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Subject: Ecology, Climate Change and Related News Update November 16, 2012
Date: 11/16/2012 08:35 AM

Hi all-
FYI-
Enjoy the weekend!
Best-
Ellie

Conservation Science News November 16, 2012

Highlight of the Week - WATER, DROUGHT and NATURE-BASED SOLUTIONS

1-ECOLOGY, BIODIVERSITY, RELATED

2-CLIMATE CHANGE AND EXTREME EVENTS

3- POLICY

4- RESOURCES and REFERENCES

5- RENEWABLES, ENERGY AND RELATED

6-OTHER NEWS OF INTEREST

7-IMAGES OF THE WEEK

NOTE: Please feel free to pass on my weekly news update that has been prepared for [PRBO Conservation Science](#) staff. The information contained in this update was drawn from www.sciencedaily.com, [SER The Society for Ecological Restoration](#), <http://news.google.com>, www.climateprogress.org, www.slate.com, www.sfgate.com, [The Wildlife Society NewsBrief](http://www.wildlifenews.org), www.blm.gov/ca/news/newsbytes/2012/529.html and other sources as indicated. This is a compilation of articles and other information available on line, which were not verified and are not endorsed by PRBO Conservation Science. Please email me directly at Ellie Cohen, ecohen@prbo.org if you want your name added to or dropped from this list. You can also receive this through the [California Landscape Conservation Cooperative ListServe](#) or the [Bay Area Ecosystems Climate Change Consortium](#) list. Also, we are starting to experiment with blog posting at www.prbo.org/sciencenews.

Highlight of the Week- WATER, DROUGHT and NATURE-BASED SOLUTIONS

California Snowpack Outlook Grim for Water

CLIMATE CHANGE Snowpack decline to hurt supply for cities, farms

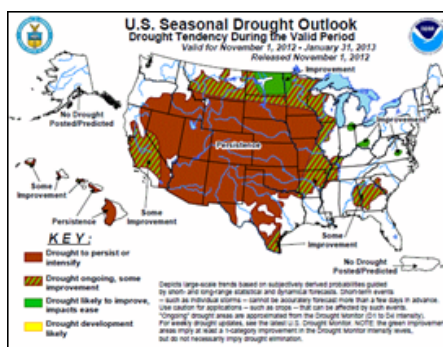
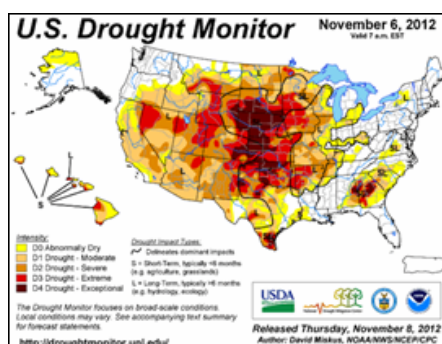
David Perlman Sunday, November 11, 2012

The future of water for drinking and irrigation looks increasingly bleak throughout California and the world's northern regions as the changing global climate shrinks mountain snowpacks and speeds early runoffs, Stanford researchers forecast. Decreases in winter snowpacks are likely to be most noticeable during the next 30 years and will continue to shrink through the century, according to an analysis of future climate trends by a team of specialists led by [Noah Diffenbaugh](#) at Stanford's Department of [Environmental Earth System Science](#). ...

Forecast: Drought And More Drought

By [Joe Romm](#) on Nov 13, 2012 at 12:27 pm

Two charts tell the story. First, here's last week's U.S. Drought Monitor:



David Miskus of [NOAA's Climate Prediction Center](#) explains why this drought persists: ... a persistent ridge of high pressure located over the central Rockies kept the Southwest, Great Basin, and southern halves of the Rockies and Plains unseasonably mild and dry. The weakened Pacific storm systems were diverted northeastward into south-central Canada by the ridge, then southeastward by the eastern trough into the northern Plains, lower Missouri Valley, the Delta, and across the Southeast....

Observations Support Predictions Of Extreme Warming And Worse Droughts This Century

Posted: 09 Nov 2012 12:27 PM PST

"Future warming likely to be on high side of climate projections," concluded a new analysis by scientists at the National Center for Atmospheric Research (NCAR). And that "higher temperature rise would produce **greater impacts on society in terms of sea level rise, heat waves, droughts, and other threats.**"

Many in the media have been getting this story wrong — unintentionally lowballing the future warming we should expect this century if the NCAR analysis is correct. For instance, the *Washington Post* [writes](#), "the world could be in for a devastating increase of about eight degrees Fahrenheit by 2100, resulting in drastically higher seas, disappearing coastlines and more severe droughts, floods and other destructive weather." Not quite. The [news release](#) makes clear that amount of warming would likely occur well before 2100. Since this confusion is quite common in climate coverage, I'll quote at length from NCAR to set the record straight:

The most common benchmark for comparing model projections is equilibrium climate sensitivity (ECS), or the amount of warming that eventually occurs in a model when carbon dioxide is doubled over preindustrial values. At current rates of global emission, that doubling will occur well before 2100.

For more than 30 years, ECS in the leading models has averaged around 5 degrees Fahrenheit (3 degrees Celsius).

This provides the best estimate of global temperature increase expected by the late 21st century compared to late 19th century values, assuming that society continues to emit significant amounts of carbon dioxide. However, the ECS within individual models is as low as 3 degrees F and as high as 8 degrees F. **At current rates of global emissions, that doubling (to 550 ppm) will occur around mid-century, and we might approach a quadrupling by 2100!**

The "good news" is that inherent delays in the climate system mean we don't hit the ECS immediately upon doubling. The "bad news" is that the ECS ignores key non-equilibrium feedbacks like the release of carbon currently locked in the frozen tundra (see ["Carbon Feedback From Thawing Permafrost Will Likely Add 0.4°F – 1.5°F To Total Global Warming By 2100"](#))....



CRWFS Releases New Report on Water: From Storage to Retention Nov. 13, 2012.

On November 13, 2012, the [California Roundtable on Water and Food Supply](#) releases its latest report, **From Storage to Retention: Expanding California's Options for Meeting Its Water Needs.** The report builds on earlier work focused on

[agricultural water stewardship](#), and argues for an expansion of approaches to storing water that increase supply reliability for specialty crop agricultural production and other beneficial uses while protecting ecosystem health. Management approaches must support a broad range of options, including ecologically sound large-scale reservoirs, a patchwork of on-farm ponds, expanded soil capacity to retain water, and improvements in groundwater recharge, among others. The report highlights both a conceptual shift in water management that it argues is a necessary underpinning of effective water storage, and recommends a set of priority actions that constitute high-leverage opportunities to improve California's water storage capacity and management. The Roundtable is grateful to the USDA Specialty Crop Block Grant Program, administered by the California Department of Food and Agriculture, and Gaia Fund for their support.

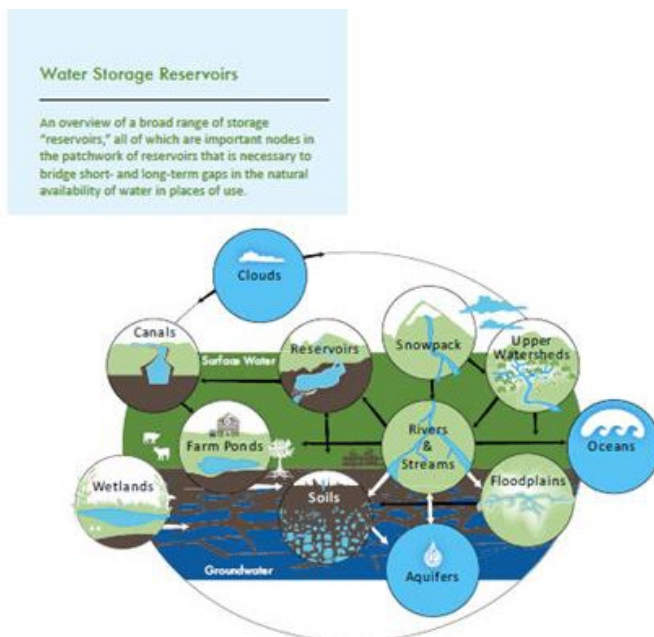
Highlights

Achieving a more effective and flexible water storage system requires a shift in the way that we, as a society, understand, define, and use storage as an element of integrated water management. Broadening our view of what constitutes a storage reservoir must be accompanied by a shift in our policies and programs to support **a "retention" approach to storage—one that holds as much water as possible in the landscape for later use, while maintaining healthy ecosystems. To be more resilient and better prepared for future variations in water supply, California must take advantage of all storage opportunities throughout the system that meet the goals of reliable water supply and ecosystem restoration.** Several valuable aspects of water storage tend to be overlooked in terms of their ability to contribute to the availability and reliability of water supplies for uses that benefit society. **In particular, California's agricultural lands play an important role in the storage infrastructure. The value of working lands in helping to sequester water for later use while achieving many benefits, such as food security, flood management and habitat restoration, represents a critical missed opportunity for improving water security.**

4 Key principles must guide efforts to ensure effective water retention in the future:

1. Storage integrates all hydrological components affecting water availability, movement, and retention to improve supply reliability statewide for evolving needs.
2. Comprehensive, timely, accurate, accessible, and transparent data and resulting information about our water resources is an essential foundation for effectively managing water storage in California.
3. An effective storage system requires the coordination of policies and regulations, activities, oversight, and accountability of all government agencies to meet local, regional, and statewide needs simultaneously.
4. Water storage and retention for improved water supply reliability and watershed health is facilitated by the availability of new sources of financial support that allow investment in quantified outcomes.

