



# MONTANA WATER SUPPLY INITIATIVE UPPER MISSOURI RIVER BASIN WATER PLAN

## F. Socioeconomic Portrait

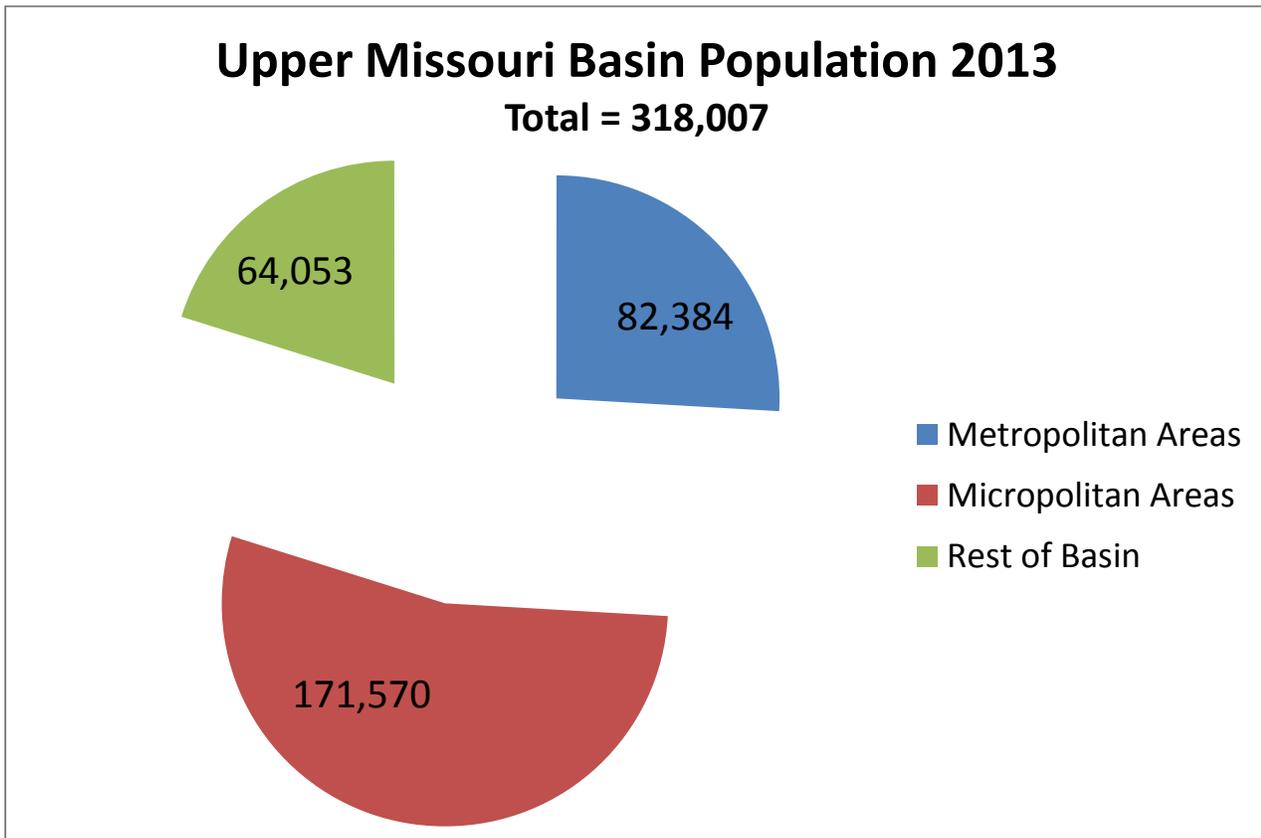
### POPULATION

#### Recent Estimates

Between the 2010 Census and July 1, 2013, the population of the Upper Missouri Basin increased 2.9 percent to 318,007. During the same period Montana’s population increased 2.6 percent to 1,015,165.

As displayed in **Figure 1**, approximately 80 percent of Upper Missouri Basin residents live within areas considered to be “Metropolitan” or “Micropolitan” by the Executive Office of the President, Office of Management and Budget (OMB). According to OMB (Executive Office of the President 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. These definitions allow for the possibility that populations of some Micropolitan Areas may exceed those of Metropolitan Areas, such as the case for the larger population of the Bozeman Micropolitan Area compared to the population of the Great Falls Metropolitan Area.

**Figure 1** Upper Missouri Basin Population



Source: U.S. Census Bureau, Population Division



# MONTANA WATER SUPPLY INITIATIVE

## UPPER MISSOURI RIVER BASIN WATER PLAN

**Figure 2** Upper Missouri Basin

<b>Metropolitan Statistical Areas, Micropolitan Statistical Areas Upper Missouri Basin</b>			
	<u><b>2010</b></u>	<u><b>2013</b></u>	<u><b>% Change</b></u>
<b><u>Metropolitan Areas</u></b>			
<b>Great Falls</b>	81,327	82,384	+1.3
<b><u>Micropolitan Areas</u></b>			
<b>Bozeman</b>	89,513	94,720	+5.8
<b>Helena</b>	74,801	76,850	+2.7
<b>TOTAL</b>	164,314	171,570	+4.4
<b><u>Rest of Basin</u></b>	63,542	64,053	+0.8
<b>Montana</b>	989,415	1,015,165	+2.6

Source: U.S. Census Bureau, Population Division

**Figure 2** displays the Metropolitan Statistical Area and the Micropolitan Statistical Areas in the Upper Missouri Basin. In 2013, one-quarter of the Basin’s residents lived in Great Falls, the only Metropolitan Area in the Basin. Great Falls is the smallest of Montana’s Metropolitan Areas and grew 1.3 percent between 2010 and 2013. Bozeman is the state’s largest Micropolitan Area and it continues to grow at a far greater rate than the other Metropolitan and Micropolitan Areas. Between 2010 and 2013, the rate of growth for the Bozeman Micropolitan Area was more than double the rate of growth for the state. More than half of the Basin’s residents live in either the Bozeman or Helena Micropolitan Areas. One-fifth of the Basin’s population is found in “rural” areas outside of the areas characterized as Metropolitan or Micropolitan. Taken together, these areas grew at 0.8 percent between 2010 and 2013.

The populations of Indian reservations in the Basin totaled 13,728 in 2010 with over 75 percent residing on the Blackfeet Indian Reservation. **Figure 3** displays the populations of the Blackfeet and Rocky Boy’s Reservations and Off-Reservation Trust Land and the percentage change in population between 2000 and 2010. The population for the Rocky Boy’s Reservation increased by nearly one-fourth.

**Figure 3** Reservation Population Changes

<u><b>Reservations</b></u>	<u><b>Population 2010</b></u>	<u><b>% Change 2000-10</b></u>
<b>Blackfeet</b>	10,405	3.0
<b>Rocky Boy’s</b>	3,323	24.2
<b>Total</b>	13,728	7.5

Source: U.S. Census Bureau, Population Division



Populations of counties in the Upper Missouri Basin for 2013 are listed in **Figure 4**. Nearly one-third of the Basin’s residents lived in Gallatin County. Among U.S. counties with populations exceeding 10,000, Gallatin County ranked 89<sup>th</sup> for population growth between 2012 and 2013, increasing by 2.2 percent to 94,720. More than three-quarters of the Basin’s population resides in the three largest counties, Gallatin, Cascade, and Lewis and Clark. The populations of Teton County and Toole County declined by 0.1 percent and 3.5 percent, respectively, between 2010 and 2013.

**Figure 4** Upper Missouri Basin Population by County

**Upper Missouri Basin Counties**  
**Populations - 2013**

<b>Beaverhead</b>	9,341
<b>Broadwater</b>	5,692
<b>Cascade</b>	82,384
<b>Chouteau</b>	5,849
<b>Gallatin</b>	94,720
<b>Glacier</b>	13,739
<b>Jefferson</b>	11,512
<b>Lewis and Clark</b>	65,338
<b>Liberty</b>	2,369
<b>Madison</b>	7,712
<b>Meagher</b>	1,937
<b>Pondera</b>	6,211
<b>Teton</b>	6,065
<b>Toole</b>	5,138

Source: U.S. Census Bureau, Population Division

**Figure 3**

**UPPER MISSOURI BASIN POPULATION**  
**by SUB-BASIN - 2010**

<b><u>SUB-BASIN</u></b>	<b><u>POPULATION</u></b>
<b>Beaverhead River</b>	8,614
<b>Belt Creek</b>	1,940
<b>Big Hole River</b>	1,265
<b>Cut Bank Creek</b>	11,398
<b>Gallatin River</b>	84,847
<b>Jefferson River</b>	5,872
<b>Madison River</b>	6,837
<b>Marias River</b>	11,778
<b>Red Rock River</b>	674
<b>Ruby River</b>	2,079
<b>Smith River</b>	1,914
<b>Sun River</b>	16,949
<b>Teton River</b>	3,998
<b>Two Medicine River</b>	2,492
<b>Upper Missouri River</b>	72,194
<b>Upper Mo-Dearborn</b>	67,978
<b>Willow Creek</b>	576
<b>Boulder River</b>	2,296

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

Population estimates from the 2010 Census were aggregated by 8-digit hydrologic unit code (HUC) sub-basins for the Upper Missouri Basin. Population estimates for these sub-basins are presented in **Figure 5**. Nearly 75 percent of the Basin population resided in three sub-basins, the Gallatin, the Upper Missouri (including Helena), and the Upper Mo-Dearborn (including Great Falls).

