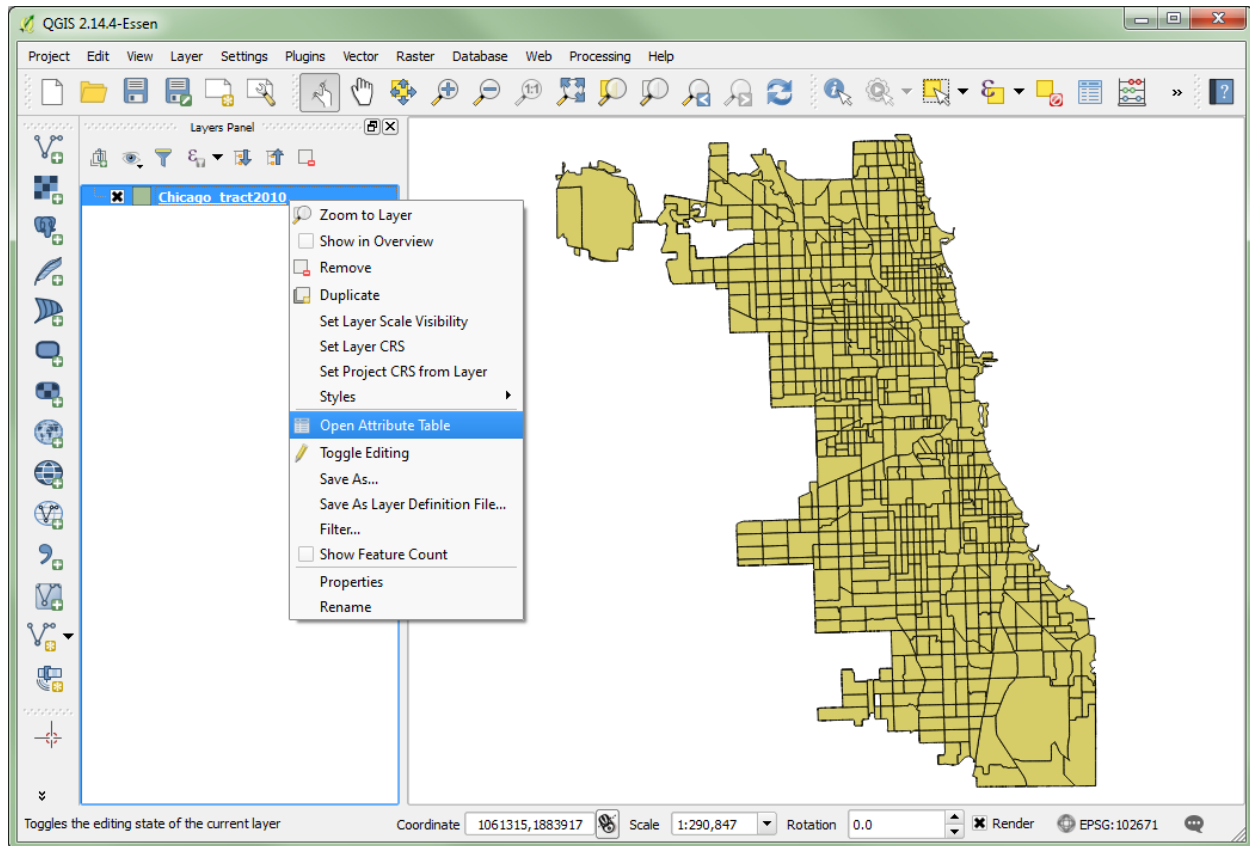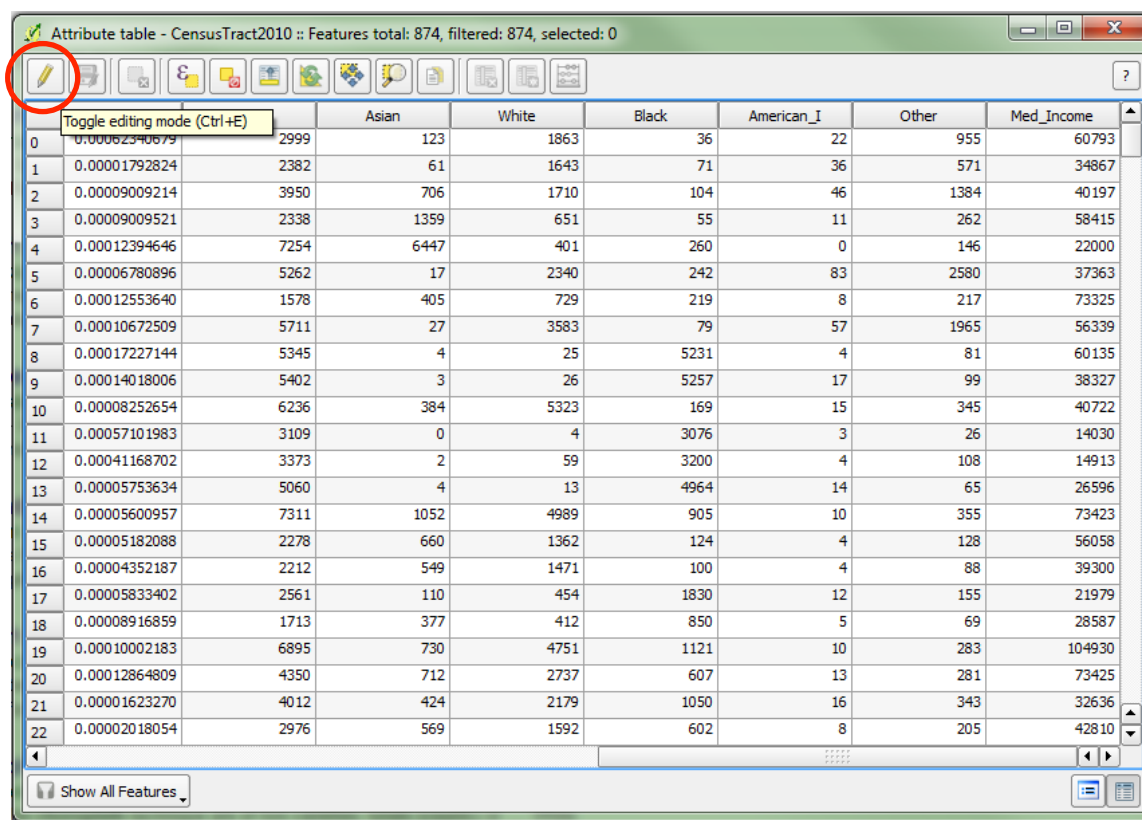