle Spatial</p>
<p>Example 1. Polygon with 5 vertices in Minnesota (note: first and last coordinate pairs must be the same - run time approximately 1 second):</p>	<pre>and plot.cn in (SELECT /*+ ordered */ CN FROM fs_fia_spatial.fiadb3_plot_geom c WHERE sdo_relate(c.geom, sdo_geometry(2003, 8265, null, sdo_elem_info_array(1, 1003, 1), sdo_ordinate_array(-93,45, -94,45, -94.5,44.5, -94,44, -93,44, -93,45)), 'mask=ANYINTERACT querytype=WINDOW') = 'TRUE')</pre>
<p>Example 2. Polygon with a 50km buffer around Interstate 94 and limit to Stearns County, MN (note: run time approximately 2 minutes)</p>	<pre>and plot.cn in (SELECT /*+ ordered */ CN FROM FS_FIA_SPATIAL.US_INTERSTATES_8265 B, fs_fia_spatial.fiadb3_plot_geom c WHERE (sdo_relate(C.geom,sdo_geom.sdo_buffer (b.geometry,50,0.5,'ARC_TOLERANCE=0.05 UNIT=KM'), 'mask=ANYINTERACT querytype=WINDOW') = 'TRUE') and c.cn=plot.cn and b.interstate='I94')</pre>

- a. Optional Filters – EVALIDator provides a list of available filters. To filter from the available selections, click on the radio button next to “**Specific . . .**” and then click on the desired category (use the Ctrl key to select more than one from the list).

<p>Ownership</p> <p><input type="radio"/> All Ownership classes</p> <p><input checked="" type="radio"/> Specific Ownership class by Ownership Group (You must select one or more of the following ownership groups.)</p> <div style="border: 1px solid black; padding: 2px;"> <p>10 National Forest</p> <p>20 Other federal</p> <p>30 State and local government</p> <p style="background-color: #0056b3; color: white;">40 Private</p> </div> <p><input type="radio"/> Specific Ownership class by Ownership Class (You must choose one or more combinations of ownership classes.)</p> <div style="border: 1px solid black; padding: 2px;"> <p>24 Dept of Defense/Energy</p> <p>25 Other federal</p> <p>31 State</p> <p>32 Local - County/municipal/etc.</p> <p>33 Other non federal public</p> <p>46 Undifferentiated private</p> </div>	
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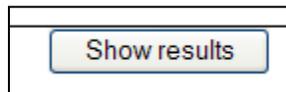
- b. Users who are familiar with Oracle SQL may choose to further customize their query in the box provided at the bottom of the page. This is also the place where you would insert the script for a polygon retrieval.

Tree diameter
 All diameters
 Specific diameters (You must enter the minimum and maximum diameter range.)
Minimum Diameter Maximum Diameter

Text area to input additional SQL where clause: (experts only please - syntax must be exact - example: to limit the retrieval to National Forest ownership put "and cond.owned=11" in the textbox)

In step 1 you selected: **Average annual net growth of live trees (at least 5 inches d.b.h./d.r.c), in cubic feet, on forest land** as the attribute of interest.
State as the report type
In step 2 you selected:
as the geographic/temporal area(s) of interest. sessionid=2665230E84AA85D5D54FD40326D178B1

- c. When you are finished with your selections, click on the **Show results** button at the bottom of the page.



6. EVALIDator will then compute the estimate and provide table outputs of the estimate and sampling errors, as well as the proper citation, and a summary of your selections.

Estimate for Average annual net growth of live trees (at least 5 inches d.b.h./d.r.c.), in cubic feet, on forest land

All live stocking (based on values from the Accounting inventory).	Total	Overstocked	Fully stocked	Medium stocked	Poorly stocked	Nonstocked	Unavailable	Other
RSCD=23 EVALID=271203 MINNESOTA 2008;2009;2010;2011;2012	227,875,255	47,426,066	132,581,568	49,721,442	1,845,113	-3,698,933	0	0

Sampling Errors in percent for Average annual net growth of live trees (at least 5 inches d.b.h./d.r.c.), in cubic feet, on forest land

All live stocking (based on values from the Accounting inventory).	Total	Overstocked	Fully stocked	Medium stocked	Poorly stocked	Nonstocked	Unavailable	Other
RSCD=23 EVALID=271203 MINNESOTA 2008;2009;2010;2011;2012	4.42	29.14	16.21	33.41	338.77	-68.84	0.00	0.00

Population Estimate Description

Average annual net sound cubic-foot growth of live trees on forest land. The net change in cubic-foot volume per year for trees that were on forest land (for remeasured plots $(V_2 - V_1)/(t_2 - t_1)$). Because this value is net growth, it may be a negative number. Negative growth values are usually due to mortality ($V_2 = 0$) but can also occur on live trees that have a net loss in volume because of damage, rot, broken top, or other causes.

