Ogmius

CENTER FOR SCIENCE & TECHNOLOGY POLICY RESEARCH

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CENTER FOR SCIENCE AND TECHNOLOGY POLICY RESEARCH
COOPERATIVE INSTITUTE FOR RESEARCH IN ENVIRONMENTAL SCIENCES
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CIRES

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http://sciencepolicy.colorado.edu/ogmius.

Inside this issue:

Introduction to Ogmius Exchange

This issue of Ogmius features an article by Center for Science and Technology Policy Research director William (Bill) Travis comparing recommendations for adaptation to climate change in the U.S. from two National Academy of Science reports issued almost two decades apart: "America's Climate Choices", and "Policy Implications of Greenhouse Warming". Bill is an Associate Professor of Geography at the University of Colorado, Boulder. His teaching and research focus on human behavior in the environment, including studies of the human dimensions of climate change, land use and the interaction of people and ecosystems. His current projects focus on the theme of potential social response to extreme climate change, including warning systems, the most transformative and difficult adaptive choices, and geo-engineering responses in the face of a "climate emergency."

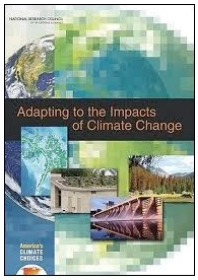
Comments welcome!
info@sciencepolicy.colorado.edu

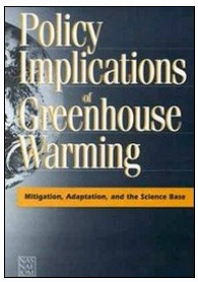
Ogmius Exchange

Two Decades and Two Adaptation Panels: What Progress?

By William R. Travis

The formal release in May, 2011 of the final report of the National Academy of Sciences study "America's Climate Choices"[1] (ACC) marks the first comprehensive Academy review of global warming since the 1992 report of the Committee on Science, Engineering and Public Policy (COSEPUP), "Policy Implications of Greenhouse Warming"[2].





Though much else has been written about climate change and global warming in the interim, these two reports are useful hallmarks in U.S. climate science assessment, and their domestic focus differentiates them from, say, IPCC reports. Furthermore, the NAS reports were specifically designed to address policy, and to make policy recommendations, which also differs from the IPCC mandate and that of many other assessments.

1. "America's Climate Choices" available at: http://www.nap.edu/catalog.php?record_id=12781.
2. "Policy Implications of Greenhouse Warming" available at: http://www.nap.edu/openbook.php?isbn=0309043867.

Ogmius Exchange Continued

Both reports included panels on adaptation, and thus provide an opportunity to examine progress they reveal in adaptation science over two decades. No panel member was on both assessments. [I was on the COSEPUP panel under my previous name, William Riebsame.]

Both panels operated under the assumption that anthropogenic global warming would significantly alter the climate and noticeably affect social and ecological systems in coming decades. Both panels took their cues on the physical nature of climate change from associated climate science panels. The COSEPUP study did not focus as much attention on whether global warming was underway or not, settling instead on a wide range of warming (1 to 5 degrees C) likely to eventuate from a doubling of GHG concentrations, which they expected in the middle of the 21st century. ACC's climate change conclusions were, as might be expected, more definitive: "Climate change is occurring, is caused largely by human activities, and poses significant risks for a broad range of human and natural systems." (p. 1). ACC's posture reflects the study's main title: we need to inform and enlarge the range of choices available in the face of this problem, and its adaptation panel report is dominated by extensive rosters of potential responses, ranging from changes in crop varieties to land use. Still, in many ways these lists are not much different from the options embedded in the COSEPUP narrative, both stressing relatively low-regrets options linked to other benefits, such as water conservation, habitat protection, and strengthened building codes. COSEPUP paid more attention to the economics of adaptation, using cost as one measure of feasibility, while ACC focused more on the strategy of adaptation, stressing public sector planning and policy reforms that could aid it.

One marked difference over the two decades separating the reports is that the ACC panel was able to cite "early adaptation activities" (Table 3.1, pp. 63-64) among several U.S. locales. Most of those listed are plans for future adaptation, but they are, nevertheless, explicit adaptations to climate change not extant at the time of the COSEPUP study. COSEPUP drew more heavily on past and then-current responses to weather and climate extremes to tease out specific adaptive actions and policies (e.g., use of the Dust Bowl droughts as an analog to future climate change, pp. 625 and 628), and both panels argued that better management of current extremes would aid future adaptation.

Overall, both panels take a pragmatic approach to adaptation, wrestling less with the potential failure of adaptation and more with how to get it done, within, say, typical capital and infrastructure replacement cycles (COSEPUP) and common public sector planning rubrics like urban growth and water supply plans (ACC). COSEPUP is perhaps a bit more optimistic about adaptation, concluding that:

"So far as we can reason from assumed gradual changes in climate, their impacts will be no more severe, and adapting to them will be no more difficult, than for the range of climates already on earth and no more difficult than for other changes humanity faces" (p. 657).

Similar sanguine conclusions for agriculture, industry, infrastructure and ecosystems led one panel member to write a dissent to the report's "complacent tone" and conclude: "In summary I disagree with the report's implicit message, that 'we can adapt with little or no problem'" (p. 659). ACC attends more to institutional barriers to adaptation (pp. 121-124), yet, like COSEPUP, conveys a message that we can adapt: "At moderate rates and levels of climate change, adaptation can be very effective" (p. 30), while cautioning that effective adaptation requires us to formulate a "well-integrated, comprehensive planning process and an adaptive risk-management approach" (p. 156). The panel offers a blueprint for such a planning system, covering all sectors and all levels of government (see especially Chapter 5).