Improving the flow of information through coordinated data management and institutional coordination can lead to powerful water retention outcomes. Several new and innovative funding mechanisms can complement traditional funding streams for water retention and are particularly well suited to agricultural applications.



1. ECOLOGY

Pacific fishing zones: Lifeline for overfished tuna? (November 14, 2012) -- Marine zoning in the Pacific Ocean, in combination with other measures, could significantly improve numbers of heavily overfished bigeye tuna and improve local economies, a fish modelling study has found. ... > [full story](#)

Scientists think a third of sea species unknown

David Perlman SF Chron Updated 11:21 p.m., Thursday, November 15, 2012

The world's oceans are teeming with as many as a million different species - from microscopic plankton to monster whales - and possibly a third of them are still unknown to science, according to the first full-scale register of the seas' diversity. The census of all the ocean's plants and animals by hundreds of ocean scientists from around the world is just an estimate, but even still the species-by-species count is crucial for understanding the biodiversity of all the oceans and for protecting their future in a swiftly changing environment, said [Stephen Palumbi](#), director of Stanford's [Hopkins Marine Station](#) in Pacific Grove. "It's the best job ever of tallying everything we know - and what we don't know - about life in the oceans today," Palumbi said. "It's the first time anyone's done this kind of dirty work that's so important with the world's oceans facing a biodiversity crisis." **Scientists say the crisis has many causes, including overfishing as human populations increase, widespread damage to coastal environments, and increasing acidification of ocean waters as carbon dioxide levels rise in the atmosphere, to name three of the most significant threats....**

Australia: Native Street Trees Can Boost Birds' Survival November 13, 2012

As native birds continue to lose their homes due to the spread of the Australia's cities, scientists are urging city planners and householders to help save them by planting more Australian trees. A world-first study in the Australian national capital shows that the amount of native trees on suburban streets has a big effect on the numbers and types of birds in the area. Scientists found that more than 30% native tree have 11% more bird species of all types than those with exotic street trees. The researchers surveyed 66 bird species at 40 locations across Canberra and grouped native birds by their tolerance of urbanization...

Study offers new tool for incorporating water impacts into policy decisions (November 12, 2012) -- A new policy-making framework provides a tool for assessing and valuing the many services clean water provides -- from recreation and beauty to navigation and hydropower -- and incorporating them into policy decisions. ... If you've eaten fish, gone for a boat ride or even taken a drink from the tap, you know clean water is a valuable commodity. But just how valuable? That's always been a tough question for policy makers to answer as they weigh the worth of clean water against societal needs that compromise it, such as the need to grow food or produce fossil fuels. Now, however, their ability to do so has been greatly enhanced by a new policy-making framework developed by a team of scientists led by Bonnie Keeler, research associate at the University of Minnesota's Institute on the Environment. The framework, published in the Nov. 6 issue of the *Proceedings of the National Academy of Sciences*, provides a tool for assessing and valuing the many services clean water provides -- from recreation and beauty to navigation and hydropower -- and incorporating them into policy decisions. "After repeated requests for information on the value of water quality, we realized that there was a huge gap between the demand for economic values of water quality and our ability to provide tools to estimate those values. This gap limits our ability to make informed decisions," Keeler said. "We provide a framework that describes the numerous pathways in which changes in water quality affect our health, recreation and livelihoods and the economic value of those changes. This yields a far more accurate picture of the costs and benefits of decisions."... > [full story](#)

B. L. Keeler, S. Polasky, K. A. Brauman, K. A. Johnson, J. C. Finlay, A. O'Neill, K. Kovacs, B. Dalzell. **Linking water quality and well-being for improved assessment and valuation of ecosystem services.** *Proceedings of the National Academy of Sciences*, 2012; 109 (45): 18619 DOI: [10.1073/pnas.1215991109](https://doi.org/10.1073/pnas.1215991109)

Species persistence or extinction: Through a mathematical lens (November 12, 2012) -- A new study uses mathematical modeling to study Allee effects, the phenomenon by which a population's growth declines at low densities. ... > [full story](#)

Conservationists in Conflict

Many ecologists seek to restore damaged ecosystems to their original states, but others argue they are being 'unrealistically nostalgic' and that invading species open up new ecosystems. The phrases scientists choose to portray natural phenomena

can shape our perceptions of the world, and affect crucial decisions made by policy-makers. The "novel ecosystems" theory, energetically promoted by a group of influential ecologists in recent years, is a case in point. The theory's advocates say they are simply describing unprecedented changes in ecosystems, and warning of their consequences. Their critics claim that the way they have characterized these changes could have a disastrous impact on environmental policy. ..

Over the last decade, restoration has become a front-line strategy in global conservation. At home, we have seen expanding restoration of native woodlands and, with more difficulty, of bog ecosystems. Restoration is now written large into European policy, with the EU committed to restoring 15 per cent of degraded landscapes by 2020. And yet, just at this breakthrough moment, novel-ecosystem theory appears to be undermining, from the inside as it were, basic restoration principles that have only recently been established. One of the foundational pillars of restoration science is that restoration projects should be based on "historical reference systems". If you want to restore native oak woodland on a degraded site, for example, you should reconstruct in detail a model of its previously healthy condition. This model becomes the template for the biological communities and ecosystem functions appropriate to your project. Novel-ecosystem theorists, however, argue that many, perhaps most, of today's ecosystems are changing so rapidly, and so unpredictably, that attempting to restore to an historical reference system is often a waste of scarce resources. They say that global human impacts on nature, ranging from climate change to the introduction of invasive alien species, are creating "novel" biological communities. And these new combinations of species may also create unprecedented ecosystem dynamics. They theorise that such systems have crossed "irreversible thresholds" – radically altered soil composition, for example – that make restoration to historical conditions impossible.....

[The Puffin Charmer](#) Wed Nov 7 Slate.com

By thinking like a social bird, Stephen Kress brought puffins back to the United States. Atlantic puffins were once driven to near-extinction in the United States by hunting and egg collecting. In 1973, Kress and a small group of colleagues went to a puffin breeding colony in Newfoundland. Kress placed some wooden puffin decoys on the island, carefully clustered in groups as if absorbed in conversation. In 1977, a curious puffin landed in the water near the island. The busy colonies off the Maine coast today are the result of a long-running restoration project. It took a tremendous amount of time and effort to turn a heretical idea into the noisy, messy, thriving reality of the Maine puffin colonies-and it takes even more work to keep that reality in place.

[Craig County Man's Covert Operation Helping to Restore Quail](#)

For 60 years, Wysor Smith Jr. has listened for the mating call of the bobwhite quail, as a hunter and now as a conservationist. But over the decades since the 1970s, as farms have wooded over or sprouted crops of houses and businesses, the "bob-WHITE" call has faded, and in places disappeared. Through state and federal programs, however, Smith and his family are restoring quail-friendly native grasslands on their 550-acre Craig County farm. He only wishes he'd done it sooner. Today, Smith's family is doing selective logging of trees that have grown up since the 1950s, and reestablishing native grasses on about 80 acres in hopes of luring wild quail back to the land.

[Rare bird indeed: Count reveals scrub jay among rarest in US](#)

NBCNews.com - Nov 14 2012

There are far fewer island scrub jays than previously thought, a new calculation of their population size finds. The new count makes them one of the 10 rarest songbirds in the continental United States.

[To Birds, Storm Survival Is Only Natural](#)

By [NATALIE ANGIER](#) November 12, 2012 NY Times

In the wake of [Hurricane Sandy](#) and the spiteful me-too northeaster, much of the East Coast looked so battered and flooded, so strewn with toppled trees and stripped of dunes and beaches, that many observers feared the worst. Any day now, surely, the wildlife corpses would start showing up — especially birds, for who likelier to pay when a sky turns rogue than the ones who act as if they own it?

Yet biologists studying the hurricane's aftermath say there is remarkably little evidence that birds, or any other countable, charismatic fauna for that matter, have suffered the sort of mass casualties seen in environmental disasters like the BP oil spill of 2010, when thousands of [oil](#)-slicked seabirds washed ashore, unable to fly, feed or stay warm.

"With an oil spill, the mortality is way more direct and evident," said Andrew Farnsworth, a scientist at the Cornell Lab of Ornithology. "And though it's possible that thousands of birds were slammed into the ocean by this storm and we'll never

know about it, my gut tells me that didn't happen."

To the contrary, scientists said, powerful new satellite tracking studies of birds on the wing — including one that coincided with the height of Hurricane Sandy's fury — reveal birds as the supreme masters of extreme weather management, able to skirt deftly around gale-force winds, correct course after being blown horribly astray, or even use a hurricane as a kind of slingshot to propel themselves forward at hyperspeed.

2. CLIMATE CHANGE AND EXTREME EVENTS

Global Carbon Dioxide Emissions Rose 2.5 Percent In 2011

*** Recovering industrial activity boosts CO2 output**

*** Highest emitter China widens gap on U.S.**

FRANKFURT, Nov 13 (Reuters) - Global carbon dioxide (CO2) emissions in 2011 rose 2.5 percent to 34 billion tonnes, a new record, Germany's renewable energy institute said on Tuesday. The IWR, which advises German ministries, cited recovered industrial activity after the end of the global economic crisis of recent years. "If the current trend is sustained, worldwide CO2 emissions will go up by another 20 percent to over 40 billion tonnes by 2020," IWR director Norbert Allnoch said. China led the table of emitters in 2011 with 8.9 billion tonnes, up from 8.3 billion a year earlier. Its CO2 output was 50 percent more than the 6 billion tonnes in the United States. India was third, ahead of Russia, Japan and Germany. In May the International Energy Agency said that global CO2 emissions rose 3.2 percent last year to 31.6 billion tonnes, led by China.

