

Lesson Title: At Odds with Salem

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Lessons Summary: In this lesson we will explore the political dissimilarities between the different geographical regions of Oregon. We will determine why so many Oregonians feel left out of the political process and why simple things like water will be the major source of contention in years to come.

Lesson Objective: Students will be able to:

- Locate and identify different regions in Oregon
- Describe differences based on population density
- Use ArcServer maps and tools needed to complete the assignment
- Identify changes in party voting patterns over time

Before you begin using this module, you will need to know about using a Web-based GIS viewer. You can do this by watching the tutorial video or working through the tutorial. The tutorial video, student activity, and Web-based GIS Tutorial Viewer can be found at <http://gis.lanecc.edu> → “Modules” tab → “Tutorial” link. The activity works best with a high speed Internet connection.

Prior Skills: You will need to know how to turn layers on and off, use the ID tool and, zoom in and out of the map, toggle from layers to the legend, and perform a search (Boolean) query.

Remember, computer steps are indicated by a ► symbol and questions you need to answer are numbered.

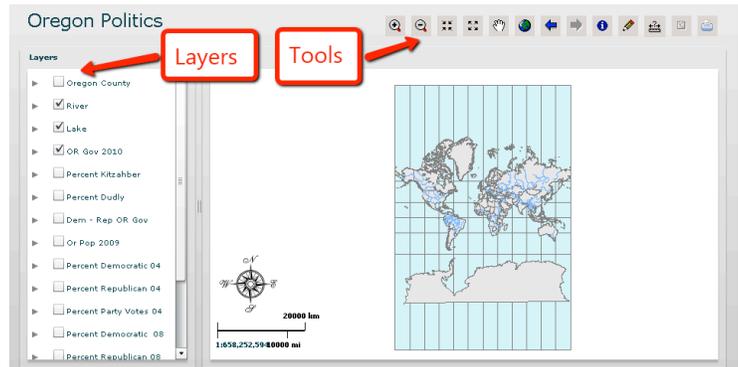
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- Connect to the MAPS-GIS Web page at <http://gis.lanecc.edu>
 - Click on the Modules link.
 - Click on Oregon Politics
 - Click the Link to the web-based map.



The page will take a minute or two to load. The base map will load first then the other data layers. If it stalls at 55%, just click the **refresh** button on your browser.



Your web browser should open a map that looks like the one shown here.



On the left hand side of the map is a list of Data Layers, at the top are several Tools.



- ▶ Use the ZOOM IN tool to focus on the Pacific Northwest.
- ▶ Click on the tool and hold the left mouse button down.
- ▶ Draw a rectangle around the Pacific Northwest.



- ▶ Use the ZOOM IN tool again so Oregon is the focus of the map.

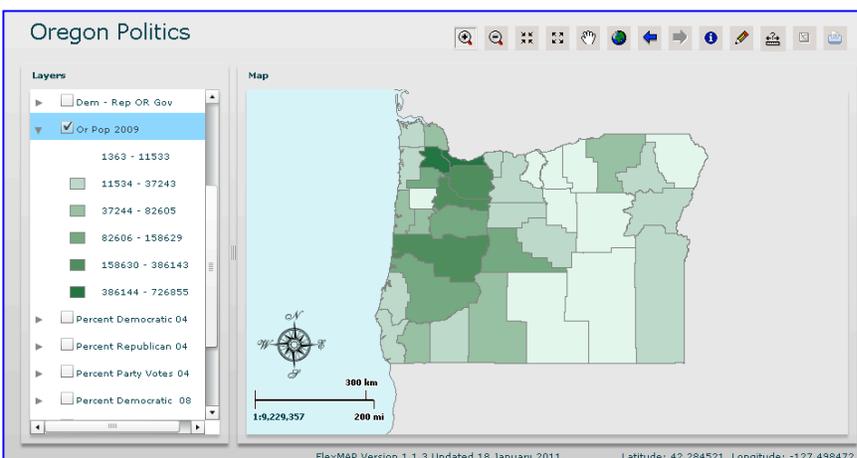
Your map should look like this:



- ▶ On the left hand side under layer, unclick the designated layers – Rivers, Lake, Or Gov 2010. This will turn them off.
- ▶ Click on OR Pop 2009.
- ▶ Click on the ▶ to see the color key.