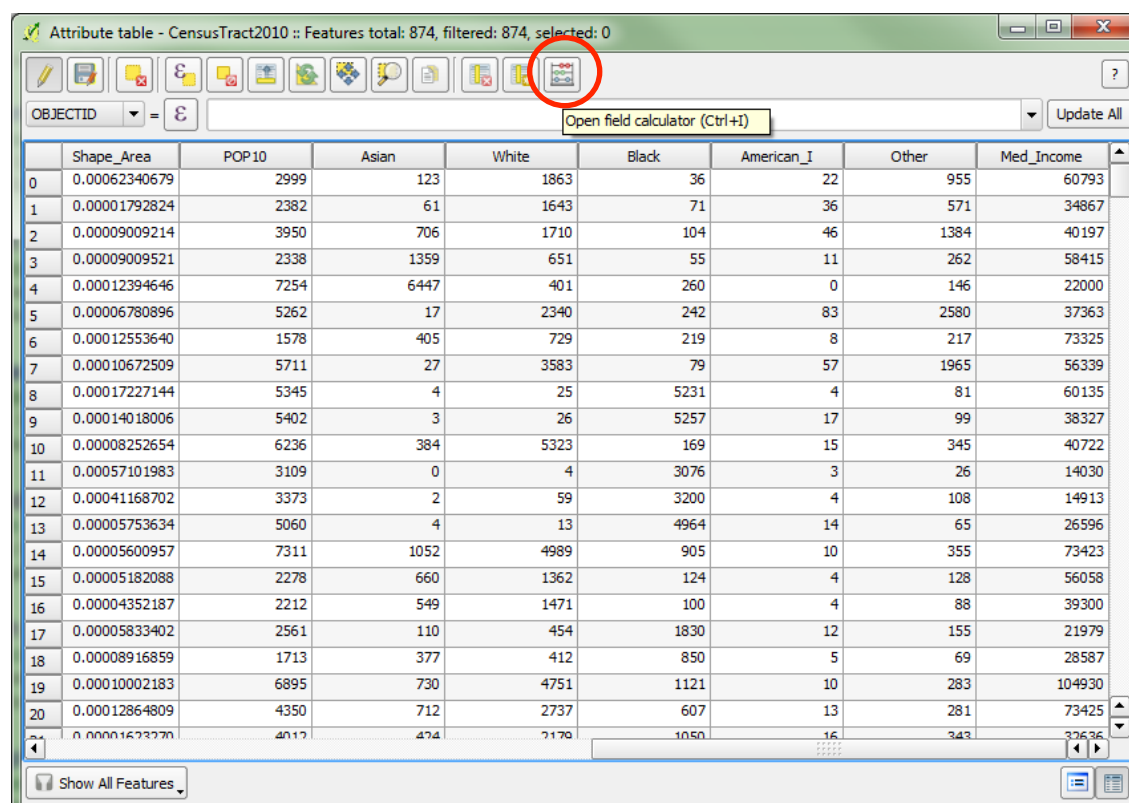# Use QGIS Field Calculator: Calculate Polygon Area

