

Where did we come from? Where might we go?

Chuck Cartledge

April 23, 2020 at 12:02 Noon

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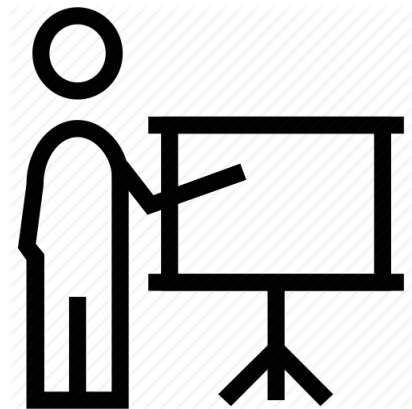
5 Conclusion

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# A quick overview

Questions that were/are interesting:

- 1 What are the relative population centers
- 2 What are the absolute population centers
- 3 What places are changing the most



All these questions are based on time.

All from the US Census Bureau

## Census data pre-2000

The file contains a lot of interesting, but not useful information. Things like: a Notes column to the right, when the state was not part of the Union, triple dashes when no data was available (because no one was there, or the county didn't exist), a textual section after the state that addresses the notes.

The screenshot shows a spreadsheet titled "Part B. Population of Counties, Selected Decades 1800-2000". The columns represent years from 1800 to 2000 in 20-year increments. The rows list states and counties. A "Notes" column is present on the right side of the spreadsheet, containing text for states that were not part of the Union or where data was unavailable. The data is organized in columns by year and rows by state/county.

“Messy” data in the worksheet.

All from the US Census Bureau

## Same image.

Population\_PartIII - LibreOffice calc

W2479

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V
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Sheet 1 of 2

Population\_PartIII - General Notes

PopStyle\_Population\_PartIII

Sum=0

100%

"Messy" data in the worksheet.





