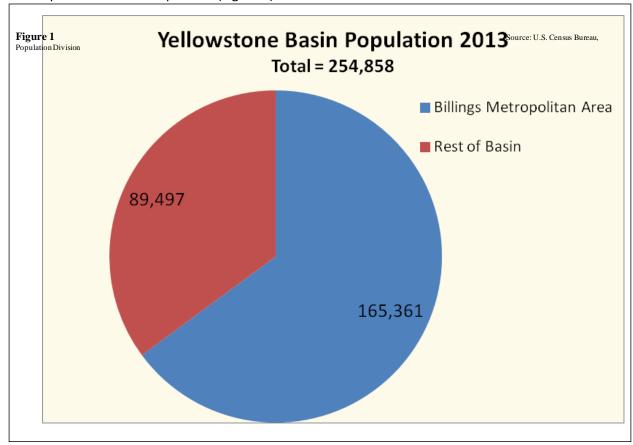
Appendix B: Section III. Basin Profile: Population and Income

POPULATION

Recent Estimates

Between the 2010 census and July 1, 2013, the population of the Yellowstone Basin increased 3.8 percent to 254,858. During the same period Montana's population increased 2.6 percent to 1,015,165.

The Yellowstone Basin contains one area that is considered to be "Metropolitan" or "Micropolitan" by the White House Office of Management and Budget (see Figure 1). According to OMB (OMB 2013), a "Metropolitan Statistical Area" is considered to have "at least one urbanized area of 50,000 or more population, plus adjacent territory that has a high degree of social and economic integration with the core as measured by commuting ties." "Micropolitan Statistical Areas" are defined similarly with the exception that the area's core consists of "at least one urban cluster" with a population between 10,000 and 50,000. The Billings Metropolitan Area is the most populous of these areas in Montana with 162,848 residents. One of every six Montanans lived in the Billings Metropolitan Area in 2013. Thirty-five percent of the Basin's residents lived in areas considered to be "rural" or classified as neither "Metropolitan" nor "Micropolitan" (Figure 1).



Populations for the Billings Metropolitan Statistical Area and for the rest of the Yellowstone Basin grew by 4 percent and 3 percent, respectively, between 2010 and 2013. Growth for these parts of the Basin exceeded the Montana's growth rate for the period of 2.6 percent.

Metropolitan Statistica Yellowstone Basin	tical Area, Rest of Basin			
	<u>2010</u>	<u>2013</u>	% Change	
Metropolitan Areas Billings +4.0	158,934	162,8	848	
Rest of Basin Montana	86,966 989,415	89,497 1,015,165	+2.9 +2.6	
Figure 2	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	, ,	reau, Population Division	

Populations of counties in the Yellowstone Basin for 2013 are listed in Figure 3. More than 60 percent of the Basin's residents lived in Yellowstone County.

Among U.S. counties with populations exceeding 10,000, Richland County ranked 19th in population growth between 2012 and 2013, growing by 3.7 percent to 11,214. Richland County's population increased by 15.1 percent between 2010 and 2013.

Carbon County ranked 92nd for population growth between 2012 and 2013, increasing by 2.2 percent to 10,340.

The populations of Indian reservations in the Basin totaled 11,652 in 2010 with nearly 60 percent residing on the Crow Indian Reservation. Figure 4 displays the populations of the Crow and Northern Cheyenne Reservations and Off-Reservation Trust Land and the percentage change in population between 2000 and 2010. The population for the Northern Cheyenne

Yellowstone Basin Counties						
Populations - 2013						
Big Horn	13,042					
Carbon	10,340					
Custer	11,951					
Dawson	9,445					
Fallon	3,079					
Park	15,682					
Powder River	1,748					
Prairie	1,179					
Richland	11,214					
Rosebud	9,329					
Stillwater	9,318					
Sweet Grass	3,669					
Treasure	700					
Yellowstone	154,162					
Source: U.S. Census Bureau, Popu	ulation Division					
Figure 3						

Reservation increased by 7 percent while the population of the Crow Reservation declined slightly during the decade.

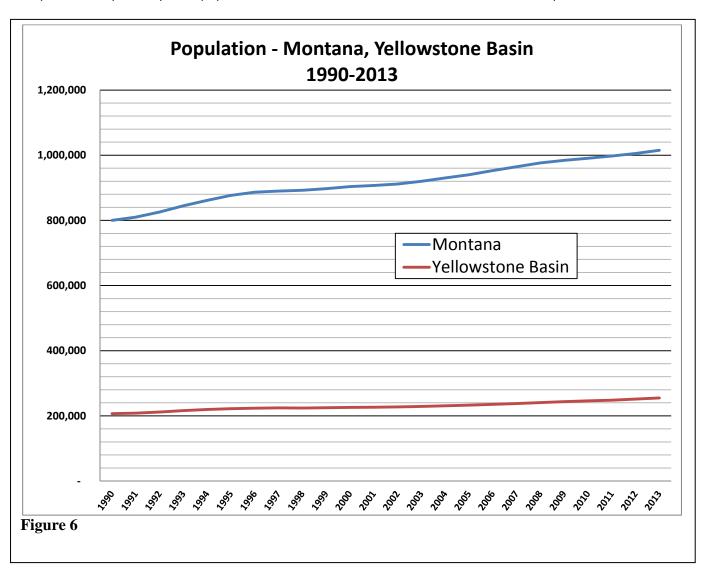
Reservations	Population 2010 9	6 Change (2000-
10) Crow	6,863	-0.5
Northern Cheyenne	4,789	7.1
Total	11,652	2.5
Figure 4	Source: U.S. Census Bu	reau. Population Division

