



*Understanding Climate Change, Ltd.
A nonprofit corporation established by Mission Valley Rotary Club*

Fact Sheet: How Climate Change Affects Rotary's Clean Water Initiative

Global Warming Redistributes Water

- Intensifies water cycle:
 - More rain overall, but soil dries faster
 - Wet places wetter, dry places drier
- Makes weather more variable:
 - More drought, more flooding
 - Higher proportion of rain in big storms
- Mountain snowpacks smaller, melt earlier

Climate Change Affects Water Supplies

- Some areas get more rain (N. Europe, N.E. U.S., parts of E, S.E. Asia)
- More drought in world's poorest areas (N. Africa, S. Africa, S. Asia)
- Seasonal flooding increases runoff, reduces groundwater (India, S.W. US)
- Reduced mountain snowpack threatens water supply for 1/6 of world's population

Climate Change Affects Water Quality

- Flooding contaminates water sources
- Drought concentrates pollutants, higher temperatures breed pathogens

Outlook

- Water crisis has many causes; global warming magnifies problem
- May put 1 to 2 B people at risk of increased water stress by 2050

*Help us bring the power of Rotary to bear on the climate crisis. Visit our website,
<http://understandingclimatechange.org/>.*



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Sources

How global warming redistributes water:

United Nations Educational, Scientific and Cultural Organization (UNESCO), "Water for people, water for life," United Nations World Water Development Report, 2003, pp. 10 and 11, <http://unesdoc.unesco.org/images/0012/001295/129556e.pdf>, accessed 5/15/08.

Intergovernmental Panel on Climate Change (IPCC), Assessment Report 4, Working Group 1 Technical Summary, 2007, pp. 54, 73-76, www.ipcc.ch, accessed November, 2007.

Intergovernmental Panel on Climate Change (IPCC), Assessment Report 4, Working Group 2 Technical Summary, 2007, pp. 44.

More seasonal flooding in many areas:

Intergovernmental Panel on Climate Change (IPCC), Assessment Report 4, Working Group 2 Technical Summary, 2007, pp. 48-51, 59.

Flooding increases runoff, reduces groundwater:

Intergovernmental Panel on Climate Change (IPCC), Assessment Report 4, Working Group 2 Technical Summary, 2007, Box TS.6, p. 59.

Melting glaciers and reduced snowpack threaten water supply for 1/6 of world:

IPCC Assessment Report 4, Working Group 2 Technical Summary, 2007, p. 35.

Floods, droughts and waterborne disease:

IPCC Assessment Report 4, Wkg. Gp. 2, Tech. Summary, 2007, p. 44 (Box TS.5), p. 50.

1 to 2 billion at risk of increased water stress by 2050:

IPCC Assessment Report 4, Working Group 2, 2007, p. 36.

Magnitude and causes of water crisis:

United Nations Educational, Scientific and Cultural Organization (UNESCO), "Water for people, water for life," United Nations World Water Development Report, 2003, pp. 10 and 11, <http://unesdoc.unesco.org/images/0012/001295/129556e.pdf>, accessed 5/15/08.

United Nations Educational, Scientific and Cultural Organization (UNESCO), "Water a shared responsibility, The United Nations world water development report 2," 2006, pp. 1, 12, 31, 44, <http://unesdoc.unesco.org/images/0014/001444/144409E.pdf>, accessed 5/19/08.

To Learn More:

- Climate change: www.realclimate.org (Click "Start Here" at upper right of page.)
- Climate change and water: www.epa.gov/climatechange/effects/water/index.html
- Climate change, water and California:
<http://www.water.ca.gov/climatechange/docs/062807factsheet.pdf>