



Environment – Documents on the Web – 1st Quarter 2010

GOVERNMENT DOCUMENTS

CLIMATE CHANGE

BRIEFING BY THE SPECIAL ENVOY FOR CLIMATE CHANGE ON INTERNATIONAL CLIMATE NEGOTIATIONS POST-COPENHAGEN

Todd Stern, Special Envoy for Climate Change. Washington, DC. February 16, 2010.

<http://www.state.gov/g/oes/rls/remarks/2010/136755.htm>

Where we stand right now is -- as you all know that Copenhagen meeting produced, in the end, a short document which is known as the Copenhagen Accord, we think a very important -- short but important document that was produced very importantly through the intervention of leaders, a great number of leaders from countries there. It was, at the end of the day, not formally adopted as a decision of the -- decision being a term of art -- of the Conference of the Parties, but was supported by the overwhelming number of them. The fact that it wasn't formally adopted has led to a process since Copenhagen where countries essentially conveyed to the secretariat of the UN convention their interest in being part of it; the UN term is to associate itself with the accord. And in addition, the major countries, major economies have submitted their targets or actions that they plan to take to reduce emissions. So this is the developed countries and the major developing countries. That was supposed to happen by January 31st and it did.

STATEMENT ON THE COPENHAGEN ACCORD'S JANUARY 31 INSCRIPTION DEADLINE

Todd Stern, Special Envoy for Climate Change. Washington, DC. February 4, 2010.

<http://www.state.gov/g/oes/rls/remarks/2010/136577.htm>

We are pleased to be among 55 countries -- including all of the world's major economies -- that have submitted pledges to limit or reduce their greenhouse gas emissions under the Copenhagen Accord. These countries represent nearly 80% of global emissions. In supporting the Accord, we are taking an important step in the global effort to combat climate change. In addition to the countries that have submitted targets or actions, a number of others have conveyed their support for the Accord. We urge all countries to join this broad coalition by promptly conveying their support for the Accord to the UNFCCC Secretariat.

STATEMENT ON THE UNITED STATES NOTIFICATION TO THE SECRETARIAT OF THE UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE OF ITS COPENHAGEN ACCORD ASSOCIATION AND ITS EMISSIONS REDUCTION TARGET

Todd Stern, Special Envoy for Climate Change. Washington, DC. January 28, 2010.

<http://www.state.gov/g/oes/rls/other/2010/136213.htm>

The United States today officially announced its desire to associate with the Copenhagen Accord and submitted its emissions reduction target to the Secretariat of the United Nations Framework Convention on Climate Change. The U.S. submission reflects President Obama's continued commitment to meeting the climate change and clean energy challenge through robust domestic and international action that will strengthen our economy, enhance our national security and protect our environment. The Copenhagen Accord -- the product of a collaborative effort by developed and developing countries -- represents an important step forward by the global community to address climate change and mitigate its impacts.

CLIMATE CHANGE AND THE EU EMISSIONS TRADING SCHEME (ETS): LOOKING TO 2020

Larry Parker. Congressional Research Service (CRS). January 26, 2010. 22 pages.

http://assets.opencrs.com/rpts/R41049_20100126.pdf

The European Union's (EU) Emissions Trading Scheme (ETS) is a cornerstone of the EU's efforts to meet its obligation under the Kyoto Protocol. It covers more than 10,000 energy intensive facilities across the 27 EU Member countries; covered entities emit about 45% of the EU's carbon dioxide emissions. A "Phase 1" trading period began January 1, 2005. A second, Phase 2, trading period began in 2008, covering the period of the Kyoto Protocol. A Phase 3 will begin in 2013 designed to reduce emissions by 21% from 2005 levels. The United States is not a party to the Kyoto Protocol. However, five years of carbon emissions trading has given the EU valuable experience in designing and operating a greenhouse gas trading system. This experience may provide some insight into cap-and-trade design issues currently being debated in the United States.

REMARKS AT THE 4TH INVESTOR SUMMIT ON CLIMATE RISK

Todd Stern, Special Envoy for Climate Change. Washington, DC. January 16, 2010.

<http://www.state.gov/g/oes/rls/remarks/2010/135848.htm>

In the context of international negotiations, I have said from the outset that financing would be one of the critical pillars any new international agreement, and the experience of Copenhagen and the Accord that was negotiated there demonstrated this truth. What I'd like to talk about today, however, is not just how financing factored into the Copenhagen Accord, but my perspective on how we arrived at the Accord, what its significance is, and the path we are on now. This is not just an exercise in recent history; what we just went through inevitably holds important lessons for the future.

A U.S.-CENTRIC CHRONOLOGY OF THE INTERNATIONAL CLIMATE CHANGE NEGOTIATIONS

Jane A. Leggett. Congressional Research Service (CRS). January 7, 2010. 13 pages.

http://assets.opencrs.com/rpts/R40001_20100107.pdf

Under the 2007 "Bali Action Plan," countries around the globe sought to reach a "Copenhagen agreement" in December 2009 on effective, feasible, and fair actions beyond 2012 to address risks of climate change driven by human-related emissions of greenhouse gases (GHG). The Copenhagen conference was beset by strong differences among countries, however, and (beyond technical decisions) achieved only mandates to continue negotiating toward the next Conference of the Parties (COP) to be held in Mexico City in December 2010. The COP also "took note of" (not adopting) a "Copenhagen Accord," agreed among the United States and additional countries (notably including China), which reflects compromises on some key actions. As background to the ongoing negotiations, this document provides a U.S.-centric chronology of the international policy deliberations to address climate change from 1979-2009.

CARS AND CLIMATE: WHAT CAN EPA DO TO CONTROL GREENHOUSE GASES FROM MOBILE SOURCES?

James E. McCarthy. Congressional Research Service (CRS). December 9, 2009. 21 pages.

http://assets.opencrs.com/rpts/R40506_20091209.pdf

As Congress considers legislation to reduce the greenhouse gas (GHG) emissions that contribute to climate change, attention has focused on “cap-and-trade” legislation. Such legislation would set a national cap on GHG emissions, with allowances (permits) to emit limited amounts of the gases distributed or auctioned to affected parties. Recently, there has also been discussion of taxes on greenhouse-gas-emitting substances (generally referred to as a “carbon tax”), which proponents argue would provide greater transparency and a clearer price signal. Enacting greenhouse gas controls is not simply a choice between cap-and-trade and carbon tax options, however. A third set of options, using the more traditional regulatory approaches of the Clean Air Act (CAA), is available. Unlike a cap-and-trade system or a carbon tax, regulation under the Clean Air Act does not require new Congressional action. The ability to limit GHG emissions already exists under various CAA authorities that Congress has enacted, a point underlined by the Supreme Court in an April 2007 decision.

OUR CHANGING PLANET: THE U.S. CLIMATE CHANGE SCIENCE PROGRAM FOR FISCAL YEAR 2010

The U.S. Global Change Research Program (USGCRP) and the Subcommittee on Global Change Research. October 28, 2009. 172 pages.