Population estimates from the 2010 Census were aggregated by 8-digit hydrologic unit code (HUC) subbasins for the Upper Missouri Basin. Population estimates for these sub-basins are presented in Figure 5. Nearly two-thirds of the Basin population resided in two sub-basins, the Upper Yellowstone-Big Lake Basin and the Upper Yellowstone-Pompeys Pillar.

y SUB-BASIN - 2010	
	2010
SUB-BASIN	POPULATION
Big Horn Lake	10
Big Porcupine Creek	108
Clarks Fork Yellowstone River	10,013
Little Bighorn River	4,662
Little Powder River	271
Lower Bighorn River	5,646
Lower Powder River	327
Lower Tongue River	7,139
Lower Yellowstone River	19,143
Lower Yellowstone River-Sunday	
Creek	12,012
Middle Powder River	796
Mizpah Creek	221
O'Fallon Creek	2,723
Pryor Creek	1,457
Rosebud Creek	4,253
Shields River	1,957
Shoshone River	31
Stillwater River (Yellowstone R)	3,102
Upper Tongue River	148
Upper Yellowstone River	16,455
Upper Yellowstone River-Big Lake	
Basin	111,086
Upper Yellowstone River-Pompeys	
Pillar	42,574
Yellowstone Headwaters	928

Trends

Between 1990 and 2013, the population of the Yellowstone Basin increased by 23 percent while Montana's population increased by 27 percent (Figure 6). Stillwater, Yellowstone, and Carbon Counties were the most rapidly growing counties with populations increasing by 42 percent, 36 percent, and 28 percent, respectively. The populations of four counties in the Basin declined over the period.



The changes in population for Yellowstone Basin counties for the periods 1990 to 2010 and 2000 to 2010 are displayed in Figure 7. Stillwater and Yellowstone Counties grew most rapidly between 1990 and 2010 with populations increasing by more than 30 percent. The populations of Treasure, Powder River, Prairie, and Rosebud Counties declined during the period by more than 10 percent. The populations of Stillwater and Yellowstone Counties increased by more than 10 percent between 2000 and 2010. Five counties experienced population declines during the decade. Montana's population increased by 24

Population Change	pulation Change - Yellowstone Basin Counties				
	% C	Change			
County	<u>1990-2010</u>	<u>2000-2010</u>			
Big Horn	14.2	2.0			
Carbon	24.6	5.3			
Custer	0.1	0.2			
Dawson	-5.1	-1.3			
Fallon	-6.0	2.5			
Park	6.4	-0.8			
Powder River	-16.7	-6.3			
Prairie	-13.2	0.7			
Richland	-8.4	1.3			
Rosebud	-11.6	-1.5			
Stillwater	38.5	10.4			
Sweet Grass	15.1	-0.3			
Treasure	-17.1	-15.8			
Yellowstone	30.7	14.6			
Figure 7					

percent between 1990 and 2010 and by 10 percent between 1990 and 2010.

The U.S. Census Bureau estimates the populations of cities and towns and "Census designated places" (CDPs). CDPs are identified as "settled concentrations of population that are identifiable by name but are not legally incorporated under the laws of the state in which they are located." Population estimates from the 1990, 2000, and 2010 censuses for cities, towns, and CDPs in the Yellowstone Basin are presented in Figure 8. (** indicates a CDP split into two CDPs in 2010.)

Figure 8 Estimated Populations for Yellowstone Basin Cities, Towns, and CDPs

	Census 2010 Population	Census 2000 Population	Census 1990 Population	% Change <u>2000 to</u> <u>2010</u>
Big Horn County				
Busby CDP	745	695	409	7.2%
Crow Agency CDP	1,616	1,552	1,446	4.1%
Fort Smith CDP	161	122		32.0%
Hardin city	3,505	3,384	2,940	3.6%
Lodge Grass town	428	510	517	-16.1%
Muddy CDP	617	627	387	-1.6%
Pryor CDP	618	628	654	-1.6%
St. Xavier CDP	83	67		23.9%
Wyola CDP	215	186		15.6%
Carbon County				
Bearcreek town	79	83	37	-4.8%
Belfry CDP	218	219		-0.5%
Boyd CDP	35			
Bridger town	708	745	692	-5.0%
Edgar CDP	114			
Fromberg town	438	486	370	-9.9%
Joliet town	595	575	522	3.5%
Red Lodge city	2,125	2,177	1,958	-2.4%
Roberts CDP	361			
Roscoe CDP	15			
Silesia CDP	96			
Custer County				
Ismay town	19	26	19	-26.9%
Miles City city	8,410	8,487	8,461	-0.9%
Dawson County				
Glendive city	4,935	4,729	4,802	4.4%
Richey town	177	189	259	-6.3%
West Glendive CDP	1,948	1,833		6.3%
Fallon County	_,	_,355		
Baker city	1,741	1,695	1,818	2.7%
Plevna town	162	138	140	17.4%
	10 2	-50	- 10	27.170

Source: U.S. Census Bureau, Population Division; Montana Department of Commerce; Montana Department of Natural Resources and Conservation