Tree: A woody plant usually having one or more erect perennial stems, a stem diameter at breast height of at least 3.0 inches, a more or less definitely formed crown of foliage, and a height of at least 15 feet at maturity.

Forest land: Land at least 10-percent stocked by trees of any size, including land that formerly had such tree cover and that will be naturally or artificially regenerated. Forest land includes transition zones, such as areas between heavily forested and nonforested lands that are at least 10-percent stocked with trees and forest areas adjacent to urban and builtup lands. Also included are pinyon-juniper and chaparral areas in the West and afforested areas. The minimum area for classification of forest land is 1 acre and 120 feet wide measured stem-to-stem from the outer-most edge. Unimproved roads and trails, streams, and clearings in forest areas are classified as forest if less than 120 feet wide.

Column classification variable description

All live stocking code. A code indicating the stocking of the condition by live trees, including seedlings.

Code Description

- 1 Overstocked (100+ %)
- 2 Fully stocked (60 to 99%)
- 3 Medium stocked(35 to 59%)
- 4 Poorly stocked(10 to 34%)
- 5 Nonstocked(0 to 9%)

Stocking: The degree of occupancy of land by trees, measured by basal area or number of trees by size and spacing, or both, compared to a stocking standard; that is, the basal area or number of trees, or both, required to fully utilize the growth potential of the land.

Web citation:

Miles, P.D. Tue Jul 23 12:26:26 CDT 2013. Forest Inventory EVALIDator web-application version 1.5.1.05. St. Paul, MN: U.S. Department of Agriculture, Forest Service, Northern Research Station. [Available only on internet: <http://apps.fs.fed.us/Evalidator/tmtribute.jsp>]

In step 1 you selected:

Average annual net growth of live trees (at least 5 inches d.b.h./d.r.c.), in cubic feet, on forest land as the attribute of interest.

State as the report type

In step 2 you selected:

RSCD=23 EVALID=271203 MINNESOTA 2008;2009;2010;2011;2012

as the geographic/temporal area(s) of interest.

In step 3 you selected:

None as the page classification variable.

Trend analysis - StateInventories for rows...no pages as the row classification variable.

All live stocking as the column classification variable.

The filter used was: Filters: ownership group includes (Private),

The SQL filter used was: and (cond.owngrpcd=40)

sessionId=2665230E84AA85D5D54FD40326D178B1

- a. The table output can be selected and copied...

VALIDator Version 1.5.1.05 - View report

Estimate for Average annual net growth of live trees (at least 5 inches d.b.h./d.r.c.), in cubic feet, on forest land

All live stocking (based on values from the Accounting inventory).	Total	Overstocked	Fully stocked	Medium stocked	Poorly stocked	Nonstocked	Unavailable	Other
RSCD=23 EVALID=271203 MINNESOTA 2008;2009;2010;2011;2012	227,875,255	47,426,066	132,581,568	49,721,442	1,845,113	-3,698,933	0	0

Sampling Errors in percent for Average annual net growth of live trees (at least 5 inches d.b.h./d.r.c.), in cubic feet, on forest land

All live stocking (based on values from the Accounting inventory).	Total	Overstocked	Fully stocked	Medium stocked	Poorly stocked	Nonstocked	Unavailable	Other
RSCD=23 EVALID=271203 MINNESOTA 2008;2009;2010;2011;2012	4.42	29.14	16.21	33.41	338.77	-68.84	0.00	0.00

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Column classification variable description

All live stocking code. A code indicating the stocking of the condition by live trees, including seedlings.

Code Description

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Stocking: The degree of occupancy of land by trees, measured by basal area or number of trees by size and spacing, or both, compared to a stocking standard; that is, the basal area or number of trees, or both, required to fully utilize the growth potential of the land.

Web citation:
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b. ...and then pasted into spreadsheet or word processing software for saving.