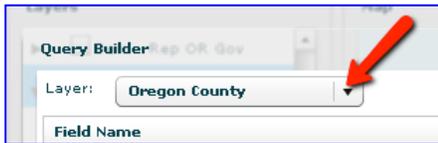
Your map should now look like this:



- ▶ Click on “Selection” at the top left-hand corner of the page. Choose “select by Attributes”.

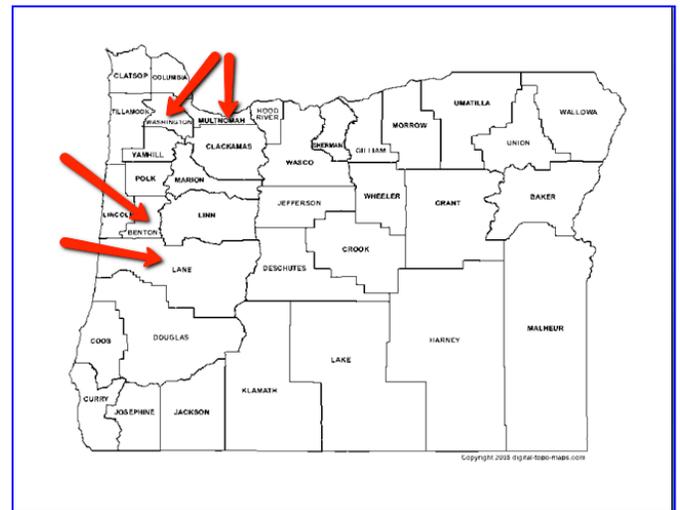


- ▶ Pull down the “Layers” choices and choose “OR Pop 2009”.



Using the counties map given to you in class, locate Multnomah, Washington, Benton, and Lane Counties.

- ▶ Locate Multnomah County on your GIS population map. Using the Identify tool  click on Multnomah County.



Your screen should show an attributes box that looks like this:

DEM04	DEM08	Diff	Diff04	Diff08	difper	Dud_Per	Dud_b
259585	279696	121242	161146	204525	43	27.3	76915

- ▶ Open an Excel Spreadsheet by clicking on the Start tab at the bottom of your computer screen. Select “All Programs” → “Microsoft Office” → “Microsoft Office Excel”.

- ▶ From the Web-based map table, click on “Copy All to Clipboard”.

DEM04	DEM08	Diff	Diff04	Diff08	difper	Dud_Per	Dud_b
259585	279696	121242	161146	204525	43	27.3	76915

- ▶ On you Excel Spreadsheet, right click on Row 1, Column A and paste the information from your clipboard.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	DEM04	DEM08	Diff	Diff04	Diff08	difper	Dud_Per	Dud_tot	FID	Kitz_per	Kitz_tot	Kord_tot	NAME	PDEM04
2	259585	279696	121242	161146	204525	43	27.3	76915	9	70.5	198157	2149	MULTNON	71.

- ▶ Continue this process for Washington (paste into Column A, Row 3), Benton (paste into Column A, Row 5), and Lane (paste into Column A, Row 7) counties. Now remove columns A thru L by highlighting them, right click, and delete.

	A	B	C	D	E	F	G	H	I	J	K	L	M
1	DEM04	DEM08	Diff	Diff04	Diff08	difper	Dud_Per	Dud_tot	FID	Kitz_per	Kitz_tot	Kord_tot	NAME
2	259585	279696	121242	161146	204525	43	27.3	76915	9	70.5	198157	2149	MULTNOM
3	DEM04	DEM08	Diff	Diff04	Diff08	difper	Dud_Per	Dud_tot	FID	Kitz_per	Kitz_tot	Kord_tot	NAME
4	121140	141544	2885	13917	52359	2	48	89926	7	49.6	92811	1977	WASHING
5	DEM04	DEM08	Diff	Diff04	Diff08	difper	Dud_Per	Dud_tot	FID	Kitz_per	Kitz_tot	Kord_tot	NAME
6	26515	29901	7646	8055	14637	21	38	13634	24	59.4	21280	393	BENTON
7	DEM04	DEM08	Diff	Diff04	Diff08	difper	Dud_Per	Dud_tot	FID	Kitz_per	Kitz_tot	Kord_tot	NAME
8	107769	114037	24337	32762	50202	17	39.9	57394	28	56.9	81731	1855	LANE
9													

- ▶ The names of the counties should now be in column A.
- ▶ Now highlight columns B and C, right click and delete.

Population should now be in Column B.