Figure 8 (cont'd) Estimated Populations for Yellowstone Basin Cities, Towns, and CDPs					
	Census 2010 <u>Population</u>	Census 2000 Population	Census 1990 Population	% Change 2000 to 2010	
Park County					
Clyde Park town	288	310	282	-7.1%	
Cooke City CDP **	75				
Cooke City-Silvergate					
CDP**		140			
Corwin Springs CDP	109				
Emigrant CDP	488				
Gardiner CDP	875	851		2.8%	
Jardine CDP	57				
Livingston city	7,044	6,851	6,701	2.8%	
Pray CDP	681				
Silver Gate CDP **	20				
South Glastonbury CDP	284				
Springdale CDP	42				
Wilsall CDP	178	237	150	-24.9%	
Wineglass CDP	256				
Powder River County					
Biddle CDP	41				
Broadus town	468	451	572	3.8%	
Prairie County					
Fallon CDP	164	138	659	18.8%	
Terry town	605	611		-1.0%	
Richland County					
Crane CDP	102				
Fairview town	840	709	869	18.5%	
Fox Lake CDP	158	157		0.6%	
Knife River CDP	320	297		7.7%	
Sidney city	5,191	4,774	5,217	8.7%	
Rosebud County					
Ashland CDP	824	464	484	77.6%	
Birney CDP	137	108		26.9%	
Colstrip city	2,214	2,346	3,035	-5.6%	
Forsyth city	1,777	1,944	2,178	-8.6%	
Lame Deer CDP	2,052	2,018	1,918	1.7%	
Rosebud CDP	111				
Stillwater County	,	4		0.004	
Absarokee CDP	1,150	1,234	1,067	-6.8%	
Columbus town	1,893	1,748	1,573	8.3%	
Park City CDP	983	870		13.0%	
Reed Point CDP	193	185		4.3%	

Figure 8 (cont'd) Estimated Populations for Yellowstone Basin Cities, Towns, and CDPs

	Census 2010 Population	Census 2000 Population	Census 1990 Population	% Change 2000 to 2010
Sweet Grass County				
Big Timber city	1,641	1,650	1,557	-0.5%
Greycliff CDP	112	56		100.0%
Treasure County				
Hysham town	312	330	361	-5.5%
Yellowstone County				
Ballantine CDP	320	346		-7.5%
Billings city	104,170	89,847	81,125	15.9%
Broadview town	192	150	133	28.0%
Custer CDP	159	145		9.7%
Huntley CDP	446	411		8.5%
Laurel city	6,718	6,255	5,686	7.4%
Lockwood CDP	6,797	4,306	3,967	57.8%
Shepherd CDP	516	193		167.4%
Worden CDP	577	506		14.0%

Figures 9 and 10 display maps of the population distributions for the Yellowstone Basin as reported in the censuses of 1990 and 2010. The maps illustrate the increasing population density in the western portion of the Basin--particularly in the vicinities of Billings and Livingston.

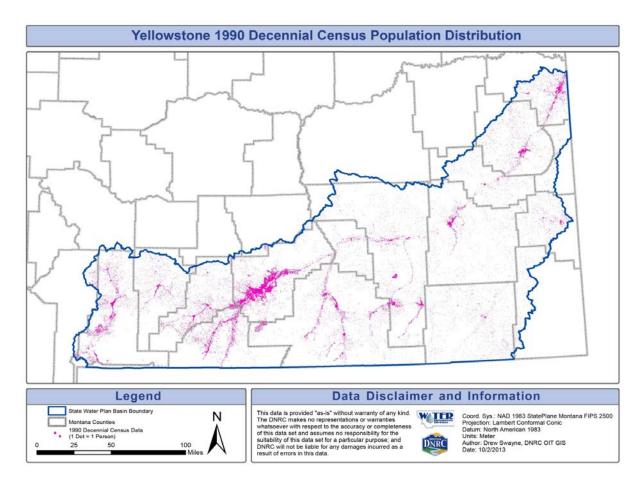


Figure 9

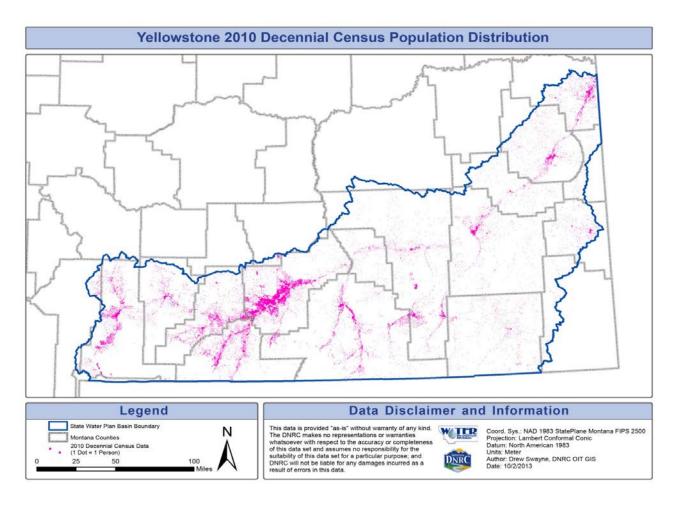


Figure 10

The Yellowstone was the third fastest growing major basin in Montana between 1990 and 2010, with a population increasing by 19 percent to 245,062. The populations of the Upper Yellowstone-Pompeys Pillar and the Upper Yellowstone-Big Lake Basin increased by 47 percent and 26 percent, respectively, between 1990 and 2010. The Upper Tongue River and Lower Powder River sub-basins saw decreases in population of 33 percent and 25 percent, respectively, during the period. Twelve of the basin's 23 sub-basins experienced population declines.

