



**Understanding Ecological Thresholds in Global Change:  
Connecting Science to Decisions and Response**

**November 7-10, 2006**

*Hosted by The H. John Heinz Center for Science, Economics and the Environment  
and  
The Nature Conservancy*

Airlie Center Warrenton, VA

**DAY 1 Tuesday, November 7**

- 3:00** Arrival and check-in
- 3:30** Field trip: Wildlife and Habitat Project – Swan Research Project Airlie Campus
- 6:00** Dinner
- 7:30** **Welcome and Introductions** *Tony Janetos, Joint Global Change Research Institute University of Maryland and John Wiens, The Nature Conservancy*
- 7:45** **Meeting Objectives: Developing the framework for integrated thresholds**  
*Tony Janetos and John Wiens*
- Overview and Goals**

**DAY 2 Wednesday, November 8**

- 8:00 - 9:00** *Breakfast*
- 9:00 – 10:15** **Panel “Establishing the Thresholds ‘Playing Field’— Concepts and Context”**  
*Introduction: Tom Lovejoy, President, The Heinz Center*  
*Chair: John Wiens*  
*Panelists: Ed Miles, University of Washington, School of Marine Affairs; Peter Groffman, Institute of Ecosystem Studies; Roger Pulwarty, NOAA Climate Program Office, and Rebecca Shaw, The Nature Conservancy- California*
- 10:15 – 10:45** *Break*
- 10:45 –12:30** **Plenary Discussion Establishing the Thresholds ‘Playing Field’— Concepts and Context**

- 12:30 – 1:30**      *Lunch*
- 1:30 – 2:30**      **Panel presentation and Discussion “Where have we been?” Learning from well-understood cases of threshold responses (‘Type 1’) where both physical phenomenon and management/policy response are well-documented**  
*Chair: Jane Leggett, Congressional Research Service*
- Peruvian Anchovy (*Kenny Broad, University of Miami*)
  - Mesquite invasion in New Mexico (*Brandon Bestlemeyer, New Mexico State University*)
- 2:30 – 3:30**      **Plenary Discussion -- “Where have we been?” Type 1 Cases**
- 3:30 – 4:00**      *Break*
- 4:00 – 5:30**      **Panel Presentation and Discussion “Where are we now?” Type 2 Threshold Cases** (*Accumulating or accelerating change is resulting in large or sudden changes important to management and adaptive capacity*)  
**Panel chair:** *Virginia Burkett, National Wetlands Research Center of the U.S. Geological Survey, U.S. Department of Interior*
- Session I:**
- **Woodland forest/tree die-off: US west** (*David Breshears, University of Arizona*) and **African Sahel** (*Patrick Gonzalez, The Nature Conservancy*)
  - **Drought: Colorado River** (*Roger Pulwarty, NOAA Climate Program Office*) and **Columbia River** (*Ed Miles, University of Washington, School of Marine Affairs*)
- 5:30**              *Adjourn*
- 6:30**              **Dinner**

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**DAY 3 Thursday, November 9**

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- 7:30 – 8:30**      *Breakfast*
- 8:30 – 9:00**      **Report back ‘Concepts and Context’ and Type 1**
- 9:00 – 11:00**      **Panel Presentation and Discussion “Where are we now?” Type 2 Threshold Cases**  
**Session II:**
- **Coral Reefs** (*Phil Kramer, The Nature Conservancy*)
  - **Bark Beetles** (*Mike Bradley, CANFOR*)
  - **Sea-level rise: North Carolina Coast, Albemarle Peninsula** (*Jeff DeBlieu, The Nature Conservancy—North*)

Carolina)

- 11:00 – 11:30**    *Break*
- 11:30 – 2:30**    **Break-Out Sessions** (*and working lunch*):
- 2:30 - 3:30**    Plenary Discussion of Break-out Sessions
- 3:30**            **Adjourn**
- 6:00**            **Dinner**
- 7:00**            **Report back: Type 2**
- 7:30 – 8:30**    **Panel Presentation and Discussion of Type 3 Cases, “Things that go bump in the night”**
- Panel Chair:** *Jerry Melillo, The Ecosystems Center, Marine Biological Lab*
- **Ocean Acidification** (*Richard Feely, NOAA, Pacific Marine Environmental Lab*)
  - **Terrestrial Carbon Sink Capacity** (*Lisa Dilling, Visiting Fellow, Cooperative Institute for Research in Environmental Sciences, University of Colorado, Boulder CO*)

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**DAY 4 Friday, November 10**

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- 8:00 – 9:00**    *Breakfast*
- 9:00 – 10:00**    *Plenary Discussion -- “Things that go bump in the night” Type 3 Cases*
- 10:00 -12:00**    **Key insights:** What have we learned over the past three days that advances understanding of thresholds within the context of response and management, and/or reveals new classes of resource management or policy information needs that the scientific community should respond to?
- 12:00 – 1:00**    **Lunch**
- 1:00 – 3:00**    **Meeting outcomes and next steps:** How can we build a process that seeks to recognize and improve understanding of thresholds in the context of existing and future coping strategies? How can we best organize and advance a process of engagement with resource/conservation managers and policy-makers? What does such a process look like and what are the desired outcomes?