



SNOW FALLS ON A SINKING CITY

On a gray February afternoon, a miserable mix of rain and damp snow is tumbling out of gray clouds in Tucson, Arizona, as Brad Lancaster stands in front of his home, welcoming every ice-cold drop. *“This is what we live for here,” he says, raising both hands, palm upward. “I am loving it.”*

It never snows in Tucson. It doesn’t even rain much, about 11 inches a year, so precipitation of any kind makes Tucsonans a little giddy. But the light in Lancaster’s eyes is different. He sees water falling from the sky as the key to his city’s future, nothing less than its salvation.

To understand why, you have to understand a little known fact about today’s world: much of it is running out of fresh water.

Seen from space, the earth may be the deep blue of the sea, a water planet, seven-tenths covered by oceans. But only three percent of the earth’s water is freshwater, and most of that is locked up in glaciers or the ice caps.

Less than one percent is usable freshwater. +

From the American Southwest, the city’s freshwater supply far outpaces its demand.

Tucson stands as a stark contrast to the rest of the world, nestled between four arid states and a desert. With more than a million residents, it’s one of the fastest growing in population, more than doubling since 1950. The downtown reflecting pool glimmers like a mirage in the desert heat.

But that lifestyle is built on a foundation of groundwater that’s been depleted faster than the water has been replenished. The city has sucked up so much of its groundwater that parts of Tucson and the surrounding area are literally sinking, some spots as much as 12 feet. Subsidence has cracked foundations and shifted walls as a thirsty city has drilled ever deeper into the ground in search of freshwater.

The Santa Cruz River, once the heart of Tucson, is now a dry wash. For all but a few days every year, it is a casualty of the falling water table. For at least 4,000 years, the river provided the basis for a rich river oasis culture. Native people were channeling its water through a system of canals to irrigate maize and other crops when Europe was still sunk in the dark ages. Later, it was one of the original draws for both Hispanic and American settlers. Today, calling it a river is mostly an act of nostalgia.

Yet if Tucson stands as an example of a looming crisis, Brad Lancaster believes it can also offer a solution – an answer that draws not on some revolutionary new technology, but on traditional practices that made the region’s long history of habitation possible. Can the old world really save the new? The man standing in the snow like a slightly mad prophet is determined it can.



TUCSON, ARIZONA

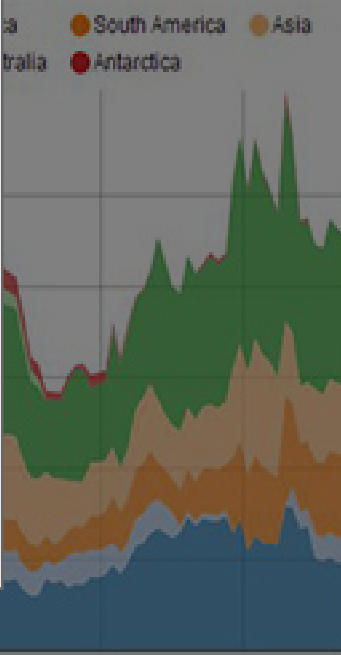
+ Less than one percent is usable freshwater

For most of human history that 1 percent was plenty, but the situation has changed as the global population has mushroomed. As recently as 1950, there were less than 3 billion people on the planet. By 2050, however, it’s estimated there will be more than 9 billion and, as the world prospers, those people are using more water than ever.

