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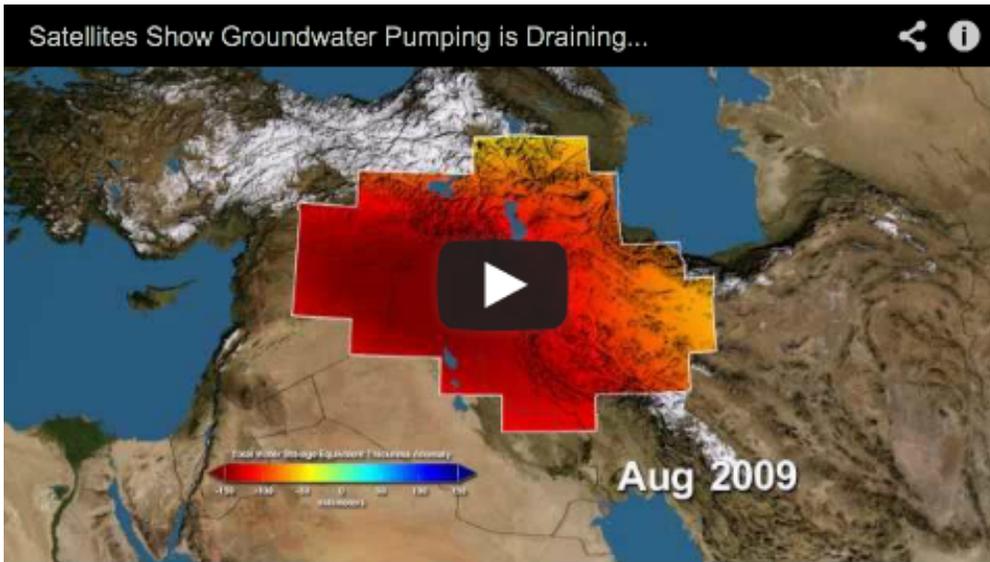
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[Water](#) February 12, 2013, 3:20 pm [Comment](#)

Satellites Reveal Depletion of a Vital Middle East Water Supply

By [ANDREW C. REVKIN](#)



Just in case you needed more reasons to be concerned about [the stability of the Middle East](#), new research using data from NASA's [gravity-sensing Grace satellites](#) shows a substantial decline in the volume of groundwater reserves in the Tigris and Euphrates river basins. Data gathered between 2003 and 2009 show the seasonal recharge of the region's aquifers (the blue pulses in the illuminating animation above) but then the onset of a potent drought in 2007 followed by a persistent big drop in water amounts, 60 percent of which is ascribed to unsustainable rates of pumping in a study to be published on Friday in the journal *Water Resources Research*.

Here are some useful excerpts from a joint news release from NASA and the University of California, Irvine:

Scientists at the University of California, Irvine; NASA's Goddard Space Flight Center in Greenbelt, Md.; and the National Center for Atmospheric Research in Boulder, Colo., found during a seven-year period beginning in 2003 that parts of Turkey, Syria, Iraq and Iran along the Tigris and Euphrates river basins lost 117 million acre feet (144 cubic kilometers) of total stored freshwater. That is almost the amount of water in the Dead Sea. The researchers attribute about 60 percent of the loss to pumping of groundwater from underground reservoirs....

"Grace data show an alarming rate of decrease in total water storage in the Tigris and Euphrates river basins, which currently have the second fastest rate of groundwater storage loss on Earth, after India," said Jay Famiglietti, principal investigator of the study and a hydrologist and professor at UC Irvine. "The rate was especially striking after the 2007 drought. Meanwhile, demand for freshwater continues to rise, and the region does not coordinate its water management because of

different interpretations of international laws.” [[Read the rest.](#)]

On a crowding, turbulent planet, the value of remote-sensing satellites and related programs has never been greater. I hope and trust that [President Obama](#) will find room in [his State of the Union address](#) tonight not only for jobs, security and environmental progress, but also for [sustaining critical investments in such technologies and related science](#).

To see more evidence of the value of remote sensing, tune in Wednesday night to PBS, which will take a detailed look at various ways satellite and space station imagery are enriching understanding of the home planet in a two-hour Nova special, “[Earth from Space](#).”

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About Dot Earth



By 2050 or so, the human population is expected to reach nine billion, essentially adding two Chinas to the number of people alive today. Those billions will be seeking food, water and other resources on a planet where, scientists say, humans are already shaping climate and the web of life. In Dot Earth, which recently [moved from the news side of The Times](#) to the Opinion section, [Andrew C. Revkin](#) examines efforts to balance human affairs with the planet's limits. Conceived in part with support from a John Simon Guggenheim Fellowship, Dot

Earth tracks relevant developments from suburbia to Siberia. The blog is an interactive exploration of trends and ideas with readers and experts.

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New Options Needed



Access to cheap energy underpins modern societies. Finding enough to fuel industrialized economies and pull developing countries out of poverty without overheating the climate is a central challenge of the 21st century.

- [Africa's Energy Gap](#)
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Climate

The Arctic in Transition



Enshrined in history as an untouchable frontier, the Arctic is being transformed by significant warming, a rising thirst for oil and gas, and international tussles over shipping routes and seabed resources.

- [The Big Melt series](#)
- [Postcards from the Arctic](#)
- [The North Pole Was Here \(book\) and teaching tools](#)
- [The Arctic Rush](#)

Society

Slow Drips, Hard Knocks



Human advancement can be aided by curbing everyday losses like the millions of avoidable deaths from indoor smoke and tainted water, and by increasing resilience in the face of predictable calamities like earthquakes and drought.

- [Times Topics: Disasters](#)
- [Thirsty Giant, India and water](#)
- [The Future of Calamity](#)

Biology

Life, Wild and Managed



Earth's veneer of millions of plant and animal species is a vital resource that will need careful tending as human populations and their demands for land, protein and fuels grow.

- [Managing Planet Earth](#)
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Slide Show



[A Planet in Flux](#)

Andrew C. Revkin began exploring the human impact on the environment nearly 30 years ago. An early stop was Papeete, Tahiti. This narrated slide show describes his extensive travels.



WORLD

Trafficked Through Thailand

The number of confiscated tigers continues to rise as Thailand, one of the world's biggest hubs for illegal wildlife trafficking, cracks down.



Video



[Dot Earth on YouTube](#)

Many of the videos featured here can be found on Andrew Revkin's channel on YouTube. Recent reader favorites:

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[North Korea Conducts Nuclear Test](#)

By DAVID E. SANGER and CHOE SANG-HUN

The test, condemned by world leaders, was the first under Kim Jong-un and seemed to show that the country was producing devices with substantial explosive power.

[North Korea Is Suspected of Conducting 3rd Nuclear Test](#)

By DAVID E. SANGER and CHOE SANG-HUN

North Korea set off a nuclear test on Tuesday, its official news service said, and preliminary estimates suggested it was far larger than the previous two conducted by the North.

[Books: Flights of Winged Majesty – Review of ‘The Unfeathered Bird’](#)

By JAMES GORMAN

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