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Urban and Community Tree Cover in the Mountain West

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URBAN & COMMUNITY TREE COVER IN THE MOUNTAIN WEST

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PURPOSE:

This fact sheet examines data on tree cover and impervious cover in urban land for the United States and for the five states in the Mountain West: Arizona, Colorado, Nevada, New Mexico, and Utah. The original report includes data for each of the 50 states and the District of Columbia.¹

ABOUT THE DATA:

The original report examines changes in impervious and tree cover in two area categories: “urban” areas and “urban/community” areas. The authors of the original report define areas as “urban” if they only include heavily populated areas.² The authors of the original report define areas as “urban/community” if they include more heavily populated areas *and* their geopolitical boundaries delimited by U.S. Census Bureau.³

Change in tree cover and impervious cover was determined by comparing two aerial photographs of randomly chosen points in urban communities and urban areas that were approximately five years apart. Among the five Mountain West states included in this fact sheet, five-year periods range from 2008 to 2015. Exact date ranges for each state are indicated in the tables below.

KEY TERMS:

Tree Cover	Surfaces that absorb rainfall; examples include trees, shrubs, grass, soil
Impervious Cover	Surfaces that don’t absorb rainfall; examples include buildings and roads
Urban/Community	Land in urban areas <i>and</i> politically defined areas of communities

KEY FINDINGS:

1. Between 2008 and 2014, Arizona saw the largest decrease in tree cover for urban areas (-1.3%) and urban/community areas (-0.6%) as well as the largest decrease in acreage of tree cover in urban areas (-3,360 acres) and urban/community areas (-6,190 acres) in the Mountain West.
2. From 2010 to 2015, Utah saw the largest increase in impervious cover of urban areas (2.6%) among Mountain West states.
3. Among Mountain West states, Nevada was the only state to see an increase in urban tree cover (0.5%) between 2008 and 2015.
4. Among Mountain West states, New Mexico is the only state to see an increase in urban/community tree cover (0.2%) between 2008 and 2015.
5. Utah’s urban areas saw the largest increase in impervious cover (+3,020 acres) from 2010 to 2015 and Arizona’s urban/community areas saw the largest increase in impervious cover (+5,060 acres) between 2008 and 2014.

¹ David J. Nowak and Eric J. Greenfield. “Declining Urban and Community Tree Cover in the United States,” (2018). *Urban Forestry and Urban Greening*. Retrieved from www.fs.usda.gov/nrs/pubs/jrnl/2018/nrs_2018_nowak_005.pdf

² “2010 Census Urban and Rural Classification and Urban Area Criteria.” *United States Census Bureau*. Retrieved from www.census.gov/programs-surveys/geography/guidance/geo-areas/urban-rural/2010-urban-rural.html

³ Ibid.

Table 1 shows the change in urban tree cover over a varied 5-year period in Mountain West states. New Mexico and Colorado experienced a net 0.0% change in urban tree coverage, while Utah experienced a -0.3% decrease. Arizona displayed the largest overall urban tree coverage at 27.3% in 2008 compared to Nevada with the lowest urban tree coverage at 12.9% in 2014. Although Arizona experienced the highest negative percent change in urban tree coverage (-1.3% from 2014 to 2008), the state still has more tree coverage than other Mountain West states.

Table 1: Urban Tree Cover Change in the Mountain West, 2008-2015⁴

	Years Examined	Year 1	~Year 5	Percent Change
Arizona	2008-2014	27.3%	26.1%	-1.3%
Colorado	2007-2013	17.6%	17.6%	0.0%
Nevada	2009-2014	13.4%	12.9%	-0.5%
New Mexico	2010-2015	16.8%	16.8%	0.0%
Utah	2010-2015	15.3%	14.9%	-0.3%

⁴ Adapted from “Declining Urban and Community Tree Cover in the United States,” (2018). *Urban Forestry and Urban Greening*. Retrieved from www.fs.usda.gov/nrs/pubs/jrnl/2018/nrs_2018_nowak_005.pdf

Table 2 shows the change in urban impervious cover during a varied 5-year period in Mountain West states. All Mountain West states experienced increases in impervious cover, with Utah and Nevada experiencing the greatest increases (2.6% and 1.9% respectively). Nevada is the only state to have reported percentages above 40% for both years examined. Among Mountain West states, Nevada reported the greatest percentage of urban impervious cover (46.4% in 2014), while New Mexico reported the smallest percentage of urban impervious cover (31.8% in 2010). Compared to Table 1, there is a higher percentage of impervious cover compared to tree cover for all Mountain West states.