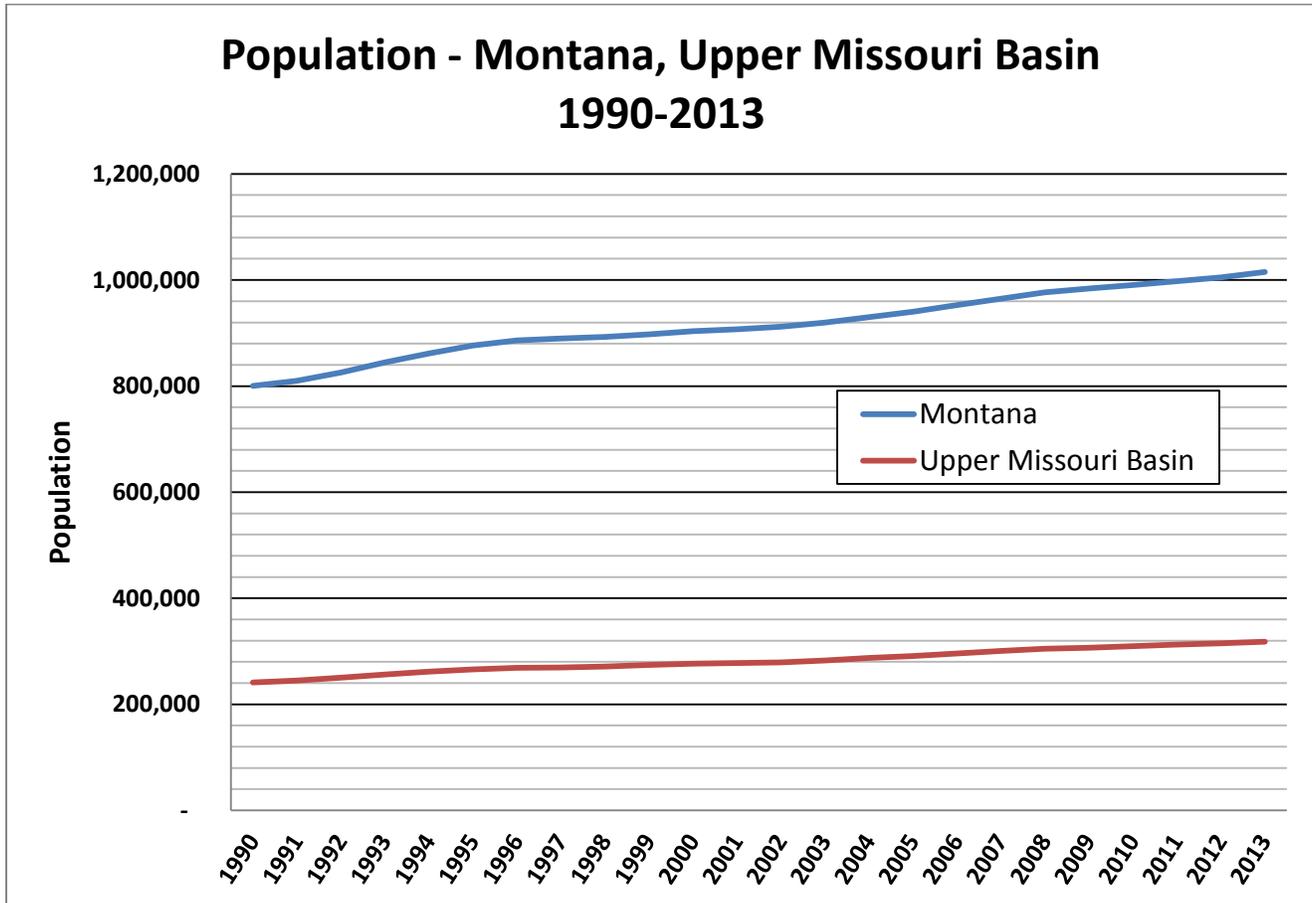
**Figure 5** Basin Population by Sub-Basin



**TRENDS**

Between 1990 and 2013, the population of the Upper Missouri Basin increased by 32 percent while Montana’s population increased by 27 percent (**Figure 6**). Gallatin, Broadwater, and Jefferson Counties were the most rapidly growing counties with populations increasing by 86 percent, 71 percent, and 44 percent, respectively. The populations of Pondera and Teton Counties declined by 3 percent over the period.

**Figure 6** Upper Missouri Basin Population





**Figure 7** Upper Missouri Basin Population Changes

<b>Population Change - Upper Missouri Basin Counties</b>			
		<u>% Change</u>	
<u>County</u>	<u>1990-2010</u>		<u>2000-2010</u>
<b>Beaverhead</b>	9.6		0.4
<b>Broadwater</b>	69.2		28.6
<b>Cascade</b>	4.8		1.5
<b>Chouteau</b>	6.2		-4.2
<b>Gallatin</b>	76.4		31.1
<b>Glacier</b>	10.6		2.0
<b>Jefferson</b>	42.7		13.4
<b>Lewis and Clark</b>	33.7		13.8
<b>Liberty</b>	2.9		8.6
<b>Madison</b>	28.1		11.7
<b>Meagher</b>	3.6		-1.4
<b>Pondera</b>	-4.1		-3.5
<b>Teton</b>	-2.9		-5.5
<b>Toole</b>	5.7		1.5

The changes in population for Upper Missouri Basin counties for the periods 1990 to 2010 and 2000 to 2010 are displayed in **Figure 7**. Gallatin and Broadwater Counties grew most rapidly between 1990 and 2010 with populations increasing by 76 percent and 69 percent, respectively. The populations of Pondera and Teton Counties declined during the period. The populations of Gallatin and Broadwater Counties increased by nearly one-third between 2000 and 2010. Four counties experienced population declines during the decade. Montana’s population increased by 24 percent between 1990 and 2010 and by 10 percent between 2000 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 Upper Missouri Basin are presented in **Figure 8**. (\*\* indicates a CDP split into two CDPs in 2010.)



**Figure 8** Estimated Populations for Upper Missouri Basin Cities, Towns, and CDPs

	Census Population 2010	Census Population 2000	Census Population 1990	Percent Change 2000-2010
<b>Beaverhead County</b>				
Dillon city	4,134	3,752	4,001	10.2%
Lima town	221	242	265	-8.7%
Wisdom CDP	98	114	2,880	-14.0%
<b>Broadwater County</b>				
Radersburg CDP	66	70	--	-5.7%
Spokane Creek CDP	355	--	--	
The Silos CDP	506	--	--	
Toston CDP	108	105	--	2.9%
Townsend city	1,878	1,867	1,635	0.6%
Wheatland CDP	568	--	--	
Winston CDP	147	73	--	101.4%
<b>Cascade County</b>				
Belt town	597	633	571	-5.7%
Black Eagle CDP	904	914	--	-1.1%
Cascade town	685	819	729	-16.4%
Fort Shaw CDP	280	274	--	2.2%
Gibson Flats CDP	199	--	--	
Great Falls city	58,505	56,690	55,125	3.2%
Malmstrom AFB CDP	3,472	4,544	5,938	-23.6%
Neihart town	51	91	53	-44.0%
Sand Coulee CDP	212	--	--	
Simms CDP	354	373	--	-5.1%
Stockett CDP	169	--	--	
Sun Prairie CDP	1,630	1,772	1,424	-8.0%
Sun River CDP	124	131	--	-5.3%
Ulm CDP	738	750	--	-1.6%
Vaughn CDP	658	701	--	-6.1%
<b>Chouteau County</b>				
Box Elder CDP**	87	794	--	-89.0%
Parker School CDP	340	352	--	-3.4%
Big Sandy town	598	703	740	-14.9%
Boneau CDP	380	190	--	100.0%
Carter CDP	58	62	--	-6.5%
Fort Benton city	1,464	1,594	1,660	-8.2%
Geraldine town	261	284	299	-8.1%
Highwood CDP	176	189	--	-6.9%
Loma CDP	85	92	--	-7.6%
Rocky Boy West CDP **	890	--	--	