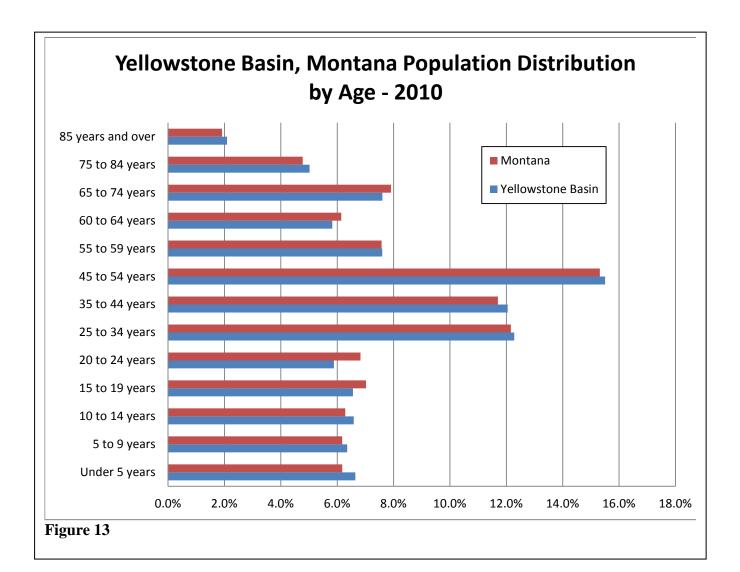
				Percent Change	Percent Change
SUB-BASIN	1990	2000	2010	1990-2010	2000-2010
Big Horn Lake	24	17	10	-58.3	-41.2
Big Porcupine Creek	138	125	108	-21.7	-13.6
Clarks Fork Yellowstone River	7,991	9,467	10,013	25.3	5.8
Little Bighorn River	4,369	4,680	4,662	6.7	-0.4
Little Powder River	435	335	271	-37.7	-19.1
Lower Bighorn River	4,904	5,498	5,646	15.1	2.7
Lower Powder River	435	326	327	-24.8	0.3
Lower Tongue River	7,342	7,344	7,139	-2.8	-2.8
Lower Yellowstone River	20,471	19,015	19,143	-6.5	0.7
Lower Yellowstone River-Sunday					
Creek	13,308	12,175	12,012	-9.7	-1.3
Middle Powder River	960	842	796	-17.1	-5.5
Mizpah Creek	206	239	221	7.3	-7.5
O'Fallon Creek	2,951	2,695	2,723	-7.7	1.0
Pryor Creek	1,235	1,424	1,457	18.0	2.3
Rosebud Creek	3,526	4,046	4,253	20.6	5.1
Shields River	1,688	2,013	1,957	15.9	-2.8
Shoshone River	36	23	31	-13.9	34.8
Stillwater River (Yellowstone R)	2,541	3,126	3,102	22.1	-0.8
Upper Tongue River	220	172	148	-32.7	-14.0
Upper Yellowstone River	15,013	16,182	16,455	9.6	1.7
Upper Yellowstone River-Big Lake					
Basin	88,133	99,631	111,086	26.0	11.5
Upper Yellowstone River-Pompeys	2005-	04.40=	10 == 1	4.5.7	22.5
Pillar	29,067	34,435	42,574	46.5	23.6
Yellowstone Headwaters	1,028	1,093	928	-9.7	-15.1

Components of Population Change

The Yellowstone Basin's population change of 16,752 between 2000 and 2010 was the result of a natural increase of 9,750 and net migration of 8,237. The components of population change are displayed in Figure 12. (The components of population change do not reconcile with the total population change due to the variance in estimation methods applied to different demographic characteristics.) Population change in the Basin is dominated by the relatively large levels of positive net migration and natural increase for Yellowstone County. The composition of population change for counties within the Basin varies significantly. In four Basin counties, the number of deaths exceeded the number of births and for nine counties net migration was negative during the decade. Curiously, for Rosebud County a natural increase of 1,009 was offset by negative net migration in the same amount. In 2010, the median age of residents of counties in the Yellowstone Basin ranged from 30.1 years in Big Horn County to 56.1 years in Prairie County—the state's youngest and oldest counties. The median age for Montana was 39.7 years and 36.9 for the U.S.

As displayed in Figure 13, the Yellowstone Basin has proportionately more residents than the state that are younger than 15, between the ages of 25 and 55, and older than 75 years old.