NOAA: Global temperatures were fifth highest on record for October

Arctic sea ice doubles from last month, yet remains second lowest on record for October

According to NOAA scientists, the globally-averaged temperature for October 2012 was the fifth warmest October since recordkeeping began in 1880. It marked the 36th consecutive October and 332nd consecutive month with a global temperature above the 20th century average. The last below-average October temperature was October 1976, and the last below-average temperature for any month was February 1985. Higher-than-average monthly temperatures were observed across much of Europe, western and far eastern Asia, northeastern and southwestern North America, central South America, northern Africa, and most of Australia. Meanwhile, much of northwestern and central North America, central Asia, parts of western and northern Europe, and southern Africa were notably below average. This monthly analysis ([summary](#), [full report](#)) from NOAA's National Climatic Data Center is part of the suite of climate services NOAA provides to government, business and community leaders so they can make informed decisions.

Year seen as warmest in contiguous U.S.

November 16, 2012 SF Chronicle Temperatures from January through October were 1.1 degrees Fahrenheit higher than the previous mark, set in 1998, and 3.4 degrees above the long-term average, said Jake Crouch, a climatologist at the center in Asheville, N.C. U.S. records go back... [more »](#)

32-Foot-Plus Waves From Hurricane Sandy Topple Records

November 14th, 2012 , *Last Updated:* November 14th, 2012 By [Andrew Freedman](#) [climatecentral.org](#)

Hurricane Sandy has already broken dozens of records, from the lowest air pressure reading ever recorded in the Northeast to the highest storm surge on record in Lower Manhattan. After reviewing wave height data, the National Weather Service office in Philadelphia has determined that the wave heights recorded at two buoys — including one monster 32.5-foot significant wave height at a buoy near the entrance to New York Harbor — set records for the largest waves seen in this region since such records began in 1975. One of the buoys is located near the entrance to New York Harbor, about 15 nautical miles southeast of Breezy Point, N.Y., which sustained heavy damage from a merciless combination of coastal flooding and a fire that spread out of control. The harbor entrance buoy recorded a significant wave height of 32.5 feet at 8:50 pm on Oct. 29, beating the previous record set during Hurricane Irene by 6.5 feet! Records at that buoy extend only to 2008, which minimizes the historical significance of the record somewhat.

Cuomo On Climate Change: 'Extreme Weather Is The New Normal'

Posted: 11/15/2012 11:31 am EST Updated: 11/15/2012 11:32 am EST

New York Governor Andrew Cuomo, reacting to the destruction caused by Superstorm Sandy, penned an op-ed in Thursday's *Daily News* calling for more preparedness in a "new age of extreme weather."

Titled, "**We Will Lead On Climate Change**," Cuomo's op-ed details the ways the state can ready itself for future storms, while only briefly mentioning a single measure to prevent climate change itself.

"First," the governor writes, "we must begin by thinking about where and how we rebuild. The next generation's infrastructure must be able to withstand another storm. We must also reduce the energy consumption that contributes to climate change — which means, for starters, upgrading our building codes." **He uses the Con Ed substation in lower Manhattan as an example of poorly located infrastructure. The substation, near the East River, experienced severe flooding when Sandy hit, causing a giant explosion that plunged much of the island, and thousands of New Yorkers, into darkness.**

Addressing the [gas shortage](#) that followed Sandy, Cuomo writes that **the state needs to build "redundancies into our fuel system and [put] in place generators and pumping systems that are readily deployable."**



Henning Wagenbreth

We Need to Retreat From the Beach

By ORRIN H. PILKEY November 14, 2012 NY TIMES Op-Ed Contributor

AS ocean waters warm, the Northeast is likely to face more Sandy-like storms. **And as sea levels continue to rise, the surges of these future storms will be higher and even more deadly. We can't stop these powerful storms. But we can reduce the deaths and damage they cause.** Hurricane Sandy's immense power, which destroyed or damaged thousands of homes, actually pushed the footprints of the barrier islands along the South Shore of Long Island and the Jersey Shore landward as the storm carried precious beach sand out to deep waters or swept it across the islands. This process of barrier-island migration toward the mainland has gone on for 10,000 years. Yet there is already a push to rebuild homes close to the beach and bring back the shorelines to where they were. The federal government encourages this: there will be billions available to replace roads, pipelines and other infrastructure and to clean up storm debris, provide security and emergency housing. Claims to the National Flood Insurance Program could reach \$7 billion. And the Army Corps of Engineers will be ready to mobilize its sand-pumping dredges, dump trucks and bulldozers to rebuild beaches washed away time and again.

But this "let's come back stronger and better" attitude, though empowering, is the wrong approach to the increasing hazard of living close to the rising sea. Disaster will strike again. We should not simply replace all lost property and infrastructure. Instead, we need to take account of rising sea levels, intensifying storms and continuing shoreline erosion....This is not the time for a solution based purely on engineering. The Army Corps undoubtedly will be heavily involved. But as New Jersey and New York move forward, officials should seek advice from oceanographers, coastal geologists, coastal and construction engineers and others who understand the future of rising seas and their impact on barrier islands. **We need more resilient development, to be sure. But we also need to begin to retreat from the ocean's edge.** [Orrin H. Pilkey](#) is an emeritus professor of earth sciences at Duke University and a co-author of *"The Rising Sea."*



America's ancient hurricane belt and the U.S.-Canada equator (November 15, 2012) -- The recent storms that have battered settlements on the east coast of America may have been much more frequent in the region 450 million years ago, according to scientists. ... > [full story](#)

Climate change greater threat to EM financial centres to storm-hit New York

November 15, 2012 10:10 am [by Rob Minto](#) If you thought 'superstorm' Sandy was bad, here's a sobering thought: New York isn't even a high-risk city when it comes to climate change. For that, head to Asia. According to a [report by Maplecroft](#), the risk consultancy, several big Asian financial and manufacturing centres are in the danger zone.....

[Communication of the role of natural variability in future North American climate:](#) As climate models improve, decision-makers' expectations for accurate climate predictions are growing. Natural climate variability, however, poses inherent limits to climate predictability and the related goal of adaptation guidance in many places, as illustrated here for North America. Other locations with low natural variability show a more predictable future in which anthropogenic forcing can be more readily identified, even on small scales. We call for a more focused dialogue between scientists, policymakers and the public to improve communication and avoid raising expectations for accurate regional predictions everywhere. Deser et al. *Nature Climate Change*

2, 775–779 (2012) doi:10.1038/nclimate1562 Published online Oct 26, 2012.

['Groundwater inundation' doubles previous predictions of flooding with future sea level rise](#)

(November 11, 2012) -- A new study by researchers in Hawaii shows that besides marine inundation (flooding), low-lying coastal areas may also be vulnerable to "groundwater inundation," a factor largely unrecognized in earlier predictions on the effects of sea level rise. ... > [full story](#)

[New dating of sea-level records reveals rapid response between ice volume and polar temperature](#)

(November 14, 2012) -- A new study has revealed a rapid response between global temperature and ice volume/sea-level, which could lead to sea-levels rising by over one meter. During the last few million years, global ice-volume variability has been one of the main feedback mechanisms in climate change, because of the strong reflective properties of large ice sheets. Ice volume changes in ancient times can be reconstructed from sea-level records. However, detailed assessment of the role of ice volume in climate change is hindered by inadequacies in sea-level records and/or their timescales. Now, for the first time, scientists are able to accurately date continuous sea-level records, to allow detailed comparisons of the ice-volume variability with independently dated ice-core records from Antarctica and Greenland. ... "Ice sheet responses to a change in climate forcing are like the responses of heavy freight trains to firing up the locomotive. They are hard to set in motion (slow to 'spin up'), but once they are reacting, they will be equally slow to 'spin down'. So a lag of a few centuries is worrisome, because we have been warming up the climate for 150-160 years now. **If the natural relationship (when changes in climate were slower than today) also holds for the very fast changes in climate today, then we are coming into that 'window' of time where we may expect to start seeing some unprecedented responses in the large ice sheets.** This then may tie in with observations of the past decade or so of large ice-shelf collapses around Antarctica and Greenland, the major melt-area expansion over Greenland, changes in the flow speed of major ice streams (both Antarctica and Greenland), and increasing ice-mass loss over West Antarctica/the Antarctic Peninsula and Greenland. "We cannot say whether this proves the case, but at least **the time delay of the modern ice-sheet responses relative to climate change would seem to agree with the response timescales we have now found in the palaeo-record.**" > [full story](#)

[Melting glaciers raise sea level](#)

