

Urban Growth and the Urban Heat Island Effect

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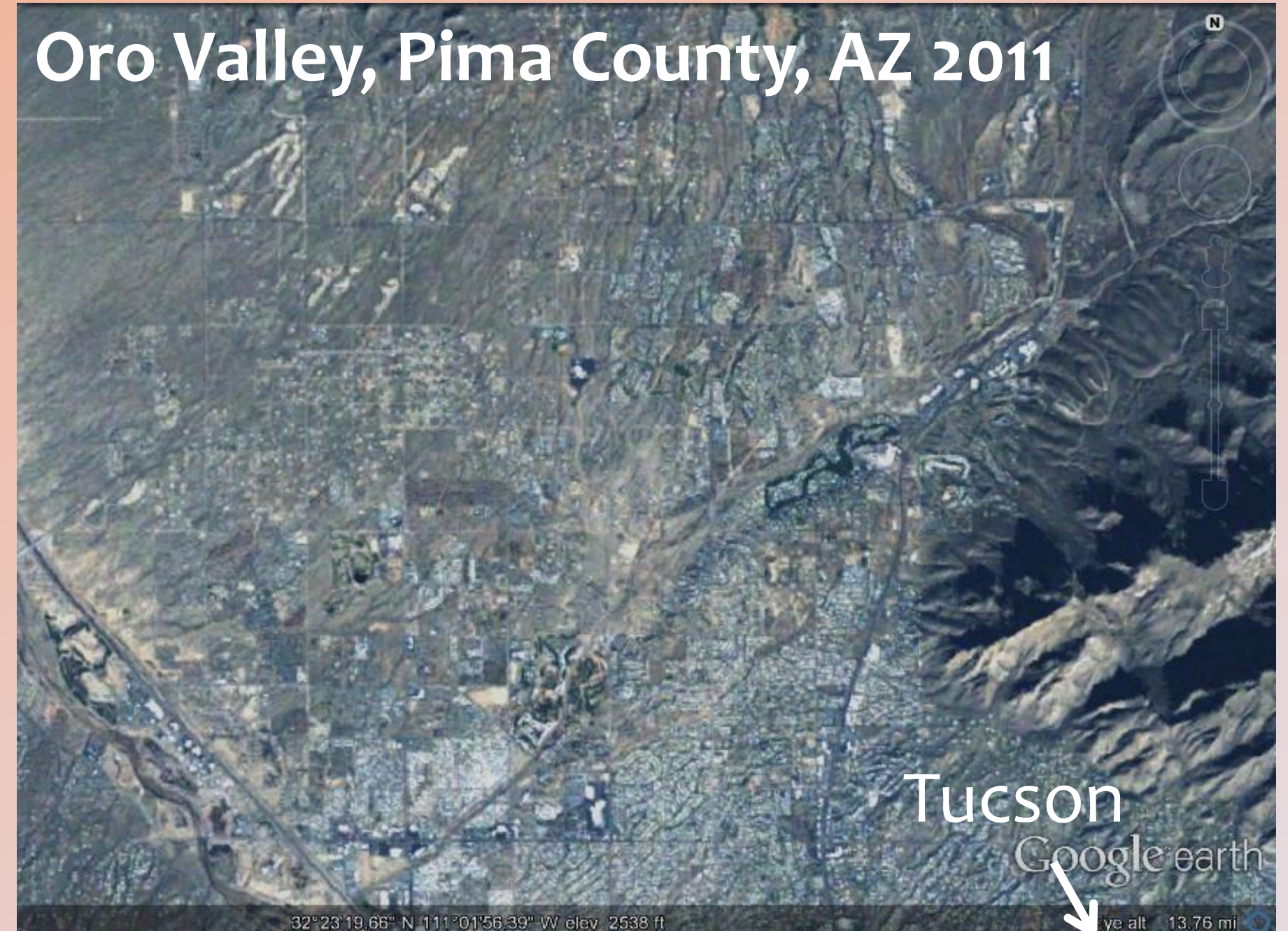
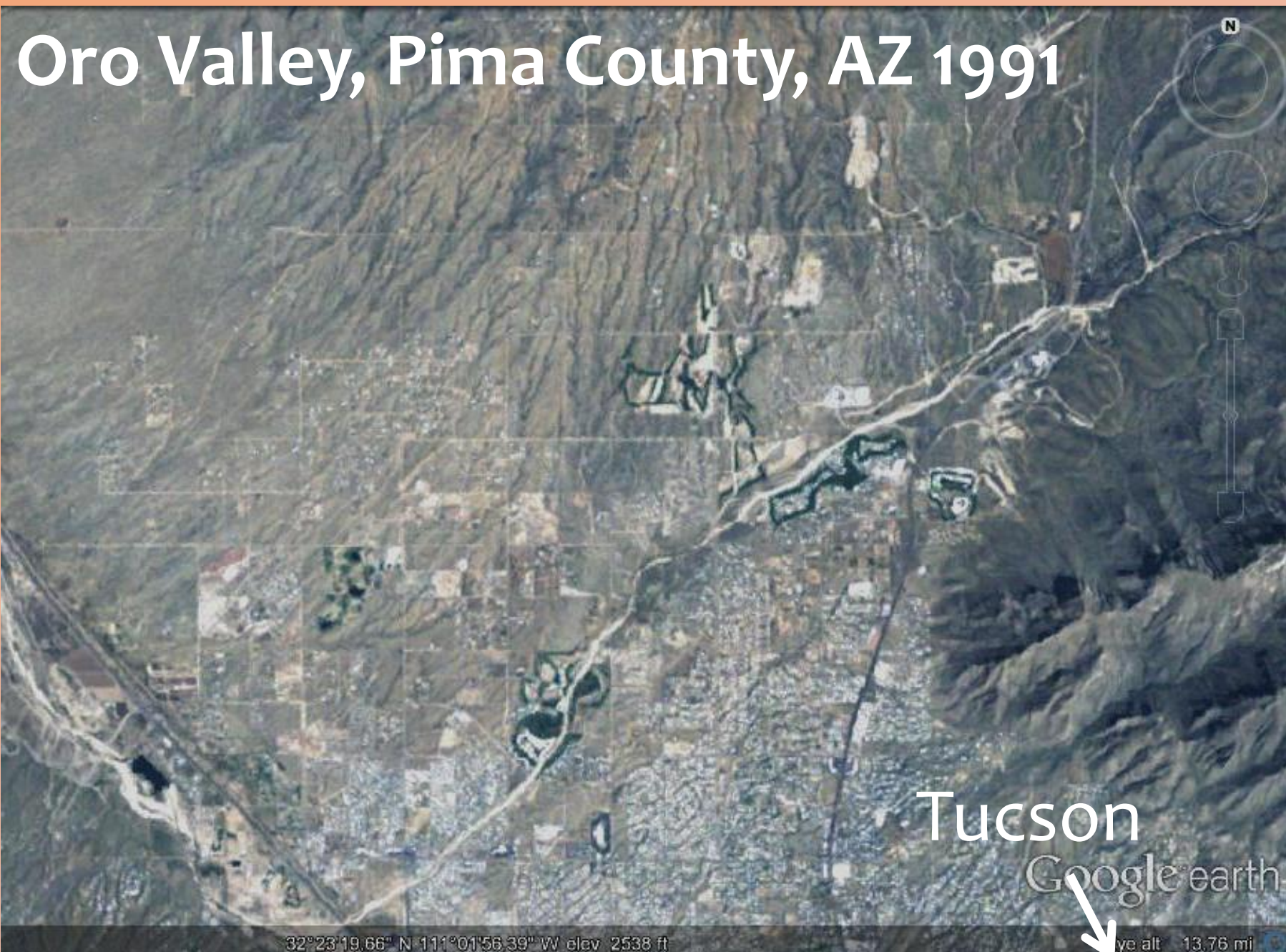
The Power of Perspective