- ▶ Now highlight Columns C through K, right click, delete. You should now have three columns. Expand your columns so they are easier to read.

A	B	C	D
NAME	PDEM04	PDEM08	Pop09
MULTNOM	71.6	76.69	726855
NAME	PDEM04	PDEM08	Pop09
WASHING	52.4	59.82	537318
NAME	PDEM04	PDEM08	Pop09
BENTON	58	64.33	82605
NAME	PDEM04	PDEM08	Pop09
LANE	58	62.35	351109

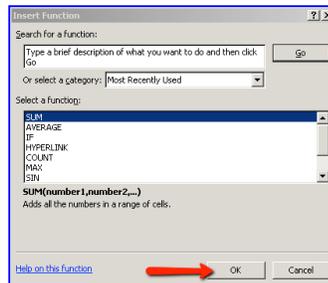
A	B	C	D	E	F	G	H	I	J	K	L
NAME	Pop09	PREP04	PREP08	REP04	REP08	Shape	tot_votes	TV04	TV08	Wag_tot	Winner
MULTNOM	726855	27.1	20.61	98439	75171	Polygon	280100	362694	364710	2879	Kitzhaber
NAME	Pop09	PREP04	PREP08	REP04	REP08	Shape	tot_votes	TV04	TV08	Wag_tot	Winner
WASHING	537318	46.4	37.69	107223	89185	Polygon	186697	231308	236632	1983	Kitzhaber
NAME	Pop09	PREP04	PREP08	REP04	REP08	Shape	tot_votes	TV04	TV08	Wag_tot	Winner
BENTON	82605	40.4	32.84	18460	15264	Polygon	35748	45735	46478	441	Kitzhaber
NAME	Pop09	PREP04	PREP08	REP04	REP08	Shape	tot_votes	TV04	TV08	Wag_tot	Winner
LANE	351109	40.4	34.9	75007	63833	Polygon	143025	185872	182910	2048	Kitzhaber

	A	B	C
1	NAME	Pop09	Winner
2	MULTNOMAH	726855	Kitzhaber
3	NAME	Pop09	Winner
4	WASHINGTON	537318	Kitzhaber
5	NAME	Pop09	Winner
6	BENTON	82605	Kitzhaber
7	NAME	Pop09	Winner
8	LANE	351109	Kitzhaber

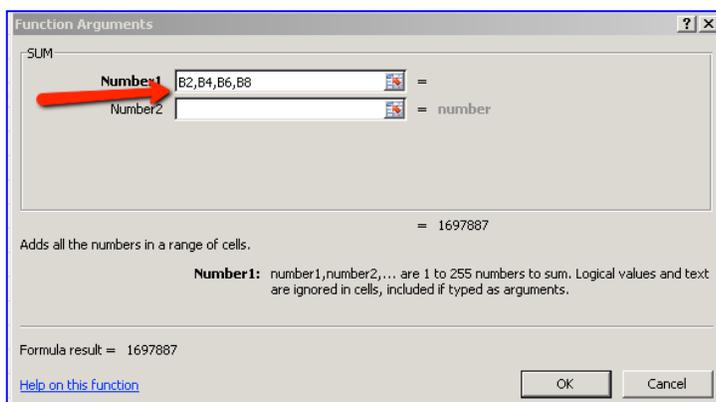
- ▶ Click on column B, Row 10. Select the “Insert Function” by clicking on 

- ▶ Click the “OK” button.

- ▶ In the box “Number 1”, type B2, B4, B6, B8 and click “OK”.



	A	B	C	D
1	NAME	Pop09	Winner	
2	MULTNOMAH	726855	Kitzhaber	
3	NAME	Pop09	Winner	
4	WASHINGTON	537318	Kitzhaber	
5	NAME	Pop09	Winner	
6	BENTON	82605	Kitzhaber	
7	NAME	Pop09	Winner	
8	LANE	351109	Kitzhaber	
9				
10				
11				



Your Excel Spreadsheet should have the total population for the four counties.