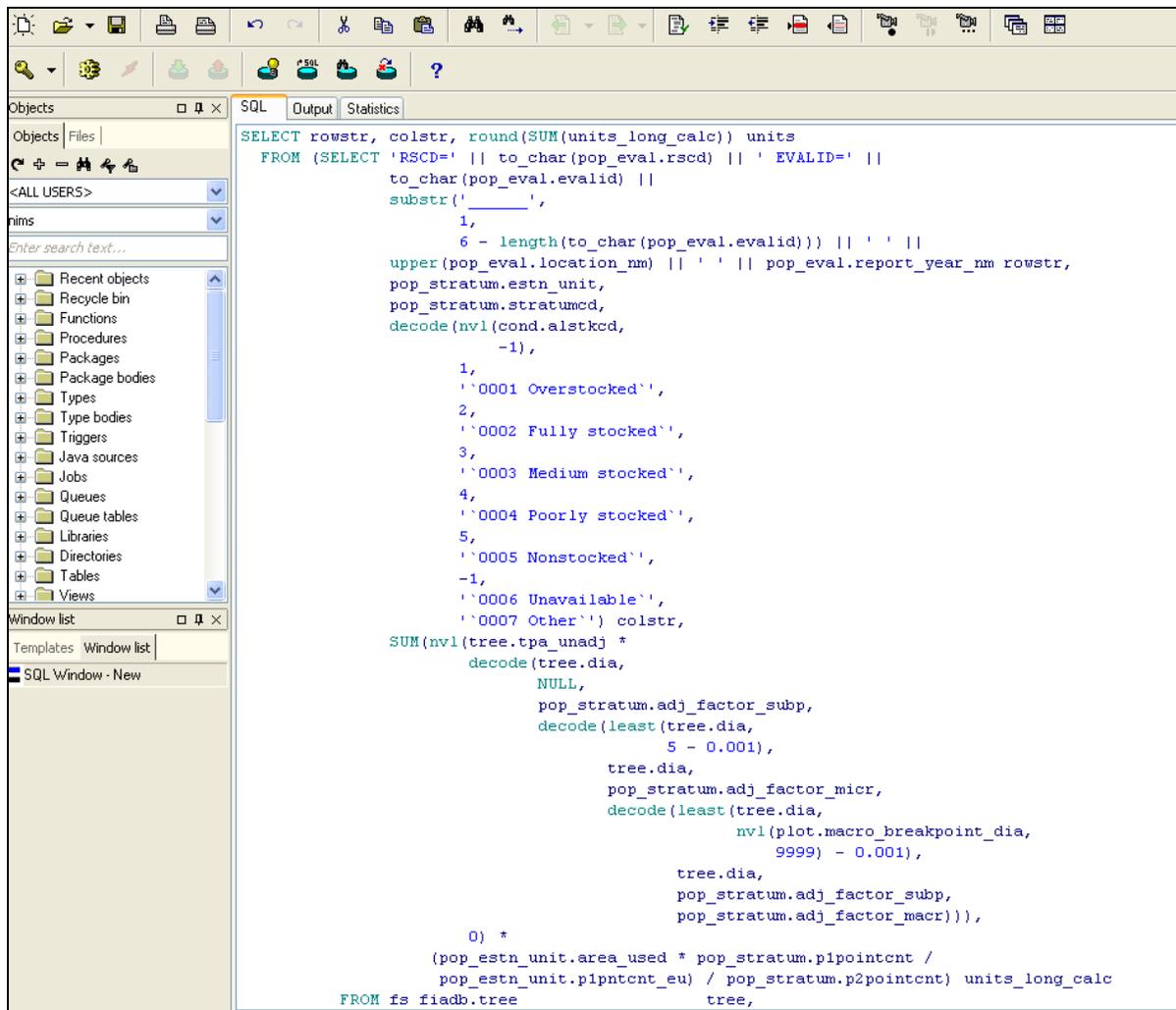
	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	EVALIDator Version 1.5.1.05 - View report													
2														
3	Estimate for Average annual net growth of live trees (at least 5 inches d.b.h./d.r.c.), in cubic feet, on forest land													
4														
5	All live stocking (based on values from the Accounting inventory).	Total	Overstocked	Fully stocked	Medium stocked	Poorly stocked	Nonstocked	Unavailable	Other					
6	RSCD=23 EVALID=271203 MINNESOTA 2008;2009;2010;2011;2012	227,875,255	47,426,066	132,581,568	49,721,442	1,845,113	-3,698,933	0	0					
7														
8	Sampling Errors in percent for Average annual net growth of live trees (at least 5 inches d.b.h./d.r.c.), in cubic feet, on forest land													
9														
10	All live stocking (based on values from the Accounting inventory).	Total	Overstocked	Fully stocked	Medium stocked	Poorly stocked	Nonstocked	Unavailable	Other					
11	RSCD=23 EVALID=271203 MINNESOTA 2008;2009;2010;2011;2012	4.42	29.14	16.21	33.41	338.77	-68.84	0	0					
12	Population Estimate Description													
13	Average annual net sound cubic-foot growth of live trees on forest land. The net change in cubic-foot volume per year for trees that were on forest land (for re-measured plots $(V_2 - V_1)/(t_2 - t_1)$).													
14	Tree: A woody plant usually having one or more erect perennial stems, a stem diameter at breast height of at least 3.0 inches, a more or less definitely formed crown of foliage, and a height of at least 15 feet at maturity.													
15	Forest land: Land at least 10-percent stocked by trees of any size, including land that formerly had such tree cover and that will be naturally or artificially regenerated. Forest land includes transition zones, such as areas between heavily forested and nonforested lands that are at least 10-percent stocked with trees and forest areas adjacent to urban and built-up lands. Also included are pinyon-juniper and chaparral areas in the West and afforested areas. The minimum area for classification of forest land is 1 acre and 120 feet wide measured stem-to-stem from the outer-most edge. Unimproved roads and trails, streams, and clearings in forest areas are classified as forest if less than 120 feet wide.													
16														

