GLOBAL INSTITUTE of SUSTAINABILITY
ARIZONA STATE UNIVERSITY

Monsoon is More than Just an Escape from the Heat

By Andrew Ellis
Arizona Republic: Green Talk Jul 21, 2007

This article is one in a series of articles contributed by Arizona State University's Global Institute of Sustainability. The Institute was established to catalyze and advance interdisciplinary research and education on environmental, economic and social sustainability.

July . . . the time of year when Arizonans study the horizon for a break in the monotonous weather pattern of late spring and early summer. After enduring our weather doldrums of May and June, a little hunger for some dramatic weather is expected.

But really, does the monsoon matter?

The increased humidity in the atmosphere during monsoon season reduces water loss from plants and water bodies, swimming pools included, while precipitation reduces the need for watering our yards. This eases the demand on our water supply and helps us bridge the gap between winter seasons.

In rural areas outside Phoenix, summer precipitation recharges groundwater that is often the only source of fresh water. The monsoon's humidity and precipitation promote forest and wildlife health, the growth of grasses on rangeland and the vitality of river ecosystems. The moisture also reduces wildfire risk and impacts tourism and recreation.

The global-warming buzz and our recent drought of longer than a decade have raised serious questions about the future climate of Arizona. With growing certainty, climate-change researchers are projecting warmer and drier winters in Arizona and the Southwest for the remainder of the 21st century. Such a scenario places greater emphasis on the monsoon season, for which the future holds little consensus.

All climate predictions generated by global climate models used to guide the Intergovernmental Panel on Climate Change indicate significant summer-season warming.

However, climate models generally do not replicate monsoon systems well, and the projections for precipitation in the Southwest are roughly split: a little over one-half of the models indicate either no change or an increase in precipitation during the monsoon months. Recent models have indicated increased precipitation.

But problematic is the prediction of elevated summer temperatures and the accompanying increase in water loss to the atmosphere from the soil, plants and water bodies.

The impacts of projected global climate change on our little monsoon system are about as certain now as the monsoon visiting your doorstep on any given day. What is certain is that research will drive the prediction toward a consensus, and we should pay close attention, for the monsoon does matter.

Andrew Ellis is an associate professor in the School of Geographical Sciences at Arizona State University, a contributing researcher to the Global Institute of Sustainability, and the former State Climatologist for Arizona.