<http://downloads.globalchange.gov/ocp/ocp2010/ocp2010.pdf>

This report describes the activities and plans of the U.S. Global Change Research Program (USGCRP) established under the Global Change Research Act of 1990. The USGCRP coordinates and integrates scientific research on climate and global change supported by 13 participating departments and agencies of the U.S. government. This document describes a range of activities including examples of the USGCRP’s contribution to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change, as well as progress in understanding Earth system components of the global climate system, how these components interact, and the processes and forces bringing about changes to the Earth system. It provides details of efforts to understand the ongoing and projected effects of climate change on nature and society, such as the relationship between climate change and shifts in storm tracks and how this may affect water availability in the southwestern United States.

ENVIRONMENTAL PROTECTION AND CONSERVATION

OZONE AIR QUALITY STANDARDS: EPA’S PROPOSED JANUARY 2010 REVISIONS

James E. McCarthy. Congressional Research Service (CRS). February 1, 2010. 15 pages.

<http://www.fas.org/sgp/crs/misc/R41062.pdf>

EPA Administrator Lisa Jackson signed proposed changes to the National Ambient Air Quality Standards (NAAQS) for ozone on January 6, 2010. The proposal appeared in the Federal Register on January 19. NAAQS are standards for outdoor (ambient) air that are intended to protect public health and welfare from harmful concentrations of pollution. By changing the standard, EPA would be concluding that protecting public health and welfare requires lower concentrations of ozone pollution than it previously judged to be safe. Under the proposed standards, as many as 96% of the counties that

currently monitor ozone might need to take action to reduce emissions. The proposal would also, for the first time, set a separate standard for public welfare, the principal effect of which would be to call attention to the negative effects of ozone on forests and agricultural productivity. This report discusses the standard-setting process, the specifics of the new standard, and issues raised by the Administrator's choice; it also describes the steps that will follow EPA's promulgation.

HONEY BEE COLONY COLLAPSE DISORDER

Renée Johnson. Congressional Research Service (CRS). January 7, 2010. 20 pages.

<http://www.fas.org/sgp/crs/misc/RL33938.pdf>

Starting in late 2006, commercial migratory beekeepers along the East Coast of the United States began reporting sharp declines in their honey bee colonies. Because of the severity and unusual circumstances of these colony declines, scientists named this phenomenon colony collapse disorder (CCD). Reports indicate that beekeepers in most states have been affected. Based on the available research over the past few years on the numerous possible causes of CCD, USDA concluded in its 2007-2008 progress report (released in June 2009) that "it now seems clear that no single factor alone is responsible for the malady." This has led researchers to further examine the hypothesis that CCD may be "a syndrome caused by many different factors, working in combination or synergistically." Currently, USDA states, researchers are focusing on three major possibilities: pesticides that may be having unexpected negative effects on honey bees; a new parasite or pathogen that may be attacking honey bees, such as the parasite *Nosema ceranae* or viruses; and a combination of existing stresses that may compromise the immune system of bees and disrupt their social system, making colonies more susceptible to disease and collapse.

DESALINATION: STATUS AND FEDERAL ISSUES

Nicole T. Carter. Congressional Research Service (CRS). December 30, 2009. 13 pages.

<http://www.fas.org/sgp/crs/misc/R40477.pdf>

In the United States, desalination is increasingly investigated as an option for meeting municipal water demands, particularly for coastal communities that can desalinate seawater or estuarine water, interior communities above brackish groundwater aquifers, and communities with contaminated water supplies. Adoption of desalination, however, remains constrained by financial, environmental, regulatory, and other factors. At issue is what role Congress establishes for the federal government in desalination research and development, and in construction and operational costs of desalination demonstration projects and full-scale facilities. Bills in the 111th Congress (e.g., H.R. 88, H.R. 469, S. 1462, S. 1731, S. 1733, and P.L. 111-11) represent a range of federal authorizations for desalination research, demonstration and full-scale facilities, and planning and financing. H.R. 1145 would formally establish a federal interagency committee to coordinate federal water research, including desalination research.

HIGH SPEED RAIL (HSR) IN THE UNITED STATES

David Randall Peterman, John Frittelli and William J. Mallett. Congressional Research Service (CRS). December 8, 2009. 35 pages.

<http://www.fas.org/sgp/crs/misc/R40973.pdf>

Congress has been interested in high speed rail (HSR) since the 1960s, but the provision of \$8 billion for intercity passenger rail and high speed rail projects in the American Recovery and Reinvestment Act (ARRA; P.L. 111-5), enacted in February 2009, has catalyzed enthusiasm for high speed rail in Congress and the nation. Proponents of HSR contend that it offers benefits to society at large, not just to its passengers: that it can be a more energy efficient and less polluting transportation alternative compared

to aviation and highway travel (and is safer than driving). They also cite its potential to relieve congestion on highways and in the aviation system; its potential contribution to economic development; and the potential job-creating impact of constructing high speed lines. Others question whether these potential social benefits are commensurate with the likely costs, and whether a national HSR network is a practical transportation option for the United States, given the nation's large size and relatively low population density.

CALIFORNIA DROUGHT: HYDROLOGICAL AND REGULATORY WATER SUPPLY ISSUES
Betsy A. Cody, Peter Folger and Cynthia Brougher. Congressional Research Service (CRS). December 7, 2009. 31 pages.

<http://www.fas.org/sgp/crs/misc/R40979.pdf>

California experienced severe water supply shortages in 2009, which led to economic disruption across the state, including concentrated losses in agricultural areas in the western portion of the Central Valley -- areas already experiencing declines in the housing industry and the economic downturn in general. At the same time, several fish species whose habitat lies at the heart of California's water supply system and throughout its northern rivers are in decline and some face the possibility of extinction. This situation too has had economic implications, resulting in job and income losses in northern California. The short-term issue for Congress is how to evaluate demands for increasing water supplies that may help some users but may jeopardize the continued existence of several fish species. A longer-term issue for Congress is how to evaluate management alternatives that will protect species, but also help water users and economies that depend on reliable water supplies and healthy ecosystems.

POLLUTION AND WASTE

BIOMONITORING: EPA COULD MAKE BETTER USE OF BIOMONITORING DATA
John B. Stephenson, Director, Natural Resources and Environment. Government Accountability Office (GAO). Testimony before the Subcommittee on Superfund, Toxics and Environmental Health, Committee on Environment and Public Works, U.S. Senate. February 4, 2010. 13 pages.

<http://www.gao.gov/new.items/d10419t.pdf>

Biomonitoring, which measures chemicals in people's tissues or body fluids, has shown that the U.S. population is widely exposed to chemicals used in everyday products. Some of these have the potential to cause cancer or birth defects. Moreover, children may be more vulnerable to harm from these chemicals than adults. The Environmental Protection Agency (EPA) is authorized under the Toxic Substances Control Act (TSCA) to control chemicals that pose unreasonable health risks. One crucial tool in this process is chemical risk assessment, which involves determining the extent to which populations will be exposed to a chemical and assessing how this exposure affects human health. This testimony, based on GAO's prior work, reviews the extent to which EPA incorporates information from biomonitoring studies into its assessments of chemicals; steps that EPA has taken to improve the usefulness of biomonitoring data; and extent to which EPA has the authority under TSCA to require chemical companies to develop and submit biomonitoring data to EPA.