All from the US Census Bureau

## Same image.

File	Edit	Options	Buffers	Tools	Text	Virtual	Env	Help
AL01001Autauga County	43671	17602	1543550050	21959029	595_960032	8_478429	32_523283	-86_577176
AL01003 Baldwin County	140415	74285	413518782	1115203109	1596_346694	436_582346	30_592781	-87_748200
AL01005 Barbour County	29008	12461	2291809572	50799504	884_903549	19_613030	31_856515	-85_331312
AL01007 Bibb County	20826	8345	1613627425	81244669	623_816627	3_136875	33_040054	-87_123243
AL01008 Blount County	51024	21158	1672057889	12998071	645_581188	5_018892	33_978461	-86_554768
AL01011 Bullock County	11714	4277	1671075183	2783063	825_612619	1_043659	32_098285	-85_784915
AL01013 Butler County	21399	9957	2812876972	2722130	776_867295	1_854081	31_735884	-86_662322
AL01015 Calhoun County	112240	51322	1575907564	9996496	608_461338	3_850663	33_741989	-85_817544
AL01017 Chambers County	36583	16256	1546657821	15382288	597_167640	5_939135	32_893233	-85_288745
AL01019 Cherokee County	23988	14625	1432576264	11239094	553_120811	46_036097	34_184158	-85_621930
AL01021 Chilton County	39593	17651	1797296705	17522968	693_978777	6_777238	32_832554	-86_689882
AL01023 Choctaw County	15922	7839	2365990097	18999051	913_513922	7_335575	32_027681	-88_257855
AL01025 Clarke County	27867	12631	3207377186	36596298	1238_375308	14_129910	31_688155	-87_834164
AL01027 Clay County	14254	6612	1507124311	2493035	685_079966	6_922717	33_265810	-85_042858
AL01029 Cleburne County	14123	6189	1450940300	2809814	560_211206	6_086882	33_647948	-85_511937
AL01031 Coffee County	43615	19837	1758576346	3854083	078_990132	1_488031	31_378987	-85_956841
AL01033 Colbert County	54984	24980	1539831753	75385160	594_532389	29_075486	34_731480	-87_725980
AL01035 Conecuh County	14089	7265	2283546316	4436364	850_794025	1_712898	31_415613	-87_082188
AL01037 Coosa County	12202	6142	1689820597	3683982	652_443408	13_914884	32_955511	-86_236319
AL01039 Covington County	37631	18578	2679571159	26828615	1035_831604	10_046616	31_251036	-86_416195
AL01041 Crenshaw County	13665	6644	1578805448	3354388	609_580917	1_295137	31_740365	-86_280299
AL01043 Fulton County	77483	35233	1912519740	42457211	738_428083	16_392822	34_155683	-86_838179
AL01045 Dale County	409129	21779	1453114505	4146470	561_073837	1_680961	31_394100	-85_615013
AL01047 Dalton County	40365	28450	2540803379	32793461	980_712551	12_061627	32_379942	-87_065563
AL01049 Dekalb County	64452	28051	2014784830	1980435	777_912805	6_736851	34_459133	-85_798919
AL01051 Elmore County	65874	25733	1609984562	93127438	621_255605	35_956706	32_596847	-86_170765
AL01053 Escambia County	38440	16544	2673310209	14424173	947_382848	5_569285	31_104135	-87_232880
AL01055 Etowah County	103459	45959	1385183532	36080591	534_822374	13_930795	34_018597	-86_032125
AL01057 Fayette County	18095	8472	1625632174	4354945	627_660118	1_681454	33_747077	-87_751725
AL01059 Franklin County	31223	13749	1646312169	28139961	635_644709	10_060490	34_463485	-87_832638
AL01061 Geneva County	9974	5117	1672782673	4979742	576_280451	6_623878	31_094579	-85_780683
AL01063 Greene County	9974	5117	1672782673	3643801	645_865028	14_068907	32_837254	-87_958052
AL01065 Hale County	17185	7756	1607207394	32984565	845_735532	12_735432	32_768094	-87_035087
AL01066 Henry County	18310	8817	1455084571	149913484	561_786382	6_538333	31_693511	-85_253768
AL01069 Houston County	88787	39571	1583124582	3351697	580_359670	1_294988	31_189711	-85_358387
AL01071 Jackson County	53926	24168	2793932865	134376137	1078_743247	48_021967	34_755318	-85_948462
AL01073 Jefferson County	662847	288362	2881629146	28999654	1112_607142	11_196489	33_527872	-86_028058
AL01075 Lanier County	15904	7517	1566546589	1660546	604_847805	6_017974	33_772995	-88_084782
AL01077 Laurens County	87966	40424	1733895504	127745460	669_460825	49_322800	34_876899	-87_605700
AL01079 Lawrence County	34883	15089	1975852273	63932890	693_382460	24_684628	34_554735	-87_302184
AL01081 Lee County	115992	50329	1629625257	17723894	608_718555	6_842825	32_694748	-85_328884
AL01083 Limestone County	65676	26897	1471241120	10180952	568_049396	39_031297	34_807445	-86_974946
AL01085 Lowndes County	13473	5801	1859446089	18376803	717_936480	7_095347	32_71280	-86_059917
AL01087 Macon County	24192	10277	1591227770	7842123	619_823184	27_718079	32_421555	-85_721158
AL01089 Madison County	276700	102288	2084739506	26532503	804_522458	7_927644	34_730790	-86_508226
AL01091 Marengo County	22539	10127	2038533970	15934262	977_044670	5_804761	32_333745	-87_788789
AL01093 Marshall County	31214	14416	1918255331	5586855	741_414760	2_156788	34_116331	-87_078737
AL01095 Marshall County	82231	36331	1468077998	145303458	587_059769	65_101981	34_329598	-86_288884
AL01097 Mobile County	399843	165181	3130360623	106438078	1233_099896	418_031986	30_722216	-88_139667
AL01099 Monroe County	245390	11343	2656951618	10629459	1025_854799	8_079232	31_555656	-87_359693
AL01101 Montgomery County	225310	87624	2864772933	25888189	769_763232	9_992397	33_318172	-86_208844

U:\... \county2k.txt (county2k.zip) Top 11 (Text Archive pair)

Just need to pick the right columns.







