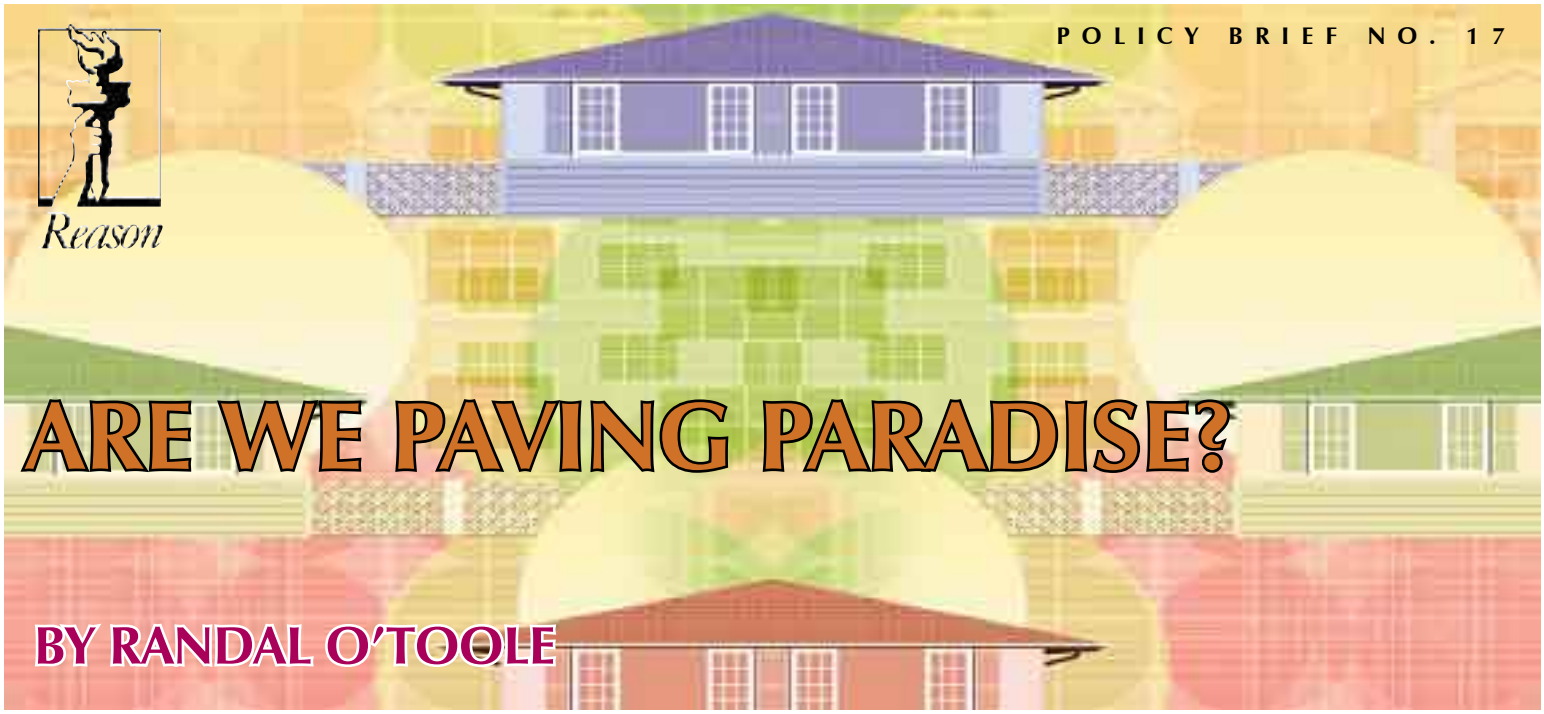

ARE WE PAVING PARADISE?

BY RANDAL O'TOOLE

A perennial argument for smart growth and compact urban development is that we are running out of open space. But how much open space is really left?

Two federal agencies provide useful data on urbanization and rural open space. The Natural Resources Conservation Service does a natural resource inventory every five years, and this inventory estimates the amount of urban and rural development. The decennial Census measures the land area of every census tract and classifies census tracts in such categories as "urban area," "urban cluster," and "place." Both of these data sources agree that about 95 percent of the United States remains rural open space.

The Census and the Natural Resources Inventory measure different things, so naturally the numbers are a little different.

The Census Bureau counts population and land area in a variety of categories:

- Urbanized areas include contiguous areas of 50,000 people or more at densities of 1,000 people per square mile or more;
- Urban clusters include contiguous areas of 2,500 to 50,000 people at densities of 1,000 people per square mile or more;
- Places include all of the above, any incorporated area , and other concentrations of people identified by the Census Bureau.

WHERE THE PEOPLE ARE

More than two out of three Americans live in urbanized areas. These areas collectively cover 2 percent of the nation's land area. Counting urbanized areas and urban clusters together, nearly four out of five Americans live in an urban setting. Urbanized areas and urban clusters cover 2.6 percent of the nation's land.

Remaining places account for just 4.4 percent of the U.S. population, but they cover 2.8 percent of the land. Obviously, their density is far lower than urbanized areas and urban clusters. The average urbanized area has nearly 2,700 people per square mile, and the average urban cluster has close to 1,500 people per square mile. But the average place (outside of urban areas) has just 133 people per square mile.

