Depicting Population Change for Watershed Planning

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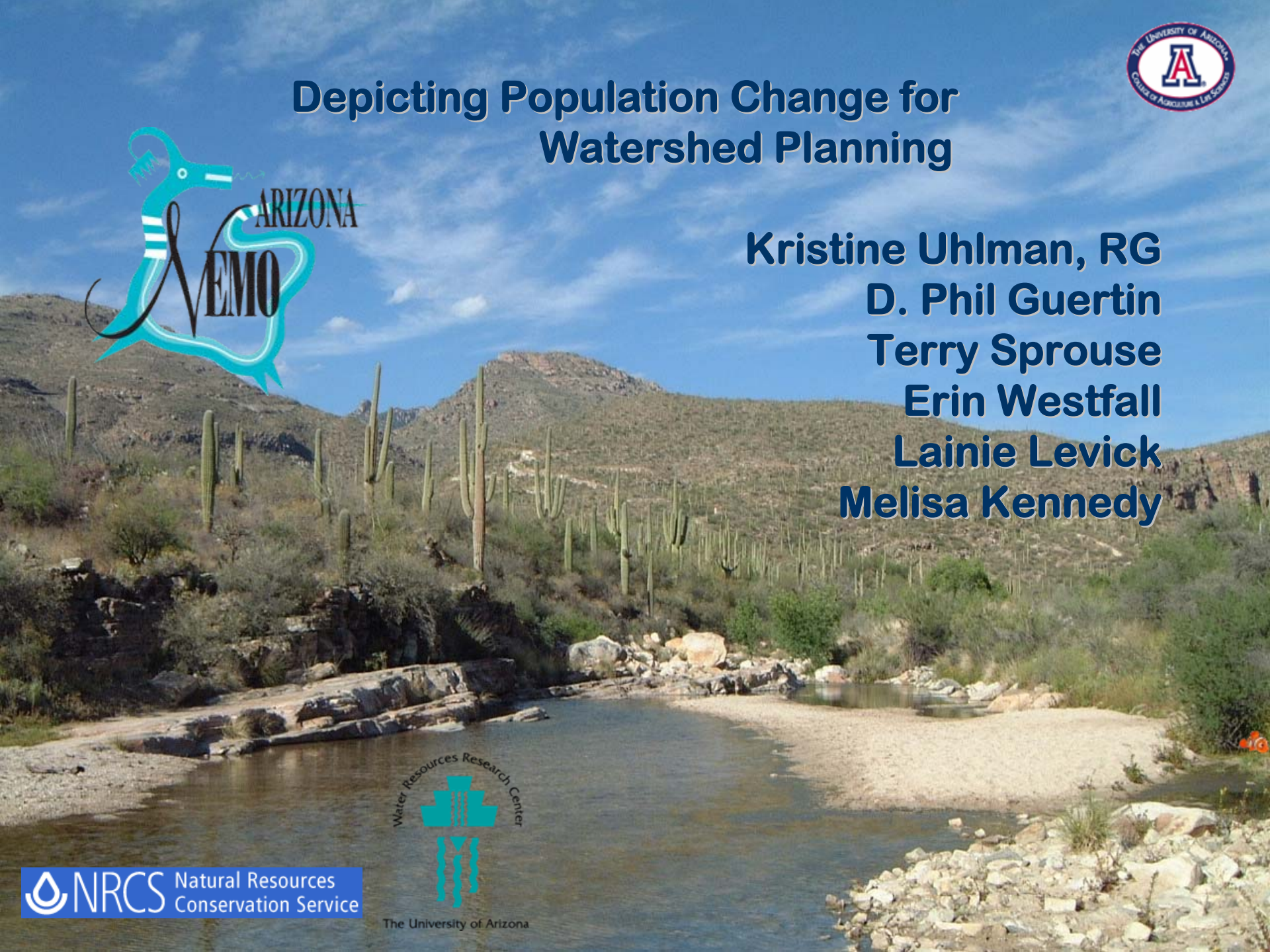

NEMO* in Arizona

*Nonpoint
Education for
Municipal
Officials …

and other Land Use Decision Makers

ADEQ
Arizona Department
of Environmental Quality
Janet Napolitano, Governor
Stephen A. Owens, ADEQ Director

The University of Arizona
College of Agriculture & Life Sciences

Water Resources Research Center
The University of Arizona

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United States Department of Agriculture
Natural Resources Conservation Service

USDA NRCS

Arizona
Rapid Watershed Assessments

United States Department of Agriculture
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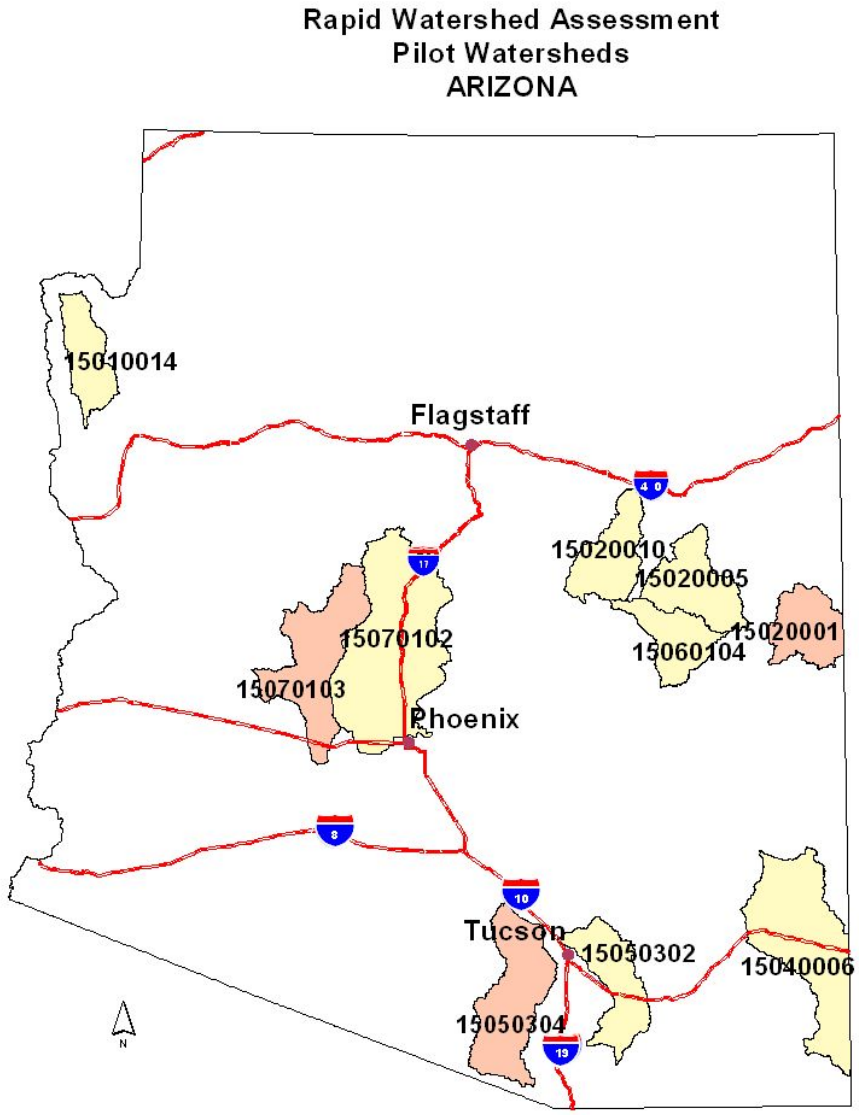
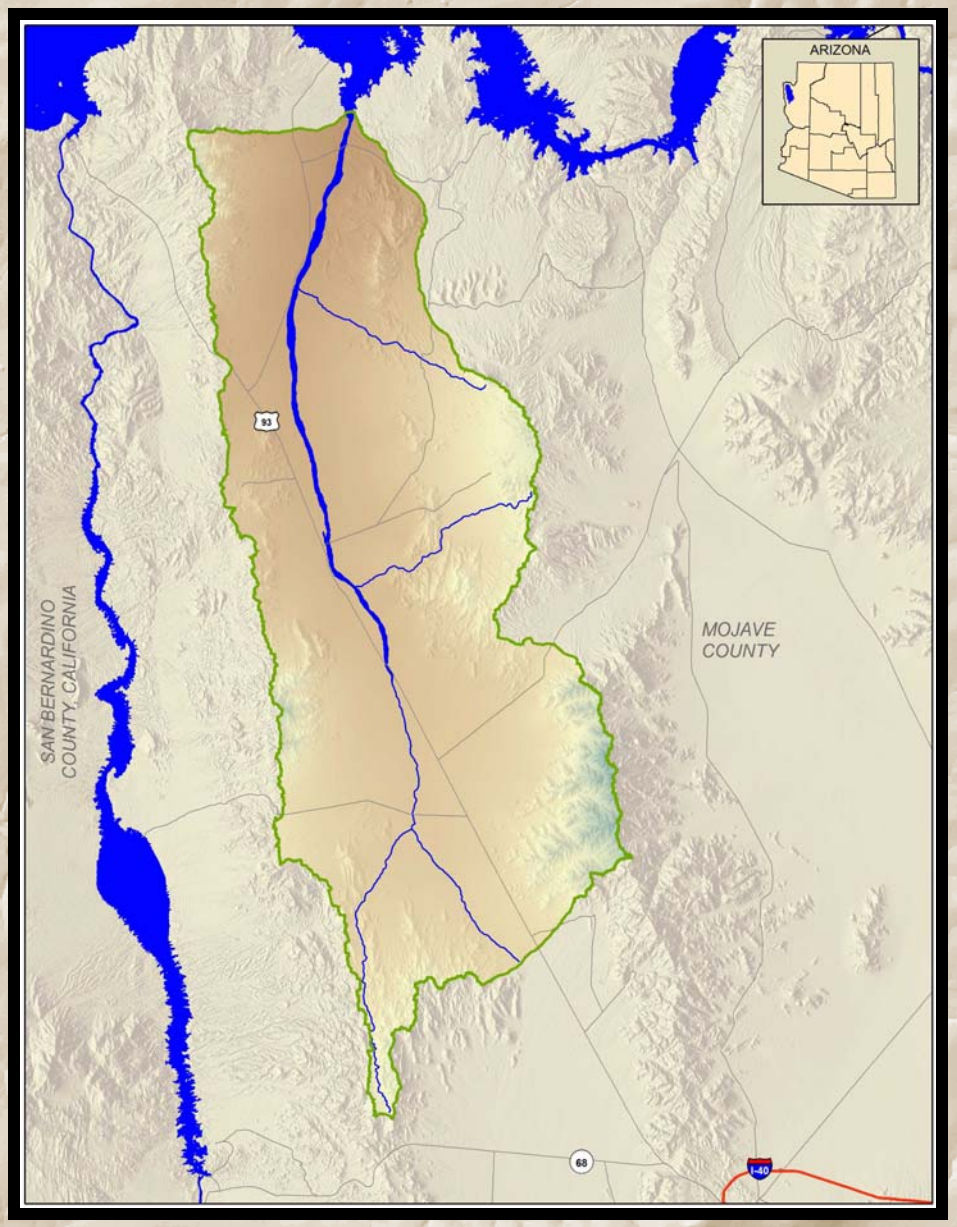
USDA NRCS