Carbon 838 962 -124 -56.9 80 33 Custer 1,447 1,414 33 -6.9 16 -4 Dawson 964 1,064 -100 17.6 7 -4 Fallon 365 313 52 -41.3 -1 -1 Park 1,664 1,487 177 106.6 98 -2 Powder River 107 188 -81 39.7 -1 -1 Prairie 83 165 -82 160.8 6 3 Richland 1,047 1,025 22 -8.0 26 -2 Rosebud 1,743 734 1,009 -2402.4 51 -1,0 Stillwater 987 740 247 38.9 6 42 Sweet Grass 374 366 8 -15.7 25 -6 Treasure 50 59 -9 3.5 6 -2		<u>Births</u>	<u>Deaths</u>	Natural <u>Increase</u>	% Natural <u>Increase</u>	International Migration	Domest <u>Migration</u>
Custer 1,447 1,414 33 -6.9 16 -4 Dawson 964 1,064 -100 17.6 7 -4 Fallon 365 313 52 -41.3 -1 -1 Park 1,664 1,487 177 106.6 98 -2 Powder River 107 188 -81 39.7 -1 -1 Prairie 83 165 -82 160.8 6 3 Richland 1,047 1,025 22 -8.0 26 -2 Rosebud 1,743 734 1,009 -2402.4 51 -1,0 Stillwater 987 740 247 38.9 6 42 Sweet Grass 374 366 8 -15.7 25 -6 Treasure 50 59 -9 3.5 6 -2 Yellowstone 19,286 12,375 6,911 40.1 484	Big Horn	2,760	1,073	1,687	305.1	53	-1,123
Dawson 964 1,064 -100 17.6 7 -4 Fallon 365 313 52 -41.3 -1 -1 Park 1,664 1,487 177 106.6 98 -2 Powder River 107 188 -81 39.7 -1 -1 Prairie 83 165 -82 160.8 6 3 Richland 1,047 1,025 22 -8.0 26 -2 Rosebud 1,743 734 1,009 -2402.4 51 -1,0 Stillwater 987 740 247 38.9 6 42 Sweet Grass 374 366 8 -15.7 25 -6 Treasure 50 59 -9 3.5 6 -2 Yellowstone 19,286 12,375 6,911 40.1 484 10,0 TOTAL 31,715 21,965 9,750 58.2 856	Carbon	838	962	-124	-56.9	80	316
Fallon 365 313 52 -41.3 -1 -1 Park 1,664 1,487 177 106.6 98 -2 Powder River 107 188 -81 39.7 -1 -1 Prairie 83 165 -82 160.8 6 3 Richland 1,047 1,025 22 -8.0 26 -2 Rosebud 1,743 734 1,009 -2402.4 51 -1,0 Stillwater 987 740 247 38.9 6 42 Sweet Grass 374 366 8 -15.7 25 -6 Treasure 50 59 -9 3.5 6 -2 Yellowstone 19,286 12,375 6,911 40.1 484 10,000 TOTAL 31,715 21,965 9,750 58.2 856 7,33	Custer	1,447	1,414	33	-6.9	16	-469
Park 1,664 1,487 177 106.6 98 -2 Powder River 107 188 -81 39.7 -1 -1 Prairie 83 165 -82 160.8 6 3 Richland 1,047 1,025 22 -8.0 26 -2 Rosebud 1,743 734 1,009 -2402.4 51 -1,0 Stillwater 987 740 247 38.9 6 42 Sweet Grass 374 366 8 -15.7 25 -6 Treasure 50 59 -9 3.5 6 -2 Yellowstone 19,286 12,375 6,911 40.1 484 10,000 TOTAL 31,715 21,965 9,750 58.2 856 7,33	Dawson	964	1,064	-100	17.6	7	-424
Powder River 107 188 -81 39.7 -1 -1 Prairie 83 165 -82 160.8 6 3 Richland 1,047 1,025 22 -8.0 26 -2 Rosebud 1,743 734 1,009 -2402.4 51 -1,0 Stillwater 987 740 247 38.9 6 42 Sweet Grass 374 366 8 -15.7 25 -6 Treasure 50 59 -9 3.5 6 -2 Yellowstone 19,286 12,375 6,911 40.1 484 10,000 TOTAL 31,715 21,965 9,750 58.2 856 7,33	Fallon	365	313	52	-41.3	-1	-171
Prairie 83 165 -82 160.8 6 3 Richland 1,047 1,025 22 -8.0 26 -2 Rosebud 1,743 734 1,009 -2402.4 51 -1,0 Stillwater 987 740 247 38.9 6 42 Sweet Grass 374 366 8 -15.7 25 -6 Treasure 50 59 -9 3.5 6 -2 Yellowstone 19,286 12,375 6,911 40.1 484 10,000 TOTAL 31,715 21,965 9,750 58.2 856 7,33	Park	1,664	1,487	177	106.6	98	-22
Richland 1,047 1,025 22 -8.0 26 -2 Rosebud 1,743 734 1,009 -2402.4 51 -1,0 Stillwater 987 740 247 38.9 6 42 Sweet Grass 374 366 8 -15.7 25 -6 Treasure 50 59 -9 3.5 6 -2 Yellowstone 19,286 12,375 6,911 40.1 484 10,000 TOTAL 31,715 21,965 9,750 58.2 856 7,33	Powder River	107	188	-81	39.7	-1	-112
Rosebud 1,743 734 1,009 -2402.4 51 -1,0 Stillwater 987 740 247 38.9 6 42 Sweet Grass 374 366 8 -15.7 25 -6 Treasure 50 59 -9 3.5 6 -2 Yellowstone 19,286 12,375 6,911 40.1 484 10, TOTAL 31,715 21,965 9,750 58.2 856 7,3	Prairie	83	165	-82	160.8	6	30
Stillwater 987 740 247 38.9 6 42 Sweet Grass 374 366 8 -15.7 25 -6 Treasure 50 59 -9 3.5 6 -2 Yellowstone 19,286 12,375 6,911 40.1 484 10, TOTAL 31,715 21,965 9,750 58.2 856 7,3	Richland	1,047	1,025	22	-8.0	26	-283
Sweet Grass 374 366 8 -15.7 25 -6 Treasure 50 59 -9 3.5 6 -2 Yellowstone 19,286 12,375 6,911 40.1 484 10, TOTAL 31,715 21,965 9,750 58.2 856 7,3	Rosebud	1,743	734	1,009	-2402.4	51	-1,060
Treasure 50 59 -9 3.5 6 -2 Yellowstone 19,286 12,375 6,911 40.1 484 10, TOTAL 31,715 21,965 9,750 58.2 856 7,3	Stillwater	987	740	247	38.9	6	424
Yellowstone 19,286 12,375 6,911 40.1 484 10, TOTAL 31,715 21,965 9,750 58.2 856 7,3	Sweet Grass	374	366	8	-15.7	25	-67
TOTAL 31,715 21,965 9,750 58.2 856 7,3	Treasure	50	59	-9	3.5	6	-255
	Yellowstone	<u>19,286</u>	<u>12,375</u>	<u>6,911</u>	<u>40.1</u>	<u>484</u>	10,59
T! 14	TOTAL	31,715	21,965	9,750	58.2	856	7,381
Figure 12	Figure 12						



Population Projections

Population trends can be somewhat mysterious. States have experienced various trends reflecting each state's particular natural endowments and historical circumstances. Those circumstances arise from unique, complex national, regional, and local dynamics that determine the geography of socioeconomic development and patterns of population change over time. For example: lowa has seen consistent, low levels of population growth broken only by negative growth in the 1980s; California experienced very high levels of growth throughout the twentieth century, tapering off in recent decades at lower, but still high, levels; North Dakota's pattern of low levels of alternating population increases and declines is now being broken by rapid growth since 2010.