- c. If Trend analysis was selected for the Row variable, EVALIDator will also provide the Oracle SQL statement used to compute the estimate.

This Oracle SQL statement can be used to derive estimates:

```
SELECT rowstr,colstr,ROUND(SUM(units_long_calc)) units FROM ( SELECT 'RSCD='||to_char(pop_eval.RSCD)||' EVALID='||to_char(pop_eval.evalid)||substr('_____',1,6-length(to_char(pop_eval.evalid)))||'UPPER(pop_eval.LOCATION_NM)||pop_eval.REPORT_YEAR_NM rowstr,pop_stratum.estn_unit,pop_stratum.stratumcd,decode(nvl(decode(be.ONEORTWO,1,pCOND.alstkcd,decode(grm.component,'SURVIVOR',COND.alstkcd,'INGROWTH',COND.alstkcd,'REVERSION1',COND.alstkcd,'REVERSION2',COND.alstkcd,pCOND.alstkcd)),-1),1,'0001 Overstocked',2,'0002 Fully stocked',3,'0003 Medium stocked',4,'0004 Poorly stocked',5,'0005 Nonstocked',-1,'0006 Unavailable','0007 Other') colstr,SUM(nvl(tree.stated/tree.stated*decode(nvl(GRM.dia_end,-1)+nvl(GRM.dia_midpt,-1)+nvl(GRM.dia_begin,-1),-3,decode(be.oneortwo,1,1,0)*tree.tpagrow_unadj*tree.fgrowfal*decode(tree.dia,null,pop_stratum.adj_factor_subp,decode(least(tree.dia,5-0.001),tree.dia,pop_stratum.adj_factor_micr,decode(least(tree.dia,nvl(plot.MACRO_BREAKPOINT_DIA,9999)-0.001),tree.dia,pop_stratum.adj_factor_subp,pop_stratum.adj_factor_macr))),GRM.tpagrow_unadj*DECODE(BE.ONEORTWO,1,(-GRM.EST_BEGIN/GRM.REMPER),(nvl(GRM.est_end,GRM.est_midpt)-nvl(GRM.mortality,0))/GRM.rempere))*DECODE(GRM.subtyp_grm,1,POP_STRATUM.ADJ_FACTOR_SUBP,2,POP_STRATUM.ADJ_FACTOR_MICR,3,POP_STRATUM.ADJ_FACTOR_MACR),0)*(pop_estn_unit.area_used*pop_stratum.p1pointcnt/pop_estn_unit.p1pntcnt_eu)/pop_stratum.p2pointcnt) units_long_calc FROM FS_FIADB.tree tree,fs_fiadb.tree tree,fs_fiadb.pcond pcond,fs_fiadb.plot pplot,fs_fiadb.beginend be,fs_fiadb.TREE,GRM,ESTN,GRM,FS_FIADB.pcond cond,FS_FIADB.plot plot,FS_FIADB.plotgeom plotgeom,FS_FIADB.pop_stratum_assgn ppp,FS_FIADB.pop_stratum pop_stratum,FS_FIADB.pop_estn_unit pop_estn_unit,FS_FIADB.pop_eval_grp pop_eval_grp,FS_FIADB.pop_eval_typ pop_eval_typ,FS_FIADB.pop_eval_pop_eval WHERE TREE.PREVCOND = PCOND.CONDID AND PLOT.PREV_PLT_CN = PCOND.PLT_CN AND PPOP.PLT_CN = PLOT.PREV_PLT_CN AND PTREE.CN(+) = TREE.PREV_TRE_CN AND GRM.tre_cn = tree.cn and TREE.CN = GRM.TRE_CN AND 1=1 and pop_eval_typ.eval_typ = 'EXPGROW' and tree.plt_cn = cond.plt_cn and tree.condid = cond.condid and GRM.ESTN_TYPE = 'AL' and GRM.ESTN_UNITS = 'CF' and GRM.ESTIMATE = 'VOLUME' and GRM.land_basis = 'FORESTLAND' and (cond.owngrpcd=40) and cond.plt_cn = plot.cn and plot.cn = plotgeom.cn and ppp.plt_cn = plot.cn AND ppp.stratum_cn = pop_stratum.cn and pop_estn_unit.cn = pop_stratum.estn_unit.cn AND pop_eval_typ.eval_grp_cn = pop_eval_grp_cn and pop_eval_cn = pop_eval_typ.eval_cn and pop_estn_unit.cn = pop_estn_unit.eval_cn and ((pop_eval.rscd=23 and pop_eval.evalid=271203)) GROUP BY 'RSCD='||to_char(pop_eval.RSCD)||' EVALID='||to_char(pop_eval.evalid)||substr('_____',1,6-length(to_char(pop_eval.evalid)))||'UPPER(pop_eval.LOCATION_NM)||pop_eval.REPORT_YEAR_NM,pop_stratum.estn_unit,pop_stratum.stratumcd,decode(nvl(decode(be.ONEORTWO,1,pCOND.alstkcd,decode(grm.component,'SURVIVOR',COND.alstkcd,'INGROWTH',COND.alstkcd,'REVERSION1',COND.alstkcd,'REVERSION2',COND.alstkcd,pCOND.alstkcd)),-1),1,'0001 Overstocked',2,'0002 Fully stocked',3,'0003 Medium stocked',4,'0004 Poorly stocked',5,'0005 Nonstocked',-1,'0006 Unavailable','0007 Other')) GROUP BY rowstr,colstr
```