Both panels at least hint at a limit on adaptability. ACC's adaptation panel, after offering dozens of practical adaptation suggestions, cautioned that continuing climate change could eventually surpass even the adaptive capacity of a relatively rich, developed nation. "At severe rates and levels of climate change, limits of many adaptation options are likely to be reached, and resulting adaptations are likely to be much more disruptive" (ACC, pp. 330-31). But where such limits might appear remained unspecified. The panel, using the ultimate adaptation to sea level rise as an exemplar, suggested where experience and knowledge fail us:

> The nation currently has no experience in planning for or deciding when or how to abandon exposed coastal areas or communities that can no longer be adequately protected from rising sea level and greater storm surge. In vulnerable coastal areas, transportation systems and the people they serve will be placed at risk, and the social and political dimensions of relocation will provide a major research and policy challenge in adapting to future climate change (ACC, p. 72).

Here then is not so much a known limit on adaptability, but a call for more research on limits and ways to extend them.

Ultimately, both panels only nibble at the edges of the potential for severe climate change, mal-adaptation, and failed

Ogmius Exchange Continued

adaptation. In a brief mention of potentially abrupt, severe change, COSEPUP concluded that "The probability and nature of such unexpected changes are unknown. Therefore we cannot predict their impacts or devise adaptations to them" (p. 507). The ACC panel touched on the possibility that we will find ourselves trying to adapt to severe rates and levels of climate change, and included "risks of large scale discontinuities" in its U.S.-focused version of the IPCC's "reasons for concern" diagram (p. 51). Yet ACC's adaptation panel likewise hardly touched on the upper range of potential climate change illustrated in that graphic, and included few adaptations that might be termed transformative (e.g., reform proposals for the National Flood Insurance Program, box 4.8) among its lengthy action rosters for various sectors. They conclude with a truism: "If the magnitude of climate change is *relatively severe*, as depicted in the USGCRP higher projection, then regions, sectors, and systems will be *hard-pressed* to cope with impacts and their costs" (p. 60, emphasis added). What is most striking about both adaptation panel reports, then, is their lack of dramatic language compared to much of what we read about global warming, and their almost work-a-day approach to adaptation: the same tools we use to cope with current weather and climate variability, properly honed and structured into a progressive planning strategy, can help us adapt to climate change. We will see …

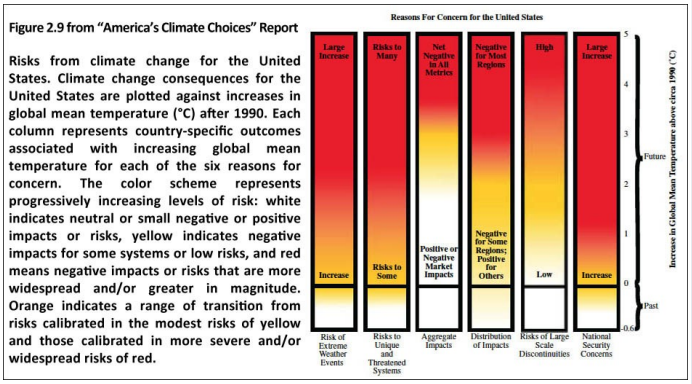


Figure 2.9 from "America's Climate Choices" Report

Risks from climate change for the United States. Climate change consequences for the United States are plotted against increases in global mean temperature (°C) after 1990. Each column represents country-specific outcomes associated with increasing global mean temperature for each of the six reasons for concern. The color scheme represents progressively increasing levels of risk: white indicates neutral or small negative or positive impacts or risks, yellow indicates negative impacts for some systems or low risks, and red means negative impacts or risks that are more widespread and/or greater in magnitude. Orange indicates a range of transition from risks calibrated in the modest risks of yellow and those calibrated in more severe and/or widespread risks of red.

William Travis
william.travis@colorado.edu

Research Highlight

Science Informing Policy? Understanding Drivers and Constraints to Improved Water Management in a Changing Climate

Introduction

This edition of Ogmius features a Research Highlight by Christine Kirchhoff. Christine recently completed her Ph.D. at the University of Michigan's School of Natural Resources and Environment in Resource Policy and Behavior. Christine's dissertation investigated the supply of climate science by two NOAA RISAs[1] and the use of that information by water managers across five states in the Pacific Northwest and the Southwest United States. It was selected as Best Dissertation in the Water Policy and Socioeconomics Category in the 2011 Universities Council on Water Resources Ph.D. Dissertation Award competition.

Christine has an undergraduate degree in civil engineering and a master's in environmental and water resources engineering both from the University of Texas at Austin. Prior to enrolling at the University of Michigan in 2004 she was a practicing professional engineer in Austin, Texas. In that capacity Christine was responsible for the design and project management of several multi-million dollar water and wastewater treatment plant projects as well as several distribution systems and water resource planning efforts for municipal clients throughout Texas.

Christine has spent the past year as a postdoctoral researcher at the Center for Science and Technology Policy Research. Her research with Lisa Dilling is described below.

