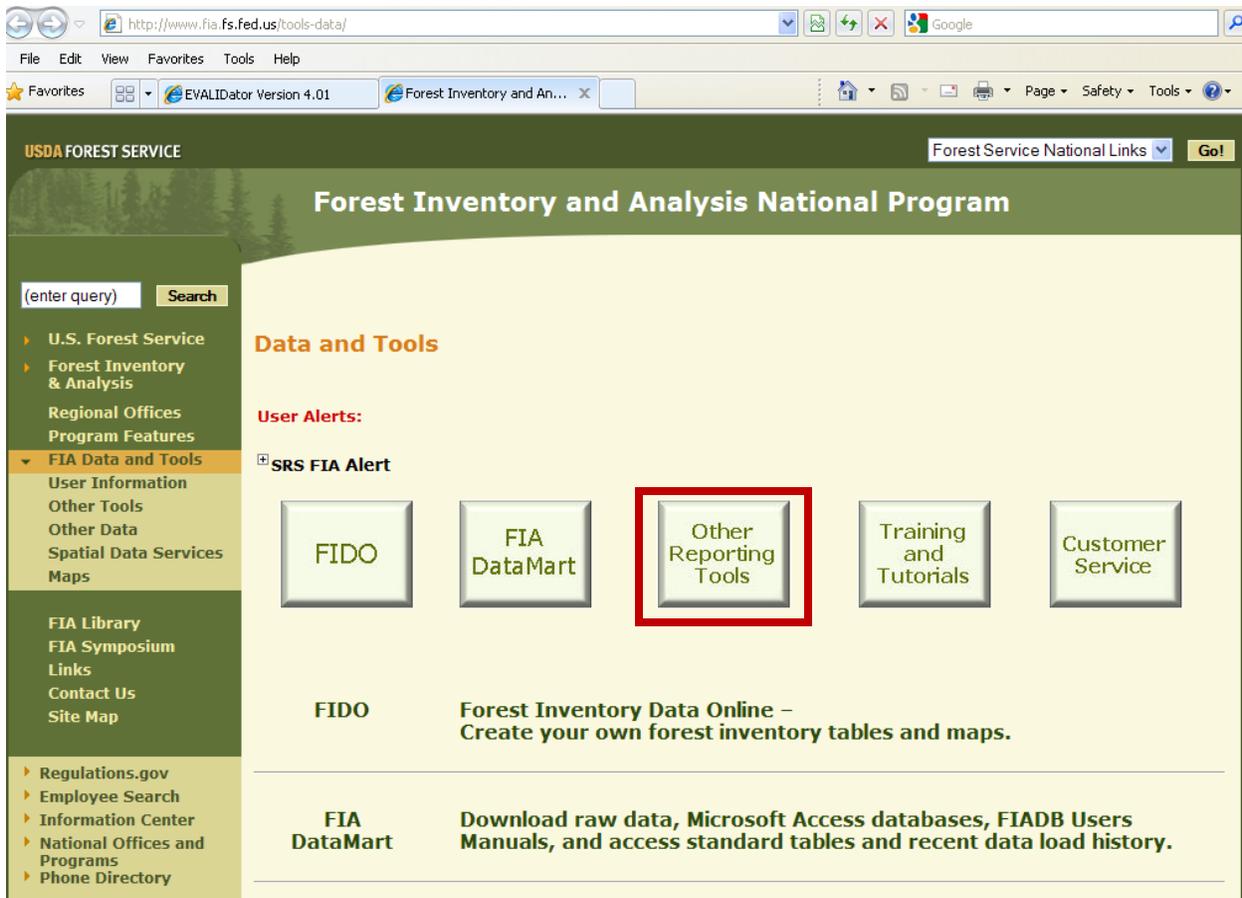


EVALIDator User Guide (Version 4.01)

The objective of this document is to familiarize the user with how to navigate EVALIDator to create a report. **Red 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](http://www.fia.fs.fed.us/tools-data/) (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 **Other Reporting Tools** button, then click on the **EVALIDator** button to go to the **Retrieval Type** page (Step 1 of 3).



