Northern India’s water is vanishing due to agriculture, human consumption
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It’s a disaster in the making: a new study by NASA and UC Irvine has found that the groundwater beneath northern India has been vanishing at a rate of a foot per year during the last decade. In total 109 cubic kilometers (26 cubic miles) has been lost in six years time—three times the size of Lake Mead in the United States.

"If measures are not soon taken to ensure sustainable groundwater usage, consequences for the 114 million residents of the region may include a collapse of agricultural output, severe shortages of potable water, conflict and suffering," said Matt Rodell of NASA’s Goddard Space Flight Center and lead author of the study appearing in Nature.

The researchers found that the reason for the declining water was due to human consumption with irrigation as the primary cause.

The loss of groundwater is particularly troublesome because replenishment of the water can take months or years and is dependent on local conditions. Unlike rivers and lakes, sources of groundwater do not respond directly to precipitation.

"Groundwater mining – that is when withdrawals exceed replenishment rates – is a rapidly growing problem in many of the world's large aquifers," Jay Famiglietti of UCI Earth system explains. "Since groundwater provides nearly 80 percent of the water required for irrigated agriculture, diminishing groundwater reserves pose a serious threat to global food security."

To measure monthly changes in the groundwater, hydrologists employed twin satellites from NASA named GRACE (Gravity Recovery and Climate Experiment) over a period of six years.

"For the first time, we can observe water use on land with no additional ground-based data collection," Famiglietti explained. "This is critical because in many developing countries, where hydrological data are both sparse and hard to access, space-based methods provide perhaps the only opportunity to assess changes in freshwater availability across large regions."
River systems worldwide are losing water due to global warming

(04/22/2009) Many rivers around the world are losing water due to global climate change, according to a new study from the American Meteorological Society's Journal of Climate. Large populations depend on some of the rivers for everything from agriculture to clean drinking resources, including the Yellow River, the Ganges, the Niger, and the Colorado, which have all shown significant declines.

Colorado River unlikely to meet current water demands in warmer, drier world

(04/20/2009) Feeding the water habits of such major cities as Los Angeles, Las Vegas, and Phoenix, in addition to providing irrigation waters for the entire Southwestern United States, has stretched the Colorado River thin. The river no longer consistently reaches the sea as it once did. Now a new study warns that the Colorado River system, which has proven dependable for human use throughout the 20th Century, may soon experience shortages due to global warming.

Saline agriculture may be the future of farming

(12/04/2008) Accessible and unpolluted freshwater is a necessity for every nation's stability and well-being. Yet, while the demand for freshwater continues to rise, its sources face increasing threats from salinization, a process whereby the salt content of fresh water rises until the water becomes undrinkable and unusable in agriculture: the more salt in the soil, the lower the crop yield.
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