Predicting population changes is an undertaking that grows increasingly speculative as the time horizon expands and the region under consideration diminishes in size. For the purposes of this planning effort, population projections are provided to inform deliberations of water management issues in which population levels are one factor among many comprising the demand for water. The intent of these projections is neither to predict nor forecast precise population levels at particular points in time and locations in Montana; the purpose, rather, is to offer reasonable estimates of magnitudes of population

growth that would presumably relate to the supply and demand for water in various ways over the course of the planning period.

Two sets of population projections are offered here. One set extrapolates trends seen in the period between the 1990 and the 2010 censuses. These projections are provided at the state, county, basin, and sub-basin levels. The other set relies on projections at the state and county levels developed by the Montana Department of Commerce (MT Commerce) using eREMI, a population projection product of Regional Economic Models, Inc. (REMI). Population levels were projected through the twenty-year planning period to 2035.

Figure 14 displays projections of the Yellowstone Basin's population based on each method. The MT Commerce forecasts predict a population increase for the Yellowstone Basin by 2035 that is about three-fourths of the projection that relies on extrapolations of trends from 1990 to 2010. Extrapolating Basin-wide population growth at the average annual rate of population change for the period between 1990 and 2010 would result in 59,364 additional residents in 2035 and an estimated population of 304,426, or one-quarter of the state's projected population. Over 90 percent of the increase would occur in the vicinity of Billings. These projections do not include the notable recent population changes in the lower Yellowstone since 2010.

Rather than extrapolate recent trends, the MT Commerce projections forecast more moderate rates of population change through 2035, reflecting assumptions about the Basin's age structure, natality and survival rates, and migration patterns over the period. This projection forecasts a substantially lower average annual rate of growth and an increase in the Basin's population of 41,223 by 2035.

Population Projections – Y	Yellowstone Basin		
2010 25	Average Annual Rate	<u>2035</u>	<u>Change</u>
2010-35 1990-2010 Extrapolation MT Commerce	0.87% 0.62%	304,426 287,201	59,364 41,223
Figure 14			

Figure 15 displays estimated populations for the Basin's counties in 2035 as projected by each method. Generally, the MT Commerce forecasts predict more moderate rates of population change for counties compared to the trends of recent decades. That is, rapidly growing counties are predicted to grow less rapidly, counties with very slow rates of growth are expected to see increasing rates of growth, and counties with declining populations are predicted to shrink at decreasing rates. The sum of the county projections does not equal the basin population projected due to compounding effects related to the basin and county projection calculations.

	1990-2010	
	Extrapolation	MT Commerce
Big Horn	15,145	11,135
Carbon	13,061	9,307
Custer	11,908	15,395
Dawson	8,760	9,816
Fallon	2,822	4,273
Park	16,777	15,883
Powder River	1,443	1,859
Prairie	974	1,457
Richland	9,764	13,389
Rosebud	8,116	9,016
Stillwater	13,384	8,341
Sweet Grass	4,273	4,280
Treasure	593	859
Yellowstone	206,018	<u>182,191</u>
ΓOTAL	313,036	287,201

Figure 16 presents the projected populations for the Yellowstone sub-basins in 2035. Essentially, all of the Basin's population increase would occur in the Basin's two most populous sub-basins in the vicinity of Billings. For the remaining sub-basins, the projected population change would be a net gain of just over 5,000 residents.

Population Projections – Yellowstone Sub-Basins 2035 1990-2010 Trends **Estimated Estimated Population** Change 2010-35 **SUB-BASIN** 2035 **2010** 10 3 -7 **Big Horn Lake** 108 79 -29 **Big Porcupine Creek Clarks Fork Yellowstone River** 10,013 13,274 3,261 Little Bighorn River 4,662 5,056 394 **Little Powder River** 271 150 -121 1,087 **Lower Bighorn River** 5,646 6,733 327 229 -98 **Lower Powder River** -246 **Lower Tongue River** 7,139 6,893 **Lower Yellowstone River** 19,143 -1,540 17,603 **Lower Yellowstone River-Sunday** Creek 12,012 10,568 -1,444 Middle Powder River 796 630 -166 Mizpah Creek 221 241 20 O'Fallon Creek 2,723 2,463 -260 334 **Pryor Creek** 1,457 1,791 **Rosebud Creek** 4,253 5,376 1,123 **Shields River** 1,957 397 2,354 **Shoshone River** 31 -5 26 **Stillwater River (Yellowstone R)** 3,102 879 3,981 **Upper Tongue River** 90 -58 148 **Upper Yellowstone River** 1,999 16,455 18,454 **Upper Yellowstone River-Big Lake** Basin 111,086 148,358 37,272 **Upper Yellowstone River-Pompeys** Pillar 42,574 68,600 26.026 **Yellowstone Headwaters** 928 <u>-111</u> 817

245,062

304,426

59,364

TOTAL

While the courses of population change in the Yellowstone Basin and in particular parts of the state are highly uncertain from the perspective of the present, these projections offer two distinct scenarios for consideration when regarding prospects for future water use in the Basin. They should be viewed as potentially useful tools in examining various factors affecting—and consequences affected by— the supply and demand of the Yellowstone's waters.

HOUSING

The number of households in the Upper Missouri Basin in 2010 was 98,976 with an average size of 2.4 people (U.S. Census Bureau; 2007-2011 American Community Survey Profile Report). The total number of housing units was 112,705 with 98,976 occupied and 5,191 for seasonal, recreational, or occasional use.