The screenshot shows a web browser window displaying the USDA Forest Service website. The browser's address bar shows the URL <http://www.fia.fs.fed.us/tools-data/>. The website header includes the USDA Forest Service logo and the title "Forest Inventory and Analysis National Program". A search bar is located at the top left. The main content area is titled "Data and Tools" and features a "User Alerts" section with an "SRS FIA Alert" link. Below this, there are five buttons: "FIDO", "FIA DataMart", "Other Reporting Tools" (highlighted with a red border), "Training and Tutorials", and "Customer Service". Underneath the buttons, there are two sections: "FIDO" with the text "Forest Inventory Data Online – Create your own forest inventory tables and maps." and "FIA DataMart" with the text "Download raw data, Microsoft Access databases, FIADB Users Manuals, and access standard tables and recent data load history."

Other Tools



EVALIDator This program allows users to produce a large variety of population estimates and their sampling errors based on FIADB version 4.0.

2. Step 1 – **Retrieval Type** - this is where you select the 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. Two examples are provided – users can edit the scripts to customize for their area of interest.
 1. Example 1: Polygon with 5 vertices in Minnesota (note: first and last coordinate pairs must be the same - run time approximately 1 second)
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')
 2. Example 2 50km buffer around Interstate 94 and limit to Stearns County, MN (note: run time approximately 2 minutes)
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.statecd=27 and c.countycd=145 and b.interstate='I94')



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Step 1 of 3

Retrieval Type

You may choose the way in which the FIA Retrieval System selects data from the database. The options are State or Circle (to run a polygon retrieval choose State and then add Oracle spatial command to the textbox in step 3). If you choose a circle option you must enter the latitude and longitude of point center in decimal degrees (the latitude and longitude of Duluth, for example, are 46.78 decimal degrees north and 92.12 decimal degrees west) and enter the circle radius in miles. You may obtain the latitude and longitude of a particular county, city, or zip code through the [U.S. Census Bureau Gazetteer](#). Note: Longitude should be a negative number for the western hemisphere.

<input checked="" type="radio"/> State retrieval	<input type="radio"/> Circle Retrieval
	Latitude: <input type="text"/>
	Longitude: <input type="text"/>
Radius(miles): <input type="text"/>	
Polygon retrievals can be run by adding a SQL filtering clause via the textbox in step 3.	Filtering clauses using Oracle Spatial
Example 1 Polygon with 5 vertices in Minnesota (note: first and last coordinate pairs must be the same - run time approximately 1 second):	<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>
Example 2 50km buffer around Interstate 94 and limit to Stearns County, MN (note: run time approximately 2 minutes)	<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.geomENTRY,50,0.5,'ARC_TOLERANCE=0.05 UNIT=KM'), 'mask=ANYINTERACT querytype=WINDOW') = 'TRUE') and c.statecd=27 and c.countycd=145 and b.interstate='I94')</pre>

Attribute order in drop-down list.
Area
Numbers of trees (forestland then timberland)
Volume (forestland then timberland)
Biomass (forestland then timberland)
Growth (forestland then timberland)
Mortality (forestland then timberland)
Removals (forestland then timberland)
Forest carbon (forestland then timberland)
Number of seedlings (forestland then timberland)

Please choose an attribute from the dropdown list below.

Area sampled (acres)

Area of forestland (acres)

Area of timberland (acres)

Number of all live trees on forestland (trees)

Number of growing-stock trees on forestland (trees)

Number of standing dead trees 5 inches+ dbh on forestland (trees)

Number of all live trees on timberland (trees)

Number of growing-stock trees on timberland (trees)

Number of standing dead trees 5 inches+ dbh on timberland (trees)

Volume of all live on forestland (cuft)