(November 14, 2012) -- Anthropogenic climate change leads to melting glaciers and rising sea level. Between 1902 and 2009, melting glaciers contributed 11 cm to sea level rise. They were therefore the most important cause of sea level rise. Scientists have numerically modeled the changes of each of the world's 300,000 glaciers. Until 2100, glaciers could lead to an additional 22 cm of sea level rise. ... **Melting glaciers will raise the sea level between 15 and 22 cm until 2100.** "Where we end up within this range is up to us – it mostly depends on how much greenhouse gas we will emit", says Marzeion. The same is true for the longer term: "Until 2300, we can expect the sea level to rise between 25 and 42 cm due to glacier melt. With 42 cm sea level rise, most of the glaciers of the world will be gone, leaving behind only small remains in very high altitudes." But also in the future, warming and thus expanding sea water, melting of the Greenland and Antarctic ice sheets, and changing terrestrial water storage have to be added to obtain the full sea level rise. > [full story](#)

[Tropical Indo-Pacific climate shifts to a more El Niño-like state](#)

(November 14, 2012) -- Climate models predict a slowdown of the Walker circulation with global warming. Atmospheric models, however, have failed to reproduce the slowdown already observed over the last 60 years, casting doubt on their ability to simulate slow climate change. Now a study has succeeded in simulating the slowdown and shows that changes in the sea surface temperature pattern across the Indo-Pacific are the cause. ... > [full story](#)



[Changing Climate, Not Tourism, Seems to Be Driving Decline in Chinstrap-](#)

[Penguin Populations](#)

ScienceDaily (Nov. 14, 2012) — The breeding population of chinstrap penguins has declined significantly as temperatures have rapidly warmed on the Antarctic Peninsula, according to researchers funded in part by the National Science Foundation (NSF). The study indicates that changing climatic conditions, rather than the impact of tourism, have had the greatest effect on the chinstrap population. Ron Naveen, founder of a nonprofit science and conservation organization, Oceanites, Inc., of Chevy Chase, Md., documented the decline in a paper published in the journal *Polar Biology*. Naveen and coauthor Heather Lynch, of Stony Brook University, are researchers with the Antarctic Site Inventory (ASI).

[climate change increases stress, need for restoration on grazed public lands](#) (November 14, 2012) --

Eight researchers in a new report say that climate change is causing additional stress to many western rangelands, and as a result land managers should consider a significant reduction, or in some places elimination of livestock and other large animals from public lands. ... > [full story](#)

Robert L. Beschta, Debra L. Donahue, Dominick A. DellaSala, Jonathan J. Rhodes, James R. Karr, Mary H. O'Brien, Thomas L. Fleischner, Cindy Deacon Williams. Adapting to Climate Change on Western Public Lands: Addressing the Ecological Effects of Domestic, Wild, and Feral Ungulates. *Environmental Management*, 2012; [\[link\]](#)

[Cultural dimensions of climate change are underestimated, overlooked and misunderstood](#)

(November 11, 2012) -- The impact of climate change on many aspects of cultural life for people all over the world is not being sufficiently accounted for by scientists and policy-makers. Cultural factors are key to making climate change real to people and to motivating their responses, new research suggests. ... From enjoying beaches or winter sports and visiting iconic natural spaces to using traditional methods of agriculture and construction in our daily lives, the research highlights the cultural experiences that bind our communities and are under threat as a result of climate change. The paper argues that governments' programmes for dealing with the consequences of climate change do not give enough consideration to what really matters to individuals and communities.

Culture binds people together and helps them overcome threats to their environments and livelihoods. Some are already experiencing such threats and profound changes to their lives. For example, the Polynesian Island of Niue, which experiences cyclones, has a population of 1,500 with four times as many Niueans now living in New Zealand. The research shows that most people remaining on the island resist migrating because of a strong attachment to the island. There is strong evidence to suggest that it is important for people's emotional well-being to have control over whether and where they move. The researchers argue that these psychological factors have not been addressed... Professor Katrina Brown from the University of Exeter's Environment and Sustainability Institute adds: "**The evidence is clear; when people experience the impacts of climate change in places that matter to them, the problems become real and they are motivated to make their futures more sustainable. This is as true in coastal Cornwall as in Pacific Islands.**"> [full story](#)

[climate science: Trends in use of words in scientific studies may impact public perceptions](#)

(November 7, 2012) -- The impact of climate science research on society is likely to depend on regular fashion cycles in the public's use of specific keywords relating to climate change, according to new research. ... > [full story](#)

[Bad news for salmon: streams warmer and lower](#)

November 6, 2012 A study of mountain streams in the West over the past 60 years finds the hottest temperatures of summer and the lowest water levels of fall are converging—which is bad news for salmon.

[Dr. Jeff Masters' WunderBlog](#)

[Despite a cool October, U.S. on track for its warmest year on record](#)

Posted by: [Dr. Jeff Masters](#), 7:06 PM GMT on November 10, 2012+36

For the first time in sixteen months, the contiguous U.S. has had a month with below-average temperatures, with October 2012 ranking as the 44th coldest (73rd warmest) October since record keeping began in 1895, said NOAA's [National Climatic](#)

[Data Center \(NCDC\)](#) in their latest State of the Climate report. Temperature extremes were scarce in October, as no states had a top-ten warmest or coldest October. Despite the cool October temperatures, the year-to-date period of January - October was the warmest such period on record for the contiguous U.S.--a remarkable 1.1°F above the previous record. Even if the remainder of 2012 ranks historically in the coldest one-third of November - Decembers ever seen, 2012 will beat out 1998 for warmest year. The first ten days of November have been warmer than average, and the next two weeks are predicted to also average out on the warm side, so it appears likely that we will have to have our coldest December on record in order to keep 2012 from setting the new mark. The November 2011 - October 2012 period was the warmest such 12-month period on record for the contiguous U.S., and the [seven warmest 12-month periods](#) since record keeping began in 1895 have all ended during 2012. Texas had their 9th driest October on record last month, and Washington, Michigan Ohio, Maine, and Maryland had top-ten wettest Octobers; Delaware had their wettest October on record, thanks to rains from Hurricane Sandy. The area of the U.S. experiencing moderate-to-exceptional drought shrank from 65% at the beginning of October to 59% by November 6, with drought conditions improving across parts of the Midwest and Northeast, but worsening across portions of the Northern Rockies.

[U.S. Ranchers Struggle to Adapt to Climate Change](#)

Scientific American - November 14, 2012

But scientists agree that **climate change** will up the ante considerably by bringing more extreme weather gyrations - searing drought one year, followed by torrential storms that can wash away cracked soil and destroy crops rather than quench their thirst.

[New Study Shows Effects of Climate Conditions On Bark Beetle Outbreaks](#)

ScienceDaily (Nov. 9, 2012) — A recent study by a team of scientists from the U.S. Forest Service's Pacific Southwest and Pacific Northwest research stations, and the University of Idaho confirms the important role climate plays on bark beetle outbreaks. Based on three decades of bark beetle outbreaks in Oregon and Washington, the researchers developed a statistical probability model to quantify the contribution of various climate conditions, such as temperature and precipitation, on outbreak levels and to estimate expected amounts of damage to lodgepole pine forests (e.g. total area with beetle outbreaks).

[Why Antarctic sea ice cover has increased under the effects of climate change](#) (November 11, 2012) -- Scientists have the first direct evidence that marked changes to Antarctic sea ice drift have occurred over the last 20 years, in response to changing winds. They can now explain why, unlike the dramatic losses reported in the Arctic, the Antarctic sea ice cover has increased under the effects of climate change. ... > [full story](#)

[Warming temperatures will change Greenland's face, experts predict](#) (November 13, 2012) -- Global climate models abound. What is harder to pin down, is how a warmer global temperature might affect any specific region on Earth. Researchers have now made the global local. Using a combination of climate models, they predict how different greenhouse gas scenarios would change the face of Greenland and impact sea level rise. ... > [full story](#)

[Tracking post-Sandy sewage](#) (November 9, 2012) -- With millions of gallons of raw sewage dumping into New Jersey waterways following Hurricane Sandy, scientists are using satellites to help predict the sludge's track into the ocean. ... > [full story](#)

[Sonoma County Emissions Down in 2011](#)

Posted on [November 13, 2012](#) by [brad](#)

Greenhouse Gas Emissions Have Fallen 14% in Three Years

Santa Rosa — Sonoma County greenhouse gas emissions totaled 3.8 million tons in 2011, according to a [new report](#) by the Climate Protection Campaign. This marks a reduction of 170,000 tons from the previous year and 600,000 tons from the county's high mark in 2008.

"We might actually make it to our 2015 target, but it's going to take a lot of dedication and work," said Climate Protection Campaign Executive Director Ann Hancock.

In 2005, Sonoma County and its nine cities each pledged to reduce the emissions that cause climate change by 25 percent below the 1990 level by 2015, the most aggressive target in the U.S. at the time.

3. POLICY

Breaking Down The BP Settlement: Where Will The Money Go?

By Climate Guest Blogger on Nov 16, 2012 at 9:19 am by Kiley Kroh

Yesterday, the Justice Department [announced](#) BP agreed to plead guilty to 14 criminal charges stemming from the 2010 Deepwater Horizon oil spill and agreed to pay \$4.5 billion in fines and penalties – the largest single criminal fine and largest total criminal resolution in US history. Attorney General Eric Holder emphasized several times that the announcement is only one piece of the government's ongoing efforts to hold BP fully accountable for the deaths of 11 men and one of the worst environmental disasters in US history.

Here's a rundown of what the settlement entailed and what lies ahead.

What were the charges?

- BP plead guilty to 14 counts: 11 felony counts of misconduct for the 11 workers killed at the rig, one misdemeanor count under the Clean Water Act, one misdemeanor count under the Migratory Bird Treaty Act, and one felony count of obstruction of Congress.
- Three BP employees were also charged, two of them with manslaughter.