SURFACE COAL MINING: FINANCIAL ASSURANCES FOR, AND LONG-TERM OVERSIGHT OF, MINES WITH VALLEY FILLS IN FOUR APPALACHIAN STATES

Government Accountability Office (GAO). Report to Congressional Requesters. January 2010. 68 pages.

<http://www.gao.gov/new.items/d10206.pdf>

Surface mining for coal in Appalachia has generated opposition because rock and dirt from mountaintops is often removed and placed in nearby valleys and streams. The Office of Surface Mining Reclamation and Enforcement (OSM) in the Department of the Interior and states with approved programs regulate these mines under the Surface Mining Control and Reclamation Act (SMCRA). The Army Corps of Engineers (Corps), the Environmental Protection Agency (EPA), and states also regulate different aspects of coal mining, including the filling of valley streams, under the Clean Water Act. GAO was asked to examine the approaches OSM, the states, and the Corps have taken to obtain financial assurances for surface coal mines with valley fills; federal and state agencies' monitoring of these mines after reclamation and mitigation are complete; and the federal laws agencies may use, and have used, to address latent environmental problems.

NUCLEAR ENERGY POLICY

Mark Holt. Congressional Research Service (CRS). December 10, 2009. 32 pages.

http://assets.opencrs.com/rpts/RL33558_20091210.pdf

Nuclear energy issues facing Congress include federal incentives for new commercial reactors, radioactive waste management policy, research and development priorities, power plant safety and regulation, nuclear weapons proliferation, and security against terrorist attacks. Disposal of highly radioactive waste has been one of the most controversial aspects of nuclear power. The Nuclear Waste Policy Act of 1982 (P.L. 97-425), as amended in 1987, requires DOE to conduct a detailed physical characterization of Yucca Mountain in Nevada as a permanent underground repository for high-level waste. DOE submitted a license application for the Yucca Mountain repository to the Nuclear Regulatory Commission (NRC) on June 3, 2008, with the repository to open by 2020 at the earliest. The Obama Administration has decided to “terminate the Yucca Mountain program while developing nuclear waste disposal alternatives,” according to the DOE FY2010 budget justification. Alternatives to Yucca Mountain are to be evaluated by a “blue ribbon” panel of experts convened by the Administration.

CHEMICAL REGULATION: OBSERVATIONS ON IMPROVING THE TOXIC SUBSTANCES CONTROL ACT

John B. Stephenson, Director, Natural Resources and Environment. Government Accountability Office (GAO). Testimony before the Committee on Environment and Public Works, U.S. Senate. December 2, 2009. 18 pages.

<http://www.gao.gov/new.items/d10292t.pdf>

The Environmental Protection Agency (EPA) is authorized under the Toxic Substances Control Act (TSCA) to obtain information on the risks of chemicals and to control those that it determines to pose an unreasonable risk. EPA also conducts assessments of chemicals under its Integrated Risk Information System (IRIS) program. Nonetheless, EPA does not have sufficient information to determine whether it should establish controls to limit public exposure to many chemicals that may pose substantial health risks. Problems with TSCA and IRIS led GAO to add transforming EPA's processes for assessing and controlling toxic chemicals to its list of high-risk areas warranting attention by Congress and the executive branch. This testimony, based on prior GAO work, addresses EPA's implementation of TSCA and IRIS and options for obtaining more information on chemical risks, controlling these risks, and sharing more of the information collected under TSCA.

NUCLEAR WASTE MANAGEMENT: KEY ATTRIBUTES, CHALLENGES, AND COSTS FOR THE YUCCA MOUNTAIN REPOSITORY AND TWO POTENTIAL ALTERNATIVES

Government Accountability Office (GAO). Report to Congressional Requesters. November 2009. 84 pages.

<http://www.gao.gov/new.items/d1048.pdf>

High-level nuclear waste -- one of the nation's most hazardous substances -- is accumulating at 80 sites in 35 states. The United States has generated 70,000 metric tons of nuclear waste and is expected to generate 153,000 metric tons by 2055. The Nuclear Waste Policy Act of 1982, as amended, requires the Department of Energy (DOE) to dispose of the waste in a geologic repository at Yucca Mountain, about 100 miles northwest of Las Vegas, Nevada. However, the repository is more than a decade behind schedule, and the nuclear waste generally remains at the commercial nuclear reactor sites and DOE sites where it was generated. This report examines the key attributes, challenges, and costs of the Yucca Mountain repository and the two principal alternatives to a repository that nuclear waste management experts identified: storing the nuclear waste at two centralized locations and continuing to store the waste on site where it was generated.

THINK TANKS AND RESEARCH CENTERS

The opinions expressed in these publications do not necessarily reflect the views of the U.S. Government

CLIMATE CHANGE - GLOBAL ISSUES

FIVE YEARS OF KYOTO

Nathan Hultman. The Brookings Institution. February 09, 2010.

http://www.brookings.edu/opinions/2010/0209_kyoto_hultman.aspx?p=1

On February 16th, 2010, the Kyoto Protocol will reach the fifth anniversary of its entry into force, the date at which it received enough ratifications to become legally active. While technically not a "birthday" -- the Protocol was negotiated in December 1997 -- this milestone provides an opportunity to reflect on the wider meaning and significance of this instrument into which perhaps too many expectations were invested.

AN INITIAL ESTIMATE OF THE COST OF LOST CLIMATE REGULATION SERVICES DUE TO CHANGES IN THE ARCTIC CRYOSPHERE

Eban Goodstein, Bard Center for Environmental Policy, Bard College, Henry Huntington, Pew Environment Group and Eugenie Euskirchen, Institute of Arctic Biology, University of Alaska, Fairbanks. February 5, 2010. 29 pages.

http://www.pewtrusts.org/uploadedFiles/wwwpewtrustsorg/Reports/Protecting_ocean_life/Cost%20of%20Warming%20Arctic-FINAL%20%205%2010.pdf

Many people are familiar with the recent graphic images of shrinking ice on the Arctic Ocean, and may be aware of projections that the Arctic could be ice-free in the summer by the year 2030. However, there is little recognition of the significant loss in economic value that the disappearance of Arctic sea ice, snow, glaciers and permafrost could impose on humans. The frozen Arctic may seem to visitors to be simply a barren sea- and landscape, but in fact it serves as habitat for many species and is the foundation

for the Inuit and other indigenous cultures of the North. Arctic sea ice has anchored the ecosystems of northern regions and helped regulate global climate for at least 800,000 years. Its seasonal disappearance would have far-reaching ecological, climatic, and economic impacts that we are just beginning to understand. This paper will provide an overview of selected global ecosystem services provided by the Arctic cryosphere in the form of climate regulation. It will also provide initial estimates of the economic value of the contributions to global climate regulation that could be lost due to Arctic warming.