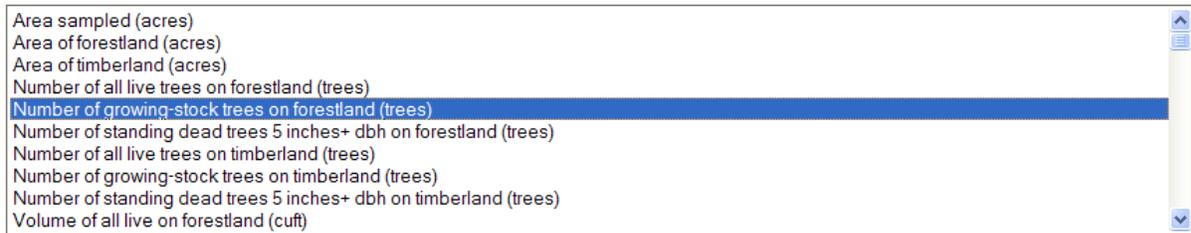
There are 94 types of population attributes.

Continue

sessionid=82BAEA31A461AD26F45F18C6E57FFF61 remoteaddress=165.221.40.140

- b. Choosing an attribute of interest. This is the estimate that will be reported in the table.
- i. There are over 90 summary attributes available for forest land and timberland estimates in these major categories:
 1. Area
 2. Number of Trees/Seedlings
 3. Tree Volume
 4. Growth
 5. Removals
 6. Mortality
 7. Biomass
 8. Carbon
 - ii. Scroll through the list and choose a single attribute, then click on the **Continue** button.

Please choose an attribute from the dropdown list below.



Area sampled (acres)
Area of forestland (acres)
Area of timberland (acres)
Number of all live trees on forestland (trees)
Number of growing-stock trees on forestland (trees)
Number of standing dead trees 5 inches+ dbh on forestland (trees)
Number of all live trees on timberland (trees)
Number of growing-stock trees on timberland (trees)
Number of standing dead trees 5 inches+ dbh on timberland (trees)
Volume of all live on forestland (cuft)

There are 94 types of population attributes.

Continue

- Step 2 – Selecting an inventory. The next page lists all the available evaluations for that particular 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

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=10001	ALABAMA	2000
RSCD=33	EVALID=10101	ALABAMA	2000;2001
RSCD=33	EVALID=10201	ALABAMA	2000;2001;2002
RSCD=33	EVALID=10301	ALABAMA	2000;2001;2002;2003
RSCD=33	EVALID=10401	ALABAMA	2000;2001;2002;2003;2004
RSCD=33	EVALID=10501	ALABAMA	2001;2002;2003;2004;2005
RSCD=33	EVALID=10601	ALABAMA	2001;2002;2003;2004;2005;2006
RSCD=33	EVALID=10701	ALABAMA	2001;2002;2003;2004;2005;2006;2007
RSCD=33	EVALID=10801	ALABAMA	2001;2002;2003;2004;2005;2006;2007;2008
RSCD=33	EVALID=10901	ALABAMA	2001;2002;2003;2004;2005;2006;2007;2008;2009

There are 258 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.

Continue

In step 1 you selected: **Number of growing-stock trees on forestland (trees)** as the attribute of interest. **State** as the report type. sessionid=5984C0D6F4FBB9C555DFD37414FF5E18

- 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**. When you are done, **click on the Continue button**.

RSCD=23	EVALID=270301	MINNESOTA	1999;2000;2001;2002;2003
RSCD=23	EVALID=270401	MINNESOTA	2000;2001;2002;2003;2004
RSCD=23	EVALID=270501	MINNESOTA	2001;2002;2003;2004;2005
RSCD=23	EVALID=270601	MINNESOTA	2002;2003;2004;2005;2006
RSCD=23	EVALID=270701	MINNESOTA	2003;2004;2005;2006;2007
RSCD=23	EVALID=270801	MINNESOTA	2004;2005;2006;2007;2008
RSCD=23	EVALID=270901	MINNESOTA	2005;2006;2007;2008;2009
RSCD=33	EVALID=280601	MISSISSIPPI	2006
RSCD=23	EVALID=290301	MISSOURI	1999;2000;2001;2002;2003
RSCD=23	EVALID=290401	MISSOURI	2000;2001;2002;2003;2004