- d. Users can select and copy this statement, and then paste it into other applications (such as PL/SQL Developer) for further examination of how the estimate was produced, or for further refinement.



7. Users can continue to run more tables – click on the browser Back button to go back to EVALIDator, Step 1.
8. **Ratio Estimates** – Users can select attributes for a numerator and denominator to derive ratio estimates (such as volume/ acre or growth/volume), which can then be used to generate shaded county maps. This will demo a growing-stock volume per acre.
 - a. For the numerator, choose Net volume of growing-stock trees (at least 5 inches d.b.h.), in cubic feet, on timberland from the list of attributes, then click on the **Ratio estimate** button.

Please choose an attribute from the dropdown list below (this will be the numerator in a ratio estimate).

Net volume of live trees (at least 5 inches d.b.h./d.r.c.), in cubic feet, on forest land

Net volume of growing-stock trees (at least 5 inches d.b.h.), in cubic feet, on forest land

Net volume of saw-log portion of sawtimber trees, in cubic feet, on forest land

Net volume of sawtimber trees, in board feet (International 1/4-inch rule), on forest land

Gross volume of sawtimber trees, in board feet (International 1/4-inch rule), on forest land

Gross volume of live trees (at least 5 inches d.b.h./d.r.c.), in cubic feet, on forest land

Sound volume of live trees (at least 5 inches d.b.h./d.r.c.), in cubic feet, on forest land

Net volume of standing-dead trees (at least 5 inches d.b.h./d.r.c.), in cubic feet, on forest land

===VOLUME ___ ON TIMBERLAND===

Net volume of live trees (at least 5 inches d.b.h./d.r.c.), in cubic feet, on timberland

Net volume of growing-stock trees (at least 5 inches d.b.h.), in cubic feet, on timberland

Net volume of saw-log portion of sawtimber trees, in cubic feet, on timberland

Net volume of sawtimber trees, in board feet (International 1/4-inch rule), on timberland

Net volume of standing-dead trees (at least 5 inches d.b.h./d.r.c.), in cubic feet, on timberland

===BIOMASS ___ ON FOREST LAND===

There are 130 types of population attributes.

Show all available inventories

Limit retrieval to only most recent inventories

Population estimate Standard estimate (forest area, or volume, or...)

Ratio estimate Ratio of Means (volume/acre, or growth/volume, or...) **New! To generate shaded county maps choose "Ratio Estimate" here in step 1 and then pick "County code and name" for the classification variable in step 3.**

- b. For the denominator, choose Area of timberland, in acres, and click on the **Continue** button.

Please choose a denominator attribute from the dropdown list below.