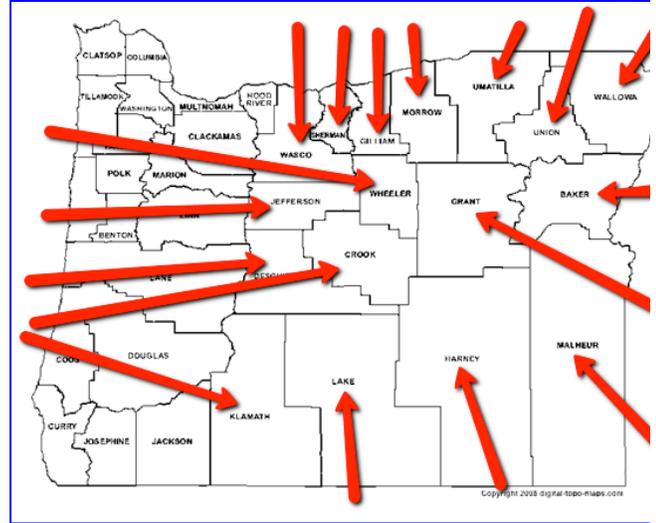
	A	B	C
1	NAME	Pop09	Winner
2	MULTNOMAH	726855	Kitzhaber
3	NAME	Pop09	Winner
4	WASHINGTON	537318	Kitzhaber
5	NAME	Pop09	Winner
6	BENTON	82605	Kitzhaber
7	NAME	Pop09	Winner
8	LANE	351109	Kitzhaber

▶ Using the counties map given to you in class, locate the counties in Eastern Oregon.

▶ Locate these counties on your GIS population map. Using the Identify tool



▶ Follow the steps you used above and paste the information onto your Excel Spreadsheet starting with Column A, Row 13.

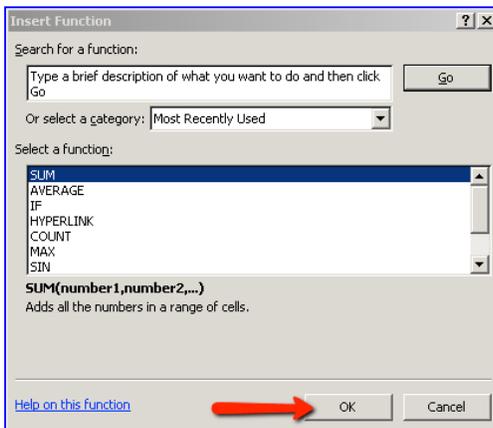


When you are completed, your spreadsheet should look like this: →

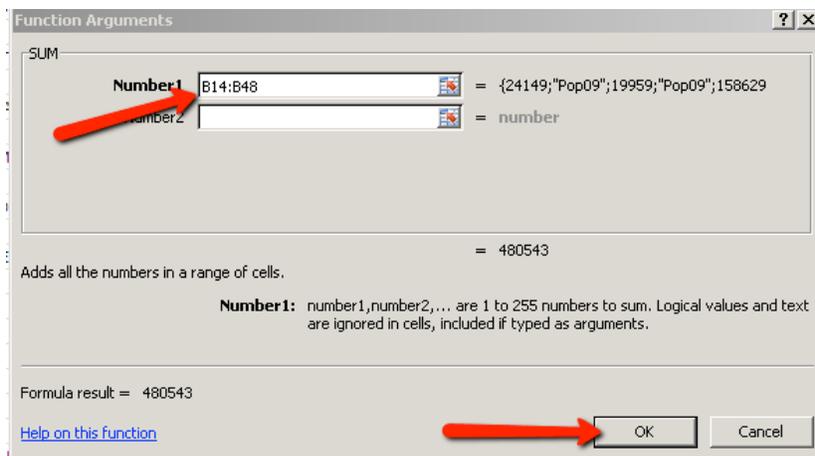
▶ Click on clicking  Column B, Row 49. Select the “Insert function” by on the link

▶ Click the “OK” button.