Arizona Pilot Watersheds

HUC	WATERSHED NAME	TOTAL ACRES
15010014	Detrital Wash	430,711
15020005	Silver Creek	606,325
15020010	Chevelon Canyon	529,935
15040006	San Simon River	1,288,737
15050302	Pantano Wash - Rillito River	598,235
15060104	Carrizo Creek	451,863
15070102	Agua Fria River	1,556,731
15020001	Little Colorado River Headwaters	483,202
15050304	Brawley Wash-Los Robles Wash	930,412
15070103	Hassayampa River	901,029





Detrital Wash Watershed Rapid Watershed Assessment June 2007

Prepared by:

USDA Natural Resource Conservation Service

University of Arizona,

Water Resources Research Center

NRCS Natural Resources Conservation Service

Water Resources Research Center

The University of Arizona

In cooperation with:

Arizona Association of Conservation Districts

Arizona Department of Agriculture

Arizona Department of Environmental Quality

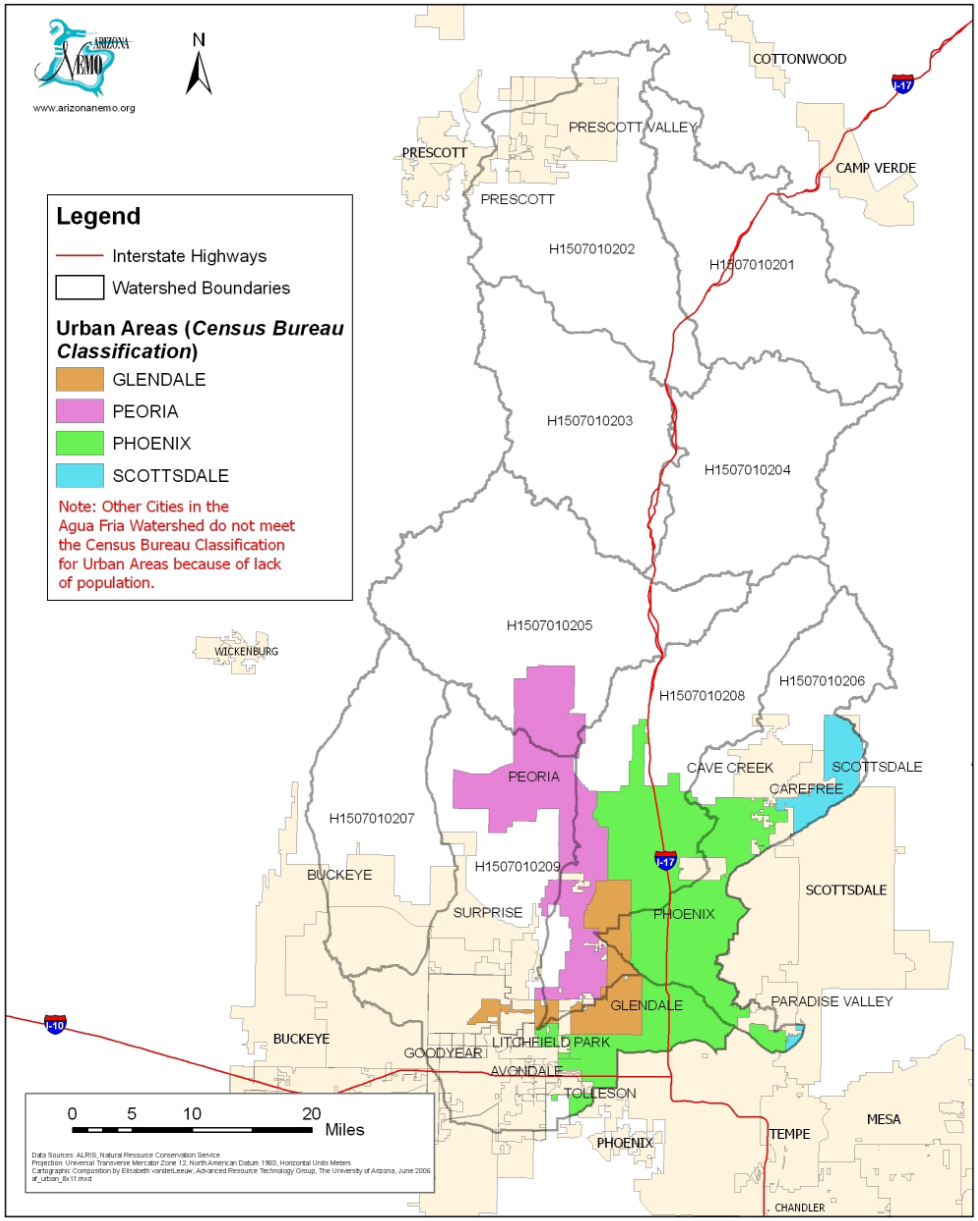
Arizona Department of Water Resources

Arizona Game & Fish Department

Arizona State Land Department

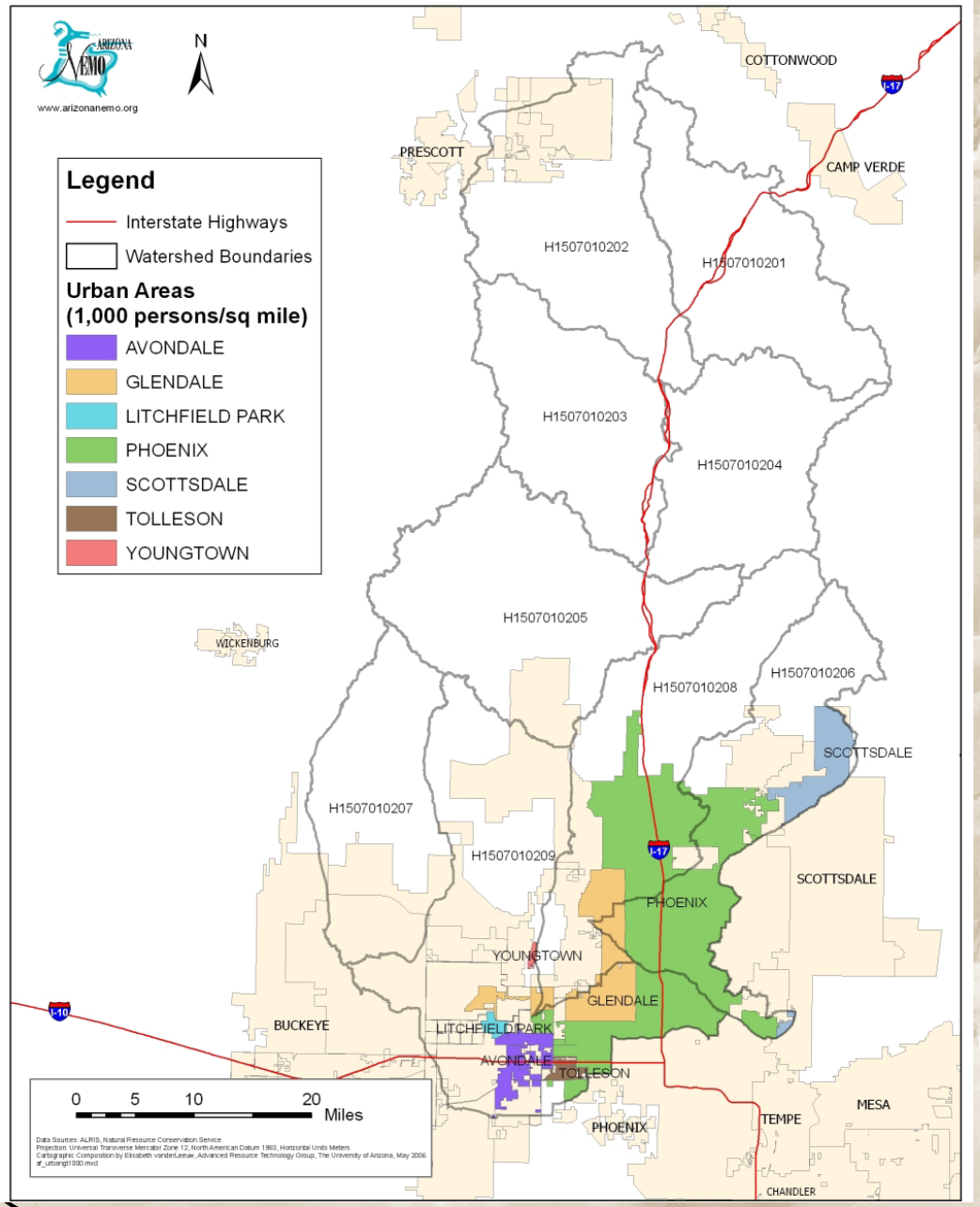
USDA Forest Service

USDI Bureau of Land Management

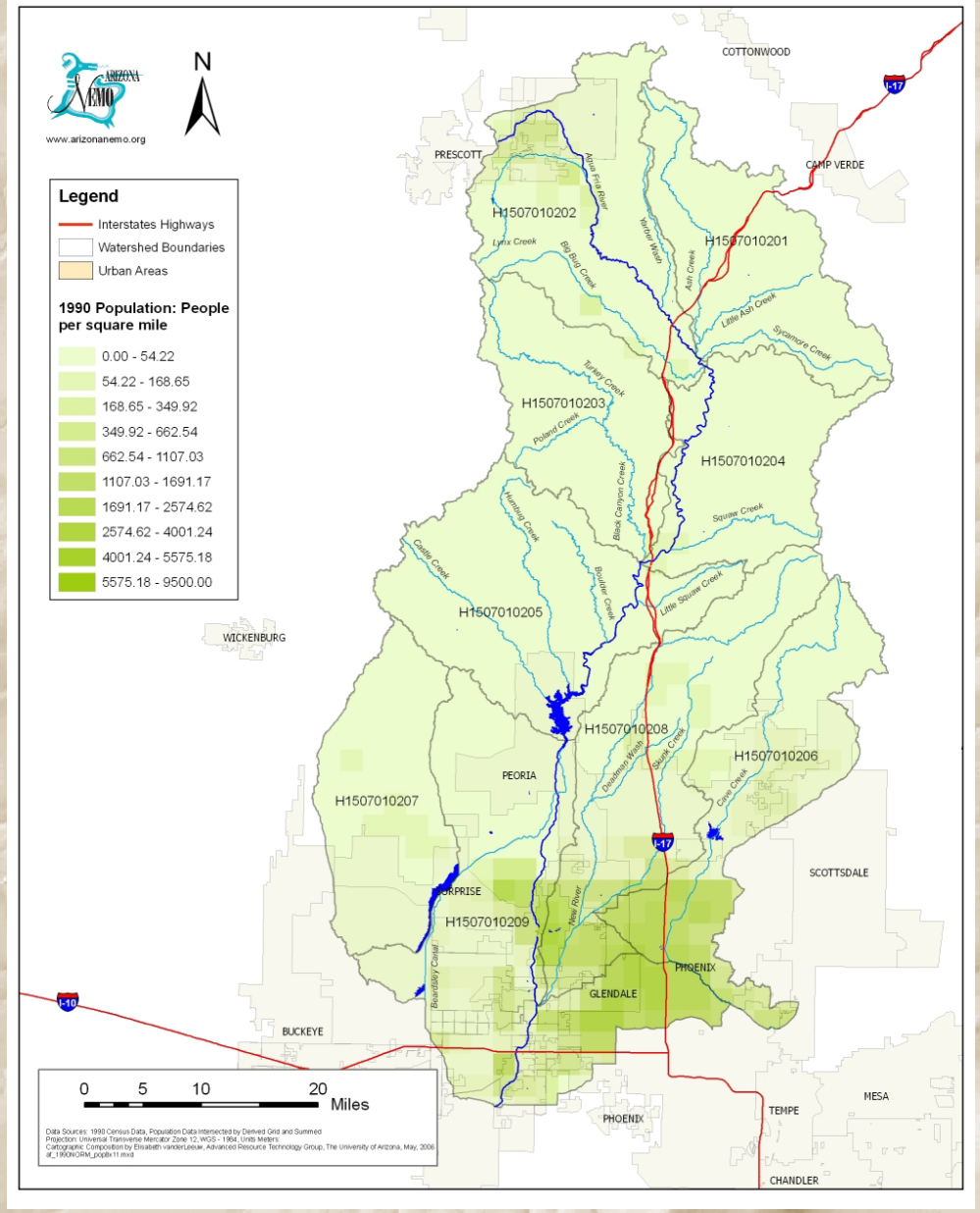


Densely settled territory that contains 50,000 or more people is defined as an urban area by the Census Bureau. Only four cities in the Phoenix metro area are classified as ‘urban’.

www.census.gov

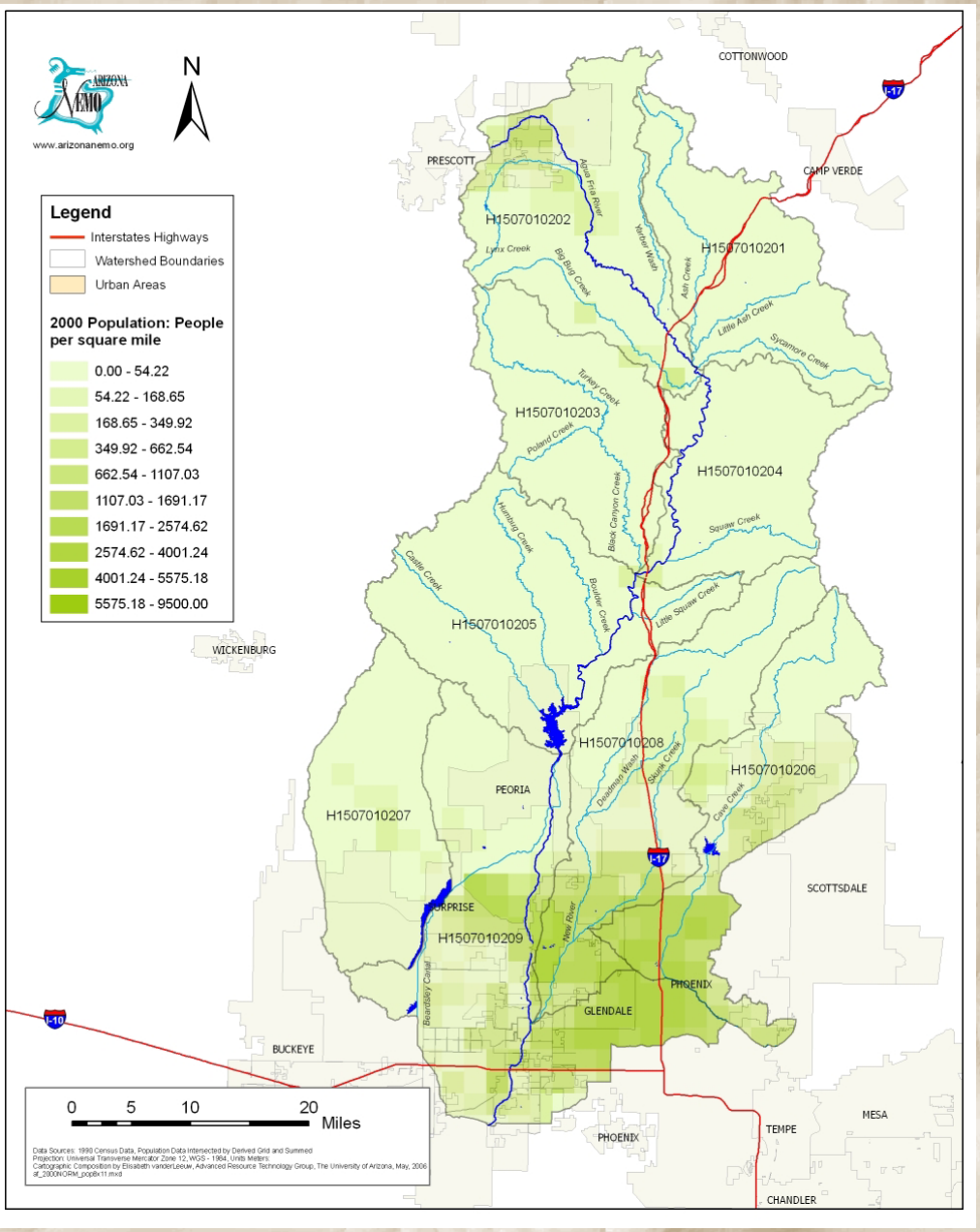


Seven areas are classified as 'Urban' in the Phoenix area if you define population density greater than 1,000 people per square mile as an Urban area.



1990 Population Density

These data were linked with census block data and used to create a density map through a normalization process using a grid of 7 km squares.