Science Informing Policy? Understanding Drivers and Constraints to Improved Water Management in a Changing Climate by Christine Kirchhoff and Lisa Dilling

Christine Kirchhoff, Research Associate at the Center, and Lisa Dilling, Assistant Professor, CIRES Fellow and member of the Center, are examining the challenges to improving state water resources management and planning efforts to be more resilient to climate variability and climate change. They focus

1. RISAs are Regional Integrated Sciences and Assessments, NOAA-funded projects that help scientists identify and meet the decision making needs of local and regional stakeholders.

Research Highlight Continued

on U.S. states because of their important role in water resources management, data collection, monitoring and long-term planning. The study is supported by a one-year extension of the NSF-sponsored Science Policy Assessment and Research on Climate (SPARC) project.

Water managers have long experienced the challenges of managing water resources in a variable climate. However, climate change has the potential to reshape the experiential landscape by, for example, increasing the intensity and duration of droughts and the frequency of extreme events. They begin with the premise that with heightened uncertainty water resources management must be dynamic and responsive and seek flexible solutions. They hypothesize that a dynamic management regime will have more adaptive capacity to cope with uncertainties in the coupled human-natural system and that to be successful, techno-scientific information must play a prominent role. However, information alone is insufficient. The complexities of the coupled human-natural system and, in particular, the institutional, organizational, and behavioral components of these systems confound efforts not only to obtain more and better information but also to use that information to improve water management.

Their research uses interviews and documentary analysis in five U.S. states to understand the drivers and constraints to improved water resource planning and decision-making. Specifically, they seek to answer the following research questions:

- What constrains or promotes flexibility and adaptability in water management?
- How might the connections between information suppliers and information users be strengthened to support more flexible and adaptable water management?

Preliminary results suggest climate variability—namely drought—coupled with population growth drives improvements in water resources planning at the state level to a far greater degree than concern over climate change. Moreover, results suggest uncertainty in the direction and magnitude of climate change can prevent early engagement with the issue, even while alternative actions to improve adaptive capacity are available. Lastly, preliminary analysis identified four important confounding factors that affect the ability of managers to consider alternative courses of action: 1) perception of risk (as distinguished from actual risks); 2) the usability and degree of incorporation of techno-scientific information; 3) the difficulty of discussing climate issues in a charged political landscape; and 4) competing or unclear authority structures surrounding water issues at the state and local level.

Additional data collection and analysis may alter this emerging picture of the drivers and constraints to more flexible and adaptive water resources management at the state level. Stay tuned!

Christine Kirchhoff
christine.kirchhoff@colorado.edu

Lisa Dilling
ldilling@colorado.edu

Center News

Lisa Dilling Appointed to the EPA Board of Scientific Counselors

Lisa Dilling has been appointed to the U.S. Environmental Protection Agency's (EPA) Board of Scientific Counselors (BOSC), and to the Executive Committee within the BOSC. BOSC was established by the EPA to provide advice, information, and recommendations about the Office of Research and Development (ORD) research program. The mission of the BOSC is to provide advice and recommendations on:

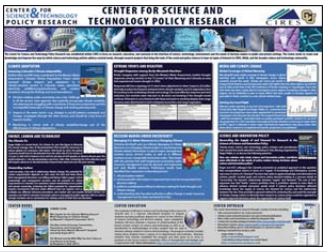
- Evaluating science and engineering research, programs and plans, laboratories, and research-management practices of ORD and recommending actions to improve their quality and/or strengthen their relevance to EPA's mission.
- Evaluating and providing advice concerning the utilization of peer review within ORD to sustain and enhance the quality of science in EPA.
- Reviewing ORD's program development and progress, ORD's research planning process, and research program balance, including implementation of the ORD Strategic Plan.
- Providing peer review including evaluation of ORD's peer review policies, and reviewing ORD Offices, National Laboratories and Centers, and research plans and products.
- Providing advice on human resources planning, such as scientist career development and rotational assignment programs, and the appropriate scope and design of training programs for environmental research professionals.

Center News
Saffron O'Neill Visits from Australia

Dr. Saffron O'Neill, a Research Fellow in the National Climate Change Adaptation Research Facility (NCCARF) Social, Economic and Institutional Dimensions (SEID) theme, based at Melbourne University, visited Boulder in May to collaborate with Center researchers. Dr. O'Neill gave a presentation titled "Defining and Assessing Maladaptation". Using a case study of migration and resettlement in the South Pacific, she spoke about her work that seeks to explore how the risk of maladaptation might change under three types of adaptation strategy: reducing exposure, decreasing sensitivity or increasing adaptive capacity.

Center News
CIRES Rendezvous

On April 22 the Center participated in the sixth institute-wide Cooperative Institute for Research in Environmental Sciences (CIRES) Rendezvous. The poster highlighting some of our current research projects can be found here: http://sciencepolicy.colorado.edu/news/cstpr_poster_2011.pdf.



Center News
Center Research Symposium

The Center held its second internal research symposium in May. This is an opportunity for presentations and discussion of research by CSTPR faculty and students. Topics included:

- Lisa Dilling: "Why do communities respond to risk? How does it matter to adaptation?"
- Max Boykoff: "Who Speaks for the Climate? Exploring media coverage of weather extremes"
- Ben Hale: "Fixing the Wrong Wrong: Geoengineering and the End of the World"
- Roger Pielke: "Raw Fish, Dead Bison and Dim Bulbs"
- Christine Kirchhoff: "Water resources management and planning in five U.S. states: Cross-scale collaborative governance for improved planning to mitigate extremes and other risks to water resources"
- Shali Mohleji: "A New Metric for Gauging Success of the NFIP and NEHRP: Comparing Projections of Pre-Policy Losses to Actual Losses"
- Kelli Archie: "The Role of Information in Climate Change Adaptation on Western Public Lands"
- Saffron O'Neill: "Analysing disaster preparedness: Evidence from the 'Black Sunday' bushfires"
- Bill Travis: "Design of a Severe Climate Change Warning System"

Center News
New Center Outreach Efforts

The Center recently added a multi-media gallery to its website at http://sciencepolicy.colorado.edu/news/multimedia. There you can find videotapes of talks, presentations and interviews; audiotapes of radio discussions; and a collection of photographs from Center events.