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



# MONTANA WATER SUPPLY INITIATIVE

## UPPER MISSOURI RIVER BASIN WATER PLAN

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

	Census Population 2010	Census Population 2000	Census Population 1990	Percent Change 2000-2010
<b>Gallatin County</b>				
Big Sky CDP	2,308	1,221	--	89.0%
Amsterdam CDP **	180	--	--	
Amsterdam-Churchill CDP**	--	727	--	
Belgrade city	7,389	5,728	3,422	29.0%
Bozeman city	37,280	27,509	22,660	35.5%
Bridger CDP	30	--	--	
Churchill CDP **	902	--	--	
Four Corners CDP	3,146	1,828	--	72.1%
Gallatin Gateway CDP	856	--	--	
Gallatin River Ranch CDP	69	--	--	
Hebgen Lake Estates CDP	70	--	--	
King Arthur Park CDP	738	--	--	
Logan CDP	99	--	--	
Manhattan town	1,520	1,396	1,034	8.9%
Ponderosa Pines CDP	336	--	--	
Sedan CDP	99	--	--	
Springhill CDP	130	--	--	
Three Forks city	1,869	1,728	1,203	8.2%
West Yellowstone town	1,271	1,177	913	8.0%
Willow Creek CDP	210	209	--	0.5%
<b>Glacier County</b>				
Browning town	1,016	1,065	1,170	-4.6%
Cut Bank city	2,869	3,105	3,329	-7.6%
East Glacier Park Village CDP	363	396	326	-8.3%
Little Browning CDP	206	--	--	
North Browning CDP	2,408	2,200	1,630	9.5%
Santa Rita CDP	113	--	--	
South Browning CDP	1,785	1,677	1,748	6.4%
Starr School CDP	252	248	260	1.6%
<b>Jefferson County</b>				
Basin CDP	212	255	--	-16.9%
Boulder city	1,183	1,300	1,316	-9.0%
Cardwell CDP	50	40	--	25.0%
Clancy CDP	1,661	1,406	--	18.1%
Elkhorn CDP	10	--	--	
Jefferson City CDP	472	295	--	60.0%
Montana City CDP **	2,715	2,094	--	29.7%
Rader Creek CDP	363	--	--	
South Hills CDP **	517	--	--	
Whitehall town	1,038	1,044	1,067	-0.6%



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

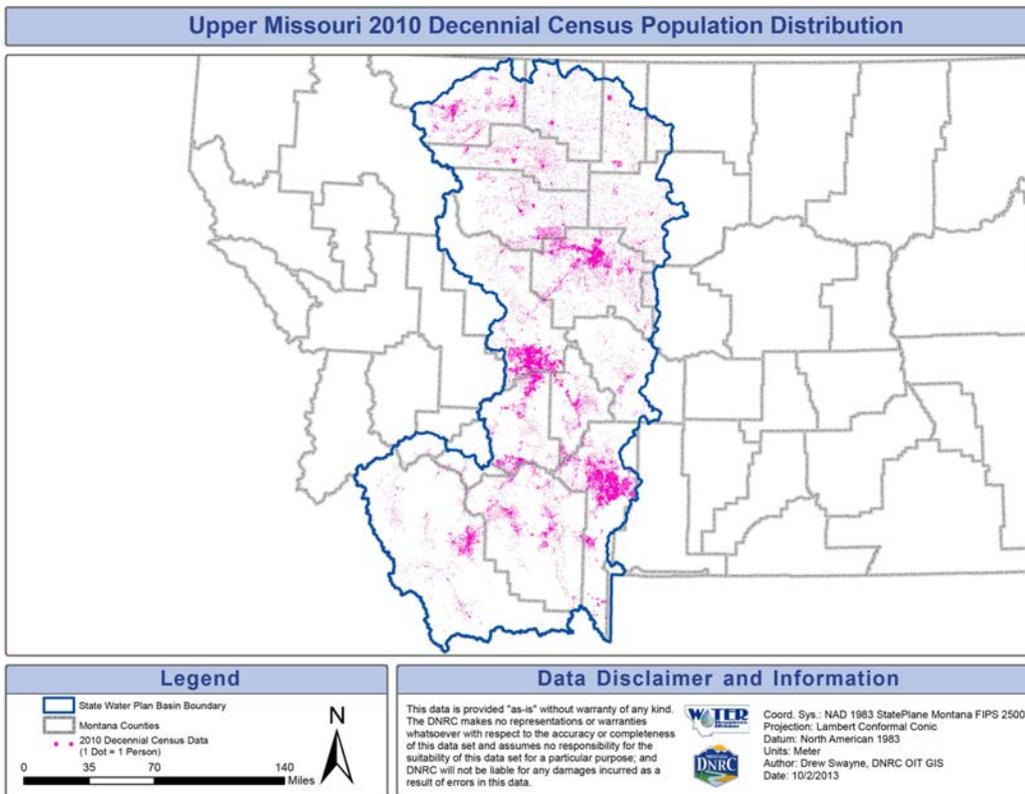
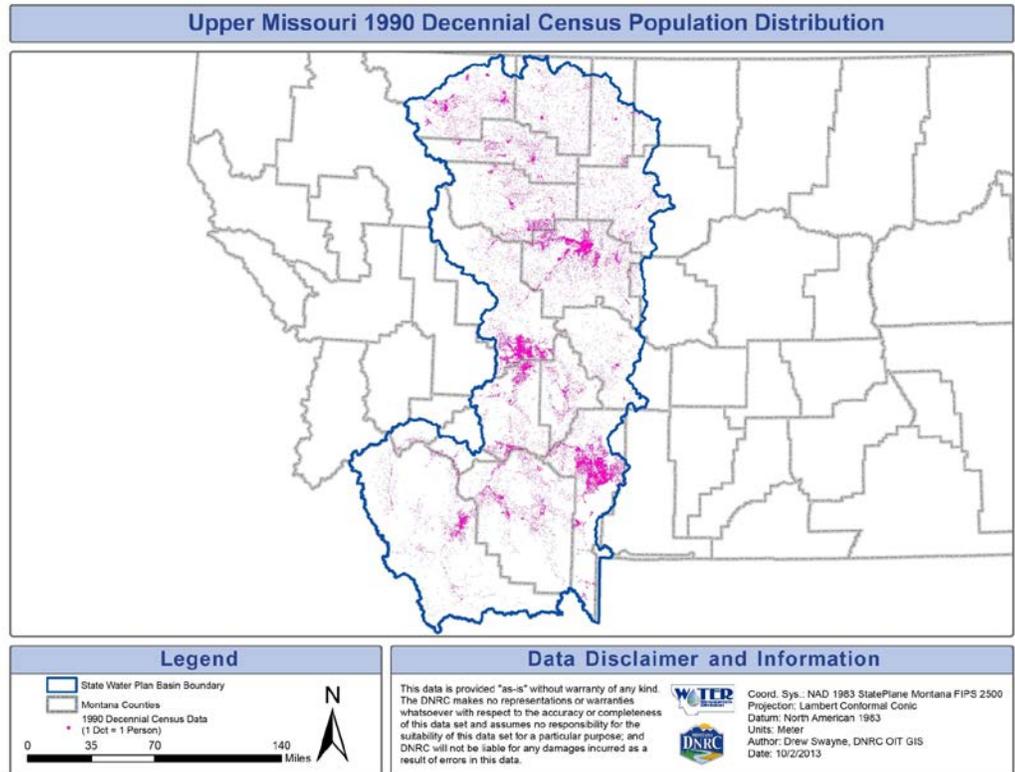
	Census Population 2010	Census Population 2000	Census Population 1990	Percent Change 2000-2010
<b>Lewis and Clark County</b>				
Augusta CDP	309	284	--	8.8%
Craig CDP	43	--	--	
East Helena city	1,984	1,642	1,538	20.8%
Helena city	28,190	25,780	24,609	9.3%
Helena Valley Northeast CDP	2,995	2,122	1,585	41.1%
Helena Valley Northwest CDP	3,482	2,082	1,215	67.2%
Helena Valley Southeast CDP	8,227	7,141	4,601	15.2%
Helena Valley West Central CDP	7,883	6,983	6,327	12.9%
Helena West Side CDP	1,637	1,711	1,847	-4.3%
Marysville CDP	80	--	--	
<b>Liberty County</b>				
Chester town	847	871	942	-2.8%
Joplin CDP	157	210	--	-25.2%
<b>Madison County</b>				
Alder CDP	103	116	--	-11.2%
Ennis town	838	840	773	-0.2%
Harrison CDP	137	162	--	-15.4%
Pony CDP	118	--	--	
Sheridan town	642	659	652	-2.6%
Twin Bridges town	375	400	374	-6.3%
Virginia City town	190	130	142	46.2%
<b>Meagher County</b>				
Martinsdale CDP	64	--	--	
White Sulphur Springs city	939	984	963	-4.6%
<b>Pondera County</b>				
Brady CDP	140	--	--	
Conrad city	2,570	2,753	2,891	-6.6%
Dupuyer CDP	86	--	--	
Heart Butte CDP	582	698	499	-16.6%
Valier town	509	498	519	2.2%
<b>Teton County</b>				
Bynum CDP	31	--	--	
Choteau city	1,684	1,781	1,741	-5.4%
Dutton town	316	389	392	-18.8%
Fairfield town	708	659	660	7.4%
Power CDP	179	171	--	4.7%
<b>Toole County</b>				
Kevin town	154	178	185	-13.5%
Shelby city	3,376	3,216	2,763	5.0%
Sunburst town	375	415	437	-9.6%
Sweet Grass CDP	58	--	--	

# MONTANA WATER SUPPLY INITIATIVE

## UPPER MISSOURI RIVER BASIN WATER PLAN

Figures 9 & 10 display maps of the population distributions for the Upper Missouri Basin as reported in the censuses of 1990 and 2010. The maps illustrate the increasing population density of the portions of the Basin in the vicinities of Bozeman and Helena. Increases in population can also be seen around Dillon and Browning.