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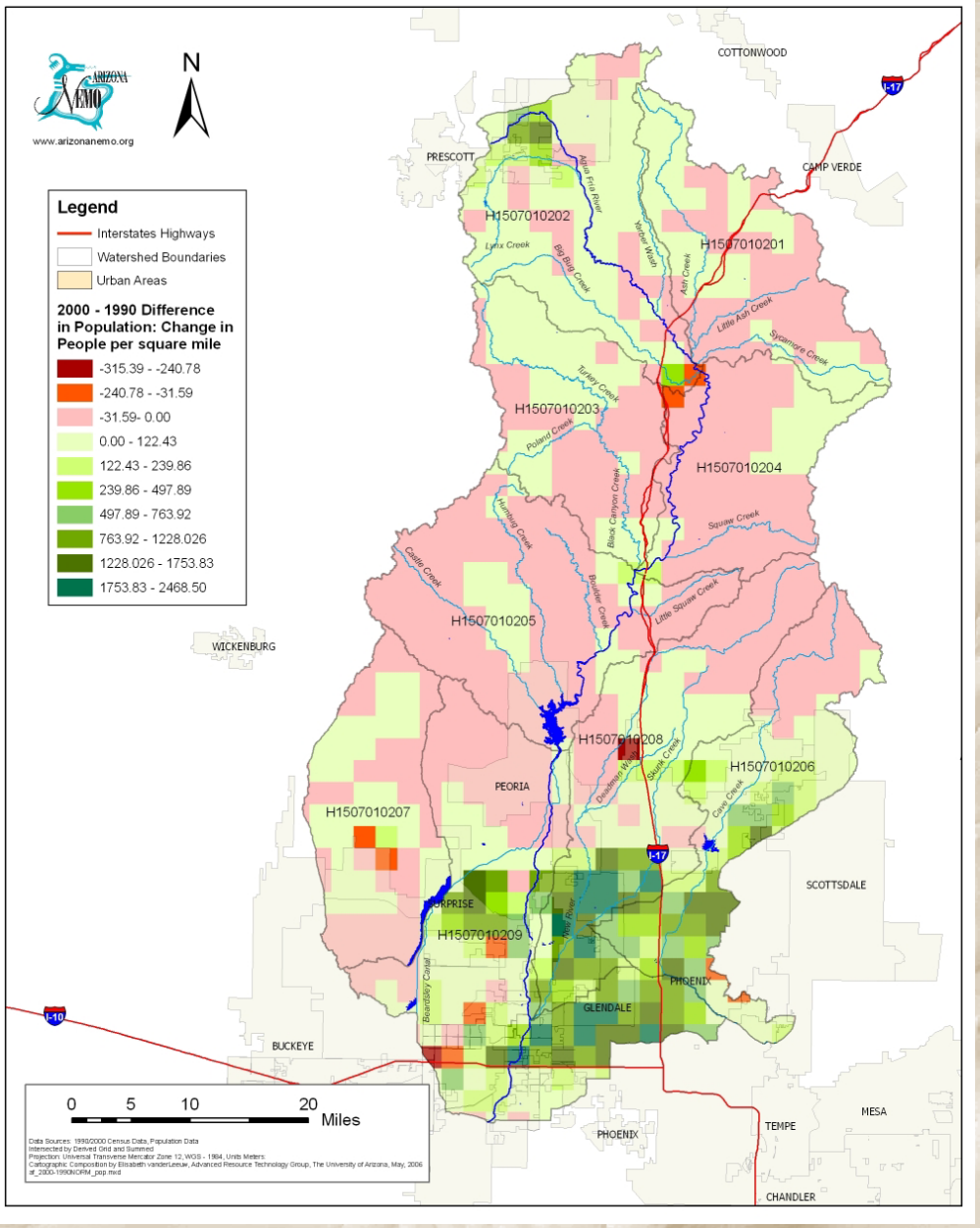
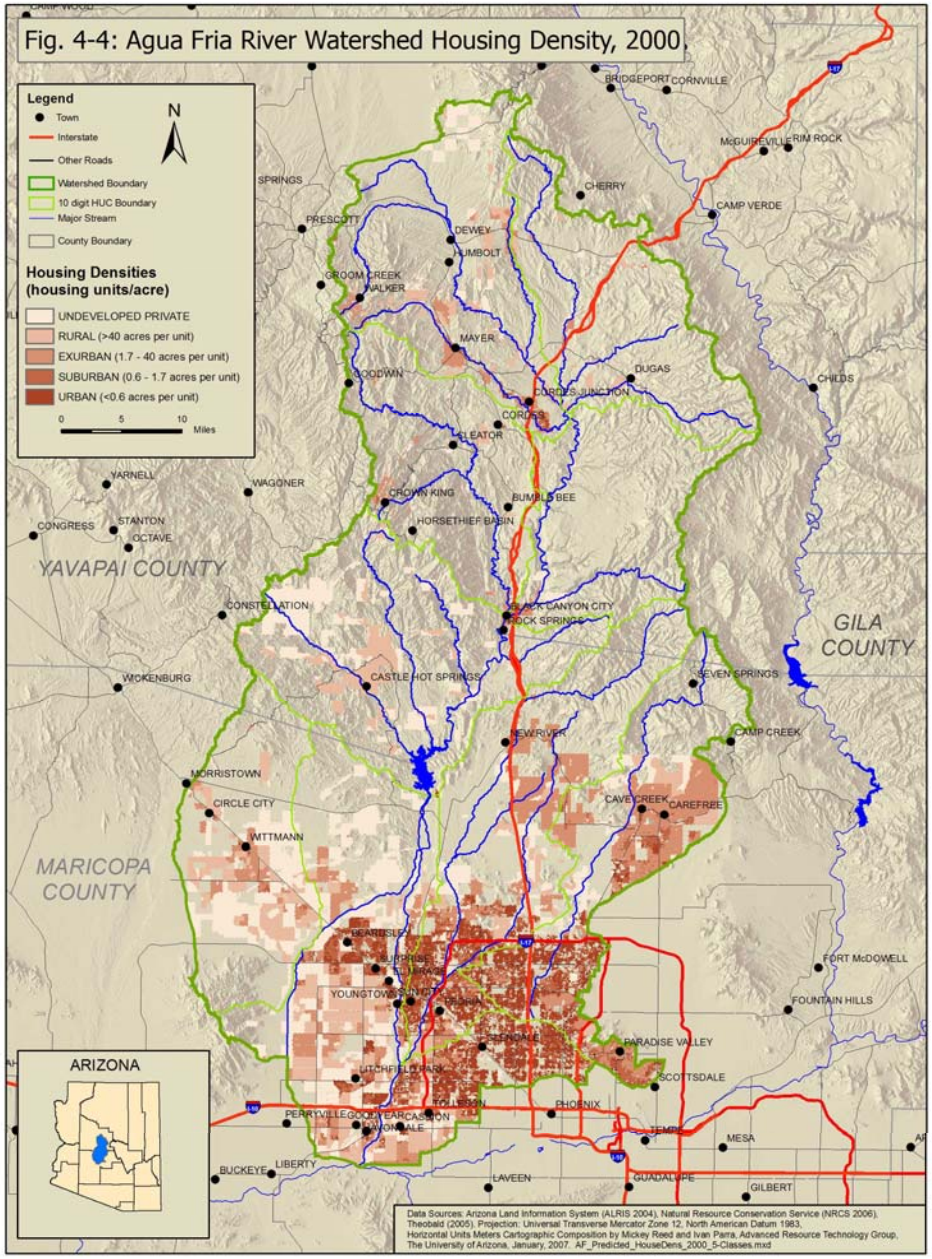


Population density increased by an average of 131.89 persons per square mile over the ten year period.

Population decrease of an average 0.22 persons per square mile shown in deep red.



Landscape patterns of exurban growth in the USA from 1980 to 2020,

D. Theobald. 2005

Development patterns are shifting more towards exurban, lower density housing units and are consuming more land.