COMPARABILITY OF ANNEX I EMISSION REDUCTION PLEDGES

Kelly Levin and Rob Bradley. World Resources Institute (WRI). Working Paper. February 2010. 22 pages.

http://pdf.wri.org/working_papers/comparability_of_annex1_emission_reduction_pledges_2010-02-01.pdf

Significant commitments to reduce developed country greenhouse gas emissions (GHGs) will be central to the realization of the Copenhagen Accord. As negotiated in December 2009, the Copenhagen Accord provides a mandate for Annex I Parties that choose to associate themselves with the Accord to register their emission reduction pledges by 31 January 2010. Many pledges have already been put forward by major industrialized countries and economic blocs. These include the European Union (EU), Japan, Canada, and Australia, and the US. In this analysis, the authors assess Annex I pledges under the Copenhagen Accord, as well as pledges by Parties that have yet to associate themselves with the Accord (namely Belarus and Ukraine). They do so with the expectation that these countries will associate themselves with the Accord in the near future. This Working Paper presents a comparative analysis of these pledges, which was performed with two key aims: to enable negotiators from all countries to compare the emission reduction outcomes that would result from industrialized countries' pledges; and to facilitate efforts to aggregate emission reduction pledges in order to calculate the global impact on the atmosphere.

CLIMATE CHANGE POLICIES: MANY PATHS FORWARD

Paula J. Dobriansky and Vaughan C. Turekian. Harvard Project on International Climate Agreements. Viewpoints Series. February 2010. 6 pages.

http://belfercenter.ksg.harvard.edu/files/dobriansky_VP.pdf

The twelve years since the conclusion of Kyoto have provided an abundance of ideas and experiences that can contribute to effective global action to address climate change. Individually, developed and developing countries are establishing and implementing national policies and investing in new technologies. Internationally, governments, the private sector, and nongovernmental organizations (NGOs) are working together in numerous venues to share ideas, to coordinate policies in areas such as regulation, research, and investment, and to distill lessons that can be incorporated into new policies. Linking these many efforts, which range from large international exchanges to targeted multilateral groups to action-oriented partnerships, will be crucial to success in combating climate change.

TEMPERATURE AND THE ALLOCATION OF TIME: IMPLICATIONS FOR CLIMATE CHANGE

Joshua Graff Zivin and Matthew J. Neidell. National Bureau of Economic Research (NBER). Working Paper No. 15717. February 2010. 41 pages.

<http://www.nber.org/papers/w15717.pdf>

In this paper the authors estimate the impacts of climate change on the allocation of time using econometric models that exploit plausibly exogenous variation in daily temperature over time within

counties. They find large reductions in U.S. labor supply in industries with high exposure to climate and similarly large decreases in time allocated to outdoor leisure. They also find suggestive evidence of short-run adaptation through temporal substitutions and acclimatization. Given the industrial composition of the US, the net impacts on total employment are likely to be small, but significant changes in leisure time as well as large scale redistributions of income may be consequential. In developing countries, where the industrial base is more typically concentrated in climate-exposed industries and baseline temperatures are already warmer, employment impacts may be considerably larger.

CLIMATE SHOCKS AND EXPORTS

Benjamin F. Jones and Benjamin A. Olken. National Bureau of Economic Research (NBER). Working Paper No. 15711. January 2010. 12 pages.

<http://www.nber.org/papers/w15711.pdf>

This paper uses international trade data to examine the effects of climate shocks on economic activity. The authors examine panel models relating the annual growth rate of a country's exports in a particular product category to the country's weather in that year. They find that a poor country being 1 degree Celsius warmer in a given year reduces the growth rate of that country's exports by between 2.0 and 5.7 percentage points, with no detectable effects in rich countries. They find negative effects of temperature on exports of both agricultural products and light manufacturing products, with little apparent effects on heavy industry or raw materials. The results confirm large negative effects of temperature on poor countries' economies and suggest that temperature affects a much wider range of economic activity than conventionally thought.

MODELING THE IMPACT OF WARMING IN CLIMATE CHANGE ECONOMICS

Robert S. Pindyck. National Bureau of Economic Research (NBER). Working Paper No. 15692. January 2010. 34 pages.

<http://www.nber.org/papers/w15692.pdf>

Any economic analysis of climate change policy requires some model that describes the impact of warming on future GDP and consumption. Most integrated assessment models (IAMs) relate temperature to the level of real GDP and consumption, but there are theoretical and empirical reasons to expect temperature to affect the growth rate rather than level of GDP. Does this distinction matter in terms of implications for policy? And how does the answer depend on the nature and extent of uncertainty over future temperature change and its impact? The author addresses these questions by estimating the fraction of consumption society would be willing to sacrifice to limit future increases in temperature, using probability distributions for temperature and impact inferred from studies assembled by the IPCC, and comparing estimates based on a direct versus growth rate impact of temperature on GDP.

THE ECONOMICS OF ADAPTATION TO EXTREME WEATHER EVENTS IN DEVELOPING COUNTRIES

Brian Blankespoor, Susmita Dasgupta, Benoit Laplante and David Wheeler. Center for Global Development. Working Paper 199. January 2010. 35 pages.

http://www.cgdev.org/files/1423545_file_Economics_of_Adaptation_FINAL.pdf

Without international assistance, developing countries will adapt to climate change as best they can. Part of the cost will be absorbed by households and part by the public sector. Adaptation costs will

themselves be affected by socioeconomic development, which will also be affected by climate change. Without a better understanding of these interactions, it will be difficult for climate negotiators and donor institutions to determine the appropriate levels and modes of adaptation assistance. This paper contributes by assessing the economics of adaptation to extreme weather events. The authors address several questions that are relevant for the international discussion: How will climate change alter the incidence of these events, and how will their impact be distributed geographically? How will future socioeconomic development, notably an increased focus on education and empowerment for women and girls, affect the vulnerability of affected communities? And, of primary interest to negotiators and donors, how much would it cost to neutralize the threat of additional losses in this context?

ADAPTATION OF FORESTS TO CLIMATE CHANGE: SOME ESTIMATES

Roger A. Sedjo. Resources for the Future (RFF). Discussion Paper 10-06. January 2010. 54 pages.
<http://www.rff.org/RFF/Documents/RFF-DP-10-06.pdf>

This paper focuses on the anticipated impacts of climate change on forests broadly, on industrial wood production in particular, and on Brazil, South Africa, and China. The aim is to identify likely damages and possible mitigating investments or activities. The study draws from the existing literature and the results of earlier investigations reporting the latest comprehensive projections in the literature. The results provide perspective as well as estimates and projections of the impacts of climate change on forests and forestry in various regions and countries. Because climate change will increase forest productivity in some areas while decreasing it elsewhere the impacts vary from positive to negative by region. In general, production increases will shift from low-latitude regions in the short term to high latitude regions in the long term. Planted forests will offer a major vehicle for adaptation.

