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Coping with the Uncertainty Arising from Unsettled Property/ User Rights

Presented at
The Aspen Global Change Institute

June 5 - 10, 2003 Summer Science Session I

"Learning from Regions: A Comparative Appraisal of Climate, Water, and Human Interactions in the Colorado and Columbia River Systems"

Coping with the Uncertainty Arising from Unsettled Property/User Rights (& Other Things If Time Permits)

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Overview: 5 Biggest Challenges of Resource Policy & Management

- Complexity
- Uncertainty
- Unsettled property/user rights
- Externalities
- Short time horizons

Relationships among Challenges

- Complexity of uses _ unsettled user rights
- Unsettled user rights:
  - Add to complexity of decisionmaking
  - Facet of general uncertainty regarding
    - Future benefits
    - Responsibilities
  - Often encourage externalities
  - Often shorten time horizons

Relevance of Unsettled Property/User Rights

- Stifles Coasean direct settlement
  - Importance of condition of clear property rights
  - Opens up appeal to government by invoking environmental rights
- Time horizons

How Property/User Rights Become Uncertain

- Uncertain to begin with
- New dimensions emerge:
  - Uses
  - Responsibilities upon discovery of harm
  - Responsibilities upon changing tastes & tolerances
- Government action (elaborated later)

Insights

- Never completely settled
  - New uses
  - New discoveries of impacts
- Fullest specification not necessarily optimal
- Recognition vs. granting

Meaning of “Rights”

- Within the normative argument: user claim that ought not be subject to cost-benefit analysis
- From above the normative argument: the most strongly-couched claim

Environmental rights

- Right to avoid harm
- Right to enjoyment
- Right to assert “nature’s” rights

Clash of Rights

- Assertion of “new” rights restrict pre-existing rights
- Instead of paying, environmentalists & governments often invoke environmental rights

Impact of Institutional Interests

- Agencies compete by posing different user-rights regimes
  - E.g., land use classifications
- Unsettled user rights _ agency discretion
  - for rewarding
  - for policy flexibility
- Pretext for expropriation
- (Perhaps unexamined) reaction to demands for environmental rights

Governance & Institutional Issues

- Paradox: accepted right denies cost-benefit, but cost-benefit is usually applied to determine which rights to accept
- Recognition vs. granting of user rights
- Level:
  - Constitutional
  - Legislative
  - Regulative
  - Private

Governance & Institutional Issues

- Governmental adjudication also entails transactions costs
  - Argument for a “Quincy Library” approach
    - Calls for new government doctrine to reduce transactions costs of such efforts
- Mutual accommodation mitigates uncertainty of user rights
- Absorb uncertainty by clarifying adjudication process

Management Alternatives

- Fixed Policy/practice
- "Trial & Error" -- random choice of policies & practices
  - Nobody does this
- AM as implementing new, provisionally optimal policies & practices on the basis of feedback (Lee)
- AM as implementing policies to test policies & practices **in order** to learn (Walters)
  - Could be optimal now, but not necessarily
- Adaptive Governance
  - Let those affected figure out how to proceed (Brunner)

Premises of Kai Lee's AM

- Information-rich incrementalism
  - M&E
  - Savvy coping philosophy
- Management responsiveness to feedback
- Observation leads to greater scientific knowledge

Premises of Carl Walters' AM

- Scientific knowledge _ better long-term management worth the short-term costs
  - Long-term investment philosophy
  - Premise that existing science is inadequate
  - Observation (M&E) alone is a scientifically weak tool
- Existing policies may be greatly suboptimal, but we do not know
  - Ted's point

Rationales for No AM

- If we have the right science, don't let temporary setbacks deter us
  - Presumes a transition period before full success can occur
  - Presumes exogenous conditions can shock the system at any given time
- Policy stability is very important
  - Effectiveness & efficiency of mitigation depend on knowing what the policies & practices will be
  - Longer time horizons of resource users depend on policy certainty
- Flexibility permits undermining camouflaged as AM

Counterarguments

- Adaptive management justifies flexibility _ willingness of top policymakers to permit adaptation
- Adaptive management justifies flexibility _ mutual accommodation _ reduces risk of huge loss by resource users _ greater cooperation of resource users

Different AMs: Costs

- Kai Lee's AM
  - M&E
  - [Possibly] missed opportunities to identify non-varied policies or practices
  - Some policy-variability uncertainty for affected parties
- Carl Walters' AM
  - M&E
  - **Suboptimal practices for the sake of learning**
  - Some policy-variability uncertainty for affected parties

Meanings of “Success”

- Adaptive management regime implemented
  - i.e., do the institutions permit experimentation?
  - Walters’ map
- Experiments yield scientifically sound findings & understandings
- Experiments yield policy-useful findings & understandings
- Better management

Circumstances of Tolerance for Lee's AM

1. Absence of knee-jerk opposition to any modifications
2. Budget conditions permitting M&E

Circumstances of Tolerance for Walters' AM

1. Absence of knee-jerk opposition to any modifications
2. Budget conditions permitting M&E
3. Perception of low costs of suboptimality of practices designed for learning
4. Prior collapse of ecosystem and valued outcomes
   - Garry Brewer: New England shell-fish exploitation
     - Result was not adaptive, but could have been
   - Note: collapse is a social construction
     - Important resources, but sometimes also the unimportant – ESA

Scientific Success of Walter's AM

- I.e., Do the experiments truly yield sound findings & understandings?
- Will the institutions permit the most insightful experiments?
- Do exogenous conditions permit lessons to be drawn?