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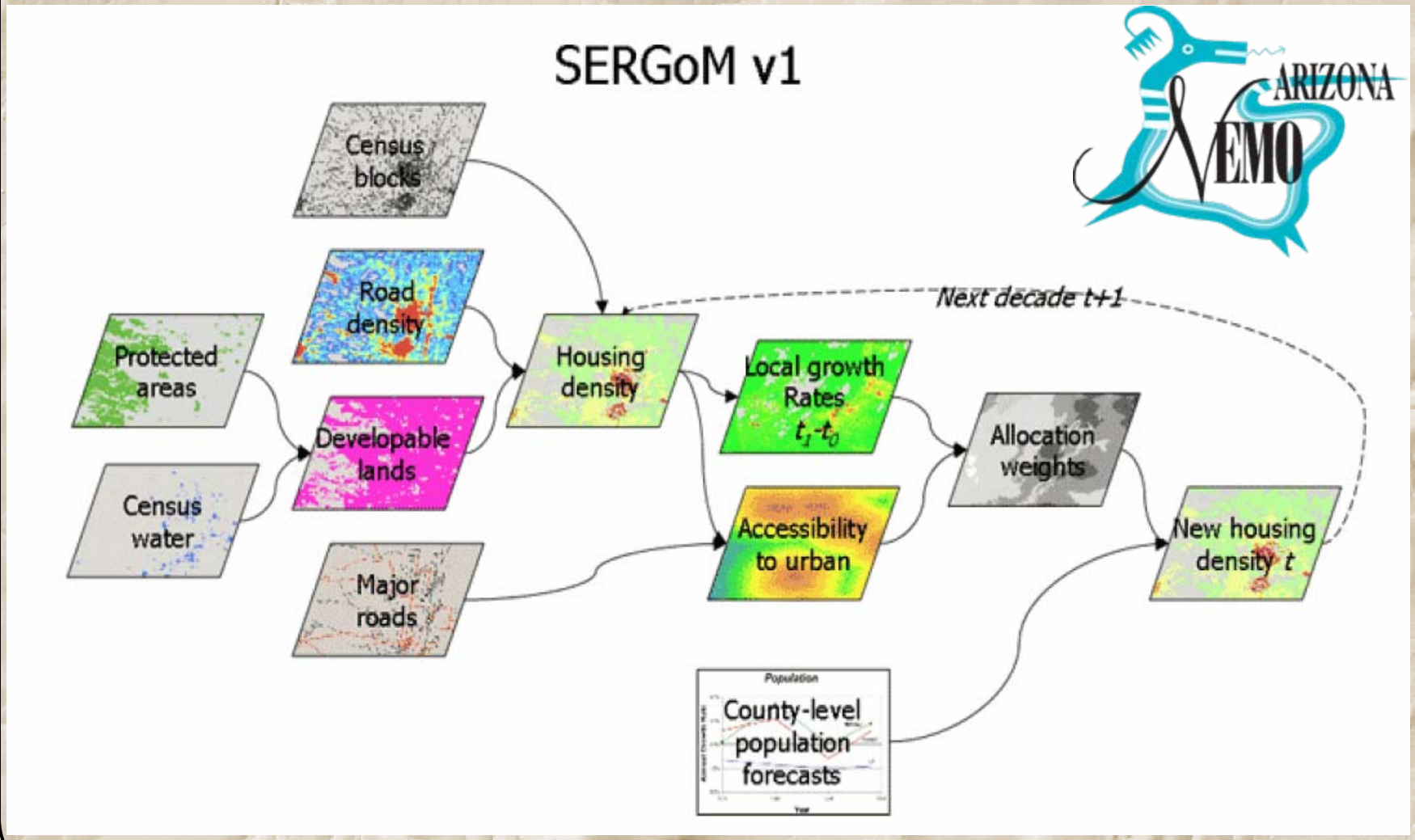
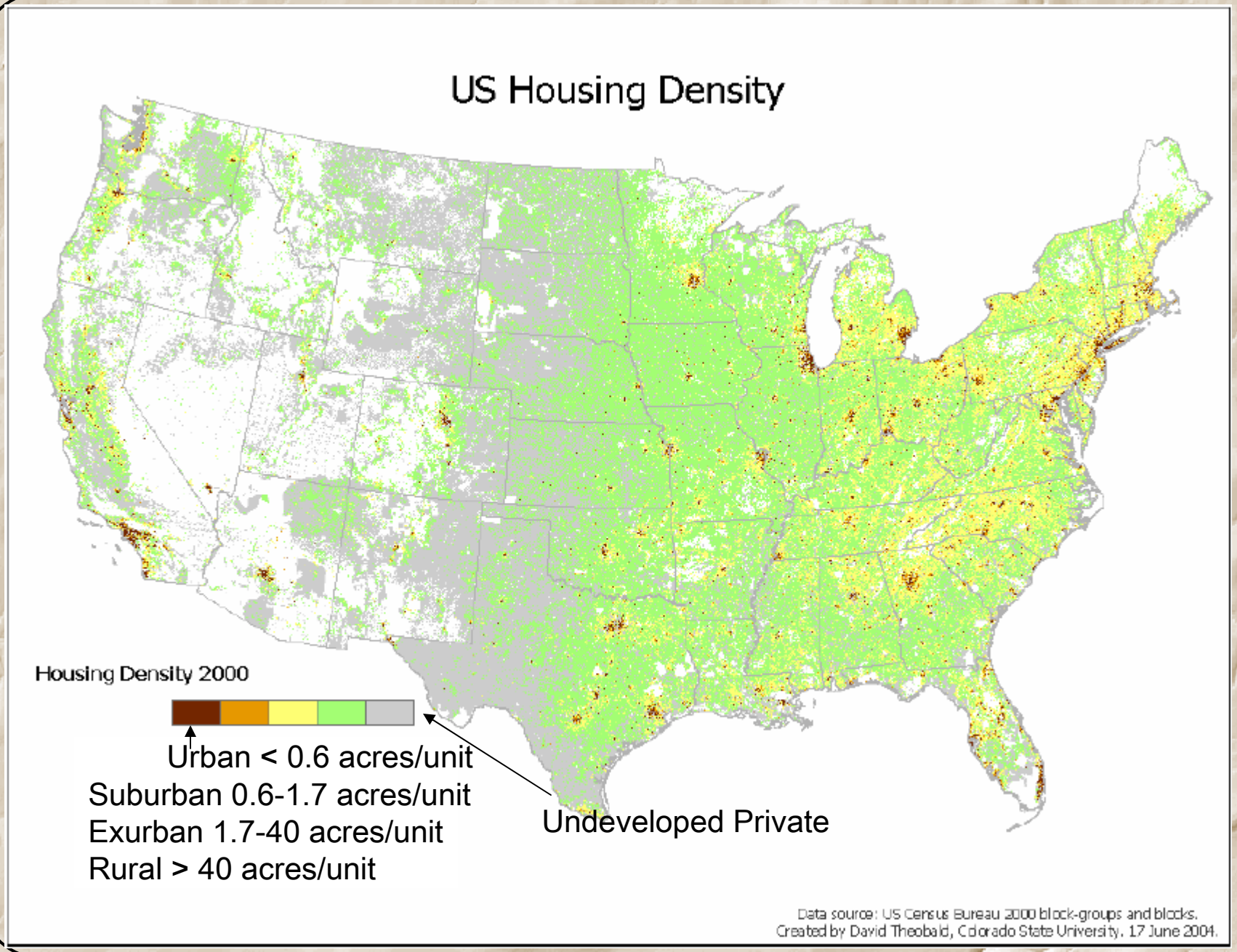
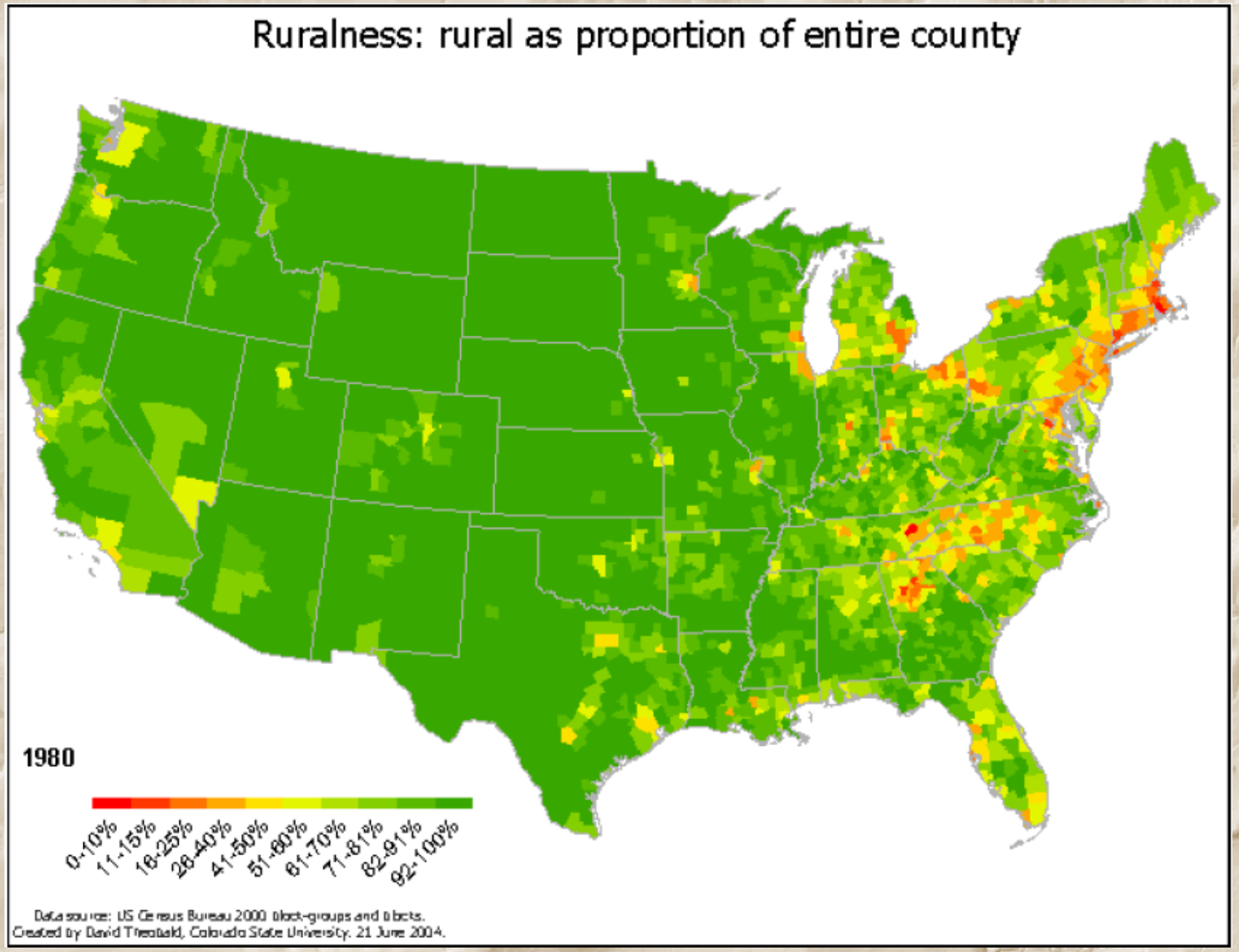
Landscape patterns of exurban growth in the USA from 1980 to 2020, D. Theobald. 2005




US Housing Density
Housing Density 2000
Urban < 0.6 acres/unit
Suburban 0.6-1.7 acres/unit
Exurban 1.7-40 acres/unit
Rural > 40 acres/unit
Undeveloped Private
Data source: US Census Bureau 2000 block-groups and blocks.
Created by David Theobald, Colorado State University. 17 June 2004.