All from the US Census Bureau



## Same image.

USPS	GE010	ANCSICCODE	NAME	POP10	HUI0	ALAND	AMATER_ALAND_SQMI	AMATER_SQMI	INTPTLAT	INTPTLONG		
AL	10001	00161526	Autauga County	54571	22135	1539582278	25775735	594.436	9.952	32.53682	-86.644490	
AL	10003	00161527	Baldwin County	182265	104061	4117521611	1133190229	1589.784	437.527	30.659218	-87.746907	
AL	10005	00161528	Barbour County	27457	11829	2271818968	50664716	884.876	19.639	31.87670	-85.455456	
AL	10007	00161529	Bibb County	22915	8981	1612488789	9289057	622.582	3.587	31.031893	-87.127148	
AL	10009	00161530	Blount County	57322	23887	1669961855	15151740	644.776	5.852	31.977448	-86.567246	
AL	10011	00161531	Blount County	18914	4493	1613856985	6656528	622.895	2.338	32.101759	-85.717261	
AL	10013	00161532	Bolton County	20947	9964	2011976894	2726814	776.829	1.053	31.755667	-86.081969	
AL	10015	00161533	Calhoun County	118572	53289	1569189995	16624267	605.868	6.419	31.771786	-85.822513	
AL	10017	00161534	Chambers County	34215	17094	1545089282	17048142	596.531	6.582	32.917943	-85.391812	
AL	10019	00161535	Cherokee County	25989	16057	1434075952	119858098	553.700	46.278	34.869515	-85.654242	
AL	10021	00161536	Chilton County	43643	19278	1794483586	20586383	692.854	7.948	32.85459	-86.726227	
AL	10023	00161537	Choctaw County	13859	7269	2365954748	19059251	913.500	7.359	31.991088	-88.248887	
AL	10025	00161538	Clarke County	25833	12638	3267689488	36542656	1236.465	14.109	31.685521	-87.818624	
AL	10027	00161539	Clay County	13932	6776	1564252280	5284628	603.961	2.040	33.267809	-85.862051	
AL	10029	00161540	Cleburne County	14972	6718	1450652767	2365681	560.100	0.913	33.671981	-85.516109	
AL	10031	00161541	Coffee County	49948	22330	1735828786	3944730	676.972	1.523	31.482183	-85.989201	
AL	10033	00161542	Colbert County	54428	25758	1534877333	76430083	592.619	29.510	34.783112	-87.893457	
AL	10035	00161543	Conecuh County	13228	7093	2281894769	6644940	850.156	2.566	31.428292	-86.992029	
AL	10037	00161544	Cosa County	11539	8478	1685891875	39946646	659.626	15.423	32.931445	-86.243482	
AL	10039	00161545	Covington County	37765	18829	2468886954	34526389	1038.456	13.331	31.243987	-86.448721	
AL	10041	00161546	Crenshaw County	13986	6735	1576888886	5376392	680.840	2.076	31.732826	-86.319222	
AL	10043	00161547	Cullman County	88486	37654	1983212833	52266921	734.841	25.100	34.131923	-86.869267	
AL	10045	00161548	Dale County	58251	28677	1453371157	4816457	561.150	31.439654	-85.609476		
AL	10047	00161549	Dallas County	43820	20388	2534887386	39134826	978.695	15.110	32.333540	-87.114356	
AL	10049	00161550	DeKalb County	71189	31109	2012662359	4123588	777.093	34.466929	-85.803992		
AL	10051	00161551	Elmore County	75983	32657	1681807593	99862541	618.485	30.557	32.970229	-86.142738	
AL	10053	00161552	Escambia County	38319	16486	2447746932	20873208	945.000	8.059	31.121747	-87.168429	
AL	10055	00161553	Etowah County	104430	47454	1386188994	35322991	534.991	13.638	34.047438	-86.034320	
AL	10057	00161554	Fayette County	17241	8437	1623631689	4392821	627.660	33.732249	-87.752040		
AL	10059	00161555	Franklin County	31784	14822	1641587113	1887905	633.821	12.763	34.441388	-87.842815	
AL	10061	00161556	Geneva County	26798	12687	1487710425	11765293	574.408	4.543	31.998606	-85.824346	
AL	10063	00161557	Greene County	9845	5867	1676987832	33231212	647.110	12.833	32.844497	-87.984200	
AL	10065	00161558	Hale County	15768	7615	1667883914	3252967	643.943	12.558	32.792786	-87.623861	
AL	10067	00161559	Henry County	17382	8891	1544926258	16986789	561.750	6.559	31.516978	-85.239971	
AL	10069	00161560	Houston County	161547	45319	1581737728	4739984	579.824	1.830	31.158193	-85.296398	
AL	10071	00161561	Jackson County	53227	24786	2781664869	12665794	1077.868	48.993	32.763325	-85.977408	
AL	10073	00161562	Jefferson County	658466	308552	2078192209	32474487	1111.276	12.538	33.553444	-86.896536	
AL	10075	00161563	Lamar County	14564	7354	1566544654	1606679	804.846	0.618	33.787085	-88.087431	
AL	10077	00161564	Lauderdale County	92709	43791	1729327931	138027479	667.697	26.521	34.529776	-87.650997	
AL	10079	00161565	Lawrence County	34339	15529	1788846556	6686846	690.678	8.313	32.604664	-85.353048	
AL	10081	00161566	Lee County	140247	62391	1573510728	21530362	607.536	9.100	47.252	29.810239	-86.981399
AL	10083	00161567	Limestone County	82782	34977	1458228326	122381869	559.936	3.000	32.147708	-86.650586	
AL	10085	00161568	Lowndes County	11239	5460	1851959646	23723521	715.911	9.160	32.427827	-85.492887	
AL	10087	00161569	Madison County	334811	146447	2076116529	28771340	801.593	11.109	34.764238	-86.551080	
AL	10091	00161572	Marion County	21827	11827	2318112461	14994547	976.882	5.769	33.147591	-87.793991	
AL	10093	00161573	Marion County	38776	17437	1922520826	3313145	742.292	1.279	34.188219	-87.081151	
AL	10095	00161574	Marshall County	93819	40342	1465522757	148503356	565.842	57.337	34.389564	-86.321668	
AL	10097	00161575	Mobile County	412992	171936	3184223882	187376586	1229.435	414.577	30.486573	-88.196568	
AL	10099	00161576	Monroe County	23868	11393	2654682575	22643193	1025.675	8.743	31.588032	-87.383266	