4. Step 3 –Final selections. Select **Page**, **Row**, and **Column** Classification variables, and optional filters. For Area estimates, EVALIDator lists only Geographic and Condition level attributes for table classifications and filters. Geographic, Condition, and Tree level classifications are available for tree estimates.
 - 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 default, Trend analysis.**
 - 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, select the column variable of your choice.**



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Step 3 of 3

Select Page, Row, and Column classification variables

Source of classification variables:

Classification variables for area retrievals are derived from variables on the Plot and Cond records (stand characteristics)

Classification variables for numbers of trees, volume, growth, removals and mortality retrievals are derived from variables on the Plot, Cond, and Tree records (stand or tree characteristics)

Note: For growth, removals, and mortality retrievals, on annual to annual remeasurement inventories, it is also possible to report by previous stand characteristics, for example "Previous stand-size" or "Previous owner". When this information is not available an empty report will be generated.

Classification variables for numbers of seedlings retrievals are derived from variables on the Plot, Cond, and Seedling records (stand or seedling characteristics)

- d. 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).

Ownership

All Ownership classes

Specific Ownership class by Ownership Group (You must select one or more of the following ownership groups.)

10 National Forest
20 Other federal
30 State and local government
40 Private

Specific Ownership class by Ownership Class (You must choose one or more combinations of ownership classes.)

24 Dept of Defense/Energy
25 Other federal
31 State
32 Local - County/municipal/etc.
33 Other non federal public
46 Undifferentiated private

- e. Users who are familiar with Oracle SQL may choose to further customize their query in the box provided at the bottom of the page.

Physiographic class

All Physiographic Classes

Specific Physiographic Class (You must choose one or more combinations of physiographic classes.)

Physiographic class is unknown and a specific physiographic class may not be selected with the following States: (AZ,CO,ID,MT,NM,NV,UT,WY)

11 Xeric - dry tops
12 Xeric - dry slopes
13 Xeric - deep sands
14 Xeric - other
21 Mesic - flatwoods

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.owncd=11" in the textbox)

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

Show results

5. 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 Number of growing-stock trees on forestland (trees)

All live stocking	Total	Overstocked	Fully stocked	Medium stocked	Poorly stocked	Nonstocked	Unavailable	Other
RSCD=23 EVALID=270901 MINNESOTA 2005;2006;2007;2008;2009	12,204,023,730	2,786,424,180	5,395,899,840	3,296,742,829	720,971,539	3,985,341	0	0

Sampling Errors in percent for Number of growing-stock trees on forestland (trees)

All live stocking	Total	Overstocked	Fully stocked	Medium stocked	Poorly stocked	Nonstocked	Unavailable	Other
RSCD=23 EVALID=270901 MINNESOTA 2005;2006;2007;2008;2009	1.24	4.42	2.20	2.50	4.83	20.68	0.00	0.00

Fri Apr 08 07:50:59 CDT 2011

Web citation: Miles, P.D. Fri Apr 08 07:50:59 CDT 2011. Forest Inventory EVALIDator web-application version 4.01 beta. St. Paul, MN: U.S. Department of Agriculture, Forest Service, Northern Research Station. [Available only on internet: <http://fiatools.fs.fed.us/Evalidator4/tmattribute.jsp>]

In step 1 you selected: **Number of growing-stock trees on forestland (trees)** as the attribute of interest.
State as the report type

In step 2 you selected:
RSCD=23 EVALID=270901 MINNESOTA 2005;2006;2007;2008;2009
 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:
 The SQL filter used was:
 sessionId=102A8E21E2AC4333B3224181D35DAE3F

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

Estimate for Number of growing-stock trees on forestland (trees)

All live stocking	Total	Overstocked	Fully stocked	Medium stocked	Poorly stocked	Nonstocked	Unavailable	Other
RSCD=23 EVALID=270901 MINNESOTA 2005;2006;2007;2008;2009	12,204,023,730	2,786,424,180	5,395,899,840	3,296,742,829	720,971,539	3,985,341	0	0