Ruralness: rural as proportion of entire county
1980
0-10%
11-15%
16-25%
26-40%
41-50%
51-60%
61-70%
71-81%
82-91%
92-100%
Data source: US Census Bureau 2000 block-groups and blocks.
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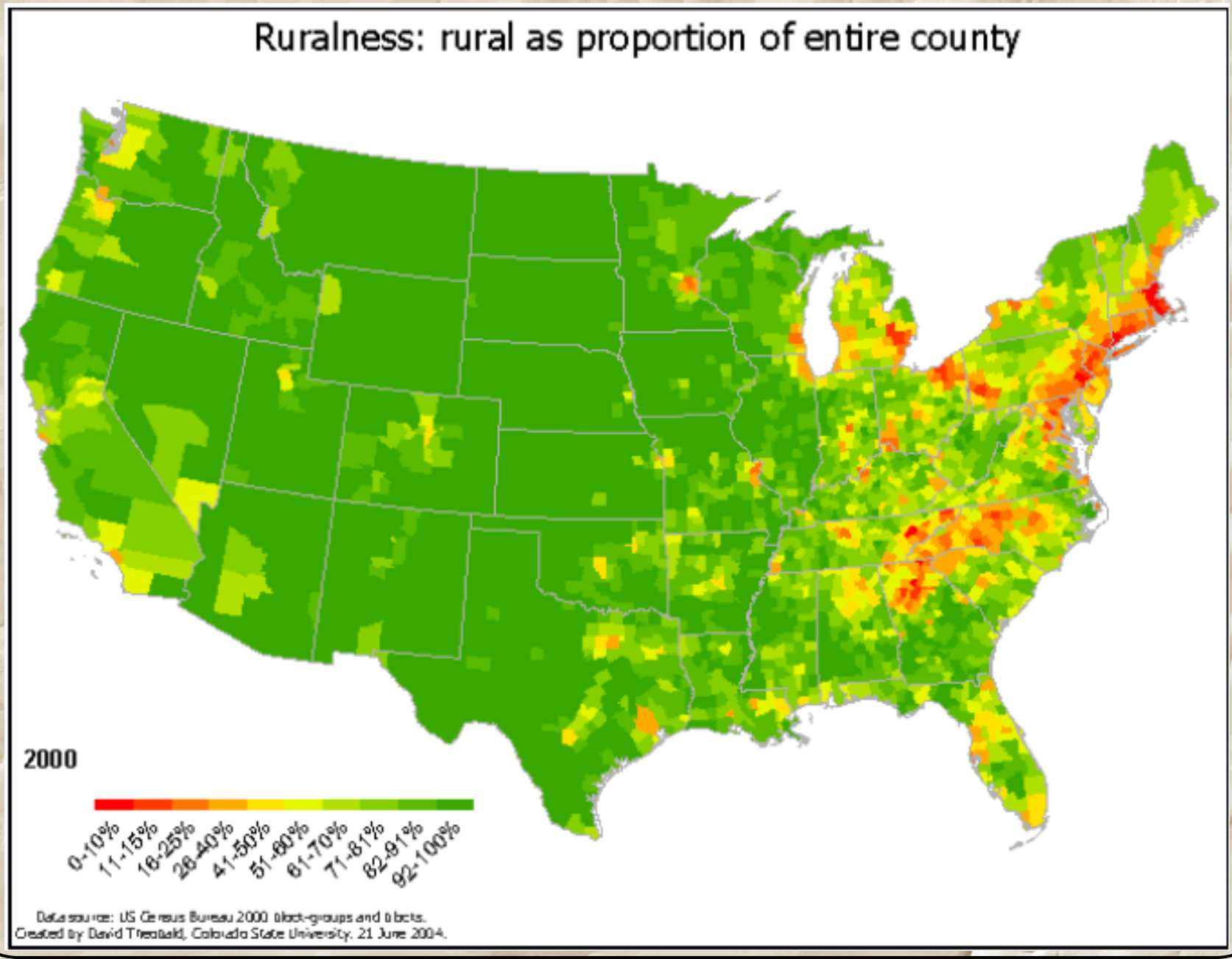
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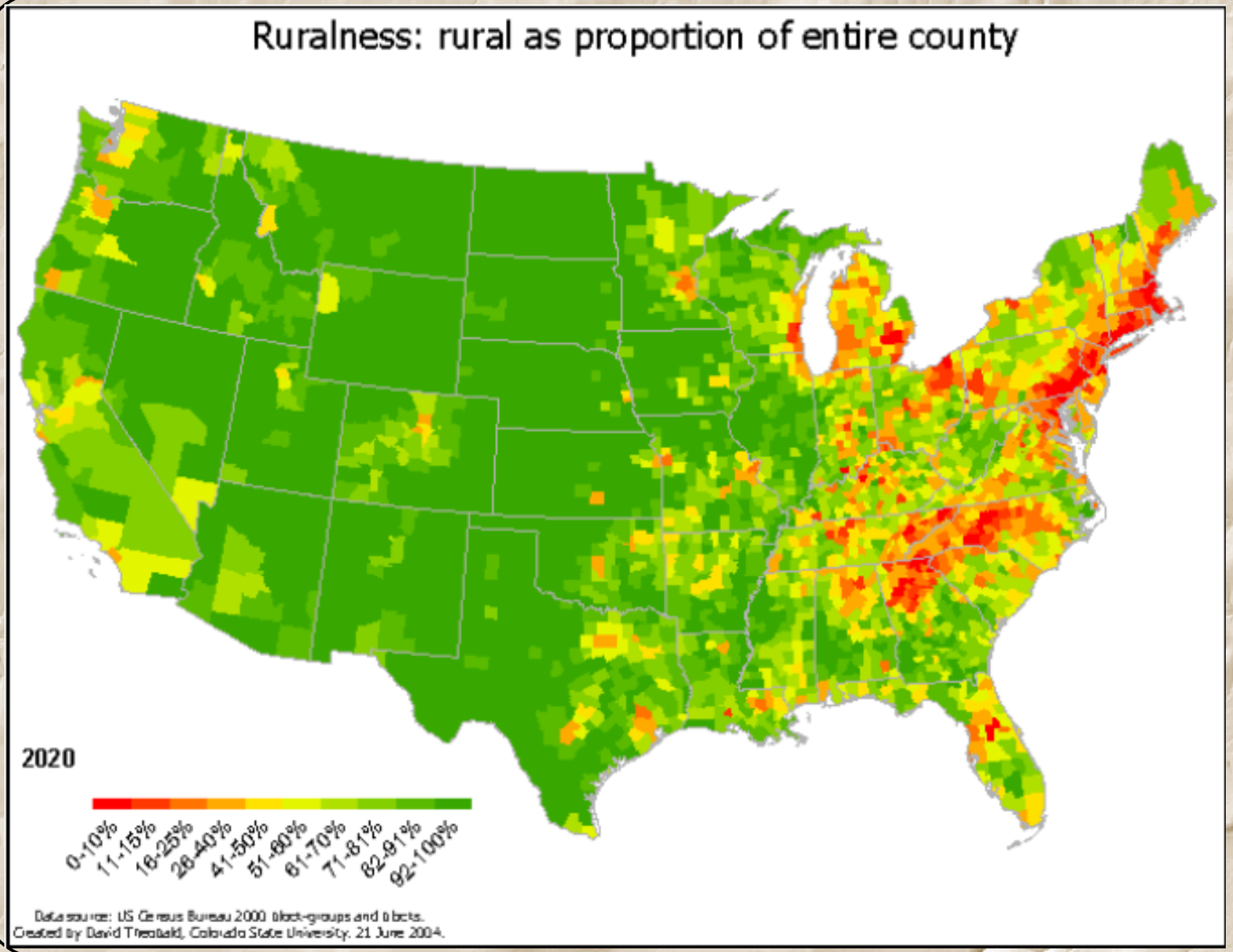
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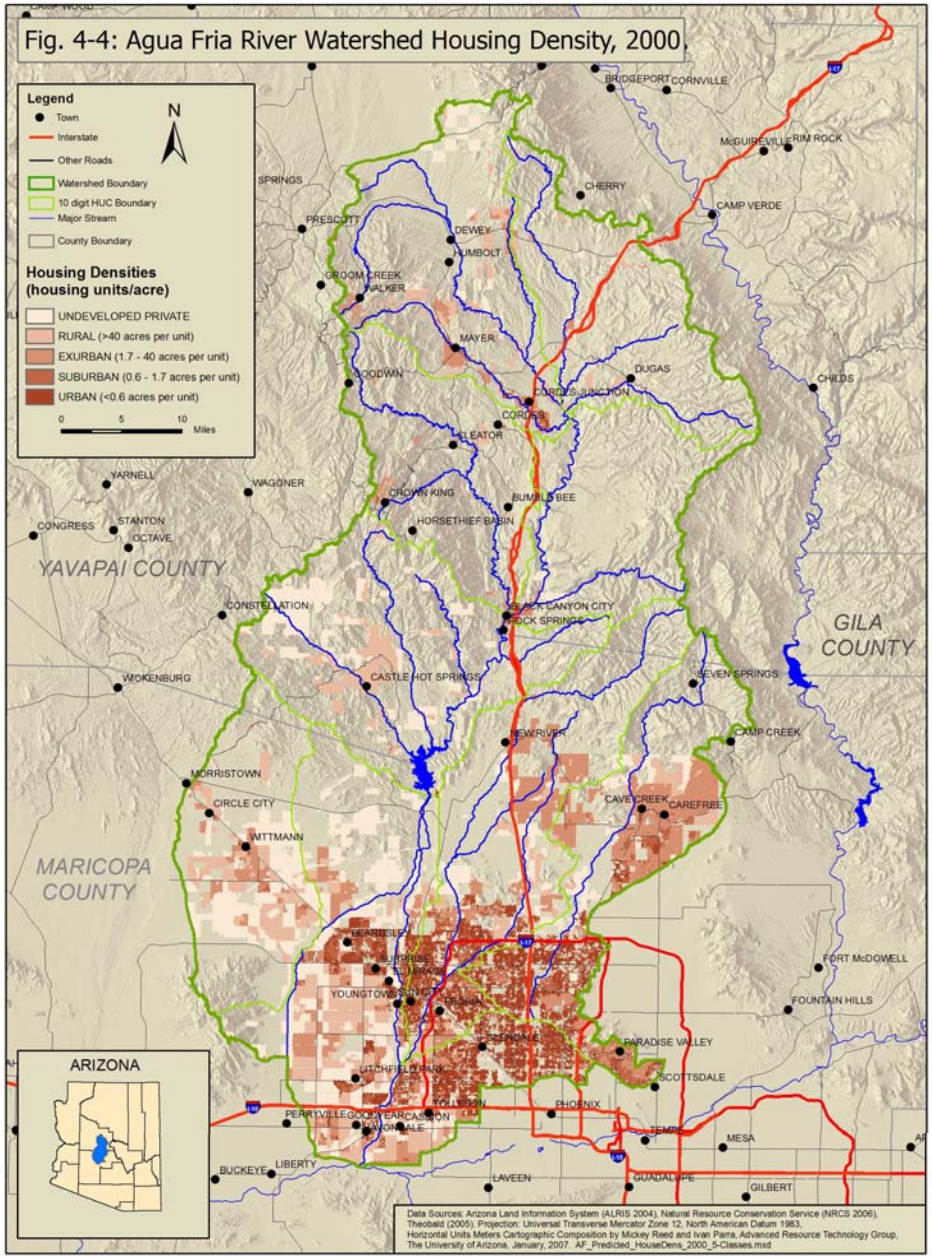

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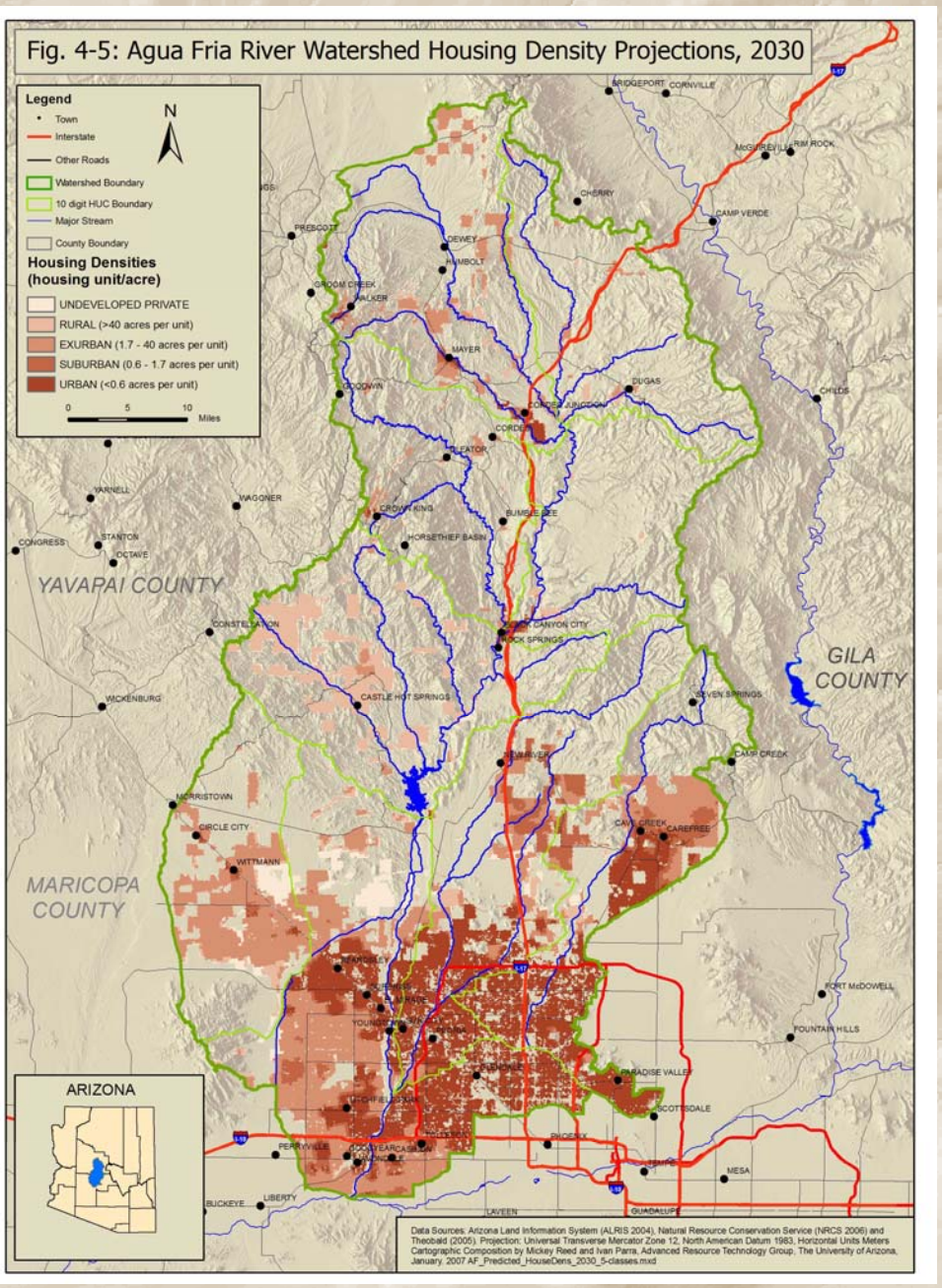