	A	B	C
1	NAME	Pop#	Winers
2	MULTNOMAH	726855	Kilabaker
3	NAME	Pop#	Winers
4	WASHINGTON	537318	Kilabaker
5	NAME	Pop#	Winers
6	BENTON	82685	Kilabaker
7	NAME	Pop#	Winers
8	LAKE	351483	Kilabaker
9			
10			
11		1637887	
12			
13	NAME	Pop#	Winers
14	WASCO	24143	Dudly
15	NAME	Pop#	Winers
16	JEFFERSON	13353	Dudly
17	NAME	Pop#	Winers
18	DESCHUTES	158623	Dudly
19	NAME	Pop#	Winers
20	KLAMATH	66247	Dudly
21	NAME	Pop#	Winers
22	SHERMAN	4741	Dudly
23	NAME	Pop#	Winers
24	GILLIAM	1645	Dudly
25	NAME	Pop#	Winers
26	MORROW	11533	Dudly
27	NAME	Pop#	Winers
28	WHEELER	1963	Dudly
29	NAME	Pop#	Winers
30	CROOK	22566	Dudly
31	NAME	Pop#	Winers
32	LAKE	7883	Dudly
33	NAME	Pop#	Winers
34	GRANT	6735	Dudly
35	NAME	Pop#	Winers
36	UMATILLA	73347	Dudly
37	NAME	Pop#	Winers
38	UNION	25838	Dudly
39	NAME	Pop#	Winers
40	HARNEY	6756	Dudly
41	NAME	Pop#	Winers
42	WALLOWA	6883	Dudly
43	NAME	Pop#	Winers
44	BAKER	16882	Dudly
45	NAME	Pop#	Winers
46	MALHEUR	38745	Dudly
47			
48			
49			
50			
51			
52			



▶ In Box Number 1, type in B14:B46 and click “OK”.



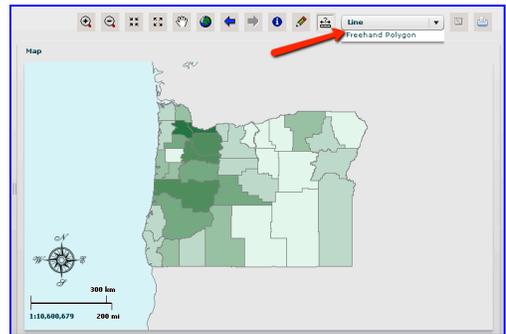
1. What is the population total for Multnomah, Washington, Benton, and Lane Counties?

2. What is the population total for Eastern Oregon?

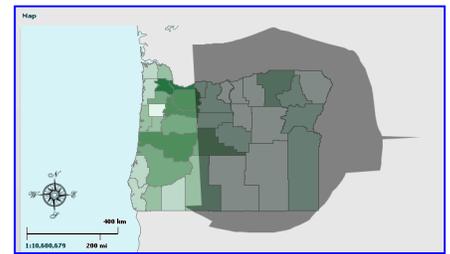
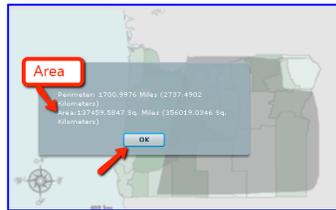
- ▶ Return to the Web-based map.

3. Describe the general pattern of population in Oregon using cardinal directions such as north, south, east, west to make your description more geographic. Respond to the following: Is the population evenly distributed? Is it clustered or grouped? Where in the state are there higher and lower populations? Why do you think population is located where it is?

- ▶ On the Tool Bar, click the Measuring Tool.
- ▶ Pull down the “Line Bar” and click on “Free Polygon”.
- ▶ Starting in the lower left-hand corner of Eastern Oregon, draw a Polygon around as much of Eastern Oregon as you can capture.

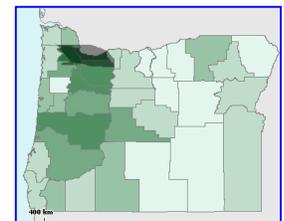


- ▶ Locate the area in the box.



4. What is the approximate area of Eastern Oregon in square miles?

- ▶ Click the “OK” button.
- ▶ On the Tool Bar, click the Measuring Tool.
- ▶ Pull down the “Line Bar” and click on “Free Polygon.” Starting in the left-hand corner of Washington County, draw a Polygon around Washington and Multnomah Counties.



5. What is the approximate area of Washington and Multnomah Counties in square miles?

- ▶ On the Tool Bar, click on the Measuring Tool.
- ▶ Pull down the “Line Bar” and click on “Free Polygon.” Starting at the coastal edge of Lane County, draw a Polygon around Lane and Benton Counties.