DEFORESTATION AND GREENHOUSE-GAS EMISSIONS

Toni Johnson. Council on Foreign Relations (CFR). Backgrounder. December 21, 2009.
http://www.cfr.org/publication/14919/deforestation_and_greenhousegas_emissions.html?breadcrumb=%2Fpublication%2Fby_type%2Fbackgrounder

Loss of forests contributes as much as 30 percent of global greenhouse-gas emissions each year -- rivaling emissions from the global transportation sector. The 1997 Kyoto Protocol's offset mechanisms allow credits to be given for replanting trees or establishing new forests, which capture carbon dioxide through photosynthesis -- but not for avoiding deforestation. Despite hopes from climate advocates that deforestation policy would be one of the few concrete things coming out of the December 2009 UN climate meeting, Copenhagen talks concluded without an agreement for a comprehensive plan for deforestation. Instead, deforestation was put on hold along with discussions for an overall climate agreement. While there is significant consensus on how deforestation programs could be implemented, a number of issues remain under debate.

NEXT STEPS FOR THE TRANSATLANTIC CLIMATE CHANGE PARTNERSHIP: A REPORT OF THE GLOBAL DIALOGUE BETWEEN THE EUROPEAN UNION AND THE UNITED STATES

Christian Egenhofer, David Pumphrey, Sarah Ladislaw and Anton Georgiev. Center for Strategic and International Studies (CSIS). December 2009. 39 pages.

http://csis.org/files/publication/091217_Egenhofer_NextStepsClimate_Web.pdf

Throughout 2009, climate change has been at the top of the agenda at nearly every major international meeting, and major economies have met repeatedly, both inside and outside the UN negotiating process, to overcome deadlocks on key obstacles to an agreement. This report examines the evolution of U.S. and

EU policies on the way to Copenhagen, and the steps that will be needed past that meeting in and beyond 2010 to reinforce further a transatlantic partnership on climate change issues and give it the capabilities and will needed to address these issues effectively in current and future negotiations. As the authors of this report emphasize, “a major positive development in 2009 has been that the transatlantic gap has narrowed considerably compared to previous years,” and the report examines ways in which further progress can be made to reinforce this trend for ever-closer cooperation and coordination of U.S. and EU decisions and actions in these areas.

CONTINENTAL CLIMATE GOVERNANCE CHALLENGES FOR NORTH AMERICA

Henrik Selin and Stacy D. VanDeveer. Brookings Institution. Issues in Governance Studies Number 30. December 2009. 14 pages.

http://www.brookings.edu/~media/Files/rc/papers/2009/12_climate_selin_vandever/12_climate_selin_vandever.pdf

Over the past decade, policymakers in Washington, D.C., Ottawa, and Mexico City generally failed to take meaningful action to reduce global greenhouse gases (GHGs), even as leading municipalities, states and provinces and firms worked to move forward with climate policy making. With ongoing global climate change negotiations and climate policy debates heating up in the United States Congress, it is time to think more seriously about North American climate change governance. To date, North American politicians, and particularly those in the United States, have paid little attention to continental options to reduce GHG emissions. If North American GHG emissions are to be reduced efficiently and effectively across public and private sector entities across the continent, with the fewest trade distortions and other economic consequences possible, federal authorities in all three countries will need to realize and act on these shared interests. In this paper, the authors explore North America’s current GHG output and policy actions to date, examine four possible multilevel climate governance scenarios and extol the benefits of continental climate change cooperation.

CLIMATE CHANGE MITIGATION: SHARING THE LOAD

Alan J. Krupnick and Thomas Sterner. Resources for the Future (RFF). Issue Brief. December 2009. 2 pages.

<http://www.rff.org/RFF/Documents/RFF-Krupnick.pdf>

Despite national-level opinion polls, little is known about how the willingness to pay (WTP) to avoid the consequences of climate change differs among countries. This willingness of people to pay can be used to gauge the strength of political support for costly mitigation actions. Perceptions of a fair distribution of costs (often referred to as effort- or burden-sharing rules) are expected to differ strongly across countries. On self-interested grounds, historically large emitters such as the United States and Europe may prefer a system whereby obligations are expressed in terms of current rather than historical emissions. Rapidly industrializing countries, such as China, may prefer a system based on historical emissions. Countries such as India or most African countries may find both of these unfair and have a material interest in supporting equal allocations in terms of emissions per capita. However, despite these conjectures, it is unknown how important the rule is to the average citizen in various countries.

AMERICA ON THE MOVE: STATE LEADERSHIP IN THE FIGHT AGAINST GLOBAL WARMING, AND WHAT IT MEANS FOR THE WORLD

Tony Dutzik, Dan Jacobson, Rob Kerth, Rob Sargent and Kari Wohlschlegel. Environment America Research and Policy Center. December 2009. 57 pages.

<http://cdn.publicinterestnetwork.org/assets/6a1e91dbfae141e88e1cacd49bb6a1fe/America-on-the-Move.pdf>

Over the last decade, America's state governments have taken the nation on a new course, one of innovative and increasingly aggressive action to reduce global warming pollution. The impact of state-level actions to reduce global warming pollution is significant on a global scale. A review of dozens of individual state policies, federal policies based on state models, and new federal policies in which states will have key roles in implementation suggests that state actions will reduce carbon dioxide emissions by approximately 536 million metric tons by 2020. That is more global warming pollution than is currently emitted by all but eight of the world's nations, and represents approximately 7 percent of U.S. global warming pollution in 2007. America's clean energy revolution -- led by the states -- shows that the nation is ready to commit to the emission reductions science tells us are necessary to prevent the worst impacts of global warming.

THE GREENNESS OF CHINA: HOUSEHOLD CARBON DIOXIDE EMISSIONS AND URBAN DEVELOPMENT

Siqi Zheng, Rui Wang, Edward L. Glaeser and Matthew E. Kahn. National Bureau of Economic Research (NBER). Working Paper No. 15621. December 2009. 46 pages.

<http://www.nber.org/papers/w15621.pdf>

China urbanization is associated with both increases in per-capita income and greenhouse gas emissions. This paper uses micro data to rank 74 major Chinese cities with respect to their household carbon footprint. The authors find that the "greenest" cities based on this criterion are Huaian and Suqian while the "dirtiest" cities are Daqing and Mudanjiang. Even in the dirtiest city (Daqing), a standardized household produces only one-fifth of that in America's greenest city (San Diego). They find that the average January temperature is strongly negatively correlated with a city's household carbon footprint, which suggests that current regional economic development policies that bolster the growth of China's northeastern cities are likely to increase emissions. They use our city specific income elasticity estimates to predict the growth of carbon emissions in China's cities.

AVIATION AND MARINE TRANSPORTATION: GHG MITIGATION POTENTIAL AND CHALLENGES

David McCollum, Gregory Gould and David Greene. Pew Center on Global Climate Change. Solutions White Paper Series. December 2009. 56 pages.