Where will the money go?

In addition to the size of today's resolution, the settlement is also historic in its dedication of the majority of funds to the affected Gulf Coast states for environmental restoration.

- **\$2.4 billion will go to the [National Fish and Wildlife Foundation](#), – an independent, non-profit conservation group chartered by Congress in 1984. The funds will be paid out over a period of five years and be earmarked for environmental restoration and preservation in Gulf states.**
- **\$350 million will go to the National Academy of Sciences for oil spill prevention, education, research, and training – also to be paid out over five years.**
- **More than \$1 billion will go to the Coast Guard's Oil Spill Liability Trust Fund, overseen by the U.S. Coast Guard to be available to pay for future oil spill cleanup.**
- The oil giant will also pay \$525 million to resolve claims with the Securities and Exchange Commission for misleading its investors regarding the size of the Deepwater Horizon spill

Global warming talk heats up, revisits carbon tax

By SETH BORENSTEIN AP Science Writer / November 13, 2012

WASHINGTON (AP) — Climate change is suddenly a hot topic again. The issue is resurfacing in talks about a once radical idea: a possible carbon tax.

On Tuesday, a conservative think tank held discussions about it while a more liberal think tank released a paper on it. And the Congressional Budget Office issued a 19-page report on the different ways to make a carbon tax less burdensome on lower income people.

A carbon tax works by making people pay more for using fossil fuels like coal, oil, and gas that produce heat-trapping carbon dioxide.

Obama spokesman: "We would never propose a carbon tax"

Posted: Nov 15, 2012 10:42 AM PST Updated: Nov 15, 2012 12:14 PM PST

By Taylor Kuykendall, Reporter

Directly taxing emission of carbon dioxide to thwart its effect on climate has been much talked about post-election, but an spokesman for the president said it's off the table. By implementing a tax on carbon dioxide emissions, many believed significant reductions of greenhouse gas emissions could be achieved absent the complicated system of cap-and-trade that failed Congressional muster in 2010. The coal industry likely stands to suffer the most from any sort of tax on carbon dioxide emissions. At a press conference Wednesday, President Barack Obama emphasized a need to address climate change, but White House Press Secretary Jay Carney said that something would not be a "carbon tax." "We would never propose a carbon tax and have no intention of proposing one," Carney said in a press briefing. "The point the president was making is that our focus right now is the same as the American people's focus, which is on the need to extend economic growth, expand job creation." The president, Carney said, is focused on first and foremost the American economy and avoiding the approaching "fiscal cliff" of tax increases and spending cuts that will happen without bipartisan cooperation.

Obama Addresses Climate Change In First Press Conference Since Reelection

The Huffington Post | By [James Gerken](#) Posted: 11/14/2012 3:45 pm EST Updated: 11/14/2012 3:57 pm EST President Barack Obama reiterated the need to address climate change on Wednesday in his [first press conference](#) since winning reelection, but suggested that any legislative action to curb global warming was likely a long way off. "I am a firm believer that climate change is real, that it is impacted by human behavior and carbon emissions," Obama said. "And as a consequence, I think we've got an obligation to future generations to do something about it."

Responding to a question from The New York Times' Mark Landler about [calls to combat climate change in the wake of Hurricane Sandy](#), Obama cautioned, [as others have](#), that no single weather event can be linked directly to climate change. But he said that the overwhelming scientific evidence suggests that the changing climate is contributing to extreme weather more generally. "What we do know is the temperature around the globe is increasing faster than was predicted even 10 years ago," Obama stated. "We do know that the Arctic ice cap is melting faster than was predicted even five years ago. We do know that there have been an extraordinarily large number of severe weather events here in North America, but also around the globe." Obama emphasized measures taken during his first term to improve vehicle fuel efficiency standards and increase renewable energy production, and acknowledged that "we haven't done as much as we need to." Despite [near silence](#) during the campaign season on climate change, Obama said that the American people will hear more on the issue in the near future as he works to make "short-term progress in reducing carbons." "You can expect that you'll hear more from me in the coming months and years about how we can shape an agenda that garners bipartisan support and helps move this agenda forward," Obama said.

At the same time, however, the president acknowledged that the political will necessary to make the "tough political choices" necessary to address climate change doesn't currently exist, given the pressing economic concerns. "Understandably, I think the American people right now have been so focused and will continue to be focused on our economy and jobs and growth that, you know, if the message is somehow we're going to ignore jobs and growth simply to address climate change, I don't think anybody's going to go for that. I won't go for that," Obama said. Asked by Landler whether his comments meant that there was no consensus in Washington about how to combat climate change, Obama replied, "that I'm pretty certain of." "Look, we're still trying to debate whether we can just make sure that middle-class families don't get a tax hike. Let's see if we can resolve that. That should be easy. This one's hard," the president said. Some environmentalists reacted strongly to Obama's remarks at the press conference, which saw more attention given to topics like economic recovery and the attack on the U.S. consulate in Benghazi. [350.org](#) Executive Director May Boeve said in a statement, "The climate silence is broken, and now the president can show us he's serious with a decision already on his desk: rejecting the Keystone XL pipeline. The pipeline would unlock so much carbon that climate scientists say, if it were built, it would be 'game over' for the climate." Yet Time senior editor Bryan Walsh [tweeted](#) that "Obama answer did not make it sound like climate action was a priority of the first order." Obama's remarks on climate change come after environmentalists -- many of whom criticized the president for [failing to discuss climate change](#) during the campaign and advocating an "all of the above" energy strategy -- reacted with guarded optimism upon his reelection. Andrew Steer, the president of the World Resources Institute, [told HuffPost's Tom Zeller Jr.](#) in an emailed statement, "At the top of the list should be climate change -- which is already taking a serious toll on people, property, resources and the economy."

How cheap energy from shale will reshape America ... - The Guardian

www.guardian.co.uk > [Environment](#) > [Shale gas and fracking](#)

November 15, 2012 – After the *fall* of the *Berlin* Wall, the rise of China and the Arab spring, American *energy* independence looks likely to trigger the next great ...

Greens pressure Obama to veto airline emissions bill The Hill (blog) – November 14, 2012 Environmentalists are pressuring President Obama to veto a bill that would exclude U.S. airlines from European carbon emissions fees, casting it as the first test of the president's commitment to fighting **climate change** in his second term. Congress ...

Wildlife agency prepares for Alaska employee loss

DAN JOLING, Associated Press Associated Press November 16, 2012

The [U.S. Fish and Wildlife Service](#) office in Alaska is bracing for an exodus of expertise. Forty to 50 employees — just under 10 percent of the workforce — are expected to retire Dec. 31 to take advantage of a window to boost retirement pay.

Agency spokesman [Bruce Woods](#) says hundreds of years of experience will be lost with the departures. The agency manages 16 wildlife refuges in the state. The refuges together total nearly....

[NY city set to use laser to harass roosting crows](#)

AP November 16, 2012 A spokesman for the state Department of Environmental Conservation says crows like cities in winter because a "heat bubble" makes them 5 to 10 degrees warmer than the surrounding countryside and it's easier to avoid predators. [more »](#)

[California to Hold Auction of Greenhouse Gas Emissions](#)

By FELICITY BARRINGER (NYT) November 14, 2012 Compiled: 12:55 AM

An auction will formally open California's cap-and-trade system, intended to reduce carbon dioxide emissions by issuing allowances to polluters, then trading them in a market.

[Do cap-and-trade systems work?](#)

ENVIRONMENT David R. Baker Published 9:22 p.m., Sunday, November 11, 2012



Europe already has a carbon cap-and-trade system similar to the one California will launch on Wednesday. The northeastern United States does too, albeit in a far more limited form. Do they work? Do they cut the greenhouse gas emissions that cause global warming and do so at a reasonable price?

Both follow the same basic principles, setting an overall limit on emissions and forcing companies to buy and sell permits to release greenhouse gases into the atmosphere. Europe's market, called the [EU Emissions Trading System](#), opened in 2005 and now covers more than 11,000 power plants and industrial facilities in....

[Swept in by a Hurricane, Climate Change Returns to Washington](#)

After two years as the new third rail of American politics, climate change is poised for a return to Capitol Hill.

By Brandon Keim on Mon. November 12, 2012 3:00 AM PDT In the aftermath of Superstorm Sandy and this summer's drought, the political atmosphere seems to have changed. Washington observers say the cost of extreme weather is too big and obvious to be ignored.

[Voters Approve 81 Percent Of Land Conservation Ballot Initiatives](#)

By [Public Lands Team](#) on Nov 13, 2012 at 10:30 am



by Tom Kenworthy

The presidential and congressional elections of last week brought [good news](#) for those who value sensible land conservation policies. But there was more good news on the state and local levels as well.

Even in a time of fiscal constraints, voters in 21 states gave overwhelming approval to ballot measures providing some \$767

million for new parks, open space, water quality protections and the preservation of farms and ranches, according to [The Trust for Public Land](#).

Of the 57 measures that went to the voters on election day last week, 46 won — a success rate of 81%.

“From Maine to Texas to San Francisco, we saw voters across the political spectrum say yes to taxes and spending for conservation which helps their communities,” noted the trust’s president Will Rogers.