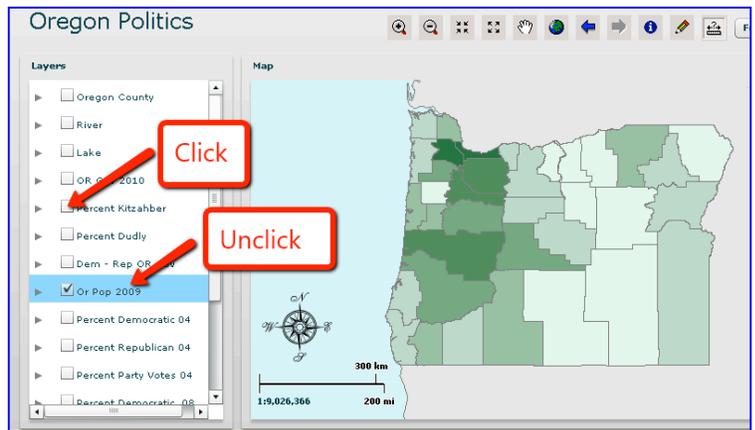
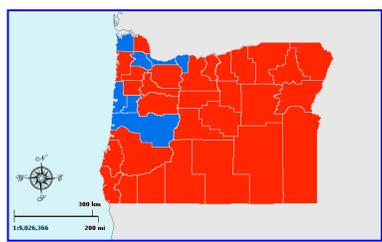
6. What is the area of Benton and Lane Counties in square miles?

7. Add the number square miles in Washington and Multnomah Counties with the number of square miles in Lane and Benton Counties. What is the total?
8. Compare the total square miles in Eastern Oregon with the total square miles in the combined four counties in Western Oregon. Which is bigger?
 - a) Find the percentage by dividing the total in Western Oregon by the total in Eastern Oregon. What is this percentage?
9. Now look at your Excel Spreadsheet. Compare the total number of votes in your top four counties with the total number of votes in your bottom seventeen counties. Which number is bigger?
 - a. Find the percentage by dividing the total in the bottom seventeen counties by the total in the top four counties. What is this percentage?
10. Fill in the blanks with the numbers from above.

Eastern Oregon has _____ square miles but account for only _____ of the number of votes cast in the Oregon 2010 Gubernatorial election.

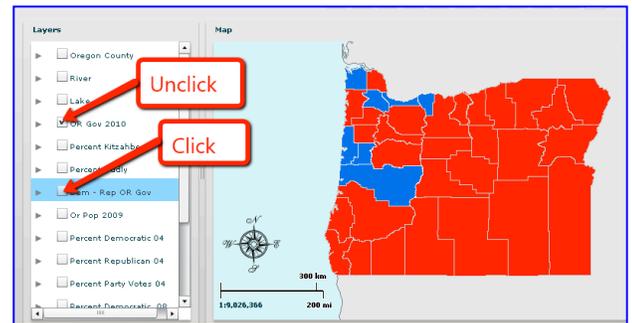
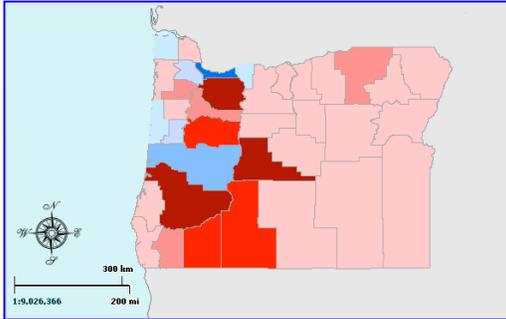
Lane, Benton, Washington, and Multnomah Counties have _____ square miles and account for _____ of the number of votes cast in the Oregon 2010 Gubernatorial election.

► Unclick the “OR Pop 2009” box in the layer section of your map and click on the “OR Gov 2010” layer. Your map should look like this.



11. How many counties did Democrat John Kitzhaber (blue) win? _____
12. How many counties did Republican Chris Dudley (red) win? _____
13. Using the information from your population maps and Excel Spreadsheet, explain why Democrat John Kitzhaber won the Oregon 2010 Gubernatorial election over Republican Chris Dudley.

► Unclick the “OR Gov 2010” layer and click on the “Dem-Rep OR Gov” layer. Your map should look like this.



14. If you were managing the campaign for a Republican candidate for statewide office, which two counties would you need to win in order to have a chance for victory? Why?

15. Why do you think many Oregonians feel like state government in Salem does not represent their needs and issues?

16. Discuss how population distribution can create influence on state decision making processes. Provide examples from your data analysis to support your discussion.

Career Extension: Making Career Connections

- Go to the website: <http://www.esri.com> and click on the “Industries” tab.
- Find a career that might be of interest to you. For example, in the list for Government careers you might be interested in “Elections and Redistricting”. In this link there are several examples of how GIS can be used in various careers.
- Prepare a brief summary of the five examples given. Chose one and search the internet for job possibilities, salaries, and locations.