===AREA ___===

Area of timberland, in acres

===NUMBER OF TREES OR SEEDLINGS ___ ON FOREST LAND===

===NUMBER OF TREES OR SEEDLINGS ___ ON TIMBERLAND===

Number of live trees (at least 1 inch d.b.h./d.r.c.), in trees, on timberland

Number of growing-stock trees (at least 5 inches d.b.h.), in trees, on timberland

Number of standing-dead trees (at least 5 inches d.b.h./d.r.c.), in trees, on timberland

===VOLUME ___ ON FOREST LAND===

===VOLUME ___ ON TIMBERLAND===

Net volume of live trees (at least 5 inches d.b.h./d.r.c.), in cubic feet, on timberland

Net volume of growing-stock trees (at least 5 inches d.b.h.), in cubic feet, on timberland

Net volume of saw-log portion of sawtimber trees, in cubic feet, on timberland

Net volume of sawtimber trees, in board feet (International 1/4-inch rule), on timberland

Net volume of standing-dead trees (at least 5 inches d.b.h./d.r.c.), in cubic feet, on timberland

===BIOMASS ___ ON FOREST LAND===

There are 63 types of population attributes that can be paired with the previously selected numerator.

In step 1 you selected:

Net volume of growing-stock trees (at least 5 inches d.b.h.), in cubic feet, on timberland as the numerator attribute of interest.

State as the report type.

sessionId=40DA4050E85A01F173DEBC246F0A66A8

- c. Choose the 2012 Vermont evaluation for the **area of interest** and **County code and name** for the **row variable**, and then click on the **Continue** button on the bottom of the page.



EVALIDator Version 1.5.1.05

Revision date: March 5, 2013

Step 3 of 3 (choosing the geographic area and classification variable)

ResearchStationCode/Evalid/State/YearsDataCollected

Please choose the area(s) of interest from the dropdown list.

RSCD=33	EVALID=471101	TENNESSEE	2005;2006;2007;2008;2009;2010;2011
RSCD=33	EVALID=481001	TEXAS	2004;2005;2006;2007;2008;2009;2010
RSCD=33	EVALID=780901	US VIRGIN ISLANDS	2009
RSCD=22	EVALID=491201	UTAH	2003;2004;2005;2006;2007;2008;2009;2010;2011;2012
RSCD=24	EVALID=501201	VERMONT	2008;2009;2010;2011;2012
RSCD=33	EVALID=511201	VIRGINIA	2008;2009;2010;2011;2012
RSCD=26	EVALID=6	WASHINGTON	2002;2003;2004;2005;2006;2007;2008;2009;2010;2011
RSCD=24	EVALID=541101	WEST VIRGINIA	2007;2008;2009;2010;2011
RSCD=23	EVALID=551201	WISCONSIN	2008;2009;2010;2011;2012
RSCD=22	EVALID=561201	WYOMING	2011;2012

There are 51 geographic/temporal areas where the selected numerator and denominator can be combined to produce an estimate. Please click on the geographic/temporal area(s) of interest to highlight it/them and then click on the Continue button

Note: To add or subtract to the list of selected items hold down the control key while clicking on individual items in the dropdown list.

Note: If you select "County code and name" you can produce a shaded county map.

Row variable	Temporal basis
All live stocking	Current
AppalachianRegionARC	
Artificial regen species	
Aspect	
Basal area all live	
Condition number	
Condition proportion	
Congressional District	
County code and name	
CountyGroup	

There are 58 types of classification variables that may be appropriate for the selected numerator and denominator.

Apply classification variable to both numerator and denominator.
 Apply classification variable to numerator but use total for denominator.

Note: If you attempt to apply a tree classification variable to a denominator area estimate the check box above will be overridden and the classification variable will be applied to the numerator but total area will be used for the denominator.

- d. The output file appears at the top of the screen

EVALIDator Version 1.5.1.05 - View report

To create a county choropleth map (color coded map) go to the bottom of this page.

Area: RSCD=24 EVALID=501201 VERMONT 2008;2009;2010;2011;2012#

Numerator: Net volume of growing-stock trees (at least 5 inches d.b.h.), in cubic feet, on timberland Time:Current

Denominator: Area of timberland, in acres Time:Current

Note: The denominator is based on the grand total rather than a class total.

Classification: County code and name

No filter used for both numerator and denominator.

No filter used only for numerator.