Usefulness of the Science Findings & Understandings

- Are the findings & understandings at the level to be useful?
- Do they discredit policies that are not in the common interest?
- Do they convey the uncertainty needed for hedging strategies?
- Do they tell us how to hedge better against [remaining] uncertainty?

Probabilistic climate projections with HadCM3

Michael Vellinga

Abrupt climate change , 13 July 2005

Uncertainty in climate projections

- Uncertainty in model formulation is likely to remain: parameter uncertainty / structural uncertainty

- Need to quantify how model uncertainty translates into uncertainty of climate projections (e.g. climate sensitivity, regional climate change) for probabilistic statements

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Examples:

Uncertainty in DJF SAT

Uncertainty in DJF precip.

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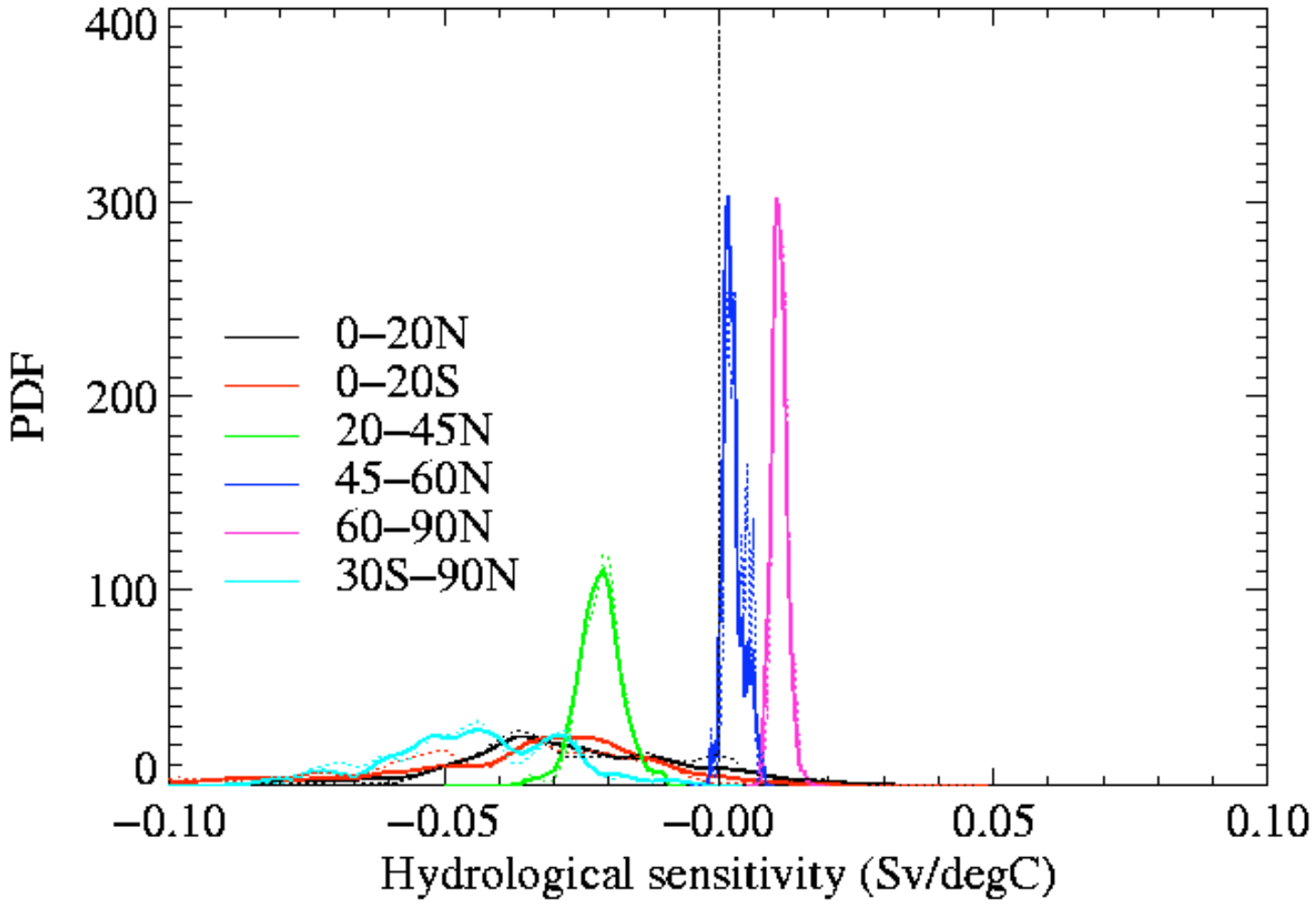
Murphy et al. 2004