<http://www.pewclimate.org/docUploads/aviation-and-marine-report-2009.pdf>

Combined, aviation and marine transportation are responsible for approximately 5 percent of total greenhouse (GHG) emissions in the United States and 3 percent globally and are among the fastest growing modes in the transportation sector. Controlling the growth in these emissions will be an important part of reducing emissions from the transportation sector. A range of near-, medium- and long-term mitigation options are available to slow the growth of energy consumption and GHG emissions from aviation and marine shipping. Implementation of these options could result in reductions of more than 50 percent below BAU levels by 2050 from global aviation and more than 60 percent for global marine shipping. For these reductions to be realized, however, international and domestic policy intervention is required. Developing an effective path forward that facilitates the adoption of meaningful policies remains both a challenge and an opportunity.

HOW LARGE ARE THE IMPACTS OF CARBON MOTIVATED BORDER TAX ADJUSTMENTS

Yan Dong and John Whalley. National Bureau of Economic Research (NBER). Working Paper No. 15613. December 2009. 37 pages.

<http://www.nber.org/papers/w15613.pdf>

Emerging policy proposals for carbon based tariffs or border tax adjustments by EU, US and other OECD countries against developing countries that do not participate in global emissions reduction agreements are a central issue for current climate change negotiations. This paper discusses the size of impact of carbon motivated border tax adjustments on world trade. The authors report numerical simulation results which suggest that impacts on welfare, trade, and emissions will likely be small. This is because proposed measures use carbon emissions in the importing country in producing goods similar to imports rather than carbon content in calculating the size of barriers. Moreover, because border adjustments involve both tariffs and export rebates, it is the differences in emissions intensity across sector rather than emissions level which matters.

RECONCILING CLIMATE CHANGE AND TRADE POLICY

Aaditya Mattoo, Arvind Subramanian, Dominique van der Mensbrugghe and Jianwu He. Center for Global Development. Working Paper 189. November 2009. 45 pages.

http://www.cgdev.org/files/1423204_file_Subramanian_Climate_and_Trade_FINAL.pdf

There is growing clamor in industrial countries for additional border taxes on imports from countries with lower carbon prices. A key factor affecting the impact of these taxes is whether they are based on the carbon content of imports or the carbon content in domestic production. Quantitative estimates suggest that the former action when applied to all merchandise imports would address competitiveness and environmental concerns in high income countries but with serious consequences for trading partners. For example, China's manufacturing exports would decline by one-fifth and those of all low- and middle-income countries by 8 percent; the corresponding declines in real income would be 3.7 percent and 2.4 percent. In contrast, border tax adjustment based on the carbon content in domestic production, especially if applied to both imports and exports, would broadly address the competitiveness concerns of producers in high income countries without seriously damaging developing-country trade. Therefore, as part of a comprehensive agreement on climate change, new WTO rules could be negotiated that would prohibit the extreme form of action while possibly allowing trade actions based on domestic carbon content as a safety valve.

CLIMATE CHANGE - DOMESTIC ISSUES

GLOBAL WARMING NOT SO HOT

Pew Research Center for the People and the press. Daily Number. February 23, 2010.

<http://pewresearch.org/databank/dailynumber/?NumberID=954>

Most Americans do not believe dealing with global warming should be high on President Obama and Congress' agenda, placing it at the bottom of a list of policy concerns. Just 28% say it should be a "top priority," the lowest measure for any issue tested in this survey. And 20% said dealing with global warming is "not too important" while 14% said nothing should be done at all -- both highs in the survey. Since 2007, when global warming was first included on the priorities list, it has ranked near the bottom; but in 2007, 38% considered it a top priority. The low level of concern is driven by Republican indifference: just 11% consider global warming a top priority, compared with 43% of Democrats and 25% of independents. Protecting the environment fares somewhat better, as 44% say it should be a top priority in 2010.

CARBON MARKET DESIGN AND OVERSIGHT: A SHORT OVERVIEW

Pew Center on Global Climate Change. February 2010. 15 pages.

<http://www.pewclimate.org/docUploads/carbon-market-design-oversight-brief.pdf>

At the heart of any successful cap-and-trade program is a well-functioning market for the trading of emissions allowances. The sulfur dioxide allowance market created under 1990 Clean Air Act Amendments to control acid rain is an example of such a success. At the same time, several recent high-profile market crises, such as the 2008 petroleum price spike, the crash of subprime mortgage and credit default swap (CDS) markets, the Lehman bankruptcy, and the Madoff Ponzi scheme have led many to question market mechanisms. Yet, these events should not be viewed as indictments of markets in general, as the U.S. entire economy is in fact a market-based system. Rather, they serve to highlight the critical need for appropriate market design, transparency and oversight. Luckily, Congress has the opportunity to design the carbon trading market oversight framework at a point in time before long-standing carbon trading practices and systems have been fully established. This presents the opportunity to get the system right from the outset.

ADAPTATION OF AGRICULTURE AND THE FOOD SYSTEM TO CLIMATE CHANGE: POLICY ISSUES

John M. Antle. Resources for the Future (RFF). Issue Brief 10-03. February 2010. 12 pages.

<http://www.rff.org/RFF/Documents/RFF-IB-10-03.pdf>

Agriculture and the food system are likely to be substantially affected by both climate change and greenhouse gas emission policies. Although these sectors are dynamic and have demonstrated significant ability to adapt, many important related questions remain unanswered. Studies have likely underestimated the impacts of climate change on agriculture and the food industry, and thus the importance of possible adaptations in mitigating the effects of the change. Assessments of agriculture have been limited in both scope and relevance because of limitations of the data and models used. For example, studies of production agriculture have neither adequately accounted for impacts of pests and diseases on crops nor adequately addressed impacts on important climate-sensitive sectors such as specialty crops, horticulture, livestock, poultry, and rangelands. The impacts of climate change on transportation infrastructure and the food processing industry, and the effects of greenhouse gas mitigation policies, have also not been studied adequately.

THE CLIMATE OF BELIEF: AMERICAN PUBLIC OPINION ON CLIMATE CHANGE

Barry G. Rabe and Christopher P. Borick. Brookings Institution. Issues in Governance Studies Number 31. January 2010. 15 pages.

http://www.brookings.edu/~media/Files/rc/papers/2010/01_climate_rabe_borick/01_climate_rabe_borick.pdf

Climate change has gained enormous visibility during the past year, reflected in a range of American policy initiatives leading up to the international deliberations in Copenhagen. But what does the American public think about the issue of climate change and possible policy responses? Have these views changed over time? The authors have tracked American public opinion on this issue for several years and are particularly attentive to any shifts between 2008 and 2009. This report presents three sections on key findings. First, the authors examine whether Americans believe that global temperatures are increasing, and if so, what is causing this change. Second, they explore public views on a range of possible policy interventions and possible engagement by various levels of American government.

Third, they consider a pair of policy options that have received considerable attention at the federal level in the past year, namely a carbon cap-and-trade program and taxation of the carbon content of fossil fuels.

UPDATE ON THE 10-50 SOLUTION: PROGRESS TOWARD A LOW-CARBON FUTURE

Pew Center on Global Climate Change. January 2010. 13 pages.