County code and name (based on values from the Current inventory).	Ratio estimates	Sampling error	Variance	Estimate of numerator	Number of non-zero plots numerator	Estimate of denominator	Number of non-zero plots denominator	Total plots	Total population acres
Total	2,033.6956	1.8151	1362.6759320632352	9,101,312,134	784	4,475,258	802	1,028	6,152,903
50001 VT Addison	2,071.6291	9.4556	38370.66947008835	491,188,222	51	237,102	54	1,028	6,152,903
50003 VT Bennington	2,352.2566	5.2620	15320.394824795781	734,520,924	67	312,262	67	1,028	6,152,903
50005 VT Caledonia	1,647.1907	8.2658	18537.772458604286	554,451,876	54	336,605	56	1,028	6,152,903
50007 VT Chittenden	2,062.0809	9.3116	36868.59584105564	451,063,176	35	218,742	37	1,028	6,152,903

- e. Scroll to the bottom to create a choropleth map. You have the choice of up to 6 color classes. Keep the default and click on the **Create choropleth map of counties** button.

Create choropleth map of counties

Select the number of map shading colors.

1
2
3
4
5
6

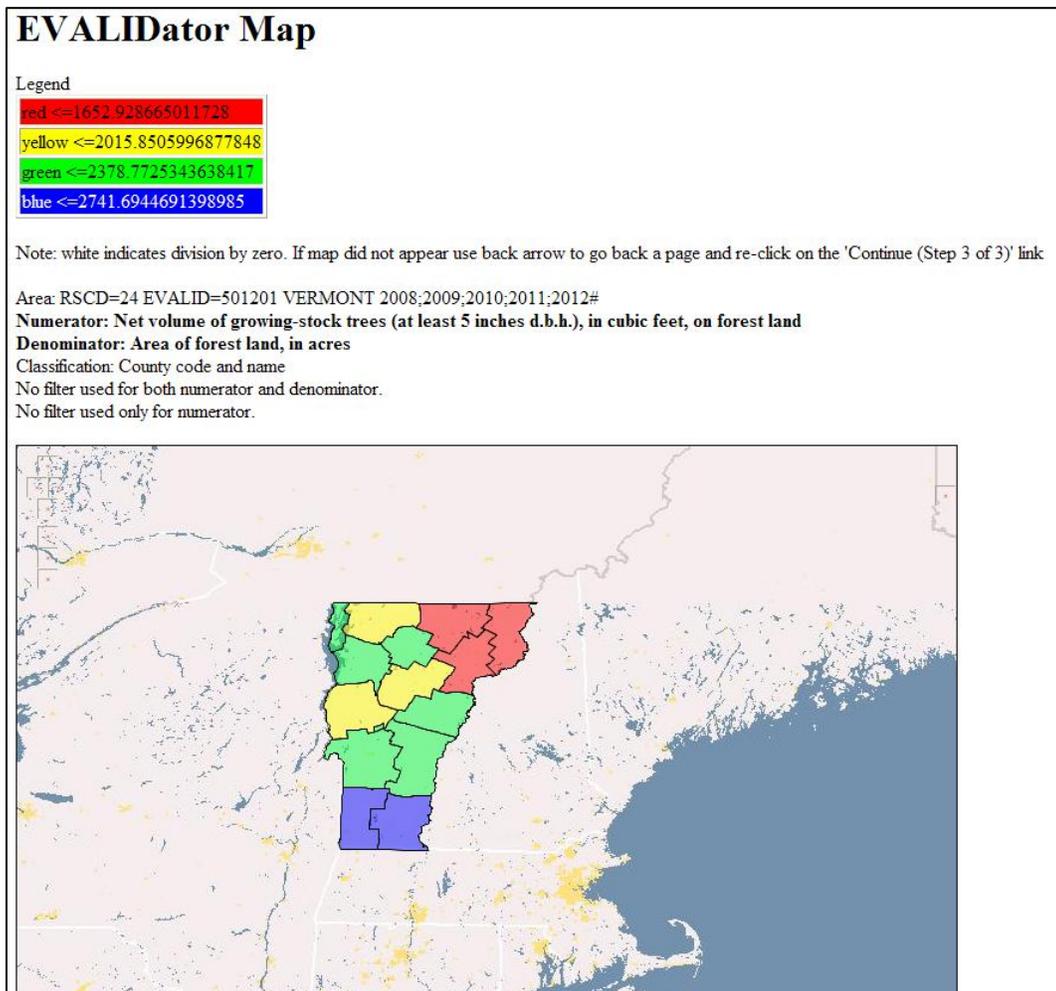
- f. You can adjust the color classes and breakpoints. Keep the defaults and click on the **Continue** button.

Generating a county map - Step 2 of 3.