The Center is experimenting with social media through Facebook (https://www.facebook.com/group.php?gid=106860292679929) and Twitter (http://twitter.com/cu_cstpr). Please let us know if you view these pages and find them useful. We value your feedback! Send comments to: ami@cires.colorado.edu.

Graduate Student News
Congratulations to Our Grads!

A huge congratulations to our May graduates, Dave Cherney (Ph.D., Environmental Studies) and Kristin Gangwer (Masters, Geography). Shali Mohleji will receive her Ph.D. in Environmental Studies in August. While we are excited to see them complete their degrees, we will miss their outstanding contributions to the Center as illustrated below.

Graduate Student News
Dave Cherney Featured in U.S. News and World Report on Best Graduate Schools

Recent Center grad Dave Cherney was featured in U.S. News and World Report's Best Graduate Schools issue. Dave explains why he chose to pursue his graduate degree in environmental studies at CU-Boulder:

Excerpt: I am grateful that my professors not only are renowned experts in their fields, but they genuinely care about their students' education. They have encouraged me to pursue my doctoral dissertation on a topic about which I am highly passionate—conservation in the Greater Yellowstone Ecosystem. They are true mentors in my educational journey, helping me to sharpen my critical thinking and practical problem-solving abilities…Read more at http://www.usnews.com/education/best-graduate-schools/articles/2011/03/16/science-student-profile-why-i-picked-university-of-coloradoboulder.

Graduate Student News
Graduate Student Presentations

Kristin Gangwer Presented"Ranching and Drought in the Rocky Mountain West"

Recent Center grad Kristin Gangwer gave a presentation at the Center's March 31 noontime seminar series on her Masters thesis titled "Dryness and Desperate Measures: Ranching, Land Tenure, And Drought Coping In The Rocky Mountain West."

Shali Mohleji Presented "Gaining from Losses: Using Disaster Loss Data as a Tool for Appraising Natural Disaster Policy"

Ph.D. candidate Shali Mohleji presented her dissertation defense, "Gaining from Losses: Using Disaster Loss Data as a Tool for Appraising Natural Disaster Policy", on May 26. Shali will receive her degree in Environmental Studies this August.

Graduate Student News

Center Graduate Student John Berggren's Daily Camera Editorial: "The Regional Watershed Supply Project: The wrong precedent on water"

Center Graduate Student John Berggren wrote an editorial for the Boulder Daily Camera on May 1, 2011 titled "The Regional Watershed Supply Project: The wrong precedent on water."

Excerpt: The American Southwest continues to be one of the fastest growing regions in the country, despite a limited availability of freshwater. As water budgets tighten, municipalities and developers now look to diversion projects that were once considered outlandish, irresponsible, and maybe even impossible. A $2.8 billion pipeline that can pump 250,000 acre-feet annually for 578 miles across state lines almost seems laughable. Almost. In reality, however, that is a proposed project that is currently undergoing NEPA review to bring water from Flaming Gorge Reservoir in Southwestern Wyoming to Front Range cities and farmers here in Colorado. If the man who envisioned this project has his way, the Regional Watershed Supply Project (RWSP) could begin pumping water by 2020…Read more: http://www.dailycamera.com/guest-opinions/ci_17959666#ixzz1LbGubUWK.

Alumni News

Center alumns Genevieve Maricle and Nat Logar recently published articles in Minerva's special issue "Public Value Mapping: Assessing the Non-Economic Value of R&D."

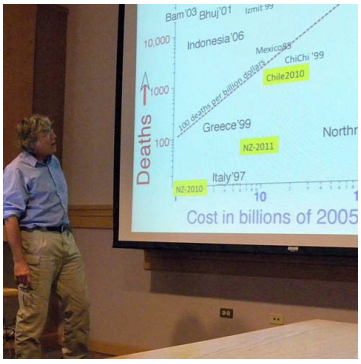
Maricle, G., 2011. Prediction as an Impediment to Preparedness: Lessons from the US Hurricane and Earthquake Research Enterprises. Minerva, v. 49, n.1, 87-111.

Logar, N., 2011. Chemistry, Green Chemistry, and the Instrumental Valuation of Sustainability. Minerva, v. 49, n. 1, 113-136.

View articles online at: http://www.springerlink.com/content/m544mkh5214g.

Center Events

Noontime Seminar Wraps Up 9th Year



'Global earthquake fatalities: Nature vs. Human nature' by Roger Bilham, March 3, 2011

The Center's noontime seminar series was launched in the fall of 2002 as a means of sharing science policy-related research at the Center and elsewhere at CU. The series' theme this year was "decision making under uncertainty". A sample of the talks by faculty, graduate students and visitors include: "Quantification of the Treatment of Uncertainty by the IPCC AR4", "Dryness and Desperate Measures: Ranching, Land Tenure, and Drought Coping in the Rocky Mountain West", and "Inundation or Ignorance? Public Perception of Storm Surge Risk." We are currently planning our fall schedule which will focus on water, climate, sustainability and innovation. To be placed on our events mailing list and receive news of upcoming events, join our mailing list at http://sciencepolicy.colorado.edu/news/center_talks.html. See you in the fall!

