

## **NAWEA 2013 Symposium, Boulder, CO**

### **4B: Environmental Sciences Session Summary and Highlights**

**Chairs: Taber Allison, Bonnie Ram**

**Speakers: Patrick Gilman, DOE, Jordan Macknick, NREL, Dale Strickland, WEST**

Sustainable wind energy deployment requires a systems approach to better understand the potential risks and benefits to society, ecosystems, and the communities that host wind turbines. For more than two decades, the approach to environmental sciences in the wind energy community has focused primarily on wildlife and habitat interactions for land-based wind turbine sites. A broader dialogue is needed to understand how wind energy contributes to reducing GHGs and other harmful emissions – an urgent environmental challenge highlighted in Dr. Terry Root’s plenary talk.

Framing the potential risks and benefits within a context of global environmental change will lead to evaluation of the effects of all energy sources. Building on this theme, Jordan Macknick reviewed the UCS report on operational water use from various energy technologies.

Patrick Gilman framed the President’s climate change policy within the realities of regulatory and scientific uncertainties that challenge decision makers to address knowledge gaps while building public trust.

Dale Strickland reviewed the ecological lessons learned from land-based wind power development and how these lessons translate to offshore wind energy development.

Training environmental and social scientists, engineers and managers in a more integrated or systems manner is needed in order to achieve the 20% vision.