**Figures 9** 1990 Population Distribution



**Figures 10** 2110 Population Distribution



**Figure 11** Population Trends - Upper Missouri Sub-Basins – 1990-2010

<u>SUB-BASIN</u>	<u>1990</u>	<u>2000</u>	<u>2010</u>	<u>% Change 1990-2010</u>	<u>% Change 2000-2010</u>
Beaverhead River	7,698	8,416	8,614	11.9	2.4
Belt Creek	1,789	1,978	1,940	8.4	-1.9
Big Hole River	1,368	1,318	1,265	-7.5	-4.0
Cut Bank Creek	10,599	11,162	11,398	7.5	2.1
Gallatin River	47,357	63,377	84,847	79.2	33.9
Jefferson River	4,170	5,122	5,872	40.8	14.6
Madison River	4,583	6,111	6,837	49.2	11.9
Marias River	11,857	11,849	11,778	-0.7	-0.6
Red Rock River	735	771	674	-8.3	-12.6
Ruby River	1,775	1,978	2,079	17.1	5.1
Smith River	1,844	1,955	1,914	3.8	-2.1
Sun River	14,937	16,101	16,949	13.5	5.3
Teton River	4,179	4,305	3,998	-4.3	-7.1
Two Medicine River	2,071	2,614	2,492	20.3	-4.7
Upper Missouri River	52,051	62,346	72,194	38.7	15.8
Upper Mo-Dearborn	66,674	68,176	67,978	2.0	-0.3
Willow Creek	654	578	576	-11.9	-0.3
Boulder River	2,043	2,245	2,296	12.4	2.3

The Upper Missouri was the second fastest growing major basin in Montana between 1990 and 2010, with a population increasing by 29 percent to 303,701. **Figure 11** displays population trends for the Upper Missouri’s sub-basins for 1990, 2000, and 2010. Three of four basin residents live in three sub-basins: the Gallatin (84,847), the Upper Missouri including Helena (72,194), and the Upper Missouri-Dearborn Rivers including Great Falls (67,978). The populations of these sub-basins increased by 79 percent, 39 percent, and 2 percent, respectively, between 1990 and 2010. The Madison and Jefferson sub-basins experienced significant population growth, increasing by 49 percent and 41 percent, respectively, during the period. Five of the basin’s 18 sub-basins experienced population declines.

**Components of Population Change**



The Upper Missouri Basin’s population change of 32,886 between 2000 and 2010 was the result of a natural increase of 14,200 and net migration of 17,077. 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.) Of the two components of population change, net migration accounts for approximately 52 percent and reflects the substantially larger number of people moving to the Upper Missouri from other parts of Montana and from other states compared to the number leaving. The vast majority of net migration to the Basin was to Gallatin County. The level of natural increase—or the number of births in excess of the number of deaths—amounted to 43 percent of the change in the Basin’s population. The composition of population change for counties within the Basin varies significantly. In Cascade and Glacier Counties, for example, positive natural increases in county populations during the decade were offset by substantial levels of negative net migration. For Broadwater and Madison Counties, on the other hand, population increases were the result of net migration exceeding negative levels of natural increase.

**Figure 12** Components of Population Change – Upper Missouri Basin Counties 2000-2010

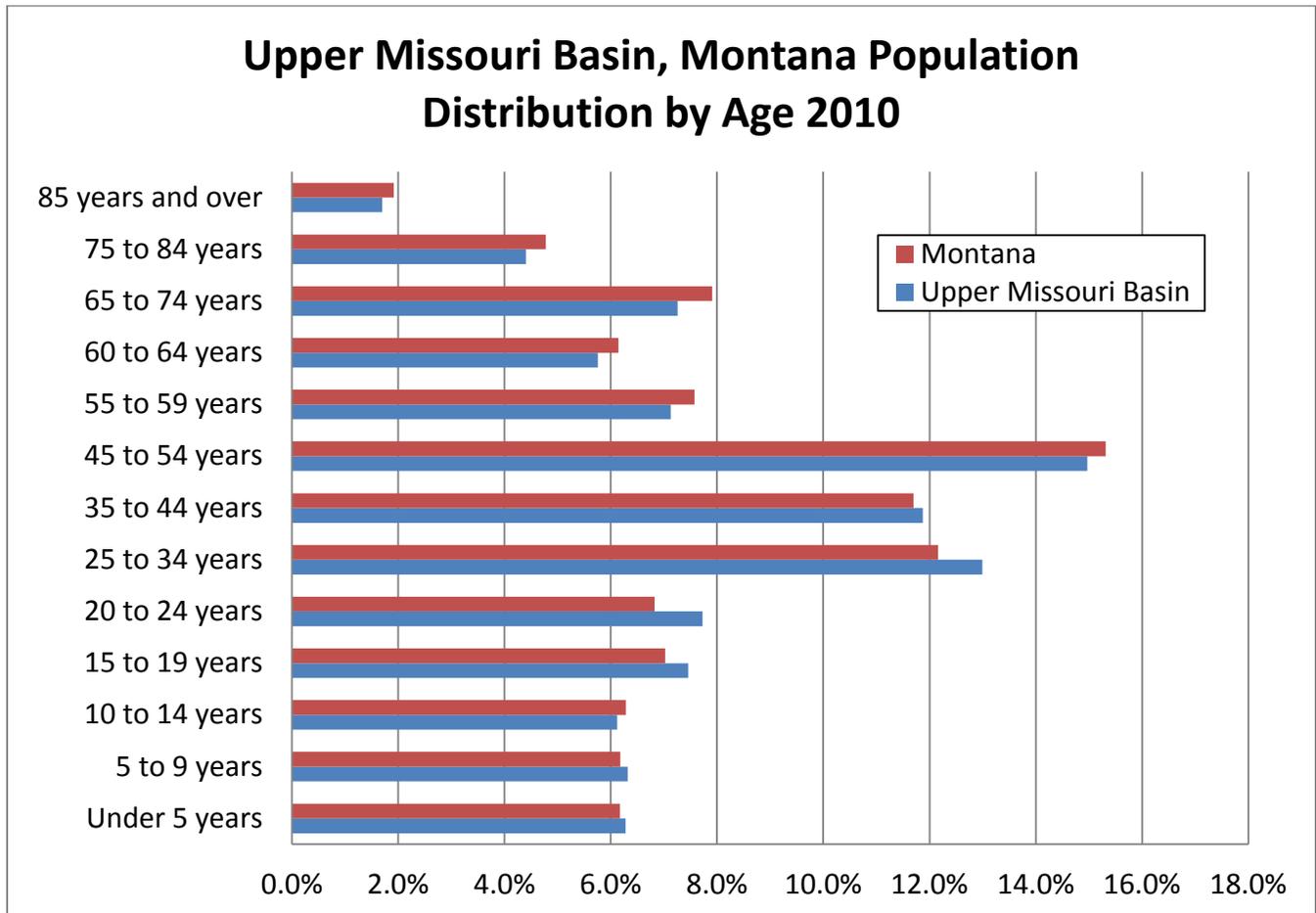
	<u>Births</u>	<u>Deaths</u>	<u>Natural Increase</u>	<u>% Pop.Chg.</u> <u>Nat. Inc.</u>	<u>Intl.</u> <u>Migration</u>	<u>Domestic</u> <u>Migration</u>	<u>Net Migration</u>	<u>% Pop.</u> <u>Change Migration</u>
<b>Beaverhead</b>	942	812	130	1.4	70	-302	-232	-2.5
<b>Broadwater</b>	400	493	-93	-2.1	7	592	599	13.7
<b>Cascade</b>	11,610	7,790	3,820	4.8	-232	-3,900	-4,132	-5.1
<b>Chouteau</b>	431	611	-180	-3.0	8	-607	-599	-10.0
<b>Gallatin</b>	10,980	4,079	6,901	10.2	875	15,577	16,452	24.3
<b>Glacier</b>	2,670	1,152	1,518	11.5	26	-1,002	-976	-7.4
<b>Jefferson</b>	1,002	873	129	1.3	-6	1,410	1,404	14.0
<b>Lewis and Clark</b>	7,328	5,029	2,299	4.1	315	4,925	5,240	9.4
<b>Liberty</b>	162	215	-53	-2.5	23	-371	-348	-16.1
<b>Madison</b>	543	756	-213	-3.1	-11	848	837	12.2
<b>Meagher</b>	224	235	-11	-0.6	15	-31	-16	-0.8
<b>Pondera</b>	772	746	26	0.4	-1	-597	-598	-9.3
<b>Teton</b>	623	637	-14	-0.2	121	-419	-298	-4.6
<b>Toole</b>	485	544	-59	-1.1	41	-297	-256	-4.9
<b>TOTAL</b>	38,172	23,972	14,200	5.1	1,251	15,826	17,077	6.2