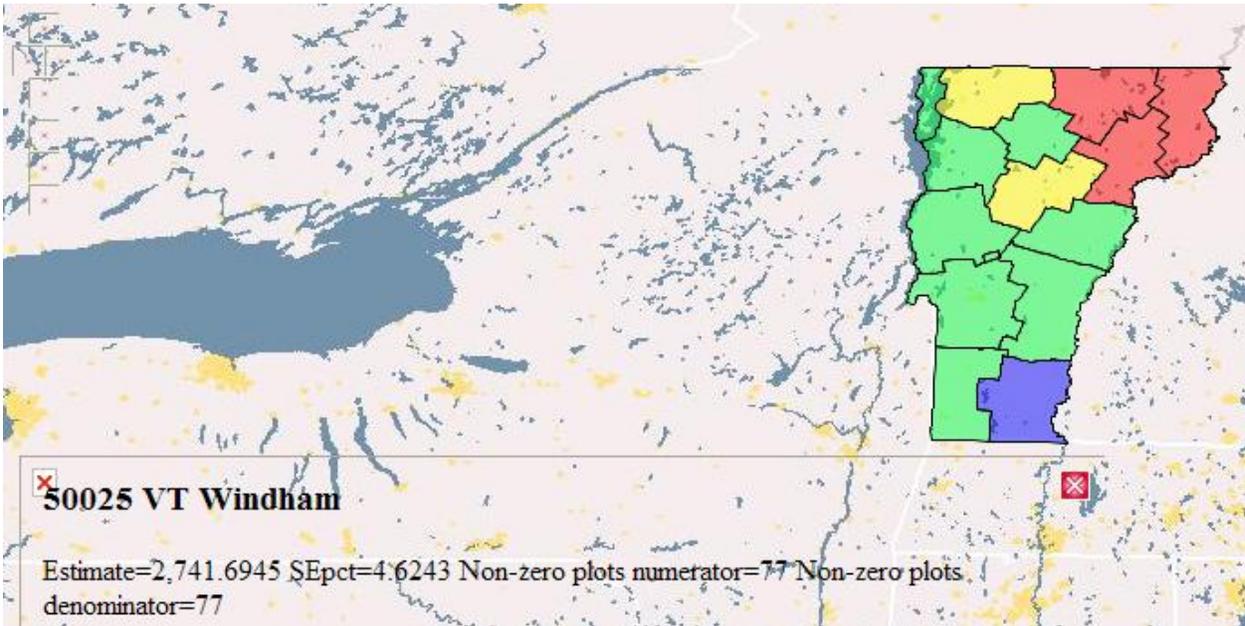
Default class breakpoints were assigned by dividing the range of values by the number of classes. These breakpoint values may be changed but the breakpoint values must increase with increasing class number.

Color class 1 includes all values <= 1662.8775465202714 Class 1 color	<input type="radio"/> red	<input type="radio"/> yellow	<input type="radio"/> green	<input checked="" type="radio"/> blue	<input type="radio"/> black	<input type="radio"/> gray	<input type="radio"/> magenta	<input type="radio"/> cyan	<input type="radio"/> orange
Color class 2 includes values > color class 1 but <= 2022.483187360147 Class 2 color	<input type="radio"/> red	<input type="radio"/> yellow	<input checked="" type="radio"/> green	<input type="radio"/> blue	<input type="radio"/> black	<input type="radio"/> gray	<input type="radio"/> magenta	<input type="radio"/> cyan	<input type="radio"/> orange
Color class 3 includes values > color class 2 but <= 2382.088828200023 Class 3 color	<input type="radio"/> red	<input type="radio"/> yellow	<input checked="" type="radio"/> green	<input type="radio"/> blue	<input type="radio"/> black	<input type="radio"/> gray	<input type="radio"/> magenta	<input type="radio"/> cyan	<input type="radio"/> orange
Color class 4 includes values > color class 3 but <= 2741.6944691398985 Class 4 color	<input type="radio"/> red	<input type="radio"/> yellow	<input checked="" type="radio"/> green	<input type="radio"/> blue	<input type="radio"/> black	<input type="radio"/> gray	<input type="radio"/> magenta	<input type="radio"/> cyan	<input type="radio"/> orange

- g. On the next page, you have the option of saving the KMZ file for viewing in Google Earth or ArcMap, or you can simple view the map. Click on the **Continue (Step 3 of 3) Click to produce map** link. Double-click and pan the image to zoom in.



h. Click on a county to get more detailed information.



i. You can use the back arrow on your browser and save the file and open it in Google Earth.