<http://www.pewclimate.org/docUploads/10-50-brief-update.pdf>

Addressing the challenge of global climate change will require a significant reduction in annual greenhouse gas (GHG) emissions in the United States and throughout the world by 2050. This will necessitate a fundamental shift from an economy predominantly based on traditional fossil fuel use to one based on efficiently managed low-carbon energy sources, including technologies that capture and store carbon dioxide (CO₂). Achievement of this transition depends on both near-term and long-term actions that take advantage of current technologies and opportunities and that also make substantial investments in the technologies of the future. But most of all, the United States needs a clearly enunciated and sustained policy to guide those actions. Too often the debate over GHG emission reductions pits near-term actions against long-term investments in technology, when in fact both are necessary and more effective together.

EMISSION REDUCTIONS UNDER CAP-AND-TRADE PROPOSALS IN THE 111TH CONGRESS

John Larsen. World Resources Institute (WRI). December 17, 2009. 11 pages.

http://pdf.wri.org/usclimatetargets_2009-12-17.pdf

This analysis provides an assessment of net reductions in greenhouse gas (GHG) emissions relative to total U.S. emissions that could be achieved by pollution reduction proposals currently under consideration in the 111th Congress. This assessment is an update to a previous WRI analysis released on October 28, 2009, and includes an analysis of S. 2877, the Carbon Limits and Energy for America's Renewal Act (CLEARA), introduced on December 11, 2009 by Senators Cantwell and Collins. The CLEARA bill is compared against other proposal from the Senate during the 111th Congress, and HR 2454 as passed by the House of Representatives June 26, 2009.

POLLS ON THE ENVIRONMENT AND GLOBAL WARMING

Karlyn Bowman and Andrew Rugg. American Enterprise Institute for Public Policy Research (AEI). December 8, 2009. 61 pages.

<http://www.aei.org/docLib/PublicOpionStudyEnvironment.pdf>

This paper examines polls on the environment and global warming. In the first section, the authors look at national polls on the politics of the environment. Democrats lead Republicans by a substantial margin nationally as the party held best able to handle environmental issues. This held true in the 2008 election cycle although the polls indicate that the issue was not a top priority for voters. The authors include available trends from the major pollsters on how recent presidents have handled the issue. The polls show that the environment is not an issue on the front burner for most Americans today. Most Americans consider themselves sympathetic to, but not active in, the environmental movement. Global warming has received an enormous amount of media attention over the past several years, but it still doesn't rank at or near the top of issues people want the President and Congress to address.

GREEN ECONOMY

HOME STAR: PUTTING AMERICANS BACK TO WORK

Bracken Hendricks and Tom Kenworthy. Center for American Progress. February 23, 2010. 5 pages.
<http://www.americanprogress.org/issues/2010/02/pdf/homestarcolumn1.pdf>

As the nation struggles to recover from one of the worst economic recessions in decades, unemployment has recently shown some marginal improvement, falling below 10 percent in January. But for workers in the construction and construction-related manufacturing sectors, there is little relief as jobless rates remain at near-Depression levels. Fortunately, help is on the horizon. This week a bill establishing a HOME STAR program of consumer rebates for home energy efficiency retrofits will be introduced in the Senate. Sponsored by Senators Mark Warner (D-VA) and Jeff Bingaman (D-NM), among others, this bill provides an incentive program to make millions of U.S. homes more energy efficient, create 168,000 jobs in construction and manufacturing among other industries, save homeowners nearly \$10 billion over a decade through lower energy costs, and make a dent in global warming pollution.

ASSESSING THE GLOBAL GREEN STIMULUS

Sarah O. Ladislaw and Nitzan Goldberger. Center for Strategic and International Studies (CSIS). February 16, 2010. 15 pages.

http://csis.org/files/publication/010216_Ladislaw_GlobalGreenStimulus_0.pdf

Over the past year, some of the world's leading economies have responded to the global financial crisis with large stimulus packages. Many of those packages included a significant green component aimed at positioning the countries to be competitive in the carbon-constrained global economy of the twenty-first century. In all, approximately half a trillion dollars of stimulus money was allocated across the globe to climate change related investment areas. The green stimulus plans vary in both the amount and focus. China, the United States, Korea, and Europe have proposed the largest green packages, although the green credentials of each stimulus differs significantly.

CLEAN ENERGY MARKETS: JOBS AND OPPORTUNITIES

Pew Center on Global Climate Change. February 2010. 18 pages.

<http://www.pewclimate.org/docUploads/clean-energy-markets-jobs-opportunities-brief.pdf>

This brief discusses how investment in clean energy technologies will generate economic growth and create new jobs in the United States and around the globe. Action around the world means that global clean energy markets will grow significantly in the coming decades. The United States stands to benefit from the development of these markets, but only if it moves quickly to support domestic demand for and production of clean energy technologies. An international climate agreement will influence the ultimate size of global clean energy markets, and comprehensive U.S. climate and clean energy policy will expand the scope of these markets domestically. Well-designed policy will enhance the competitiveness of U.S. firms in the emerging international markets of the 21st century.

THE RIGHT TRACK: BUILDING A 21ST CENTURY HIGH-SPEED RAIL SYSTEM FOR AMERICA

Phineas Baxandall, Tony Dutzik and Siena Kaplan. U.S. PIRG Education Fund. February 2010. 77 pages.

<http://cdn.publicinterestnetwork.org/assets/d2c2bda5b0c2d2d23101a0aef69daece6/The-Right-Track-vUS.pdf>

America's highways and airports are increasingly congested. The nation's transportation system remains dependent on oil, and the existing transportation infrastructure is inadequate to the demands of the 21st century. Intercity passenger rail can help America address each of these challenges. Most major industrialized countries have (or are now building) well-functioning intercity rail systems. Now, for the first time, the federal government has invested significant resources toward the development of high-speed rail in the United States, with an \$8 billion allocation in the American Recovery and Reinvestment Act (ARRA) and \$2.5 billion more in Congress' fiscal year 2010 budget. States across the country are hungry for improved passenger rail. Indeed, states have requested seven times more money for passenger rail improvements than was allocated under ARRA. State requests for passenger rail funding under ARRA -- coupled with the broader agenda for high-speed rail development articulated by the Obama administration -- present a powerful vision for the future of transportation in America, touching virtually every region of the country.

PLUG-IN CARS: POWERING AMERICA TOWARD A CLEANER FUTURE

Siena Kaplan and Rob Sargent. Environment America Research and Policy Center. January 2010. 37 pages.

<http://www.environmentamerica.org/uploads/4c/30/4c306e9db2ff693a9fbb1facf291ed9e/AME-Plug-In-Cars.pdf>

For more than 50 years, the automobile has played a central and ever-growing role in American life. Up until recently, much of the major American automakers business model was built around the sale of large cars and SUVs. Now, a decade into the 21st century, automakers appear to be serious about electric vehicles as the next wave of automotive technology. This white paper gives an overview of plug-in electric cars and how they can lower global warming emissions, oil consumption and unhealthy air pollution and lays out a plan for how local, state and federal officials can increase the number of electric vehicles on the road.