['Complicit' San Francisco Voters Reject Plan To Restore Yosemite's Hetch Hetchy](#) November 7, 2012

In San Francisco a local initiative put forth by environmentalists to return the Hetch Hetchy Valley to Yosemite Park for restoration by expanding the lower Don Pedro Dam was soundly defeated by voters. The valley's destruction, the brainchild of San Francisco industrialists who falsely claimed to congress the city burned after the 1906 earthquake due to a lack of available water supply, has been called the greatest environmental wrong over water rights in California's ongoing battles over the precious resource

[California OKs Rewards for Smart Water Usage](#)

November 9, 2012

One of California's largest water providers can reward customers who use the resource efficiently under a new plan approved by the state.

[New storm water runoff rules could cost cities billions](#)

November 9, 2012

The regional water board regulations place restrictions on 33 pollutants.

[Opinion: Time to approve desalination project](#) November 7, 2012

The city of Carlsbad, like San Diego as a region, has worked hard to build strong biotechnology research, tourism and manufacturing industries, as well as support the continuing viability of agriculture. For these important sectors to remain competitive in the future, we must create reliable, local water sources.

[Three Climate Change Actions For Obama’s Second Term](#)

Posted: 12 Nov 2012 08:39 AM PST by *Kevin Kennedy*, via [WRI Insights](#)

With [President Obama’s re-election](#), he has the opportunity to extend his legacy and take on big challenges. Climate change stands high on the list of issues that need to be addressed. As the President said in his acceptance speech:

“We want our children to live in an America that isn’t burdened by debt, that isn’t weakened by inequality, that isn’t threatened by the destructive power of a warming planet.” In the last four years, America has made some progress to address climate change, particularly in working with auto companies to establish [strong vehicle rules](#) that will significantly reduce emissions and our reliance on foreign oil. However, much more needs to be done. Here are three key pieces of an agenda for the second Obama administration to address climate change:

- 1) Use the Bully Pulpit....
- 2) Establish an American Plan for Climate Action...
- 3) Reduce Emissions of Other Potent Greenhouse Gases....

Climate science is clear: We’re running out of time to prevent global warming’s most severe impacts. With the campaign behind him, it’s time for President Obama to demonstrate his commitment to leading the country on a sustainable, low-carbon path to economic prosperity.

[A New Manhattan Project](#)

By [BILL KELLER](#) NY Times Opinion November 11, 2012

When the monster storm struck, my colleagues at The Times’s Room for Debate desk asked an array of experts whether New York should build protective barriers against the next one. The answers covered, pardon the expression, [the waterfront](#): Do something big! (“Worth the Investment”) Do something small! (“Big Projects, Big Problems”) Do nothing much! (“Low on the List of Life-Saving Ideas”) Think about doing, well, something! (“A Wake-Up Call to Consider the Options”) My friend and fellow columnist Joe Nocera, who grew up in Providence, R.I., [thinks](#) New York should look to that city’s waterfront defense system of dikes and gates. When President Obama visits this week, he has an opportunity to address not just the misery before his eyes, but the magnitude of the future threat it represents and the scale of the commitment required. Leading the world in the effort to curtail climate change is a moral obligation to our descendants, but there is an equally urgent need to defend against the consequences of the damage already done to our poor biosphere. At the risk of slighting the brutalized

communities of the Rockaways and the Jersey Shore, I'll call it a new Manhattan Project. It would make someone a fine legacy. I've spent some time talking to people who study weather disasters from different angles, looking for a leadership to-do list. Here's where I'd start:

- **Come together....**
- **Think big and small, long and short...**
- **Think green ... enough.**

In a post-Sandy roundup of bright ideas for the New York waterfront, The Times's Alan Feuer [described a plan](#) devised by an architecture firm to buffer Lower Manhattan against future storms by creating "a fringe of mossy wetlands strapped like a beard to Lower Manhattan's chin" — parks and tidal salt marshes that would sponge up the surging tide. The architect's rendering looked unbelievably cool. In the green part of my heart, I find this appealing. The practical part of my brain suspects it is a lovely fantasy. (Bowman, the barrier-minded oceanographer, calls it "science fiction.") But if wetlands restoration is not *the* answer, most experts say it is part of the answer. One reason runways at Kennedy Airport are less vulnerable to the disabling waves that afflict La Guardia in a storm is that restored wetlands in Jamaica Bay absorb a lot of water. Green should have a seat at the table.

- **Don't just rebuild. Rethink....**
- **Stop subsidizing stupidity....**
- **Redundancy, redundancy, redundancy....**
- **New thinking about budgets....**

The original Manhattan Project mobilized 130,000 people, cost the 2012 equivalent of \$25 billion and gave us, for better or for worse, the atom bomb. A new Manhattan Project could cost as much, might well employ as many people (jobs!) and would give us another century or two of America's greatest metropolis. Because that's what it's really about. When Malcolm Bowman asks offhandedly, "How long do we want New York City to last?," he is not dealing in hyperbole. He is just asking the right question.

Chesapeake Bay Foundation says law firm courting counties, threatening ...

BALTIMORE November 14, 2012 - A Baltimore law firm is asking rural counties to band together to challenge the new federally led Chesapeake Bay **restoration** strategy, something a foundation dedicated to the bay's health called one of the most serious attacks on clean ...

Fiscal Cliff Threatens Environmental Protections That Voters Supported

Posted: 13 Nov 2012 12:00 PM PST



by Frances Beinecke, via [NRDC's Switchboard](#)

Americans elected clean energy and clean air champions up and down the ticket last week. Even though oil, gas, and coal companies spent more than [\\$270 million on campaign ads](#) in the past two months, the majority of people rejected their dirty agenda. Voters want healthy air and safe drinking water, not more pollution. Our leaders should keep this in mind as they negotiate a way off the fiscal cliff as Congress reconvenes this week. If Congress fails to reach an agreement, automatic, across-the-board spending cuts would kick in, making it much harder for the government to deliver the health and environmental protections people value....

4. RESOURCES and REFERENCES

[The San Francisco Bay National Estuarine Research Reserve is excited to announce:](#)

More than a Message -- Planning Campaigns for Measurable

The second training in the Water Words that Work series.

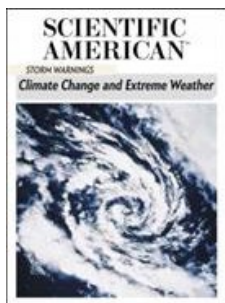
Date: January 25, 2012 Time: 9am to 3:30pm Location: TBD Cost: \$60.00*

Includes lunch, as well as coffee and light refreshments in the morning. Registration info will be announced next month. Check our [website](#) for more information. Even the strongest message won't deliver itself! Developing effective communication techniques to engage the public can be a major challenge for planners, managers and scientists. Learn how the pros plan their campaigns, measure their accomplishments, and do it even better next time. More than a Message provides a conceptual framework and practical tips to get the most out of the dollars and hours you put into your communications and outreach. The techniques presented in the workshop will help turn those blank stares into nodding heads - to reach your target audiences and inspire them to action on pressing environmental issues facing all of us. Join us for this follow up to Water Words that Work to take your communications to next level. We are able to keep the cost reasonable for this workshop thanks to generous support from the California Coastal Conservancy.

8th Annual California Rangeland Conservation Coalition Summit & 2nd Rangeland Science Symposium

January 24-25, 2013 - UC Davis Freeborn Hall

The California Rangeland Conservation Coalition is excited to announce the agenda and new additions to our 2013 Summit set for January 25, 2013. This year's event will be held in conjunction with the 2nd Rangeland Science Symposium on January 24, 2013 directed by the California Rangeland Watershed Laboratory. The two-day program and social will be held at University of California, Davis Freeborn Hall. Today's Rangeland Management: Integrating Science, Practices, Partnerships and Policy, is the theme for the 2013 event. This 2-day event will highlight the latest scientific finding on economics, natural resources and specific species regarding rangeland management. The event will also feature future opportunities in collaborative research across the state, and host California and Wyoming ranchers who will share their stories of ranching in complex and challenging settings. [Click here for the agenda.](#)



Storm Warnings: Climate Change and Extreme Weather-Scientific American's Latest E-Book By The Editors | November 13, 2012

Scientific American launched its e-Book program this summer, starting with [The Science of Sports: Winning in the Olympics](#). Each month, we add new titles selected from the most relevant issues facing science today. For November, we turn our attention to our immediate environment. Hurricanes. Blizzards. Flooding. Drought. If extreme weather events like these seem to be on the rise, your powers of observation are accurate. The first three-quarters of 2012 brought the worst European winter in 25 years, massive flooding in Australia, Brazil and China, and a deepening drought in the U.S. affecting more than 50 percent of the country. And then came the superstorm Sandy late last month, inflicting billions of dollars of damage to the Northeast. The likelihood of such extreme weather events is increasingly being tied to anthropogenic—or manmade, mostly through overproduction of carbon dioxide—global warming. It's no longer an abstract idea; it's being experienced directly and locally, on nearly every level. *Scientific American's* latest eBook, *Storm Warnings: Climate Change and Extreme Weather*, gives readers the tools to better understand what is driving climate change, what might be in store in the coming decades and how we can begin to reverse the detrimental effects that human activity is having on Earth's climate systems.....

JOB OPENING:

NOAA Office of National Marine Sanctuaries Deputy Director

Below are the links for the job announcement for the ONMS Deputy Director position. One is for non-federal employees and the other is for current and recently separated federal employees. It opened today and will be open for two weeks. ONMS

Director Dan Basta wants you all to have this in the event any of you are interested in applying.