- Open **QGIS Desktop** and **Add the Vector Layer**

- In the Layers Panel, right-click on the layer and select **Open Attribute Table**.

- In the Attribute Table dialog window, click on the **Toggle editing mode** button (see image below). The editing mode will allow you to make changes to the attribute table, such as *creating a new column* or *deleting an existing column.*

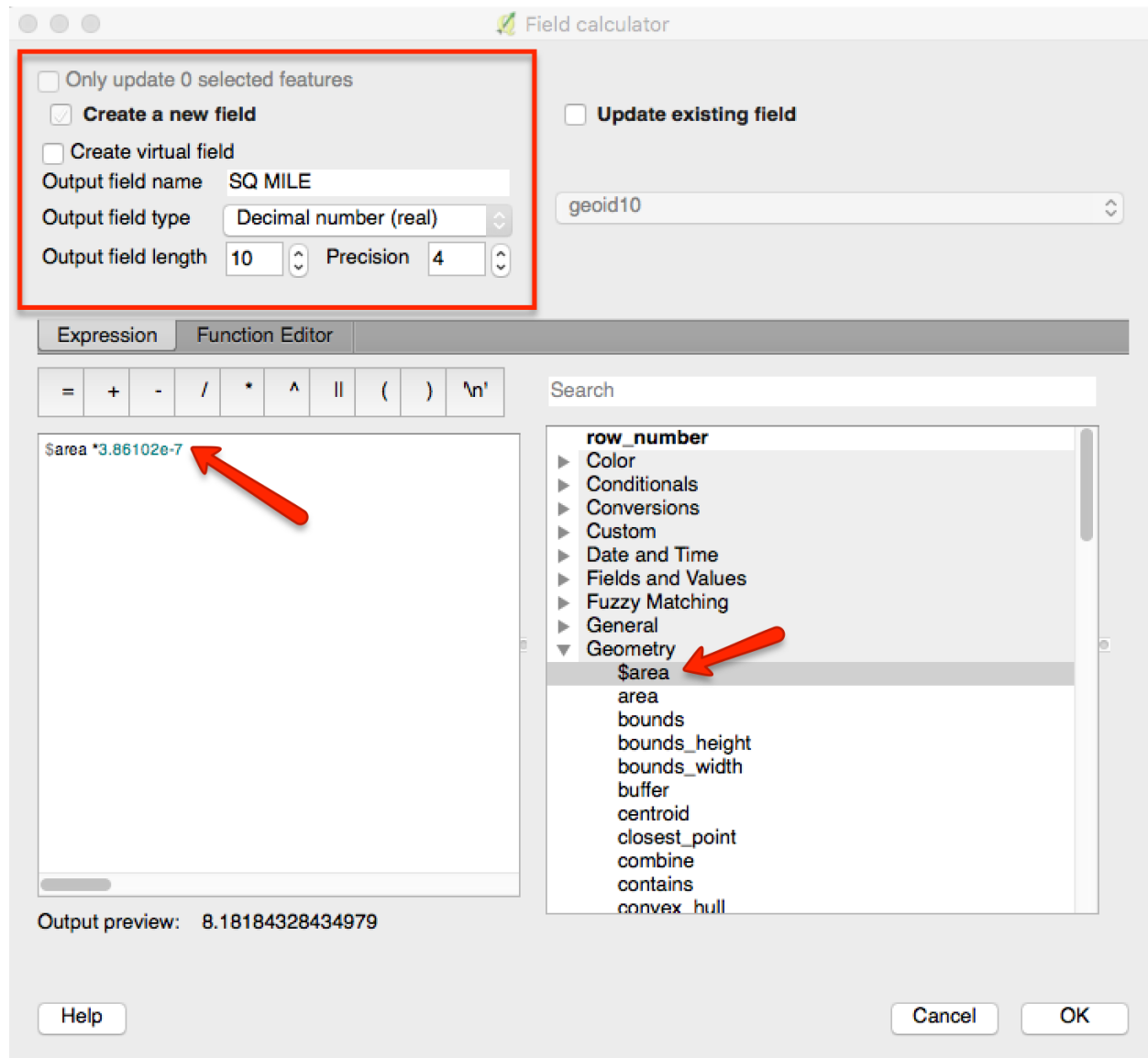- Then click on the **Open field calculator** button .