Sometimes tabs are treated “funny” by the browser.

# Only the simplest of manipulations

- 1 Data was “wrangled” and stored in a Postgres database
- 2 Each row in the database had:
  - 1 County centroid (latitude and longitude)
  - 2 Year (1790 to 2010 by 10, even for those counties and states that didn't exist)
  - 3 Population (0 for those that don't exist)
- 3 Current names used, even when census was taken using old names

Performance could be improved using a data frame vice database.  
Performance not bad.

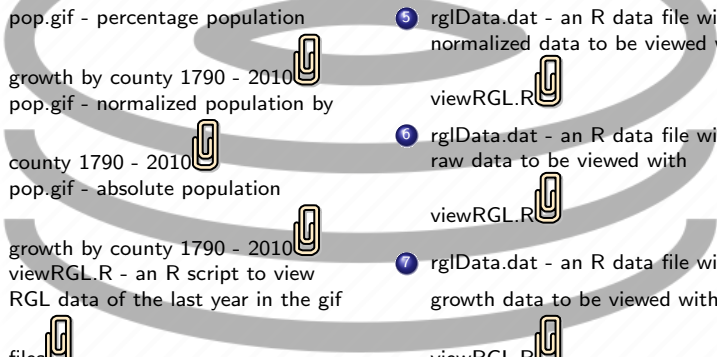






## Static images don't do the question justice

- Click on the GIFs in the Files section
- Each image has latitude, longitude, and a Z component
- The Z component varies based on the type of image





## Files of interest

- 
- 1 pop.gif - percentage population growth by county 1790 - 2010 
  - 2 pop.gif - normalized population by county 1790 - 2010 
  - 3 pop.gif - absolute population growth by county 1790 - 2010 
  - 4 viewRGL.R - an R script to view RGL data of the last year in the gif files 
  - 5 rgldata.dat - an R data file with normalized data to be viewed with viewRGL.R 
  - 6 rgldata.dat - an R data file with raw data to be viewed with viewRGL.R 
  - 7 rgldata.dat - an R data file with growth data to be viewed with viewRGL.R 