Over the 257 sq mile Watershed area,

18 % increase in Urban

2 % increase in suburban lands

16% increase in exurban

9% decrease in rural

28% decrease in undeveloped private lands

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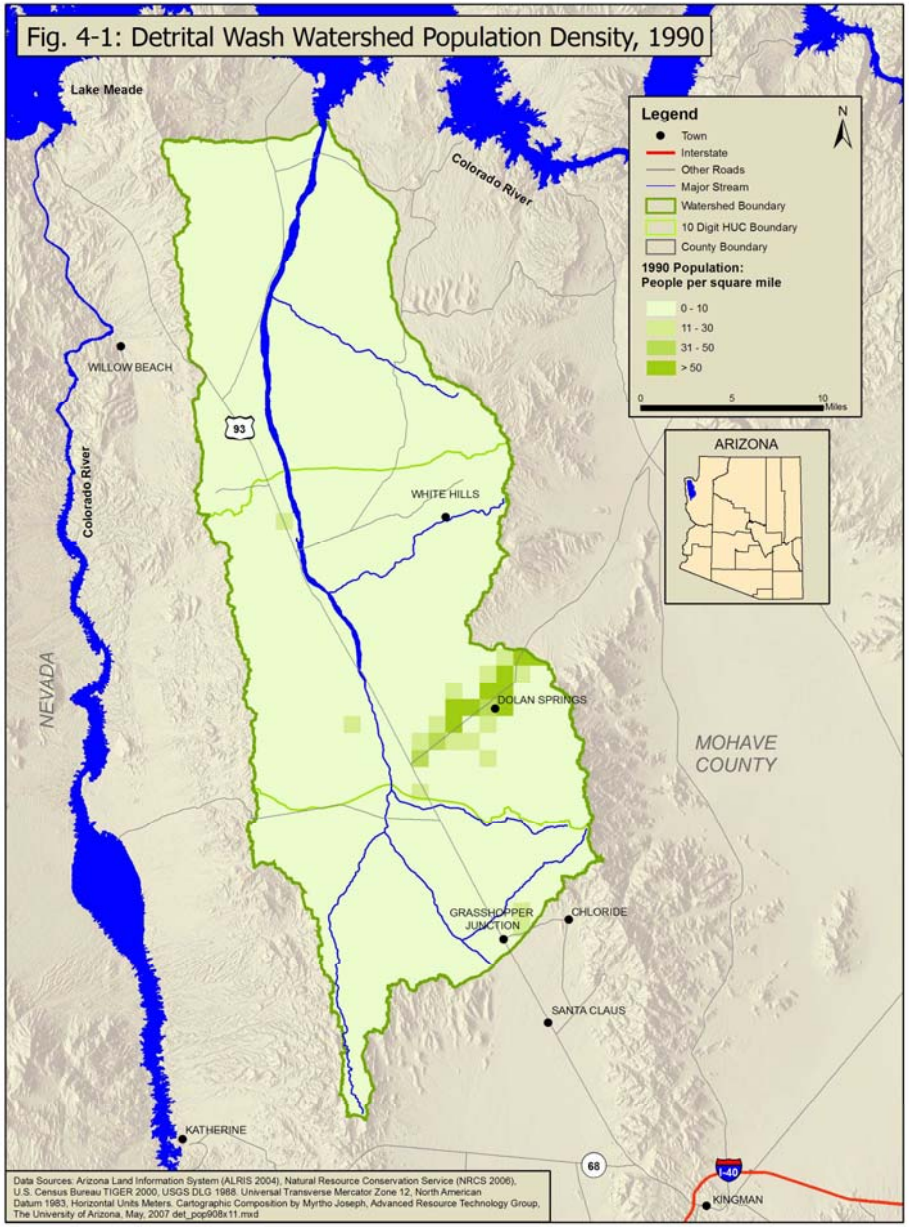

Census block statistics
For 1990 indicate
A mean of 2 people
Per square mile in the
Watershed.

The maximum population
Density if 111 people per
Square mile in the Middle
Detrital Wash, near
Dolan Springs.

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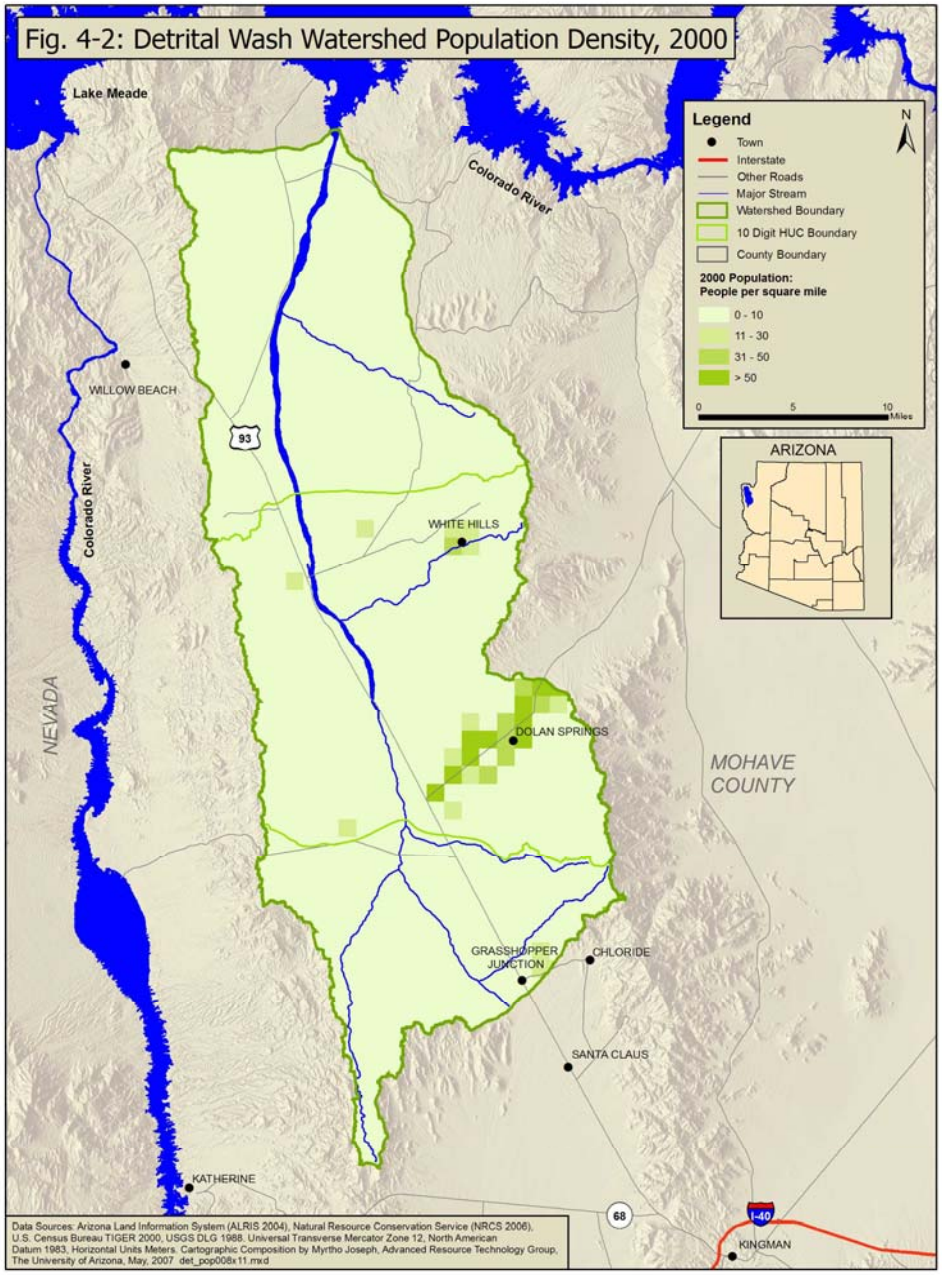
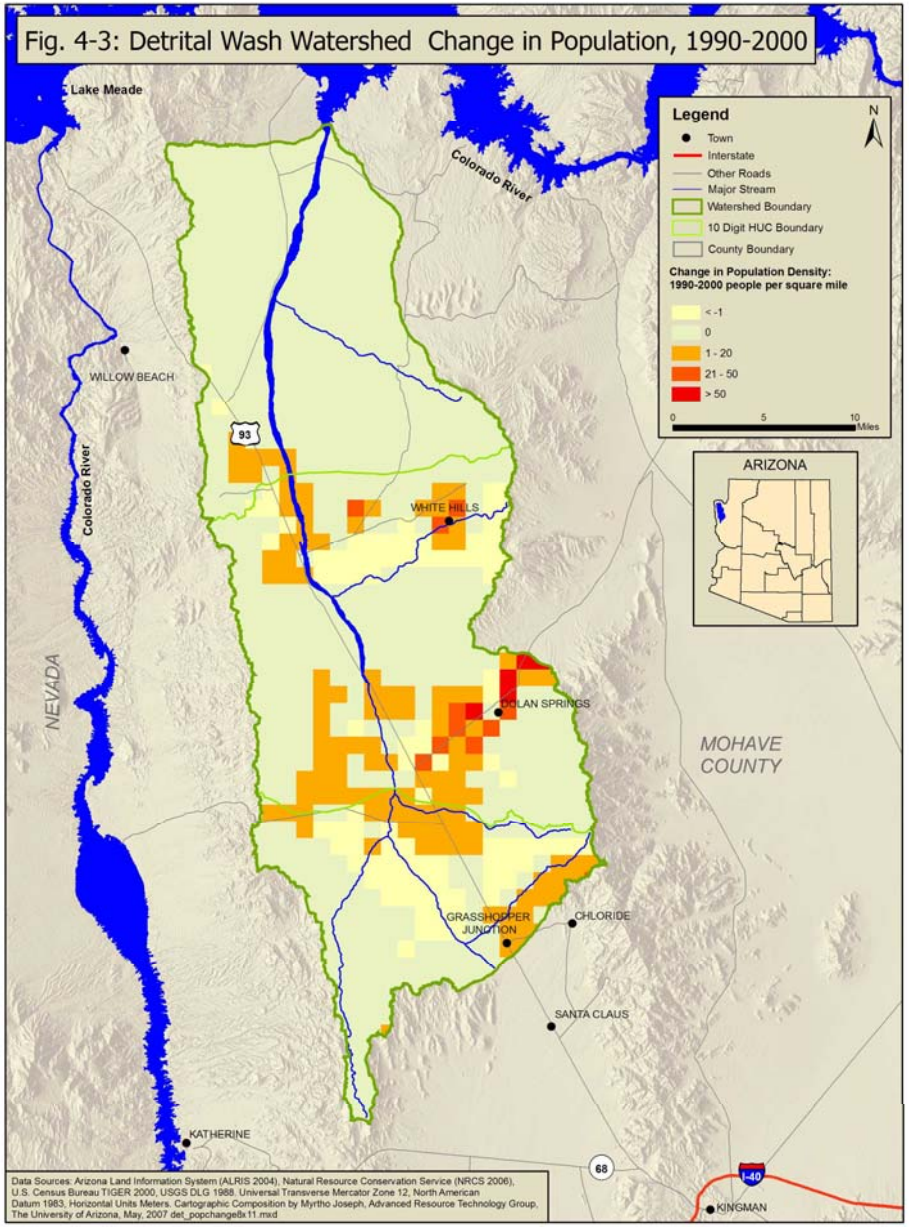