View our Noontime Seminar Series photo gallery at: http://sciencepolicy.colorado.edu/outreach/photo_gallery.

Center Events
Campus 2 Congress with Colorado Congressman Jared Polis

On April 29 Colorado Congressman Jared Polis was at the Center to talk to CU students and answer questions about climate politics and policy.

In 2008, Jared Polis was elected to the 111th Congress, representing Colorado's second congressional district. He currently serves on the House Rules Committee and the House Democratic Steering and Policy Committee and is a Democratic Caucus Regional Whip. He is a charter member and vice-chair of the Sustainable Energy and Environmental Coalition, the Chair of the Immigration task-force of the Progressive Caucus, and an honorary Co-Chair of Third Way.

View photo gallery of this event at: http://sciencepolicy.colorado.edu/outreach/photo_gallery/c2c

Center Events
Center Talks and Presentations

Colorado Conference on Earth System Governance: Crossing Boundaries and Building Bridges

Max Boykoff, Lisa Dilling, Christina Kirchhoff, and Kelli Archie participated in the Colorado Conference on Earth System Governance 17-20 May 2011 at Colorado State University in Fort Collins. This conference is part of a global series organized by the Earth System Governance Project, a ten-year research program under the auspices of the International Human Dimensions Programme on Global Environmental Change (IHDP). The Colorado Conference on Earth System Governance is hosted jointly by the Environmental Governance Working Group and the School of Global Environmental Sustainability at Colorado State University along with the IHDP Earth System Governance Project. Christine Kirchhoff and Lisa Dilling presented "Managing Water Resources in a Changing Climate: Understanding Drivers and Constraints to Adaptation Policy and Planning across Scales and Levels of Decision Making." Kelli Archie and Lisa Dilling presented "Climate Change Adaptation and Western Public Lands: Do Decision Makers Have the Information and Tools They Need to Govern?" Heike Schroeder and Max Boykoff presented "Analysing the makeup and discourse of UNFCCC national delegations through 15 years of COPs."

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Center Talks and Presentations Continued

Roger Pielke Jr. on 9News YOUR SHOW

Roger Pielke, Jr., appeared on 9News YOUR SHOW to discuss climate change and global warming and to answer audience questions.

Roger Pielke, Jr. Participated in Lecture at University of Hamburg

On May 4 Roger Pielke, Jr. participated in a lecture at University of Hamburg on "Climate Science in a Democratic Society". Jerry Ravetz of Oxford University gave the keynote speech and Jeroen van der Slujs, Hans von Storch, and Beate Ratter were part of the discussion along with Roger.

Roger Pielke, Jr. Discusses The Climate Fix

On February 25 Professor Matthew Nisbet interviewed author Roger Pielke about his new book, The Climate Fix: What Scientists and Politicians Won't Tell You About Global Warming. Roger also spoke about his book to the MIT Energy Club, the Pacific Climate Seminar Series, and the Helmholtz Centre for Environmental Research, Leipziger.

2011 Illahee Lecture: Fixing Climate Through Energy Innovation, by Roger Pielke, Jr.

On February 3, 2011 Roger Pielke, Jr. took part in the Portland-based Illahee Lectures "Innovation for Public Good". The series includes thought leaders in climate policy, sustainability, biotechnology, food systems, economics and governance.

Recent Publications

The "New" Carbon Economy: What's New?

by E. Boyd, M. Boykoff, and P. Newell
Antipode, doi: 10.1111/j.1467-8330.2011.00882.x, Published April 15, 2011, http://sciencepolicy.colorado.edu/admin/publication_files/2011.11.pdf


The "New" Carbon Economy: What's New?

Emily Boyd
School of Earth and Environment and Sustainability Research Institute, University of Leeds, Leeds, UK;

Maxwell Boykoff
Center for Science and Technology Policy Research, University of Colorado, Boulder, CO, USA;

Peter Newell
School of International Development, University of East Anglia Norwich, UK;

Introduction
We now have what is commonly called a carbon economy. However, it is in fact made up of several, increasingly inter-connected, carbon markets. It takes different forms in different parts of the world, but includes systems of emissions trading (in the EU, some states in the USA and emerging schemes in cities, such as Montreal), and the buying and selling of offsets through United Nations-controlled "compliance" markets, most notably though the Clean Development Mechanism (CDM) created by the Kyoto Protocol, as well as through "voluntary" markets. The carbon economy has had a turbulent history; its monetary value was affected by global financial meltdown, which also suppressed levels of demand for carbon credits, and its legitimacy questioned amid claims of climate fraud, "toxic carbon", and acts of (neo)colonial dispossession (Bachram 2004; Friends of the Earth 2009; Lohmann 2005, 2006).
And yet the importance of the carbon economy should not be underestimated. With the CDM, for example, Certified Emissions Reductions (CERs) amounting to more than 2.7 billion tonnes of carbon dioxide equivalent are expected to be produced in the first commitment

Introduction: We now have what is commonly called a carbon economy. However, it is in fact made up of several, increasingly inter-connected, carbon markets. It takes different forms in different parts of the world, but includes systems of emissions trading (in the EU, some states in the USA and emerging schemes in cities, such as Montreal), and the buying and selling of offsets through United Nations-controlled "compliance" markets, most notably though the Clean Development Mechanism (CDM) created by the Kyoto Protocol, as well as through "voluntary" markets. The carbon economy has had a turbulent history: its monetary value was affected by global financial meltdown, which also suppressed levels of demand for carbon credits, and its legitimacy questioned amid claims of climate fraud, "toxic carbon", and acts of (neo) colonial dispossession (Bachram 2004; Friends of the Earth 2009; Lohmann 2005, 2006).