- Now, we are about to create a new field to calculate polygon areas in **square miles**.

  o Before doing this in QGIS, we need to figure out the formula to be used.

  o First, check the map unit under **Project Properties > General**

  o The default area measurement unit is shown under **Measurements.** The Chicago layer is in **square meters**.

  o To get square miles instead, I looked up the formula on Google:

  o This basically tells us that we could calculate square mile by **multiplying the square meters values by 3.86102e-7**

- In the Field calculator window, make the following changes:

  o Check the box next to **Create a new field** (we will create a new field to hold the area values)

  o Set the Output field name as **SQ MILE** (this is the name of the new field)

  o Set the Output field type as **Decimal number (real)** (the data type of the new field)

  o Set Output field width as **10 (total number of digits)**, **Precision** as **4 (number of decimal places**)

  o Enter the Expression to calculate **"$area * 3.86102e-7".** You may double-click the $area function from the **Geometry** section to add it. And you may complete the rest of the expression using your keyboard.

  o Click **OK** to calculate the polygon area in square miles.

- Be sure to save your changes by clicking on the **Save Edits** button .

	total14	white	black	asian	mixed	other	med_income	Shape_Leng	Shape_Area	SQ MILE
0	3374	0	3374	0	0	0	35349	22777.47738…	21190885.52…	0.7601
1	4147	1885	108	828	193	1133	44554	16035.05499…	8947393.972…	0.3209
2	7622	358	302	6691	271	0	25292	15186.40024…	12306142.70…	0.4414
3	5685	2900	285	22	69	2409	31834	10472.23035…	6731931.228…	0.2415
4	1866	1019	448	293	57	49	47969	14719.44311…	12460159.24…	0.4469
5	5744	2935	2	99	191	2517	58485	13299.91218…	10608487.10…	0.3805
6	5147	68	5029	37	13	0	42355	19495.54978…	17631568.81…	0.6324
7	7343	5706	61	779	420	377	41132	17734.07520…	8184308.759…	0.2936
8	3268	74	3101	0	8	85	14932	39870.37023…	57013406.17…	2.0451
9	3922	72	3832	0	2	16	14005	34175.10771…	41617739.57…	1.4928
10	5343	28	5269	0	30	16	35861	11315.71668…	5721620.164…	0.2052
11	7868	4973	1086	1418	340	51	80091	9507.294470…	5559251.675…	0.1994
12	3538	2358	747	346	57	30	36413	8565.692847…	2721569.766…	0.0976
13	2961	1578	664	647	57	15	38300	7599.279582…	3054322.040…	0.1096
14	4512	2679	221	682	348	582	56027	10626.94529…	7060696.143…	0.2533
15	1772	579	966	6	8	213	36083	10983.12793…	6288924.120…	0.2256
16	3533	3103	109	310	11	0	77172	5161.796830…	1671998.046…	0.0600

Show All Features

- Then click on the **Toggle editing mode** button again to exit the editing mode. Then close the attribute table.