Table 2: Urban Impervious Cover Change in the Mountain West, 2008-2015

	Years Examined	Year 1	~Year 5	Percent Change
Arizona	2008-2014	33.2%	33.6%	0.4%
Colorado	2007-2013	35.3%	37.0%	1.7%
Nevada	2009-2014	44.5%	46.4%	1.9%
New Mexico	2010-2015	31.8%	32.8%	1.0%
Utah	2010-2015	34.1%	36.7%	2.6%

⁴ Adapted from “Declining Urban and Community Tree Cover in the United States,” (2018). *Urban Forestry and Urban Greening*. Retrieved from www.fs.usda.gov/nrs/pubs/jrnl/2018/nrs_2018_nowak_005.pdf

Table 3 shows the change in urban/community tree cover over a varied 5-year period throughout the Mountain West. New Mexico was the only Mountain West state to see an increase (0.2% from 2010 to 2015). Arizona saw the largest decrease in urban/community tree cover (-0.6% from 2008 to 2014) and had the highest urban/community tree cover for both years at 30.8% and 30.2%. Utah had the least urban/community tree cover in the Mountain West for both

⁴ The original report indicates which states experience a statistically significant change in each of the four examined factors of tree and impervious cover. This factsheet does not differentiate, however if interested in reviewing which data were statistically significant, please visit www.fs.usda.gov/nrs/pubs/jrnl/2018/nrs_2018_nowak_005.pdf for more information.

examined years at 16.7% and 16.6% respectively. Arizona was the only state with reported percentages in the 30s and Utah was the only state with reported percentages below 20%.

Table 3: Urban/Community Tree Cover Change in the Mountain West, 2008-2015

	Years Examined	Year 1	~Year 5	Percent Change
Arizona	2008-2014	30.8%	30.2%	-0.6%
Colorado	2007-2013	21.8%	21.6%	-0.2%
Nevada	2009-2014	27.0%	26.8%	-0.2%
New Mexico	2010-2015	21.9%	22.1%	0.2%
Utah	2010-2015	16.7%	16.6%	-0.1%

*Adapted from “Declining Urban and Community Tree Cover in the United States,” (2018). *Urban Forestry and Urban Greening*. Retrieved from www.fs.usda.gov/nrs/pubs/jrnl/2018/nrs_2018_nowak_005.pdf

Table 4 shows the change in urban/community impervious cover over a varied five-year period in the Mountain West. Every Mountain West state experienced a statically significant change between the years examined. Colorado experienced the largest increase in impervious cover at 1.5%. Arizona experienced the smallest change in impervious cover at only 0.5%. Colorado is the only state in the Mountain West to experience a total above 20% impervious cover in urban/community land for the second year observed and had the most impervious cover for both years examined. Arizona has the least impervious cover for both years examined (9.8% in 2008 and 10.3% in 2014).

Table 4: Urban/Community Impervious Cover Change in the Mountain West, 2008-2015

	Years Examined	Year 1	~Year 5	Percent Change
Arizona	2008-2014	9.8%	10.3%	0.5%
Colorado	2007-2013	19.7%	21.2%	1.5%
Nevada	2009-2014	11.9%	12.9%	1.0%
New Mexico	2010-2015	11.5%	12.1%	0.6%
Utah	2010-2015	12.5%	13.6%	1.1%

*Adapted from “Declining Urban and Community Tree Cover in the United States,” (2018). *Urban Forestry and Urban Greening*. Retrieved from www.fs.usda.gov/nrs/pubs/jrnl/2018/nrs_2018_nowak_005.pdf

Figure 1 shows the change in average acreage for impervious cover in urban and urban/community areas in the Mountain West over a varied five-year period. Acreage of urban impervious cover and urban/community impervious cover both increased for all states in the Mountain West. Utah had the greatest total acreage change for urban impervious cover with an average 3,020 acres/year. Arizona experienced the largest change in urban/community impervious cover with an average 5,060 acres/year.

Figure 1 also shows the change in average acreage for tree cover in urban and urban/community areas in the Mountain West over a varied five-year period. New Mexico is the only state to experience a small increase in urban/community tree cover (+8 acres). Every other Mountain West state experienced a decrease in acreage in urban/community tree cover. For urban tree cover, every Mountain West state experienced either a decrease in acreage or no change. Among Mountain West states, Arizona experienced the largest decrease in acreage for both urban and urban/community tree

cover, with an average of -3,360 acres/year and -6,190 acres/year respectively. Colorado and New Mexico experienced no change in acreage for urban tree cover.

Figure 1: Average Acreage Change for Urban Tree and Impervious Cover & Urban/Community Tree and Impervious Cover in the Mountain West, 2008-2015



*Adapted from “Declining Urban and Community Tree Cover in the United States,” (2018). *Urban Forestry and Urban Greening*. Retrieved from www.fs.usda.gov/nrs/pubs/jrnl/2018/nrs_2018_nowak_005.pdf