--[Announcement for non-federal employees](#)

--[Announcement for federal employees](#)

Ocean Climate Initiative Specialist Position Available Immediately

Gulf of the Farallones National Marine Sanctuary

Send resume and cover letter to Kelley Higgason at kelly.higgason@noaa.gov or 991 Marine Dr., The Presidio, San Francisco, CA 94129 by **December 14, 2012**. Available immediately, Gulf of the Farallones National Marine Sanctuary is seeking a part-time, 20 hour per week Ocean Climate Initiative Specialist.

5. RENEWABLES, ENERGY AND RELATED



[IEA Report: Fossil Fuel Boom Is A Climate Disaster In The Making](#)

By Climate Guest Blogger on Nov 13, 2012 at 9:23 am by Lorne Stockman, via [Oil Change International](#)

The International Energy Agency released its annual flagship publication yesterday, the [World Energy Outlook](#). The IEA made an historic statement in the executive summary. It said, *"No more than one-third of proven reserves of fossil fuels can be consumed prior to 2050 if the world is to achieve the 2 °C goal,"* the internationally recognized limit to average global warming in order to prevent catastrophic climate change....

[US: Gulf Oil Spill Early Restoration Plan to Focus on Bird and Turtle Habitat](#)

The Deepwater Horizon Natural Resource Damage Assessment (NRDA) trustees (Trustees) have released the Deepwater Horizon Phase II Draft Early Restoration Plan & Environmental Review (DERP/ER) for public review and comment. The plan includes two proposed projects totaling about \$9 million that focus on restoring nesting habitat for birds and sea turtles...



A common sight in Germany: wind turbines in fields of rapeseed. Oil from the plant is made into biodiesel fuel to power cars, produce electricity and heat buildings. Credit: Osha Gray Davidson, InsideClimate News.

[German Law Gave Ordinary Citizens a Stake in Switch to Clean Energy](#)

Clean Break: Chapter 2 in the story of Germany's switch to renewables

By Osha Gray Davidson Nov 14, 2012

Zingst, Germany—"What an eyesore, huh?" the man standing next to me on the beach said, nodding in the direction of a little girl flying a kite. The man, in his mid-40s, seemed to enjoy my confusion. He waited a beat before pointing beyond the girl, far out into the Baltic Sea. "There," he said, smiling to make sure I understood his sarcasm. "The 'ugly' wind farm."

Staring hard, it was barely possible to make out the turbines on the horizon. Ten miles from shore, the Baltic 1 Wind Farm seemed as small and insubstantial as the scruffy grass along the coast. But, in fact, each of the nearly two dozen turbines is as tall as a 27-story building and has fiberglass epoxy blades nearly 150 feet long. Work has already begun on wind farms with even larger turbines that will generate twice the power of those at Baltic 1, enough to supply 250,000 households with

electricity. Wind turbines produce 10 times more electricity in Germany today than they did in 1999. What's even more remarkable is that this expansion is modest compared to the growth of solar power. In 1999, Germany had an installed solar capacity of 32 megawatts. In 2012, that figure was 30,000 megawatts—a nearly 1,000-fold increase in a nation that gets roughly as much sunlight as Alaska. On a sunny day that's as much electricity as 13 nuclear power plants would produce.....

Doing The Climate Math: Action Obama Can Take Now

Posted: 14 Nov 2012 07:30 AM PST by RL Miller

Like her formal name Cassandra, Hurricane Sandy brought to American consciousness what science has been yelling at us for years: climate change is real, it's happening now, and it's likely [worse than models predict](#). The global economy fiddles away \$500 billion each year — the [cost of inaction on climate](#).

The dirty hippies at Pricewaterhouse Cooper warn that the previous goal of [two degrees Celsius is virtually unattainable](#) (pdf). Yet consensus for climate action in the United States in President Obama's second term seems limited to Environmental Protection Agency actions nibbling around the edges of what power plants can burn. There's a better solution: keep the coal in the ground.

It's time for a moratorium on Powder River Basin coal. The Powder River Basin in eastern Wyoming supplies coal to the Midwest and, if the coal barons have their way, the Far East. The American coal market is declining, which Bob Murray [blames on President Obama](#) but those in the reality-based community attribute, mostly, to [cheap natural gas](#). Thus, the coal barons are [eyeing Asian markets](#) through Washington and Oregon, but encountering stiff resistance from Pacific Northwest folk concerned about everything from longer waits at traffic signals to gigatons of carbon changing our climate.

Meanwhile, Powder River Basin coal, much of which is located on federal land, is auctioned by the Bureau of Land Management for [obscenely low prices](#) — Peabody Coal recently won the right to mine for \$1.11/ton what is sold in China for \$97 — \$123/ton. The gap between what taxpayers receive and what Peabody sells means that [United States taxpayers subsidize Chinese demand](#).

The current vogue in Washington speculation is for a carbon tax despite the minor detail of a lack of support from both the House and the [White House](#). But will a \$20/ton tax on carbon solve global warming? The Breakthrough Institute warns that [carbon pricing will encourage natural gas more than renewables](#). We need to keep it in the ground.

Last week, I attended Bill McKibben's Do The Math lecture at UCLA, in which he showed how the fossil fuel companies enable our addiction: the drunk knows that one beer is the safe limit, but the bartender keeps putting a dizzying array of products on the counter top. His math is pretty simple: to keep the world on pace to warm no more than two degrees Celsius, we need to keep 80% of the world's fossil fuels in the ground.

Today, the wild eyed fanatics at the International Energy Agency backed up McKibben in the [World Energy Outlook](#): No more than one-third of proven reserves of fossil fuels can be consumed prior to 2050 if the world is to achieve the 2 °C goal, unless carbon capture and storage (CCS) technology is widely deployed. This finding is based on our assessment of global "carbon reserves", measured as the potential CO2 emissions from proven fossil-fuel reserves. Almost two-thirds of these carbon reserves are related to coal, 22% to oil and 15% to gas. Geographically, two-thirds are held by North America, the Middle East, China and Russia. [As with the Keystone XL pipeline battle, a Powder River Basin moratorium can be accomplished by executive order](#), without any need for Congressional action. There's precedent — in 2009, the Obama administration suspended 77 Bush-era oil/gas leases in Utah, and last week [drastically scaled back public lands available for oil shale leasing](#). The land can be studied for a [Strategic Coal Reserve](#). A moratorium needn't be forever — just long enough to calculate the true costs to the American taxpayer of mining and burning all that carbon, and pricing it accordingly. A \$20/ton tax won't deter the enemy of the human race. We need a plan to keep the coal in the ground. Start with the Powder River Basin, President Obama.

RL Miller is an attorney and environment blogger with Climate Hawks. This piece was [originally published](#) at Daily Kos and was reprinted with permission by the author.

Four Important Things To Know About California's First Ever Carbon Auction

Posted: 14 Nov 2012 05:50 AM PST

by Emily Reyna, via [Environmental Defense Fund](#)

While millions of Americans recover from the Sandy-Nor'easter extreme weather event combo, and even as President Obama's remarks about action against a ["warming planet"](#) linger, all eyes will be on California this coming Wednesday. This

is when the next big event in the climate change conversation will take place. Between 10am and 1pm pacific time on November 14th, California will conduct the state's first ever cap-and-trade auction for climate change pollution. This landmark event will kick off the second largest carbon market in the world, the European Union being the first. Entities covered in the program include utilities, oil refineries, oil producers, and large manufactures, though other individuals and organizations can also participate to buy carbon allowances if they meet the state's rigorous requirements. A [practice run](#) was held back in August, and all systems are ready to go. More information about the nuts and bolts of the auction can be [read here](#). In anticipation of this historic occasion, here are four things to keep in mind:

1. This is the best designed cap-and-trade program in the world

California has the good fortune of [learning from predecessor cap-and-trade programs](#) like the European Union Emissions Trading Platform, the [Regional Greenhouse Gas Initiative](#), and the Acid Rain Program, just to name a few. Key elements of California's program include giving free allowances to industry in the beginning years to help with transition; letting entities bank allowances for future use; and establishing an allowance reserve in case prices exceed a certain value. All help keep carbon prices more stable and make for a well-functioning market.

2. A price will be established for carbon, but that will vary as the program evolves

The California program will include auctions four times a year through 2020 – 32 more times after November 2012. As such, the number of participants, the settlement price and other results of the first auction may not necessarily predict the activity of future auctions. Over time, the market will change and both prices and participation will fluctuate as the cap reduces and businesses decide how best to participate.

3. Money from the auctions will be used to invest in California's clean energy future

Proceeds from the auction must be invested in ways that further the goals of the law – the [Global Warming Solutions Act of 2006 \(AB 32\)](#). Though these investments are scheduled to start in the next fiscal year, a specific investment plan is still underway and is being guided by [two bills passed at the end of California's legislative session](#). Likely project categories include renewable energy, energy efficiency, advanced vehicles, and natural resource conservation. In addition, 25% of proceeds must be used in ways that benefit disadvantaged communities. These investments will boost clean tech in California, improve air quality, and *create jobs*.

4. California's leadership will serve as a launch pad for other programs

California is the ninth largest economy on the planet, and the world is watching. No state or country can stop climate change alone, but California's environmental policies have a history of success and replication, including clean car, clean fuel and energy efficiency standards that have saved consumers across the US hundreds of billions of dollars in avoided energy purchases. If the past is any indicator, California's rich history of leading the nation on responses to critical environmental problems, while delivering wide ranging benefits, means the US is on the brink of something special.