Artist's view of a U.S. Landsat satellite. Credits: NASA.

Arizona's population has been growing rapidly over the last 50 years.

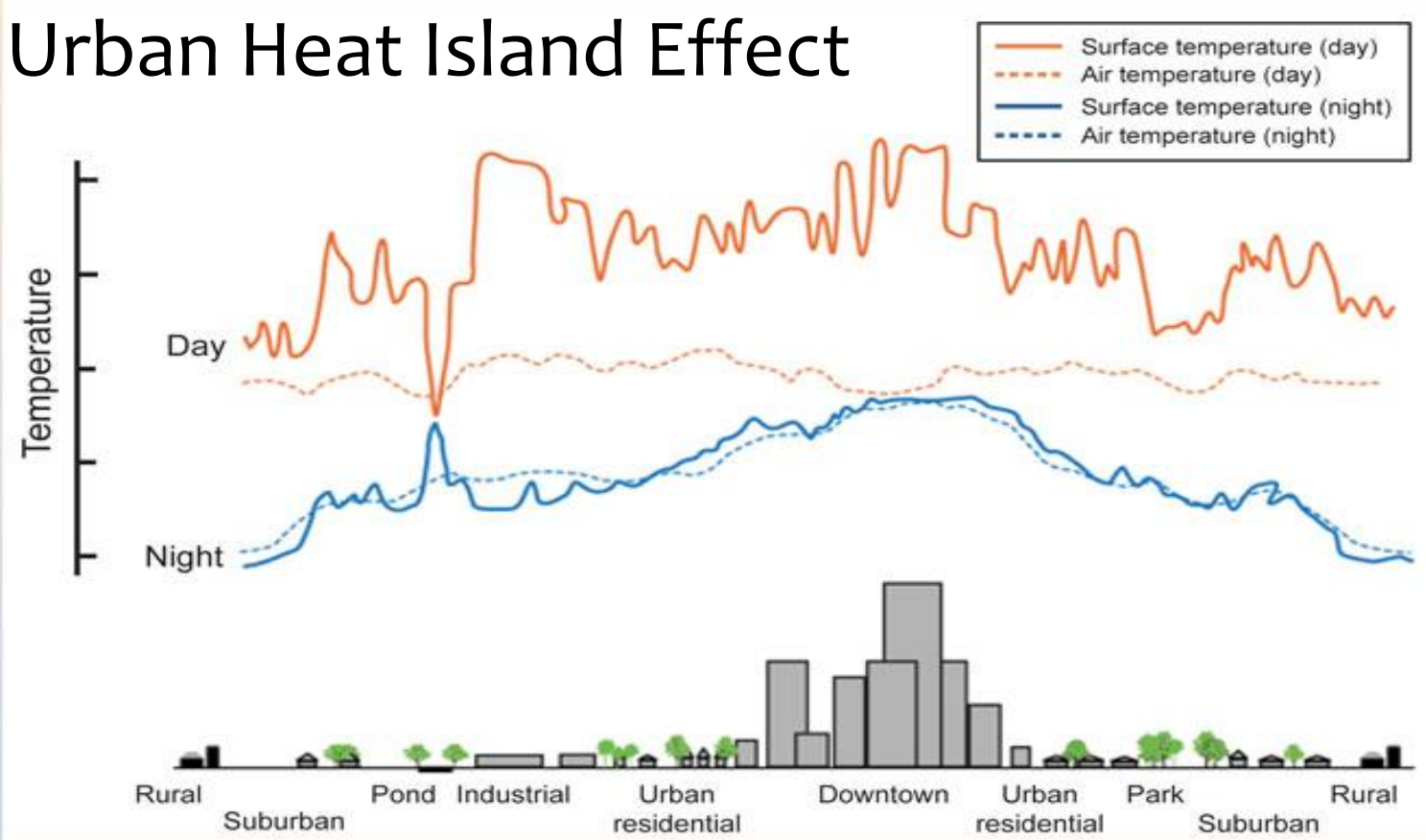
Between 1950 and 2000, Arizona grew by 584 percent! This means that nearly 6 times as many people live in Arizona now compared to fifty years ago.

During this same period, the population in Pima County increased by 497 percent. In comparison, the entire United States grew approximately 86 percent (not even doubling) during this same period.



Observe these Landsat images carefully to see the increase in built area in Oro Valley from 1991 to 2011.

Urban Heat Island Effect



This figure shows the average daytime and nighttime temperatures on and over different types of land surfaces. The Urban Heat Island Effect is especially noticeable in nighttime temperatures, where high temperatures over the city are surrounded by lower temperatures in suburban and rural areas. Credit: EPA

One of the environmental effects of urbanization is called the “urban heat island effect.” This effect is caused by the high percentage of built surfaces in cities which absorb more of the Sun’s energy and then release larger amounts of heat than natural surfaces.

Tucson's urban temperatures are approximately 5.5 degrees (F) warmer than they were in the last century, with more than 3.5 degrees of the warming occurring in the last 30 years. The rate of urban warming is about three times greater than warming in non-urban locations around Tucson.