Read more: http://onlinelibrary.wiley.com/doi/10.1111/j.1467-8330.2011.00882.x/abstract.

The Role of the Media

by M. Boykoff
Box 16.1: In K. Richardson, W. Steffen, and D. Liverman (Ed.), *Climate Change: Global Risks, Challenges and Decisions* pp. 455-458, Cambridge University Press, isbn: 9780521198363, Published March 2011, http://sciencepolicy.colorado.edu/admin/publication_files/2011.13.pdf

Science Student Profile: Why I Picked University of Colorado-Boulder

by D.N. Cherney
U.S. News and World Report, Published March 16, 2011. http://www.usnews.com/education/best-graduate-schools/articles/2011/03/16/science-student-profile-why-i-picked-university-of-coloradoboulder (see Center News for details)

College and University Environmental Programs as a Policy Problem (Part 1): Integrating Knowledge, Education, and Action for a Better World?

by S.G. Clark, M.B. Rutherford, M.R. Auer, D.N. Cherney, R.L. Wallace, D.J. Mattson, D.A. Clark, L. Foote, N. Krogman, P. Wilshusen, and T. Steelman
Environmental Management, 2011, doi: 10.1007/s00267-011-9619-2, http://sciencepolicy.colorado.edu/admin/publication_files/2011.06.pdf

Recent Publications Continued

Abstract: The environmental sciences/studies movement, with more than 1000 programs at colleges and universities in the United States and Canada, is unified by a common interest—ameliorating environmental problems through empirical enquiry and analytic judgment. Unfortunately, environmental programs have struggled in their efforts to integrate knowledge across disciplines and educate students to become sound problem solvers and leaders. We examine the environmental program movement as a policy problem, looking at overall goals, mapping trends in relation to those goals, identifying the underlying factors contributing to trends, and projecting the future. We argue that despite its shared common interest, the environmental program movement is disparate and fragmented by goal ambiguity, positivistic disciplinary approaches, and poorly rationalized curricula, pedagogies, and educational philosophies. We discuss these challenges and the nature of the changes that are needed in order to overcome them. In a subsequent article (Part 2) we propose specific strategies for improvement.

College and University Environmental Programs as a Policy Problem (Part 2): Strategies for Improvement

by S.G. Clark, M.B. Rutherford, M.R. Auer, D.N. Cherney, R.L. Wallace, D.J. Mattson, D.A. Clark, L. Foote, N. Krogman, P. Wilshusen, and T. Steelman
Environmental Management, doi: 10.1007/s00267-011-9635-2, http://sciencepolicy.colorado.edu/admin/publication_files/2011.07.pdf

Abstract: Environmental studies and environmental sciences programs in American and Canadian colleges and universities seek to ameliorate environmental problems through empirical enquiry and analytic judgment. In a companion article (Part 1) we describe the environmental program movement (EPM) and discuss factors that have hindered its performance. Here, we complete our analysis by proposing strategies for improvement. We recommend that environmental programs re-organize around three principles. First, adopt as an overriding goal the concept of human dignity-defined as freedom and social justice in healthy, sustainable environments. This clear higher-order goal captures the human and environmental aspirations of the EPM and would provide a more coherent direction for the efforts of diverse participants. Second, employ an explicit, genuinely interdisciplinary analytical framework that facilitates the use of multiple methods to investigate and address environmental and social problems in context. Third, develop educational programs and applied experiences that provide students with the technical knowledge, powers of observation, critical thinking skills and management acumen required for them to become effective professionals and leaders. Organizing around these three principles would build unity in the EPM while at the same time capitalizing on the strengths of the many disciplines and diverse local conditions involved.

Ethics, Policy & Environment: A New Name and a Renewed Mission

by B. Hale and A. Light
Ethics, Policy & Environment 14 (1) 1-2, doi: 10.1080/21550085.2011.561581, March 2011, http://sciencepolicy.colorado.edu/admin/publication_files/2011.14.pdf

Let There Be More Efficient Light

by R.A. Pielke, Jr.
New York Times, March 10, 2011

Excerpt: Last week Michele Bachmann, a Republican representative from Minnesota, introduced a bill to roll back efficiency standards for light bulbs, which include a phasing out of incandescent bulbs in favor of more energy-efficient bulbs. The "government has no business telling an individual what kind of light bulb to buy," she declared…Read more: http://sciencepolicy.colorado.edu/admin/publication_files/2011.05.pdf

The Messy Business of Cleaning Up Carbon Policy (and How to Sell it to the Electorate)

by R.A. Pielke, Jr.
ABC News Australia, April 1, 2011.