Census block statistics for 2000 indicate a mean of 3 people per square mile in the Watershed, with population decreasing in the Lower Detrital Wash.

The maximum population density if 233 people per square mile in the Middle Detrital Wash, near Dolan Springs.



Population change from 1990 to 2000

General increase in population of approximately 1 person added per square mile.

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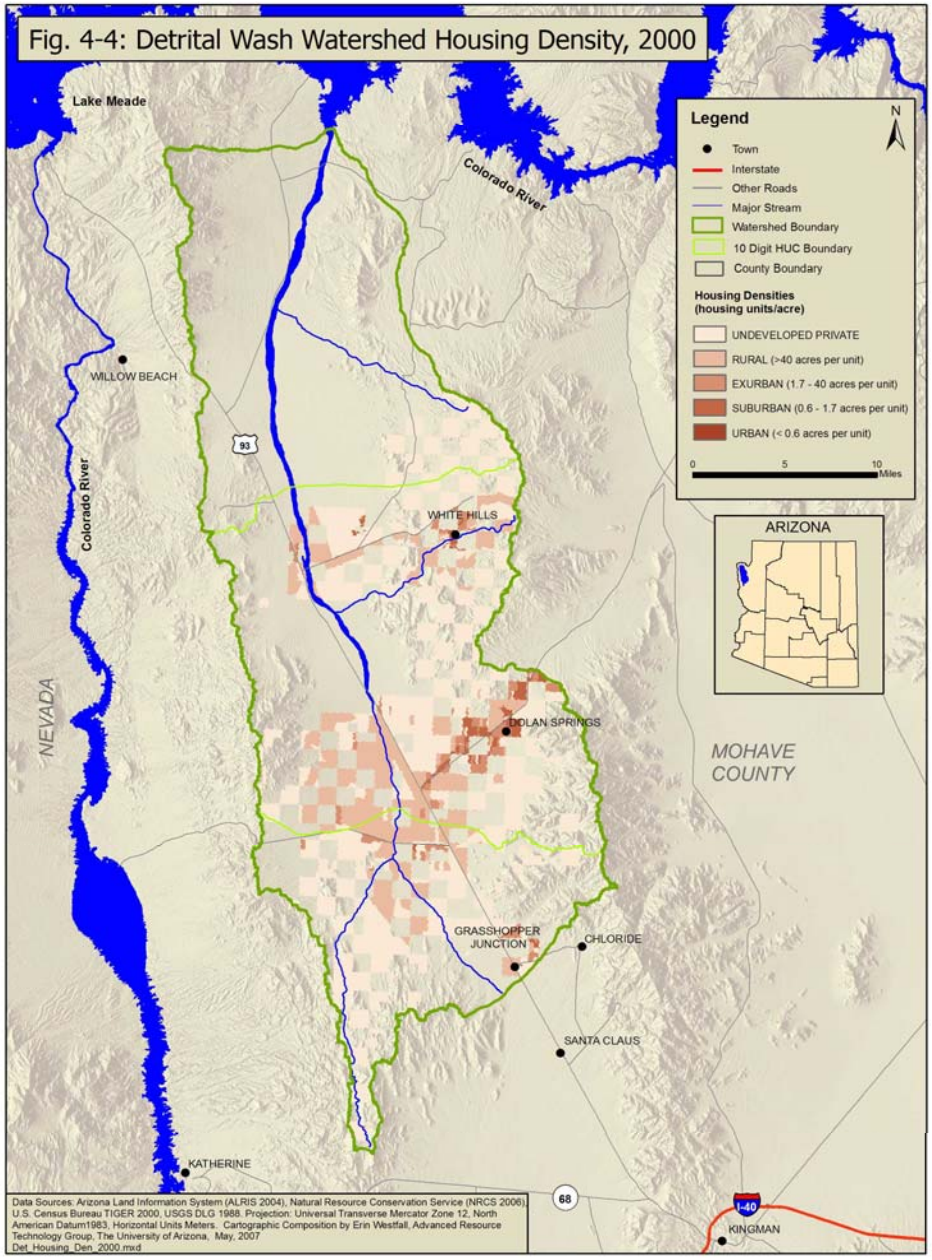

Landscape patterns of exurban growth in the USA from 1980 to 2020.

D. Theobald. 2005

66% undeveloped
27% rural
5% exurban
2% suburban
0.02% urban – Dolan Springs

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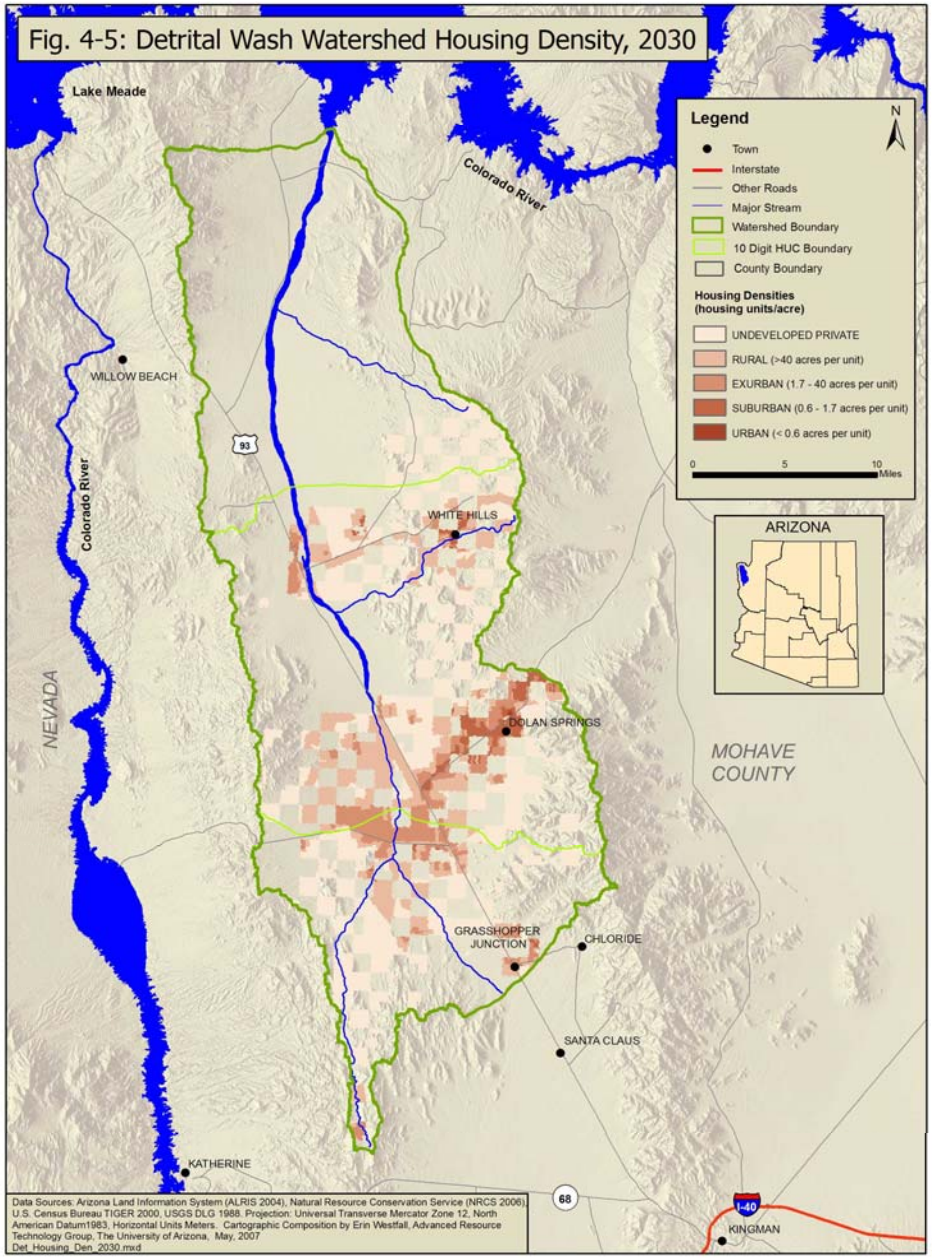

Theobald predicts an increase in urbanization to 0.06%, little to no change in rural lands, with most of the exurban development on private lands.

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Thank You!

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