INCOME and EMPLOYMENT

Total personal income (TPI) is comprised of: net earnings in the forms of wages and salaries, supplemental earnings, and proprietors' income; transfer payments; and income from dividends, interest, and rent. In 2012, TPI in the Yellowstone Basin was \$10.4 billion, 26 percent of TPI for Montana of \$39.3 billion. Between 1990 and 2012, TPI (adjusted to 2013 \$s) in the Yellowstone Basin increased by 92 percent, compared to an increase for Montana of 80 percent.

Per capita personal income (PCPI) in the Yellowstone Basin in 2012 was reported to be \$41,448, compared to \$39,126 for Montana. Personal income in 2012 (adjusted to 2013 \$s) for the major basins in Montana is displayed in Figure 17. With \$13.0 billion, the Clark Fork Basin was the basin with the highest amount of total personal income, but the lowest per capita personal income by a substantial margin. The sparsely populated Lower Missouri had the lowest TPI by a considerable amount, but the Basin nearly matched the Upper Missouri's \$40,676 for the highest PCPI

Personal Income – Major Basins 2012				
	<u>Total</u>	Per Capita		
Clark Fork	13.0 billion	35,896		
Lower Missouri	3.1 billion	40,528		
Upper Missouri	12.8 billion	40,676		
Yellowstone	10.4 billion	41,448		
Montana	39.3 billion	39,126		
Adjusted to 2013 \$s. Figure 17				

among the state's four major basins. PCPI in the Yellowstone Basin was the highest among the four major basins, exceeding PCPI for Montana by \$2,322.

Between 1990 and 2012, per capita income in the Yellowstone Basin, adjusted for inflation, increased by 58 percent. Figure 18 presents similar upward trends in PCPI for each of the major basins over the period. PCPI in the Lower Missouri and the Yellowstone Basins increased at rates greater than the statewide increase of 43 percent. Between 2007 and 2012, PCPI in the Lower Missouri increased by 19 percent while PCPI in the Clark Fork declined by 1 percent. PCPI in the Yellowstone increased 8 percent during the period. The impacts of the recent recession are evident from the graph as are the contributions of strong prices for agricultural commodities and activity in the energy sector.

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¹ Figures are from the U.S. Department of Commerce, Bureau of Economic Analysis, Table CA30, adjusted for inflation to 2013 dollars. Estimates are based on administrative records and survey and census data collected by various agencies.

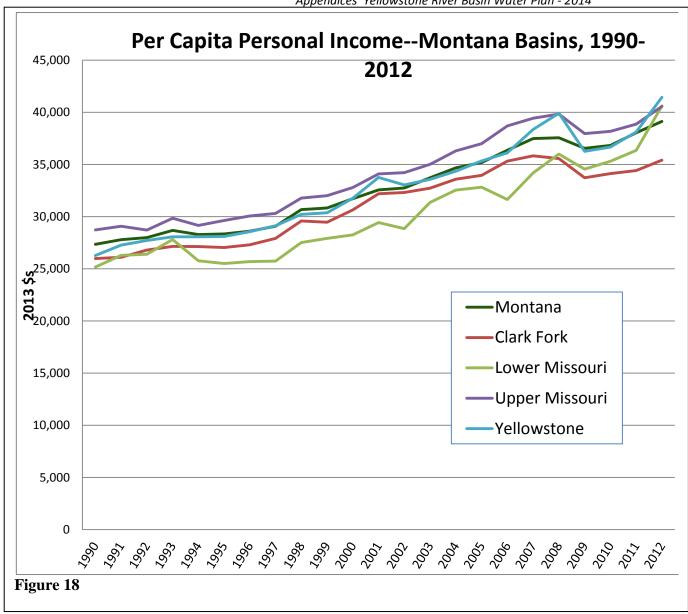


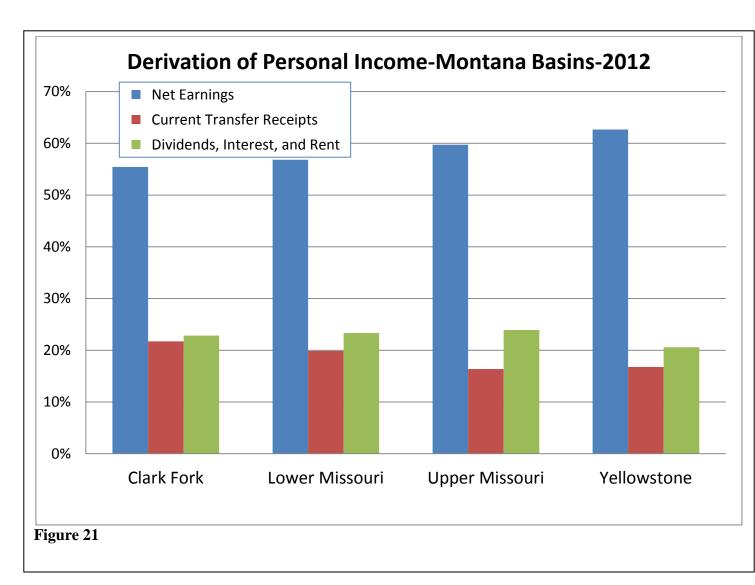
Figure 19 displays TPI and PCPI for the Billings Metropolitan Statistical Area for 2012. TPI totaled nearly \$7 billion—two-thirds of TPI for the Basin and over one-sixth of Montana's TPI. Overall, PCPI in the area exceeded PCPI for the other Metropolitan and Micropolitan Statistical Areas—except Butte—and for the state.