Excerpt: Last week someone leaked the Labor party's "talking points

Recent Publications Continued

memo" on the Prime Minister's proposed carbon tax. The memo, coupled with diametrically opposed messaging from the government illustrates what a mess the Prime Minister has gotten herself and her government into on carbon policy. Read more: http://www.abc.net.au/unleashed/45810.html

Shuttle Programme Lifetime Cost

by R.A Pielke, Jr. and R. Byerly
Nature 472 (38), doi: 10.1038/472038d, Published April 7 2011, http://sciencepolicy.colorado.edu/admin/publication_files/2011.09.pdf


CORRESPONDENCE

Excerpt: Some 20 years ago, we found the programme to be slightly over budget and severely short in capability (R. A. Pielke and R. Byerly in Space Policy Alternatives Ch. 14, 223–245; 1992). We used 8 years of cost and schedule experience to predict performance for the subsequent 20 years of the shuttle programme. The US Congress and NASA spent more than US$192 billion (in 2010 dollars) on the shuttle from 1971 to 2010 (see 'A costly enterprise'). The agency launched 131 flights; two ended in tragedy with the loss of Challenger in 1986 and Columbia in 2003. During the operational years from 1982 to 2010, the average cost per launch was about $1.2 billion. Over the life of the programme, this increases to about $1.5 billion per launch (R. A. Pielke Space Policy 10, 78–80; 1994). For the period 1991–2010, we originally projected an average cost per flight of about $800 million. The actual cost was about $1 billion. We overestimated both the flight rate during this time (8 predicted flights versus 4.7 actual) and the annual costs (about $6.2 billion predicted versus $4.7 billion actual). The actual cost for each flight of the programme falls squarely in the middle of the envelope we constructed, with projected uncertainties.

Please also see Roger's blog post on Space Shuttle Costs: 1971 -2011: http://rogerpielkejr.blogspot.com/2011/04/space-shuttle-costs-1971-2011.html

Democracy's Open Secret

by R.A. Pielke, Jr.
Bridges 29, Published April 2011, http://sciencepolicy.colorado.edu/admin/publication_files/2011.10.pdf


DEMOCRACY'S OPEN SECRET

Excerpt: [I]t should be far less worrisome that the public or policy makers do not understand this or that information that experts may know well. What should be of more concern is that policy makers appear to lack an understanding of how they can tap into expertise to inform decision making. This situation is akin to flying blind.

Specialized expertise typically does not compel particular decisions, but it does help to make decisions more informed. This distinction lies behind Winston Churchill's oft-cited advice that science should be "on tap, but not on top." Effective governance does not depend upon philosopher kings in governments or in the populace, but rather on the use of effective mechanisms for bringing expertise into the political process.

It is the responsibility - even the special expertise - of policy makers to know how to use the instruments of government to bring experts into the process of governance.

See also Roger's blog post on this article: http://rogerpielkejr.blogspot.com/2011/04/politicians-who-fail-to-understand.html

Read more: http://www.ostina.org/content/view/5464/1471/

Center in the News

Max Boykoff was quoted, cited, or referred to in the following media:

- Maxwell Boykoff and Roger Pielke, Jr. mentioned in 25 April Time Magazine blog post on the "Climate Shift" report: Battling Over the Climate War by Bryan Walsh.
- 25 April Greenwire article on the "Climate Shift" report: Report prompts debate, soul searching on enviros' cap-and-trade bill tactics by Jean Chemnick.
- 14 April iNamibia article on media coverage of climate change: More climate change but is it the right climate change? by Peter Mietzner.

Lisa Dilling was quoted in 26 May Boulder Daily Camera article on the Fourmile Fire rehabilitation process: Boulder County open space committee tours Fourmile Fire burn zone by Laura Snider.

Center in the News Continued

Roger Pielke, Jr. quoted, cited or referred to in:

- 31 May Christian Science Monitor article on the global economy and global warming: Will recovering global economy thwart efforts to curb global warming? by Pete Spotts.
- 25 May Swedish DN.se article on disasters and climate change: Väderkatastroferna har inte ökat – ännu by Anders Bolling.
- 3 May Times Magazine blog post on the Canadian federal election: Canada Turns Away From Climate Policy by Bryan Walsh.
- Rad Byerly and Roger Pielke, Jr. referenced in 29 April 2011 Space.com article on Endeavour's Shuttle Launch Delay: Endeavour's Shuttle Launch Delay Comes with Large Price Tag by Denise Chow.
- 29 April New York Times blog post on meteorologists, tornadoes and climate change: Killer Tornadoes, Horrible and Still Unknowable by Andrew C. Revkin.
- 27 April USA Today article on the Space Shuttle Program: Did investment in the shuttle program pay off? by Dan Vergano.
- 27 April USA Today article on the Space Shuttle Program: Hubble tops space mission science report by Dan Vergano.
- 27 April Arizona Republic article on the Space Shuttle Program: Shuttle trip reflects 2 journeys of resolve by John Faherty.
- William Travis and Roger Pielke, Jr. quoted in 25 April Philadelphia Inquirer article on the increasing cost of hurricanes: As hurricanes worsen, destruction gets costly by Anthony R. Wood.
- 25 April New York Times blog post on the "Climate Shift" report: Beyond the Climate Blame Game by Andrew C. Revkin.
- 20 April Daily Caller article on severe weather data: Why it seems like severe weather is becoming more common when the data shows otherwise by Anthony Watts.
- 15 April ABC News Australia article on Australian carbon tax revenue: Securing climate credibility by Leigh Ewbank.
- 15 April Online Opinion article on Australia carbon taxes: Carbon price: what about renewable investment? by Alice Body.
- 13 April Orlando Sentinel article on the cost of the space shuttle program: Has staggering cost of shuttle program been worth it? by Mike Thomas.
- 31 March New York Times blog on government's technological standards on lightbulbs: Heat Over Light by Andrew C. Revkin.
- 30 March New York Times article on the federal regulation of light bulb efficiency: Let There Be Light Bulbs by Gail Collins.
- 27 February Denver Post article on the environmental responsibility of Attorney Generals: Battle of the states' AGs by Vincent Carroll.
- 26 February Telegraph article on flood risks and climate change: Unscientific hype about the flooding risks from climate change will cost us all dear by Christopher Booker.
- 25 February New York Times blog on the effects of climate change on poor countries: What if: Standing in Line for Climate Aid by Andrew C. Revkin.
- 25 February Guardian article on libel suit under UK law against Gavin Schmidt: Real Climate faces libel suit by Shanta Barley.
- 17 February Time Magazine blog on media attention of recent climate change studies: New Studies Show That Climate Change Is the Culprit in Extreme Rain by Bryan Walsh.
- 17 February New York Times blog on Flood Disasters and Human-Caused Climate Change: On Storms, Warming, Caveats and the Front Page by Andrew C. Revkin.
- 17 February ABC News article on greenhouse gas emissions and extreme weather: Study links extreme weather to climate change by David Mark and Darren Osborne.
- 16 February Sun Sentinel article on flooding and climate change: Floods linked to manmade climate change by Gerard Wynn.
- 10 February Wall Street Journal article on extreme weather research: The Weather Isn't Getting Weirder by Anne Jolis.
- 28 January Energy Tribune article on 2010 record year of warm weather: Is It Really the Warmest Ever? by Joseph D'Aleo.