Non-urban place densities in Arizona, California, Hawaii, Montana, Nevada, and Wyoming average between 30 and 100 people per square mile. In all other states except Nebraska, non-urban place densities range from 100 to 500 people per square mile. Nebraska is the only state whose non-urban places approach urban densities: 805 people per square mile.

The problem is that the Census Bureau seems to count all the land in a town's legal boundaries, and that sometimes includes a lot of land. In short, the Census Bureau's definition of "places" exaggerates the area of developed land, and the true extent of urbanized land is somewhere between the area of urbanized areas/urban clusters and the area for places.

In many cases, this is because small towns have large corporate boundaries, only portions of which are occupied. This is most noticeable in Alaska, where many cities have legal boundaries that include thousands of square miles of unoccupied land. As a result, the density of Alaska's non-urban places averages just 7 people per square mile. Indeed, some of the small towns in the Census have so few people that they may as well be open space. Forty-five towns occupying nearly 700 square miles have a population of zero. Another sixty towns covering 2,100 square miles each have less than ten people. Nearly 1,600 towns with populations of 10 to 99 together cover well over 25,000 square miles. This means the average density of towns smaller than a hundred people is less than four people per square mile. The Census Bureau has obviously included large areas of open space in its non-urban places.

WHERE THE OPEN SPACE IS

The Natural Resources Inventory (NRI) was designed to measure the extent of farms and forests, and developed areas are only an afterthought. Unlike the Census, which is an exact measurement, the NRI is a sample, so its accuracy is not as high. The NRI also does not include Alaska, but such a tiny portion of Alaska has been developed that this is not a serious problem.

For each state, the NRI estimates the amount of land in large urban developments, meaning larger than 10 acres. Parks and other open spaces smaller than 10 acres are counted in large urban developments if they are completely surrounded by other developed land. The NRI also estimates the extent of small built-up areas, meaning between a quarter acre and 10 acres. Such small built-up areas probably include such rural developments as grain elevators or agricultural processing facilities. The NRI also estimates the amount of rural land used for transportation, including roads and railroads.

Table 1 shows the results of the two measurements for the United States as a whole. The NRI says 3.1 percent of the United States is urbanized and 1.2 percent is in rural developments and transportation. The Census says that 2.6 percent is in urban areas of 2,500 people or more and another 2.8 percent is in small towns and places. Considering the exaggerated extent of small towns in the Census, it is clear that well under 5 percent of the United States has been developed.

Together, urbanized areas, urban clusters, and rural places occupy 5.4 percent of the nation's land, while urban areas alone cover just 2.6 percent. Rural open space thus covers something between 94.6 percent and 97.4 of the land.

Table 2 has a breakdown by state of the Census determination of percent of urbanized land (urban areas plus urban clusters) and places, and the NRI urban land (both large and small) and developed land (both urban and rural). The only states that are more than 20 percent developed are the tiny states, such as Massachusetts and Maryland, on the east coast. With the exception of Ohio, other states that are more than 10 percent developed are also on the Atlantic seaboard.

Although California is the nation's most populated state, it is hardly running out of land. More than 94 percent of Californians live in urban areas that cover just 5.1 percent of the state. When rural places are added, no more than 8.6 percent of the state is developed. Since California's rural places have an average density

Table 1: Census and NRI Estimates of Developed Land

	Land Area (Square Miles)	Percent of Total
2000 Census		
Urban areas	71,961	2.0
Urban areas & clusters	92,508	2.6
All places	189,374	5.4
1997 Natural Resources Inventory		
Large urban	109,326	3.1
Large & small built up	118,875	3.4
Developed	152,726	4.3
U.S. Land		
Total square miles	3,537,438	100.0

Table 2: Census and Natural Resource Inventory Measurements of Urban and Developed Lands