ENVIRONMENTAL PROTECTION AND CONSERVATION

WELCOME CHANGE: ASSESSMENT OF THE OBAMA ADMINISTRATION'S FIRST-YEAR ENVIRONMENTAL RECORD

Natural Resources Defense Council (NRDC). January 2010. 6 pages.

<http://www.nrdc.org/legislation/obamarecord/files/obamarecord.pdf>

In his first year in office, President Barack Obama and his administration have taken a remarkable number of actions to address a wide variety of environmental challenges. From investing in clean energy technology through the stimulus bills to increasing energy efficiency, the Administration has done more in its first few months to protect our air, water and communities than we've seen in the last decade. The hallmark of the administration's first year record was the decision to put the nation on a path toward a cleaner energy future. President Obama has also made important progress across a range of environmental policies. This issue paper focuses on areas where environmental protections have been improved during Obama's first year in office, and assesses where the country stands in the year ahead.

MEASURING THE RESULTS OF WILDLIFE CONSERVATION ACTIVITIES

The H. John Heinz Center for Science, Economics and the Environment. December 2009. 129 pages.

http://www.heinzctr.org/publications/PDF/Measuring_Results_in_Wildlife_Conservation.pdf

State and federal wildlife agencies in the United States spend millions of dollars every year on projects that are intended to benefit wildlife species and their habitats. How do we know whether or not these conservation measures are working? This deceptively simple question has been the subject of considerable discussion and debate in recent years. Standard measures of success such as the number of acres protected or the number of acres restored have been roundly criticized, due to the fact that these measures cannot always be clearly linked to changes in wildlife populations. Yet many wildlife agencies lack the funding and personnel needed to develop sophisticated new monitoring programs that could actually track the effects of specific conservation actions on individual wildlife populations. New approaches for monitoring and evaluation are clearly needed. Fortunately, many new tools and techniques have been developed in recent years that can help wildlife managers determine whether or not their activities have been effective. This report reviews current practices and procedures for developing performance measures for wildlife management activities, with a particular focus on activities related to the direct conservation of wildlife species and their habitats.

U.S. SEATURTLES: A COMPREHENSIVE OVERVIEW OF SIX TROUBLED SPECIES

Allison, D., Griffin, E., Miller, K.L. and Rider, S.. Oceana. December 2009. 36 pages.

[http://na.oceana.org/sites/default/files/reports/U.S. Sea Turtles Report FINAL1.pdf](http://na.oceana.org/sites/default/files/reports/U.S._Sea_Turtles_Report_FINAL1.pdf)

Modern day activities of humans are killing sea turtles at a rate faster than many populations can sustain. In fact, each of the sea turtle species found in U.S. waters is listed as either “threatened” or “endangered” under the Endangered Species Act (ESA) -- which means they may be driven to extinction in the foreseeable future. Six species of sea turtles inhabit U.S. waters: green (*Chelonia mydas*), hawksbill (*Eretmochelys imbricata*), Kemp’s ridley (*Lepidochelys kempii*), leatherback (*Dermochelys coriacea*), loggerhead (*Caretta caretta*) and olive ridley (*Lepidochelys olivacea*). A seventh species, the flatback (*Natator depressus*), resides only in the waters around Australia and Papua New Guinea. A variety of factors have led to the decline of sea turtle populations and the need for ESA listings. Technological advances in gear, navigation and vessel capabilities have contributed to making commercial fishing one of the largest causes of sea turtle mortality worldwide. Additional threats caused by humans include marine debris, pollution, coastal development, poaching, vessel strikes, invasive species and climate change.

WATER AND AGRICULTURE: IMPLICATIONS FOR DEVELOPMENT AND GROWTH

Various contributors. Essays from the CSIS and SAIS Year of Water Conference. Center for Strategic and International Studies (CSIS). November 2009. 117 pages.

http://csis.org/files/publication/091104_Peterson_Water&Agri_WEB.pdf

Across the globe, water is a subject of huge importance and relevance to regional cooperation, poverty alleviation, competitiveness in both manufacturing and agricultural production, and therefore trade. At a time of mounting population pressures, environmental declines, and growing demand for water, efforts to understand water and its linkages to other critical resources -- particularly agriculture -- are now more important than ever. As it stands, agriculture accounts for more than 70 percent of global water use, and already 1 billion people are chronically hungry. The global demand for food is expected to double in the next 40 years, yet water scarcity, land degradation, volatility in energy prices, and the changing climatic conditions will place unprecedented strains on water and agricultural systems.

POLLUTION

HOW NUTRIENT TRADING COULD HELP RESTORE THE CHESAPEAKE BAY

Cy Jones, Evan Branosky, Mindy Selman and Michelle Perez. World Resources Institute (WRI). Working Paper. February 2010. 13 pages.

http://pdf.wri.org/working_papers/how_nutrient_trading_could_help_restore_the_chesapeake_bay.pdf

The largest estuary in the United States, the Chesapeake Bay is a vital economic, cultural, and ecological resource for the region and the nation. Excess runoff and discharges of nutrients -- particularly nitrogen and phosphorus -- from farms, pavement, wastewater treatment plants (WWTPs), and other sources have placed the bay on the Environmental Protection Agency's (EPA's) List of Impaired Waters. This nutrient pollution is responsible for creating large algal blooms that lead to "dead zones" in the bay. Despite decades of restoration efforts, progress has been slow, and the rivers and streams that drain into the Bay remain polluted. The proposed "Chesapeake Clean Water and Ecosystem Restoration Act of 2009" (H.R. 3852/S. 1816) would provide significant new resources and new approaches to help restore the bay. Nutrient trading is one such approach. In a nutrient trading market, sources that reduce their nutrient runoff or discharges below target levels can sell their surplus reductions or "credits" to other sources. This approach allows those that can reduce nutrients at low cost to sell credits to those facing higher-cost nutrient reduction options.

TOXIC CHEMICALS ON TAP: HOW NATURAL GAS DRILLING THREATENS DRINKING WATER

Michael Berkowitz. Environment America Research and Policy Center. November 2009. 17 pages.

<http://cdn.publicinterestnetwork.org/assets/4fe0dcbda2ad62ab03a8440346c90cd8/AME-toxics-report-final-lo-res.pdf>

Fossil fuels (oil, coal and natural gas) pollute the air with smog, soot and global warming pollution, but their effect on water is often overlooked. In light of the increased pressure to drill for more natural gas in states across the United States, this report focuses on the dangers to drinking water from gas drilling. In particular, the author examined hydraulic fracturing (often called "fracking"), a commonly used process gas companies employ to extract natural gas or oil reserves. Natural gas exists in bubbles underground, much like bubbles in carbonated soda. Getting to these pockets of gas requires injecting millions of gallons of water, sand and chemicals into the ground in order to crack open these bubbles in the rock to allow natural gas to flow to the surface. While natural gas may be better in some aspects than its fossil fuel brethren, drilling for natural gas must not put drinking water at risk.

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<http://france.usembassy.gov/web-alert.html>