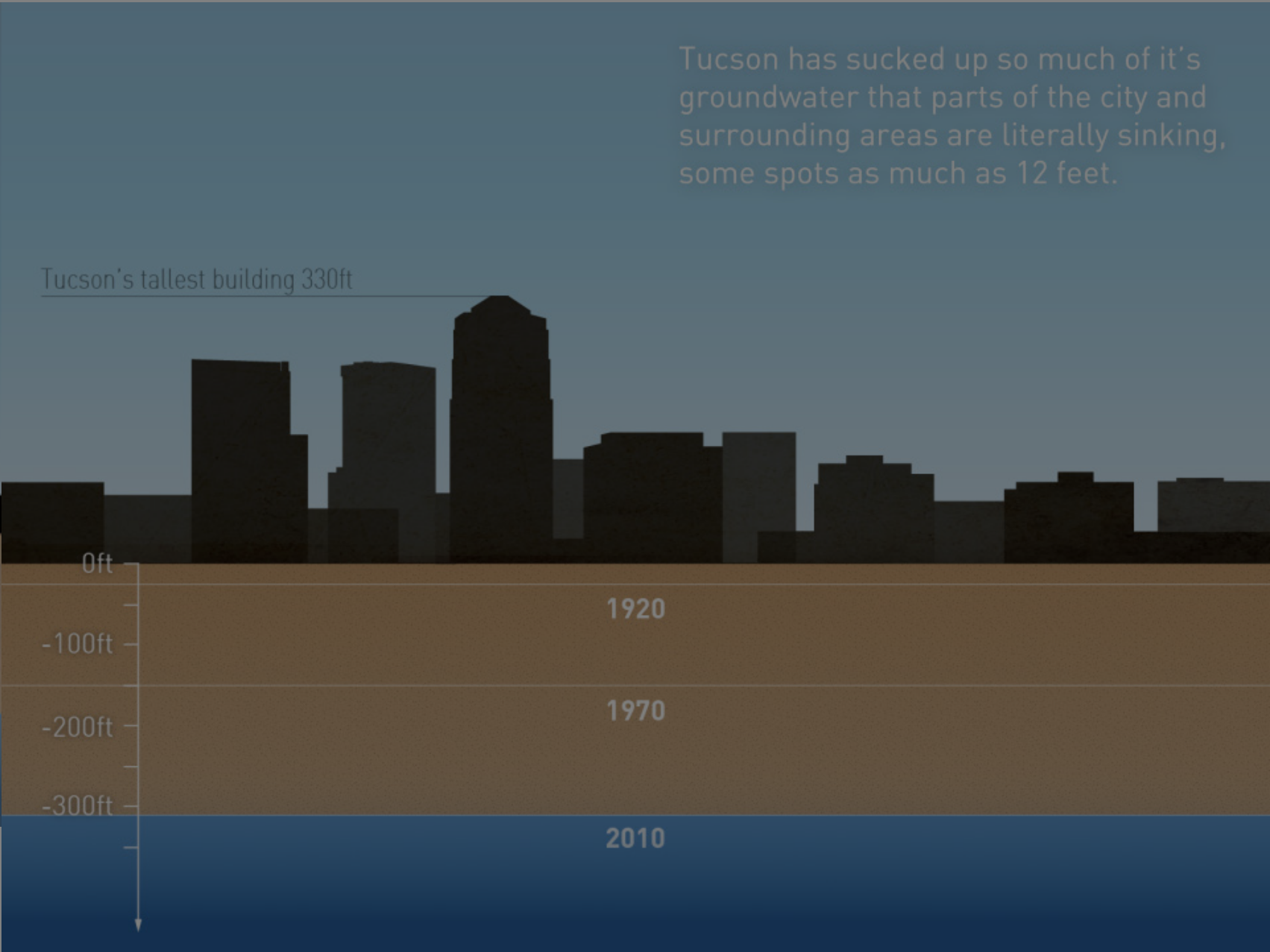
In Saudi Arabia, for example, wells now have to be dug 4,000 feet deep or more in some areas to tap a rapidly shrinking aquifer. In neighboring Yemen the water table is falling nine feet a year. In Spain and the American Midwest agricultural use is draining huge aquifers that originally took many thousands of years to fill.

Altogether, 1.7 billion people live in parts of the world where groundwater supplies are being overtaxed, according to one study.

MULTI GRAPH



A SINKING AQUIFER



“By 2025, if people continue to live the way they are, I don’t think we can support it, and if growth continues as it has, I don’t think we can support that many people in the city of Tucson or the Santa Cruz River Valley,” says Rafael de Grenade, director of the Tucson Oasis Initiative. “We’re reaching a tipping point.”