Personal Income—Billings Metropolitan Area—2012			
Metropolitan Areas	Total Personal Income	Per Capita Personal	
Income Billings	6.9 billion	42,161	
Adjusted to 2013 \$s Figure 19			

Figure 20 displays TPI and PCPI for Yellowstone Basin counties for 2012. Yellowstone County had the highest amount of TPI among all Montana counties with \$6.4 billion—more than 61 percent of the Basin total. Richland and Park Counties are next among Yellowstone Basin counties with TPI of \$663 million and \$617 million, respectively. Richland County had the second highest level of PCPI in the state with \$61,325 in 2012. Fallon and Treasure Counties ranked fourth and sixth among Montana counties with the highest levels of PCPI in 2012. Big Horn County had the state's second lowest level of PCPI in 2012.

County	TPI (\$ billion)	PCPI (\$)
Big Horn	0.378	28,958
Carbon	0.398	39,291
Custer	0.454	38,151
Dawson	0.352	38,103
Fallon	0.161	53,263
Park	0.617	39,628
Powder River	0.057	32,296
Prairie	0.045	38,779
Richland	0.663	61,325
Rosebud	0.358	38,056
Stillwater	0.365	39,698
Sweet Grass	0.111	30,795
Treasure	0.035	48,030
Yellowstone	6.429	42,328

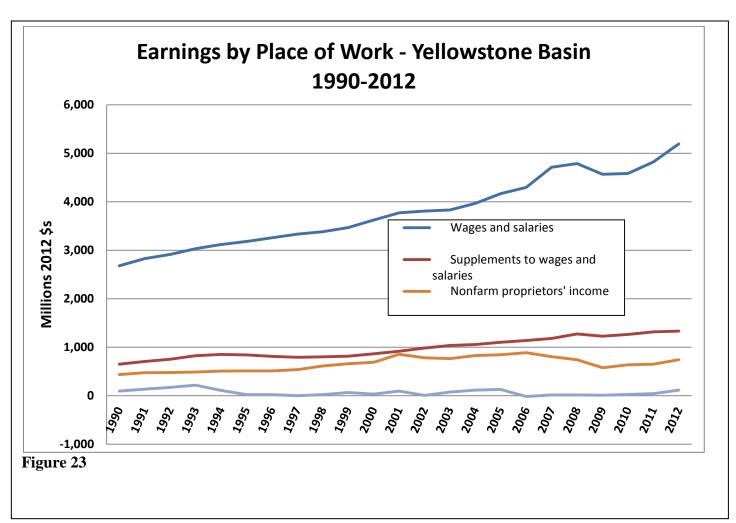
The composition of personal income in Montana has changed over time. The portion of personal income derived from net earnings—primarily in the form of wages and salaries—has declined to 59 percent in 2012. The portion of income from retirement programs and other transfer payments has increased to 18 percent and income derived from dividends, interest, and rent accounted for 22 percent in 2012. For the U.S. in 2012, 65 percent of personal income was derived from net earnings and income from transfer payments and from dividends, interest, and rent comprised, respectively, 17 percent and 18 percent of personal income. Figure 21 displays the derivation of personal income in 2012 for Montana's four major basins. For Montana's major basins in 2012, net earnings comprised the largest portion of personal income in the Yellowstone at 63 percent. Transfer receipts were lowest in the Upper Missouri and Yellowstone Basins with approximately 16 percent of personal income for each basin. The portion of personal income provided by dividends, interest, and rent ranged between 21 percent and 24 percent across the basins.



The derivation of personal income for Yellowstone Basin counties is presented in Figure 22. For Fallon and Richland Counties, net earnings comprised more than 70 percent of personal income. The portion of income derived from transfer payments was highest in Big Horn County. Income from dividends,

interest, and rent was nearly 40 percent in Sweet Grass County and greater than 30 percent in Park County.

	<u>Net</u>	Transfer	Dividends, Interest, and
	Earnings	Payments	Rent
Big Horn	57.2%	26.9%	16.0%
Carbon	51.6%	18.9%	29.5%
Custer	60.5%	19.1%	20.4%
Dawson	62.0%	18.1%	19.9%
Fallon	70.3%	11.9%	17.8%
Park	50.4%	18.8%	30.8%
Powder River	52.2%	19.5%	28.3%
Prairie	46.9%	26.1%	27.0%
Richland	70.7%	9.3%	20.0%
Rosebud	66.0%	19.6%	14.4%
Stillwater	62.2%	17.6%	20.2%
Sweet Grass	38.2%	23.3%	38.5%
Treasure	52.9%	17.2%	29.9%
Yellowstone	64.6%	16.1%	19.4%
igure 22			



Net earnings are comprised of wages and salaries, supplemental contributions by employers for pension and insurance programs, and proprietors' income for owners of businesses and farms. Trends for earnings in the Yellowstone Basin for the period 1990 to 2012—adjusted for inflation—are presented in Figure 23.

Total earnings for wages and salaries increased by nearly 94 percent to \$5.2 billion and income in the form of supplemental employer contributions increased doubled to \$1.3 billion. Non-farm proprietors' income increased 70 percent \$741 million. Farm proprietors' income increased 24 percent since 1990 in real terms, fluctuating between -\$18 million and \$216 million and averaging \$65 million since 1990. Between 1990 and 2011, average wages and salaries in the Yellowstone Basin rose 29 percent to \$39,220, just below the state average of \$36,652. State-wide, wages and salaries, adjusted for inflation, increased 19 percent over the period. Over the same period, average non-farm proprietors' income in the Basin decreased 4 percent to \$18,639, below the state-wide average that declined by 2 percent to \$21,057.