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Gleick Tells Washington: Extreme Weather Events Are Subject to Human Influence

May 10, 2011, Oakland, Calif.: Pacific Institute President Dr. Peter Gleick, in Washington, D.C. on May 9 to accept the 2011 U.S. Water Prize for the Pacific Institute, briefed congressional staff and personnel from government agencies including the National Oceanic and Atmospheric Administration on the vulnerability of U.S. water resources to climate change.

“Extreme weather is influenced by climate change, and extreme weather events are now subject to human influence,” said Gleick. “The continued delay in taking action means we face rapidly worsening impacts, and unavoidable adaptation. We are loading the dice and painting higher numbers on them.”

The American Association for the Advancement of Science (AAAS) and the American Meteorological Society (AMS) hosted Dr. Gleick as part of the AMS Climate Briefing Series. One of the world’s leading experts on water issues, Gleick addressed the critical impacts of climate change on water resources, including:

- A hotter world.
- Mixed changes in precipitation (both by region and time period).
- Dramatic reductions in snowfall and accelerating snowmelt; related changes in runoff timing.
- Rising sea-level with impacts on groundwater quality and coastal/delta ecosystems.
- Accelerating influence on extreme events: including floods and droughts.

NOAA data show precipitation intensity rising above historical norms in the Northern Hemisphere, and there is scientific evidence for growing climate risks of flooding in the Mississippi Basin. There have been a growing number of floods of historical size over the past few decades.

“All along the river, the Mississippi is reaching unprecedented flood levels,” Gleick said. “We are now moving into a situation where all weather and storm events are, to some degree, influenced by human-induced climate change. The links between climate change and extreme events cannot be ignored.”

Gleick cited studies with observed changes in precipitation, from decreased precipitation in the Mediterranean, southern Asia, and Africa, to increased land precipitation over North America, Eurasia, and Argentina. In the north, more precipitation is falling as rain rather than snow, and the earlier onset of spring over the last 50 years means the liquid precipitation season is three weeks longer. Increases in heavy rains are found to be occurring and extreme flooding has increased in the 20th century. At the same time, extremes droughts have also increased throughout the 20th century and very dry land areas across the globe have more than doubled in extent since the 1970s.

Gleick called for attention to adaptation strategies in the face of climate change impacts, including the need to:

- Integrate and coordinate mitigation and adaptation measures.
- Review the advantages and disadvantages of existing policies that prepare for unavoidable impacts.
- Explore ways to incorporate adaptation into new planning processes.
- Develop and implement economic, technological, institutional, regulatory, and educational adaptation strategies.

“No scientific body of national or international standing rejects the findings of human-induced effects on global warming,” said Gleick, listing dozens of the world’s leading scientific societies and national academies. “There is a cost to tackling climate change, but there is a real, growing, and far larger cost of continuing to deny it.”

The slides of Gleick’s presentation are available on the Pacific Institute website at: http://www.pacinst.org/publications/testimony/vulnerability_to_climate_change.pdf

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