		-----Census-----		-------NRI-------	
	Land Area (Sq. Miles)	% Urban	% Places	% Urban	% Developed
Alabama	50,744	3.5	9.7	5.5	7.2
Alaska	571,951	0.0	4.7	0.0	0.0
Arizona	113,635	1.5	5.4	1.7	2.3
Arkansas	52,068	1.7	4.6	2.9	4.4
California	155,959	5.1	8.6	4.9	5.6
Colorado	103,718	1.2	2.6	1.8	2.6
Connecticut	4,845	36.3	39.8	25.8	28.1
Delaware	1,954	15.5	17.8	13.9	15.5
District of Columbia	61	99.8	100.0	100.0	100.0
Florida	53,927	11.4	16.2	13.0	14.5
Georgia	57,906	6.4	9.6	9.4	11.2
Hawaii	6,423	5.5	17.5	3.8	4.5
Idaho	82,747	0.5	0.8	0.8	1.5
Illinois	55,584	6.4	8.7	7.1	9.0
Indiana	35,867	6.2	8.2	8.0	10.2
Iowa	55,869	1.5	3.7	2.3	5.0
Kansas	81,815	1.1	1.8	2.0	5.5
Kentucky	39,728	3.1	5.2	5.5	7.6
Louisiana	43,562	3.8	6.9	4.3	5.4
Maine	30,862	1.2	4.2	2.8	3.6
Maryland	9,774	18.4	23.3	15.1	16.4
Massachusetts	7,840	35.8	40.5	27.4	29.0
Michigan	56,804	5.9	7.3	9.0	10.1
Minnesota	79,610	1.9	5.2	2.8	4.4
Mississippi	46,907	2.0	4.7	3.6	5.4
Missouri	68,886	2.6	4.7	3.9	5.9
Montana	145,552	0.2	2.0	0.4	0.9
Nebraska	76,872	0.6	1.0	1.1	2.6
Nevada	109,826	0.5	2.8	0.5	0.6
New Hampshire	8,968	6.2	10.3	9.2	10.8
New Jersey	7,417	37.6	44.1	34.6	35.4
New Mexico	121,356	0.6	1.7	1.0	1.7
New York	47,214	8.3	10.8	9.3	10.8
North Carolina	48,711	7.3	10.3	10.5	12.4
North Dakota	68,976	0.2	0.9	0.6	2.5
Ohio	40,948	9.8	12.6	13.0	14.4
Oklahoma	68,667	1.7	6.8	2.9	4.5
Oregon	95,997	1.1	1.5	1.4	2.1
Pennsylvania	44,817	9.5	12.4	13.5	15.0
Rhode Island	1,045	37.2	39.6	23.0	25.2
South Carolina	30,109	6.2	9.2	9.4	11.7
South Dakota	75,885	0.2	0.9	0.7	2.1
Tennessee	41,217	5.9	10.6	8.1	9.7
Texas	261,797	2.7	5.0	4.2	5.3
Utah	82,144	0.8	2.8	0.9	1.4
Vermont	9,250	1.6	2.9	3.9	5.6
Virginia	39,594	6.0	9.8	8.5	10.4
Washington	66,544	3.2	5.2	3.8	5.0
West Virginia	24,078	2.3	4.1	4.8	6.4
Wisconsin	54,310	3.0	5.6	5.1	7.1
Wyoming	97,100	0.2	1.9	0.4	1.1
Total	3,537,438	2.6	5.4	3.5	4.5

Note: The numbers in the NRI file are in thousands of acres, while the numbers in the Census are in square miles. To convert, remember that there are 640 acres in a square mile.

of just 93 people per square mile, most of their land area probably qualifies as rural open space. The nation's second-most populated state, Texas, is even less heavily developed: 2.7 percent urbanized and 5.0 percent developed.

CONCLUSION

Idealy we would be able to compare data from the 2000 Census with numbers from the 1990 Census. But the Census Bureau changed many of its definitions between 1990 and 2000. Among other things, urbanized areas were redefined to exclude many undeveloped areas. This led, on average, to a 10-percent increase in the population density of urbanized areas. Despite growing populations, the 2000 Census reported many areas that were smaller than those measured by the 1990 Census.

Despite their minor differences, both the 2000 Census and the NRI agree that about 95 percent of the United States remains rural open space, even applying the most liberal use of the term "developed." While there may be localized lack of open space, a short ways outside of urban areas is a vast amount of open space. Proponents of "smart" growth legislation would do well to consider these facts when asserting a lack of open space in this country.

ABOUT THE AUTHOR

Randal O'Toole has worked as an economist for the Thoreau Institute for more than twenty years. His work has focused on understanding how environmental agencies, such as the U.S. Forest Service or Portland's Metro, work and how they can be made to work better.

O'Toole is the author of two books—*Reforming the Forest Service* (Island Press, 1988), *The Vanishing Automobile and Other Urban Myths* (1996)—and many subsequent studies on forest management, transportation, and urban policy issues. He has also written numerous op-ed pieces and other articles on environmental issues for a variety of publications.

In 1998 Yale University named O'Toole its McCluskey Conservation Fellow for the year and O'Toole spent the year there doing research and teaching a class in incentive-based conservation. O'Toole is also an adjunct scholar with Reason Foundation and the Cato Institute.

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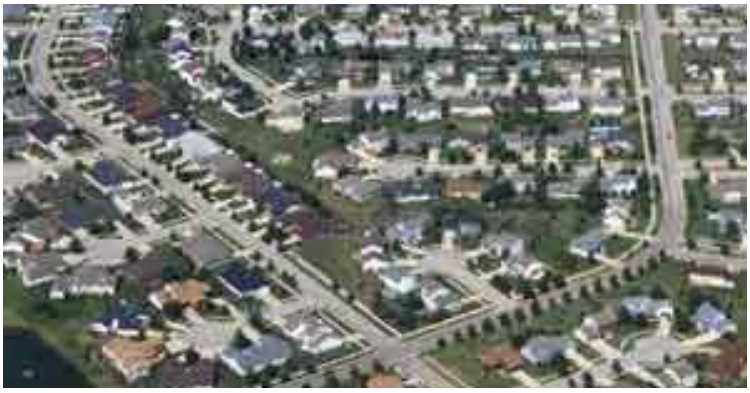

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