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RSCD=23 EVALID=270901 MINNESOTA 2005;2006;2007;2008;2009	1.24	4.42	2.20	2.50	4.83	20.68	0.00	0.00

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

Estimate for Number of growing-stock trees on forestland (trees)

All live stocking	Total	Overstocked	Fully stocked	Medium stocked	Poorly stocked	Nonstocked	Unavailab le	Other
RSCD=23 EVALID=270901 MINNESOTA 2005;2006;2007;2008;2009	12,204,023,730	2,786,424,180	5,395,899,840	3,296,742,829	720,971,539	3,985,341	0	0

Sampling Errors in percent for Number of growing-stock trees on forestland (trees)

All live stocking	Total	Overstocked	Fully stocked	Medium stocked	Poorly stocked	Nonstocked	Unavailab le	Other
RSCD=23 EVALID=270901 MINNESOTA 2005;2006;2007;2008;2009	1.24	4.42	2.2	2.5	4.83	20.68	0	0

Fri Apr 08 07:50:59 CDT 2011

Web citation: Miles, P.D. Fri Apr 08 07:50:59 CDT 2011. Forest Inventory EVALIDator web-application version 4.01 beta. St. Paul, MN: U.S. Depar

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(cond.alstkcd,-1),1,'0001 Overstocked',2,'0002 Fully stocked',3,'0003 Medium stocked',4,'0004 Poorly stocked',5,'0005 Nonstocked',-1,'0006 Unavailable',-1,'0007 Other') colstr,SUM(nvl(tree.tpa_unadj*decode(tree.dia,nvl(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))),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.cond cond,fs_fiadb.plot plot, fs_fiadb.pop_plot_stratum_assign 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 1=1 and pop_eval.typ_evl_typ='EXPVOL' and tree.plt_cn=cond.plt_cn and tree.condid=cond.condid and cond.cond_status_cd=1 and tree.statuscd=1 and tree.treeclcd=2 and tree.dia>=1.0 and cond.plt_cn=plot_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_evl_grp_cn=pop_eval_grp_cn and pop_eval.cn=pop_eval_typ.evl_cn and pop_eval.cn=pop_estn_unit.evl_cn and ((pop_eval.rscd=23 and pop_eval.evalid=270901) 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(cond.alstkcd,-1),1,'0001 Overstocked',2,'0002 Fully stocked',3,'0003 Medium stocked',4,'0004 Poorly stocked',5,'0005 Nonstocked',-1,'0006 Unavailable',-1,'0007 Other')) GROUP BY rowstr,colstr
```

This Oracle SQL statement can be used to derive estimates and sampling errors :

```
select rowstr,colstr,estimated_value, round(sqrt(Var_of_estimate_eq_4_6)/estimated_value*100,2) se_stratified_sampling, round(sqrt(Var_of_estimate_eq_4_7)/estimated_value*100,2) se_double_sampling, total_plots, non_zero_plots, Var_of_estimate_eq_4_6, Var_of_estimate_eq_4_7 from (select rowstr, colstr, sum(estimated_value) estimated_value, sum(Var_of_estimate_eq_4_6) Var_of_estimate_eq_4_6, sum(Var_of_estimate_eq_4_7) Var_of_estimate_eq_4_7, sum(Non_zero_plots) Non_zero_plots, sum(total_plots) Total_plots from (select rowstr, colstr, round(sum(area_used *(nvl(sum,0)/p2pointcnt)*(p1pointcnt/p1pntcnt_eu)),0) Estimated_value, SUM(p2pointcnt) Total_plots, sum(plots_in_cell) Non_zero_plots, area_used * area_used / sum(p2pointcnt) * (sum
```

- 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.

```

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(cond.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.tpa_unadj *
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))),
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,

```

6. Users can continue to run more tables use the browser Back button to go back to EVALIDator, Step 1.