Uncertainty in regional change in Atlantic P-E+R under CO_2 doubling



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Approach:

- Feasibility study for ‘THC risk assessment’
- Sample parameter space of HadCM3 atmosphere
- Based on un-fluxadjusted HadCM3 perturbed physics ensemble (~20 members)
- Quantify how uncertainty in (atmospheric) model formulation impacts on THC behaviour to rising greenhouse gas concentrations
- Understand the difference in THC response (if any!)
- Need to define useful metric to quantify quality of each member

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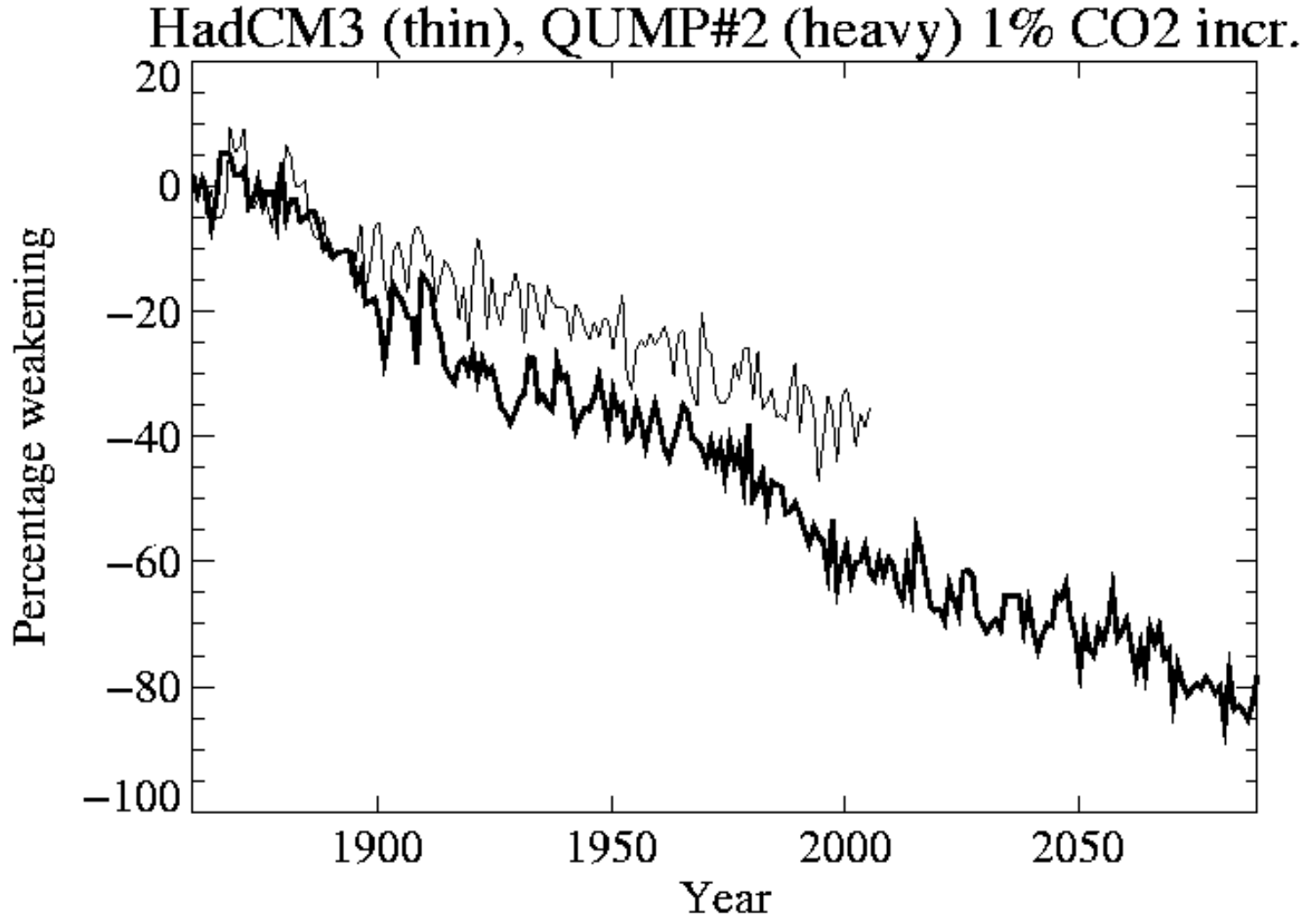
Preliminary results:



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