In 2010, the median age of residents of counties in the Upper Missouri Basin ranged from 32 years in Glacier County to 49.2 years in Madison County. The median age for Montana was 39.7 years and 36.9 for the U.S.

Montana’s older population distribution relative to the Upper Missouri’s population is evident in **Figure 13** which displays the greater proportion of the population among age groups exceeding 45 years for the state. The age structure of the Basin’s population is affected by the large number of young residents in the Basin’s largest population center, Gallatin County.

**Figure 13** Montana Population Distribution



**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: Iowa 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 Upper Missouri Basin’s population based on each method. The MT Commerce forecasts predict a population increase for the Upper Missouri Basin by 2035 that is about half 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 an estimated 111,713 additional residents in 2035. The Upper Missouri would be projected to increase to over 400,000 or about one-third of Montana’s projected population by 2035.

Rather than extrapolate recent trends, the MT Commerce projections forecast declining rates of population increase 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 61,024 by 2035.

<b>Figure 14</b> Population Projections – Upper Missouri Basin			
	<u>Average Annual Rate</u>	<u>2035</u>	<u>Change 2010-35</u>
<b>1990-2010 Extrapolation</b>	1.26%	415,414	111,713
<b>MT Commerce</b>	0.72%	370,886	61,024



**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. For example, the MT Commerce forecast predicts that the rate of population growth for Cascade County will increase substantially relative to recent trends and the recent negative rates of growth for Pondera and Teton Counties will become positive and reflect population increases in the coming decades for those counties. 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.

**Figure 15** Population Projections – 2035 Upper Missouri Basin Counties

	<u>1990-2010 Extrapolation</u>	<u>MT Commerce</u>
<b>Beaverhead</b>	10,406	9,956
<b>Broadwater</b>	10,512	5,630
<b>Cascade</b>	86,109	96,676
<b>Chouteau</b>	6,361	5,338
<b>Gallatin</b>	177,830	119,368
<b>Glacier</b>	15,360	13,317
<b>Jefferson</b>	17,146	13,214
<b>Lewis and Clark</b>	90,290	75,419
<b>Liberty</b>	2,453	2,344
<b>Madison</b>	10,294	8,761
<b>Meagher</b>	2,011	1,872
<b>Pondera</b>	5,868	7,142
<b>Teton</b>	5,839	6,273
<b>Toole</b>	<u>5,567</u>	<u>5,576</u>
<b>TOTAL</b>	446,047	370,886



**Figure 16** presents the projected populations for the Upper Missouri sub-basins in 2035. Nearly all of the Basin’s population increase would occur in the Gallatin (70 percent) and the Upper Missouri, including Helena, (26 percent) Basins.

While the courses of population change in the Upper Missouri 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 Upper Missouri’s waters.

**Figure 16** Population Projections – Upper Missouri Sub-Basins 2035 - 1990-2010 Trends

<b>SUB-BASIN</b>	<b>2010</b>	<b>Estimated Estimated Population 2035</b>	<b>Change 2010-35</b>
<b>Beaverhead River</b>	8,614	9,215	601
<b>Belt Creek</b>	1,940	1,996	56
<b>Big Hole River</b>	1,265	1,066	-199
<b>Cut Bank Creek</b>	11,398	11,603	205
<b>Gallatin River</b>	84,847	163,484	78,637
<b>Jefferson River</b>	5,872	8,373	2,501
<b>Madison River</b>	6,837	10,478	3,641
<b>Marias River</b>	11,778	10,857	-921
<b>Red Rock River</b>	674	562	-112
<b>Ruby River</b>	2,079	2,355	276
<b>Smith River</b>	1,914	1,864	-50
<b>Sun River</b>	16,949	18,451	1,502
<b>Teton River</b>	3,998	3,516	-482
<b>Two Medicine River</b>	2,492	2,919	427
<b>Upper Missouri River</b>	72,194	101,010	28,816
<b>Upper Mo. Dearborn</b>	67,978	64,738	-3,240
<b>Willow Creek</b>	576	457	-119
<b>Boulder River</b>	<u>2,296</u>	<u>2,470</u>	<u>174</u>
<b>TOTAL</b>	303,701	415,414	111,713



## HOUSING

The number of households in the Upper Missouri Basin in 2010 was 122,976 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 143,867 with 122,976 occupied and 10,870 for seasonal, recreational, or occasional use. The number of building permits issued in Montana in 2012 was 2,736.

## 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 Upper Missouri Basin was \$12.8 billion, 33 percent of TPI for Montana of \$39.3 billion.<sup>3</sup> Between 1990 and 2012, TPI in the Upper Missouri Basin increased by 87 percent, compared to an increase for Montana of 80 percent.

Per capita personal income (PCPI) in the Upper Missouri Basin in 2012 was reported to be \$40,676, 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 among the state's four major basins.

**Figure 17** Personal Income – Major Basins 2012

	<u>Total</u>	<u>Per Capita</u>
<b>Clark Fork</b>	13.0 billion	35,896
<b>Lower Missouri</b>	3.1 billion	40,528
<b>Upper Missouri</b>	12.8 billion	40,676
<b>Yellowstone</b>	10.4 billion	41,448
<b>Montana</b>	39.3 billion	39,126

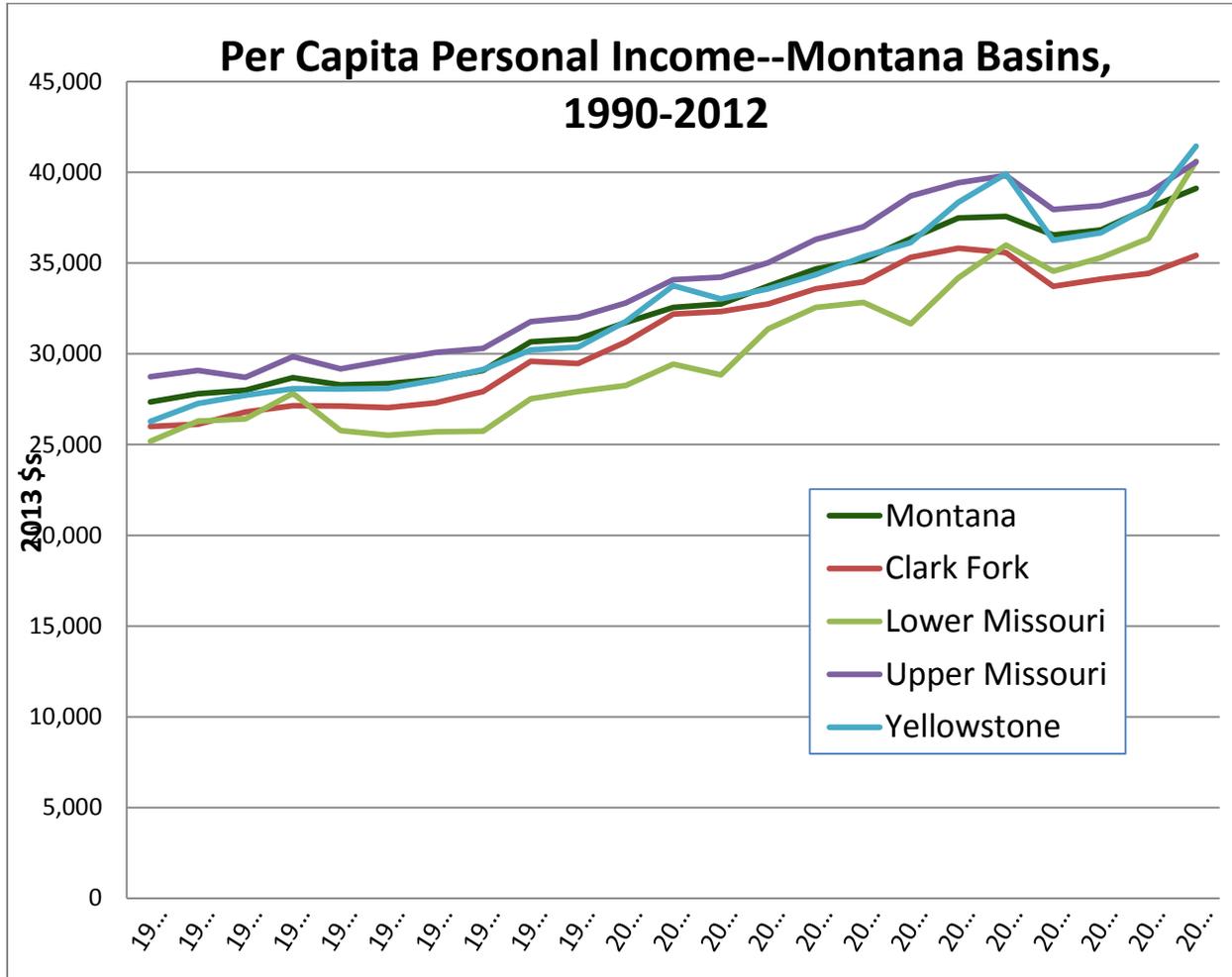
Adjusted to 2013 \$s.