Also:

- CSTPR Publication by Ursula Rick, Max Boykoff, and Roger Pielke, Jr. highlighted in 2 February Environmental Research Web article on media reporting of sea-level rise: Media reporting of sea-level rise is 'a bright spot' by Nadya Anscombe.

S&T Opportunities
Gordon Research Conference on Science and Technology Policy

Science and Technology Policy in Global Context
August 5-10, 2012
Waterville Valley Resort
Waterville Valley, NH

The global context for science and technology policies is changing quickly. Knowledge is flowing around the world ever more freely. International collaboration is growing in every field. Economies that have traditionally grown through innovation face new competition from rising economic powers. Intellectual property regimes are in flux and under attack. Scientists and engineers trained in Europe and North America are returning to their regions of origins more often. Science and technology are embroiled in global regulatory issues like the ground rules for nanotechnology and synthetic biology, renewable and nuclear energy, and access to essential medicines.

The 2012 Gordon Research Conference on Science and Technology Policy will delve deeply into this range of issues, asking how the questions and answers of science and technology policy need to change in response to international developments. The program will tap the best recent research on the global dimensions of research, innovation, human resource, and regulatory policies, as well as perspectives from S&T policy practitioners from around the world.

The 2012 GRC on Science and Technology Policy will also offer for the first time a Gordon Research Seminar organized along the theme of the symposium, which will be held immediately preceding the GRC on Science and Technology Policy. Junior investigators, such as students, postdocs, and trainees, are encouraged to attend.

Application Deadline

Applications for this meeting must be submitted by July 8, 2012. Please apply early, as some meetings become oversubscribed (full) before this deadline. If the meeting is oversubscribed, it will be stated here. Note: Applications for oversubscribed meetings will only be considered by the Conference Chair if more seats become available due to cancellations.

Related Meeting Information

The Science & Technology Policy Gordon Research Conference will be held in conjunction with the Science & Technology Policy Gordon Research Seminar. Those interested in attending both meetings must submit an application for the GRS in addition to an application for the GRC. Please refer to the Science & Technology Policy GRS web page for more information.

Preliminary Program

A list of preliminary session topics and speakers is currently being developed by the Conference Chair and will be available by December 1, 2011. Please check back for updates at: http://www.grc.org/programs.aspx?year=2012&program=scipolicy.

S&T Opportunities
Science in Society 2011 Conference

The Science in Society 2011 Conference
The Catholic University of America
Washington D.C., USA
5-7 August 2011

This conference addresses the social impacts, values, pedagogies, politics and economics of science. It is an inclusive forum that welcomes a breadth of perspectives on science from practitioners, teachers and researchers representing a wide range of academic disciplines.

In addition to Plenary Presentations from leading speakers in the field, the Science in Society Conference includes parallel presentations by practitioners, teachers and researchers. We invite you to respond to the conference Call-for-Papers. Presenters submit their written papers for publication in the peer refereed "International Journal of Science in Society". If you are unable to attend the conference in person, virtual registrations are also available which allow you to submit a paper for refereeing and possible publication in the journal as well as the option of uploading a video presentation to our YouTube channel.

Future deadlines will be announced on the conference website for the next round in the call for papers. Proposals are reviewed within two weeks of submission. Full details of the conference, including an online proposal submission form, may be found at the conference website: http://science-society.com/conference-2011.

About Us

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Editor: William Travis (william.travis@colorado.edu)
Managing Editor: Bobbie Klein (bklein@colorado.edu)
Associate Editor/Web: Ami Nacu-Schmidt (ami@cires.colorado.edu)

CENTER FOR SCIENCE AND TECHNOLOGY POLICY RESEARCH

University of Colorado/CIRES
1333 Grandview Avenue
Campus Box 488
Boulder, CO. 80309-0488
Ph: 303-735-0451 Fx: 303-735-1576
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