Between 1990 and 2012, per capita income in the Upper Missouri Basin and in Montana, adjusted for inflation, increased by 43 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 with increases of 61 percent and 58 percent, respectively. Between 2007 and 2012, PCPI in the Lower Missouri increased by 19 percent while PCPI in the Clark Fork declined by 1 percent. 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.

<sup>3</sup> 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 18** Per Capita Personal Income



**Figure 19** displays TPI and PCPI for the Metropolitan Statistical Area and Micropolitan Statistical Areas in the Upper Missouri Basin for 2012. TPI for these areas totaled over \$10 billion—one-quarter of Montana’s TPI. Overall, PCPI in the Metropolitan and Micropolitan Areas exceeded PCPI for the state.



**Figure 19** Personal Income—Metropolitan Areas and Micropolitan Areas—Upper Missouri Basin—2012

<u>Metropolitan Areas</u>	<u>Total Personal Income</u>	<u>Per Capita Personal Income</u>
<b>Great Falls</b>	3.4 billion	41,427
<u>Micropolitan Areas</u>		
<b>Bozeman</b>	3.8 billion	40,592
<b>Helena</b>	<u>3.2 billion</u>	<u>42,057</u>
<b>TOTAL</b>	7.0 billion	40,652
<u>METROPOLITAN, MICROPOLITAN AREAS TOTAL</u>		
	10.4 billion	40,707

Adjusted to 2013 \$s

**Figure 20** displays TPI and PCPI for Upper Missouri Basin counties for 2012. The counties with the highest TPI tend to be the more populous counties. Gallatin, Cascade, and Lewis and Clark Counties account for more than 75 percent of the Basin’s income. These counties, respectively, had the third, fifth, and sixth highest levels of TPI among Montana’s 56 counties in 2012. Toole and Jefferson Counties ranked fifth and tenth among Montana counties with the highest PCPI in 2012.

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

**Figure 20** Personal Income—Upper Missouri Basin Counties—2012

<u>County</u>	<u>TPI (\$ billions)</u>	<u>PCPI (\$)</u>
<b>Beaverhead</b>	.331	35,365
<b>Broadwater</b>	.174	30,207
<b>Cascade</b>	3.386	41,427
<b>Chouteau</b>	.226	38,307
<b>Gallatin</b>	3.759	40,592
<b>Glacier</b>	.458	33,387
<b>Jefferson</b>	.502	44,049
<b>Lewis and Clark</b>	2.706	41,707
<b>Liberty</b>	.102	42,795
<b>Madison</b>	.301	38,894
<b>Meagher</b>	.073	37,893
<b>Pondera</b>	.253	40,974
<b>Teton</b>	.260	43,019
<b>Toole</b>	.275	52,718

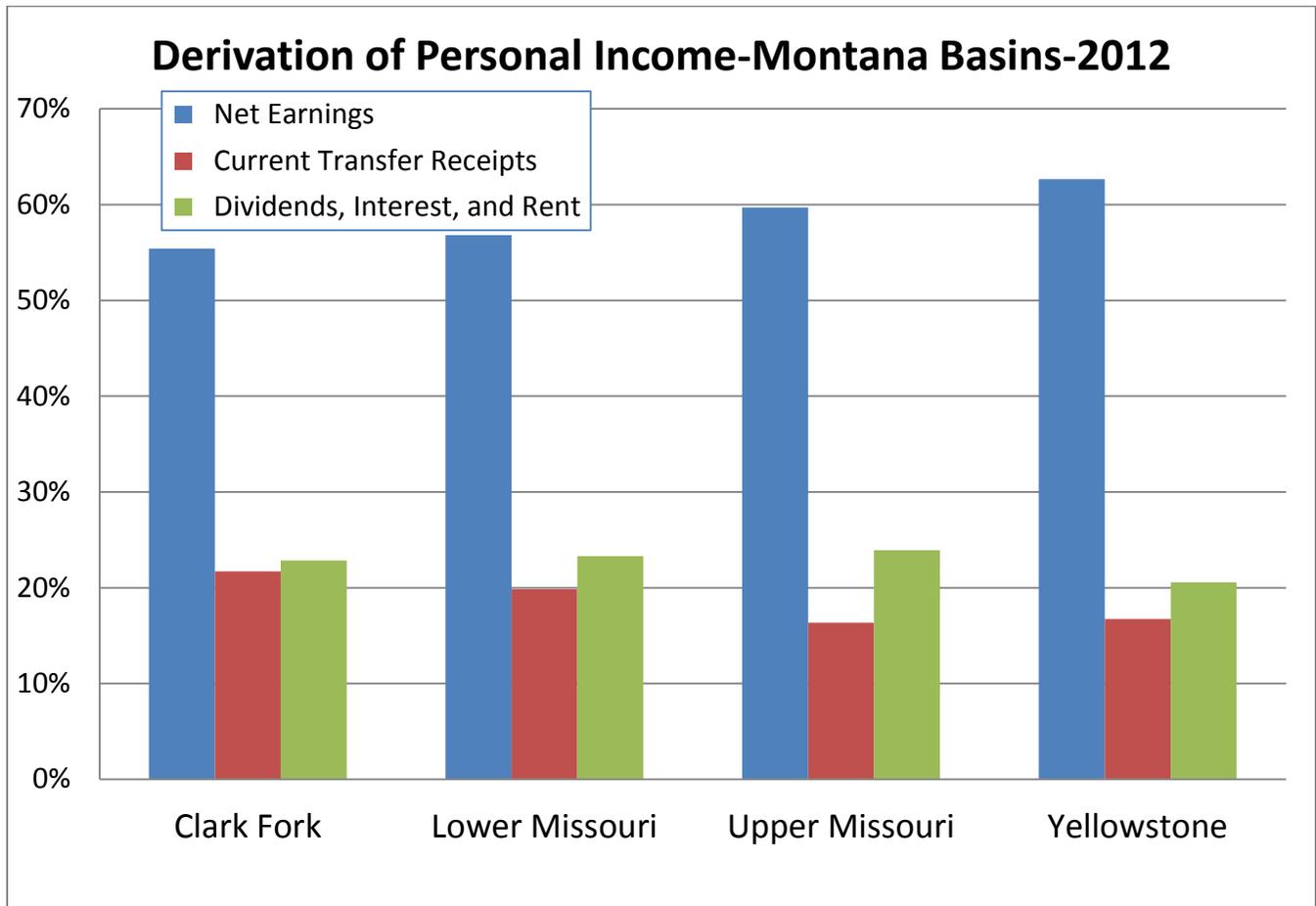
Adjusted to 2013 \$s



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. The Upper Missouri Basin had a similar reliance on non-labor income relative to earnings compared to Montana. 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.

**Figure 21** Derivation of personal Income





**Figure 22** Derivation of Personal Income—Upper Missouri Basin Counties - 2012

	<u>Net Earnings</u>	<u>Transfer Payments</u>	<u>Dividends, Interest, and Rent</u>
<b>Beaverhead</b>	48.5%	22.5%	29.0%
<b>Broadwater</b>	50.2%	23.2%	26.5%
<b>Cascade</b>	58.2%	19.1%	22.7%
<b>Chouteau</b>	55.6%	17.1%	27.3%
<b>Gallatin</b>	63.4%	11.5%	25.0%
<b>Glacier</b>	55.0%	24.4%	20.6%
<b>Jefferson</b>	63.5%	15.9%	20.6%
<b>Lewis and Clark</b>	63.1%	16.2%	20.8%
<b>Liberty</b>	45.3%	15.3%	39.4%
<b>Madison</b>	48.1%	19.7%	32.2%
<b>Meagher</b>	35.8%	27.3%	36.9%
<b>Pondera</b>	48.1%	19.1%	32.7%
<b>Teton</b>	52.1%	18.8%	29.1%
<b>Toole</b>	62.5%	12.6%	25.0%

The derivation of personal income for Upper Missouri Basin counties is presented in **Figure 22**. For four Basin counties, net earnings comprised more than 60 percent of personal income. The portion of income derived from transfer payments was highest in Meagher and Glacier Counties. Income from dividends, interest, and rent was greater than 30 percent in Liberty, Meagher, Madison, and Pondera Counties.

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 Upper Missouri Basin for the period 1990 to 2012—adjusted for inflation—are presented in **Figure 23**. Total earnings for wages and salaries increased by nearly 80 percent to \$5.6 billion and income in the form of supplemental employer contributions increased 90 percent to \$1.6 billion. Non-farm proprietors' income nearly doubled over the period to \$1.1 billion. Farm proprietors' income declined 4.0 percent since 1990 in real terms, fluctuating between \$6 million and \$450 million and averaging \$148 million since 1990. Between 1990 and 2011, average wages and salaries in the Upper Missouri Basin rose 21 percent to \$36,571, 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 increased 6 percent to \$23,033, exceeding the state-wide average that declined by 2 percent to \$21,057.



Figure 23 Earning by Place of Work

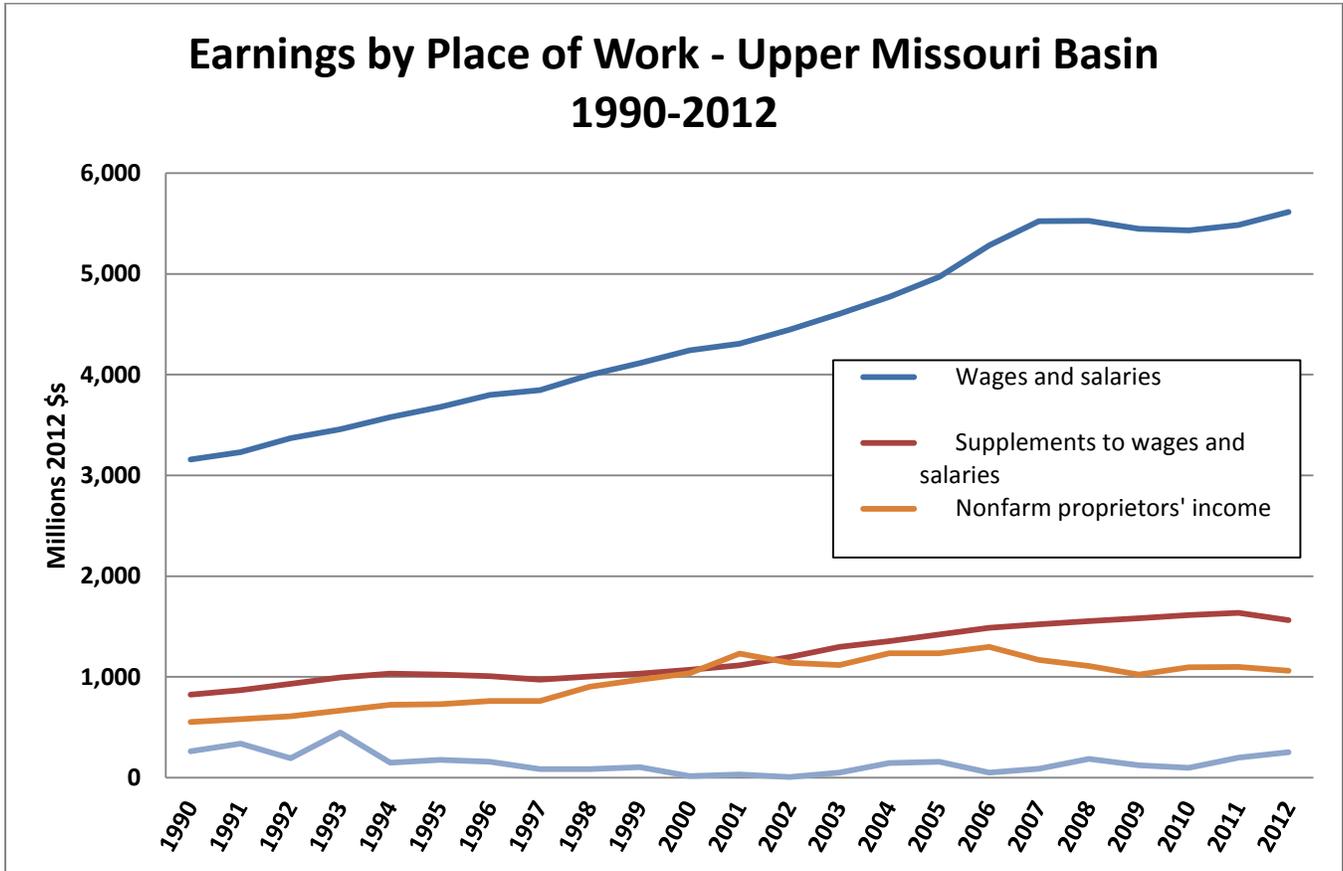


Figure 24 displays wage and salary and employment information for the Upper Missouri Basin by three-digit North American Industrial Classification System (NAICS) industrial sub-sector. The data reported are from the U.S. Department of Labor, Bureau of Labor Statistics' Quarterly Census of Employment and Wages for the period of the fourth quarter of 2012 through the third quarter of 2013. The reported employment figures are combined part-time and full-time employment for each sub-sector. Wages and salaries totaling \$3.8 billion were paid to 109,603 employees in the private sector in the Upper Missouri Basin during the period. Total wages and salaries were highest in the health care sector where more than thirteen percent of private sector workers were employed and for professional and technical services. More than eleven percent of Basin employees worked in food services and drinking places. Average wages and salaries were highest in the sub-sector related to financial services pertaining to securities, commodity contracts, and investments. Federal, state, and local levels of government in the Basin paid \$1.4 billion to 31,040 employees.



**Figure 24 Wages and Salaries and Employment – Upper Missouri Basin**

**2012-2013**

	<b>Wages and Salaries</b>		<b>Average</b>
	<b>(\$ millions)</b>	<b>Employment</b>	<b>Wages and Salaries</b>
	<b>(<u>\$</u> millions)</b>	<b>(<u>Employment</u>)</b>	<b>(<u>\$</u>)</b>
<b>Agriculture, forestry, fishing and hunting</b>			
<b>Crop production</b>	12.371	479	25,827
<b>Animal production and aquaculture</b>	38.038	1,006	37,811
<b>Forestry and logging</b>	0.889	24	37,053
<b>Fishing, hunting and trapping</b>	0.102	3	34,013
<b>Agriculture and forestry support activities</b>	9.582	250	38,327
<b>Mining, quarrying, and oil and gas extraction</b>			
<b>Oil and gas extraction</b>	10.810	210	51,477
<b>Mining, except oil and gas</b>	60.164	878	68,523
<b>Support activities for mining</b>	12.099	237	51,049
<b>Utilities</b>	46.197	628	73,562
<b>Construction</b>			
<b>Construction of buildings</b>	97.121	2,369	40,997
<b>Heavy and civil engineering construction</b>	90.098	1,507	59,786
<b>Specialty trade contractors</b>	156.975	4,094	38,343

ND: Data not disclosed.

Source: U.S. Department of Labor, Bureau of Labor Statistics; Quarterly Census of Employment and Wages; Fourth Quarter 2012 through Third Quarter 2013; Compiled by: Montana Department of Labor and Industry, Research and Analysis Bureau; Montana Department of Natural Resources and Conservation.



**Figure 24 Wages and Salaries and Employment – Upper Missouri Basin**

**2012-2013**

	Wages and Salaries		Average
	(\$ millions)	Employment	Wages and Salaries (\$s)
<b>Manufacturing</b>			
Food manufacturing	34.108	959	35,566
Beverage and tobacco product manufacturing	8.536	321	26,591
Textile mills	ND	ND	ND
Textile product mills	2.608	110	23,712
Apparel manufacturing	ND	ND	ND
Leather and allied product manufacturing	0.668	21	31,798
Wood product manufacturing	11.586	332	34,898
Paper manufacturing	ND	ND	ND
Printing and related support activities	8.353	235	35,543
Petroleum and coal products manufacturing	ND	ND	ND
Chemical manufacturing	11.702	209	55,992
Plastics and rubber products manufacturing	3.803	107	35,538
Nonmetallic mineral product manufacturing	21.102	461	45,774
Primary metal manufacturing	0.673	20	33,640
Fabricated metal product manufacturing	15.889	408	38,944
Machinery manufacturing	3.927	88	44,622
Computer and electronic product manufacturing	13.012	286	45,497
Electrical equipment and appliance mfg.	4.327	85	50,903
Transportation equipment manufacturing	19.231	356	54,020
Furniture and related product manufacturing	5.401	179	30,175
Miscellaneous manufacturing	23.495	713	32,953
<b>Wholesale trade</b>			
Merchant wholesalers, durable goods	112.640	2,235	50,398
Merchant wholesalers, nondurable goods	70.344	1,688	41,673
Electronic markets and agents and brokers	22.752	365	62,336
<b>Retail trade</b>			
Motor vehicle and parts dealers	93.023	2,370	39,250
Furniture and home furnishings stores	18.075	635	28,464
Electronics and appliance stores	14.782	501	29,505
Building material and garden supply stores	60.022	1,945	30,860
Food and beverage stores	65.517	3,021	21,687
Health and personal care stores	19.437	660	29,450
Gasoline stations	29.400	1,563	18,810
Clothing and clothing accessories stores	15.242	936	16,284
Sporting goods, hobby, book and music stores	23.378	1,363	17,152
General merchandise stores	83.654	3,647	22,938
Miscellaneous store retailers	24.370	1,197	20,360
Nonstore retailers	14.070	350	40,200



**Figure 24 Wages and Salaries and Employment – Upper Missouri Basin**

**2012-2013**

	<b>Wages and Salaries</b>		<b>Average</b>
	<b>(\$ millions)</b>	<b>Employment</b>	<b>Wages and Salaries (\$s)</b>
<b>Transportation and warehousing</b>			
Air transportation	5.176	185	27,977
Rail transportation	ND	ND	ND
Truck transportation	42.591	1,066	39,954
Transit and ground passenger transportation	9.214	502	18,355
Pipeline transportation	3.886	54	71,956
Scenic and sightseeing transportation	0.511	22	23,207
Support activities for transportation	20.084	511	39,304
Postal service	0.344	18	19,085
Couriers and messengers	22.031	554	39,767
Warehousing and storage	3.340	117	28,551
<b>Information</b>			
Publishing industries, except internet	15.312	446	34,332
Motion picture and sound recording industries	3.095	168	18,425
Broadcasting, except internet	14.210	385	36,910
Telecommunications	57.063	1,094	52,160
Data processing, hosting and related services	11.668	212	55,040
Other information services	3.295	67	49,177
<b>Finance and insurance</b>			
Monetary authorities - central bank	ND	ND	ND
Credit intermediation and related activities	127.227	2,580	49,313
Securities, commodity contracts, investments	55.337	538	102,858
Insurance carriers and related activities	114.187	2,080	54,898
<b>Real estate and rental and leasing</b>			
Real estate	32.505	1,127	28,842
Rental and leasing services	17.483	512	34,147
Lessors of nonfinancial intangible assets	2.649	44	60,211
<b>Professional and technical services</b>	410.956	7,240	56,762
<b>Management of companies and enterprises</b>	27.500	450	61,112
<b>Administrative and waste services</b>			
Administrative and support services	138.778	4,697	29,546
Waste management and remediation services	6.343	168	37,755
<b>Educational services</b>	43.634	1,730	25,222
<b>Health care and social assistance</b>			
Ambulatory health care services	289.738	5,468	52,988
Hospitals	259.348	5,540	46,814
Nursing and residential care facilities	77.972	3,353	23,255
Social assistance	57.451	3,355	17,124



**Figure 24 Wages and Salaries and Employment – Upper Missouri Basin**

**2012-2013**

	<b>Wages and Salaries</b>		<b>Average</b>
	<b><u>(\$ millions)</u></b>	<b><u>Employment</u></b>	<b>Wages and Salaries</b>
			<b><u>(\$)</u></b>
<b>Arts, entertainment, and recreation</b>			
<b>Performing arts and spectator sports</b>	7.454	313	23,815
<b>Museums, historical sites, zoos, and parks</b>	4.891	179	27,324
<b>Amusements, gambling, and recreation</b>	64.369	3,160	20,370
<b>Accommodation and food services</b>			
<b>Accommodation</b>	89.696	4,488	19,986
<b>Food services and drinking places</b>	167.240	12,191	13,718
<b>Other services, except public administration</b>			
<b>Repair and maintenance</b>	48.365	1,454	33,264
<b>Personal and laundry services</b>	19.575	951	20,583
<b>Membership associations and organizations</b>	87.160	3,115	27,981
<b>Private households</b>	3.644	173	21,064
<b>Unclassified</b>	0.414	12	34,492
<b>Private</b>	3,773.318	109,603	34,427
<b>Government</b>			
<b>Federal</b>	328.055	5,330	61,549
<b>State</b>	562.074	12,579	44,684
<b>Local</b>	479.262	13,131	36,499



Summary data about the labor force in the Upper Missouri Basin are presented in **Figure 25**. Nearly one-third of the state’s labor force is located in the Upper Missouri Basin and nearly one-third of the Basin’s labor force is located in Gallatin County. The Basin’s three most populous counties contain nearly eighty percent of the Basin’s labor force. As of March 2014, the unemployment rate in the Basin was 5.2 percent. Glacier County ranked fourth among Montana counties with an unemployment rate of 11.6 percent. Toole County had the lowest unemployment rate among the Basin’s counties. The unemployment rate for the entire state was 6.0 percent.

**Figure 25** Labor Force Data – Upper Missouri Basin Counties

February 2013 – March 2014

	<u>Labor Force</u>	<u>Employed</u>	<u>Unemployed</u>	<u>Unemployment Rate (%)</u>
<b>Beaverhead</b>	5,085	4,853	232	4.6
<b>Broadwater</b>	2,385	2,193	192	8.1
<b>Cascade</b>	41,803	39,637	2,166	5.2
<b>Chouteau</b>	2,411	2,301	110	4.6
<b>Gallatin</b>	53,719	51,316	2,403	4.5
<b>Glacier</b>	5,640	4,984	656	11.6
<b>Jefferson</b>	5,892	5,538	354	6.0
<b>Lewis and Clark</b>	34,934	33,263	1,671	4.8
<b>Liberty</b>	741	697	44	5.9
<b>Madison</b>	4,822	4,565	257	5.3
<b>Meagher</b>	976	920	56	5.7
<b>Pondera</b>	2,542	2,375	167	6.6
<b>Teton</b>	2,987	2,835	152	5.1
<b>Toole</b>	2,346	2,242	104	4.4
<b>Total</b>	166,283	157,719	8,564	5.2

Source: U.S. Department of Labor, Bureau of Labor Statistics; Local Area Unemployment Statistics (LAUS)



In 2012, 153,105 Montanans—15.6 percent—were reported to be living in poverty, just below the U.S. rate of 15.9 percent. More than thirty percent (46,451) resided in the Upper Missouri Basin. Montana counties with the highest and lowest poverty rates were, respectively, Glacier (30.4 percent) and Fallon (8.6 percent) Counties. Jefferson County had the fourth lowest poverty rate in the state with 9.7 percent. The poverty rate for the Upper Missouri Basin was estimated to be 15.2 percent in 2012. Poverty rates for the Basin over recent decades are reported in **Figure 26**.

**Figure 26** Poverty Rates (Percent) – Upper Missouri Basin Counties

	<u>1989</u>	<u>1995</u>	<u>2000</u>	<u>2005</u>	<u>2012</u>
<b>Beaverhead</b>	16.9	17.7	15.1	16.1	17.2
<b>Broadwater</b>	14.9	15.8	13.6	12.7	12.3
<b>Cascade</b>	12.5	13.8	12.1	13.2	18.1
<b>Chouteau</b>	13.5	13.6	14.1	17.2	17.6
<b>Gallatin</b>	13.4	11.7	10.2	11.8	13.3
<b>Glacier</b>	32.1	35.4	27	27.7	30.4
<b>Jefferson</b>	8.3	9.5	9.5	9.4	9.7
<b>Lewis and Clark</b>	10.7	12.6	10.3	11.9	11.2
<b>Liberty</b>	11.7	12.8	15.0	16.2	20.7
<b>Madison</b>	13.6	14.6	12.2	11.9	12.8
<b>Meagher</b>	18.6	19.7	18.1	16.7	19.1
<b>Pondera</b>	18.1	19.8	17.5	19.8	19.9
<b>Teton</b>	13.6	17.2	13.7	13.9	15.1
<b>Toole</b>	13.0	15.2	15.4	13.8	16.6
<b>Upper Missouri Basin</b>	13.7	14.4	12.3	13.4	15.2

Source: U.S. Department of Commerce, Census Bureau; Small Area Income and Poverty Estimates (SAIPE).



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