A public notice of the auction results will be released on Monday, November 19, 2012 and will be posted to both the [Air Resources Board](#) and [auction website](#).

Emily Reyna is Senior Manager of Strategic Partnerships and Alliances for the Climate & Air Program at the Environmental Defense Fund. This piece was [originally published](#) at EDF and was reprinted with permission.

[BP To Pay Largest Criminal Fine In U.S. History For Deepwater Horizon Disaster](#)

Posted: 15 Nov 2012 09:25 AM PST BP has agreed to pay an [historic \\$4.5 billion criminal fine](#) over a six-year period, after pleading guilty to 11 felony counts and criminal charges for the 2010 Deepwater Horizon disaster that killed 11 workers. After two years, the litigation is not yet over since BP faces damages from Gulf states and additional civil charges from the Justice Department.

[Exxon: Carbon Tax Would 'Play A Significant Role In Addressing Rising Emissions'](#)

Posted: 15 Nov 2012 06:41 AM PST President Obama [indicated](#) yesterday in a press conference that a carbon tax is not high on his Administration's priority list. Nor does the policy have much support from [leading Republicans](#) in the House of Representatives. But with chatter about carbon taxes in both conservative and progressive Washington political circles growing into a [serious bi-partisan conversation](#), influential players are chiming in with their support. Speaking to Bloomberg News, oil and gas giant Exxon [reiterated its support](#) for a carbon tax yesterday. A spokeswoman for the company said that the tool could "play a significant role in addressing the challenge of rising emissions." "Combined with further advances in energy efficiency and new technologies spurred by market innovation, a well-designed carbon tax could play a significant role in addressing the challenge of rising emissions," Kimberly Brasington, a spokeswoman for the company, said in an e-mail. "A carbon tax should be made revenue neutral via tax offsets in other areas," she added. Exxon's political action committee gave nearly \$1.2 million to political candidates in the past two years, 93 percent of it to Republicans, according to the Center for Responsive Politics.



[Gannets could be affected by offshore energy developments](#) (November 9, 2012) -- Scientists have discovered that proposed offshore renewable energy developments in the English Channel have the potential to affect the foraging behavior of northern gannets from Alderney in the Channel Islands. ...

[Using rust and water to store solar energy as hydrogen](#) (November 11, 2012) -- How can solar energy be stored so that it can be available any time, day or night, when the sun shining or not? Scientists are developing a technology that can transform light energy into a clean fuel that has a neutral carbon footprint: hydrogen. The basic ingredients of the recipe are water and metal oxides, such as iron oxide, better known as rust. ... > [full story](#)

6. **OTHER NEWS OF INTEREST**

[Crossing the Line](#)

New Yorker by [Elizabeth Kolbert](#) November 12, 2012

In the summer of 2007, Eve Mosher, an artist who grew up in Texas and lives in New York, bought a machine known as a Heavy Hitter. Heavy Hitters are typically used to produce the white chalk lines found on Little League fields, but Mosher had an entirely different purpose in mind. She filled the Heavy Hitter with a combination of white chalk and blue pigment and began pushing it through the streets of Brooklyn.

Mosher's idea was to draw a line around the edge of the borough. The line would follow a particular elevation—ten feet above sea level—much like a contour line on a map. Ten feet above sea level was the height that waters were expected to reach in New York during a hundred-year flood. Owing to climate change, though, the whole concept of a hundred-year flood was becoming obsolete. By the twenty-twenties, according to a report that Mosher read by a scientist at Columbia University, what used to be a hundred-year flood could be happening once every forty years. By the twenty-fifties, as sea levels continued to rise, it would become a twenty-year event. And by the twenty-eighties it could be occurring as often as once every four years. Mosher couldn't understand why a projection like this wasn't a major topic of discussion in Washington. In fact, it wasn't being discussed at all.

[Nature Close Up with the Bird Photo Booth](#)

Posted By: [Robert Lachman](#) November 15, 2012 LATIMES

When I visited the [L.A. Art Mobile Arts Festival](#) in Santa Monica a few months ago, one group of photographs really caught my attention, striking close-ups of birds. Normally nature photographs aren't that unusual, but these larger-than-life blowups were taken with an [iPhone](#). I haven't had much success getting any birds close enough to get photographs worth mounting on my wall. There must be a trick for photographer and inventor Bryson Lovett's success, and, of course, there is, the [Bird Photo Booth](#). I knew photo booths at parties and nightclubs have become the rage, but a photo booth for birds? After trying out a booth recently at a party, I think the photo booth for birds makes a lot more sense. I know there's a lot of nostalgia for fuzzy quartets of low-quality snapshots of you and your friends making funny faces, but really are you going to enlarge and frame them? Is they really high-quality pictures? High-quality photographs of birds in nature are far more interesting. Lovett's Bird Photo Booth invention also fits a [GoPro](#) camera. Equally as fun is the video you can shoot. The Bird Photo Booth is made from precision CNC metal and sustainably harvested white oak with special inserts for your iPhone or GoPro. He has it listed on [Kickstarter](#), which raises funds for inventors' creative designs using the public as investors. I was sold going for the \$149 price, which includes the Bird Photo Booth, a macro lens and a polarizing filter. Lovett created Bird Photo Booth because he wanted to bring birds close to people, to be able to see the expressions and personalities of birds up close with great detail. Because it comes with a macro lens, the iPhone focuses on the subjects, not the background....



[Captive animals show signs of boredom, study finds](#) (November 14, 2012) -- Wondering if your caged hamster gets bored? It's highly likely if the critter has nothing to do all day. Those are the findings of researchers in the first study to empirically demonstrate boredom in confined animals. ... > [full story](#)

Exposure to light at night may cause depression, learning issues, mouse study suggests (November 14, 2012) -- For most of history, humans rose with the sun and slept when it set. Enter Thomas Edison and colleagues, and with a flick of a switch, night became day, enabling us to work, play and post cat and kid photos on Facebook into the wee hours. According to a new study of mice, however, this typical 21st-century scenario may come at a serious cost: When people routinely burn the midnight oil, they risk suffering depression and learning issues, and not only because of lack of sleep. The culprit could also be exposure to bright light at night from lamps, computers and even iPads. ... > [full story](#)

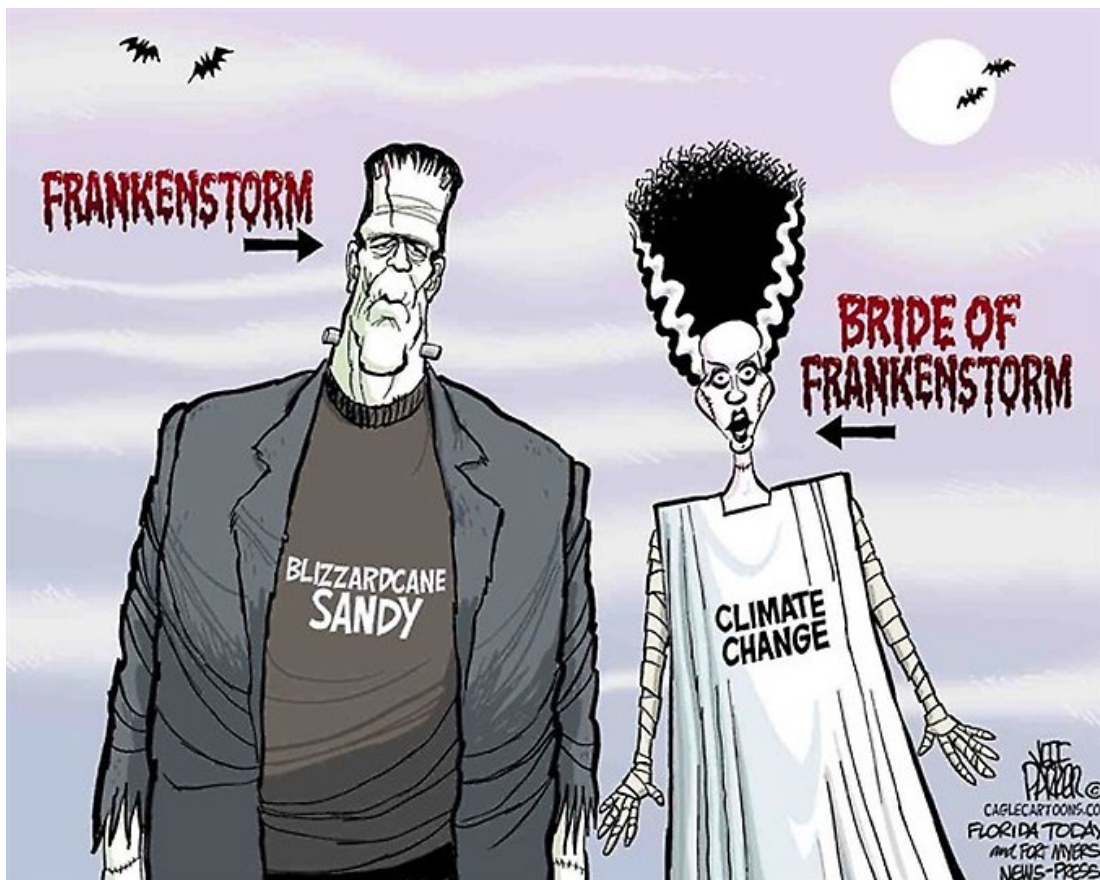
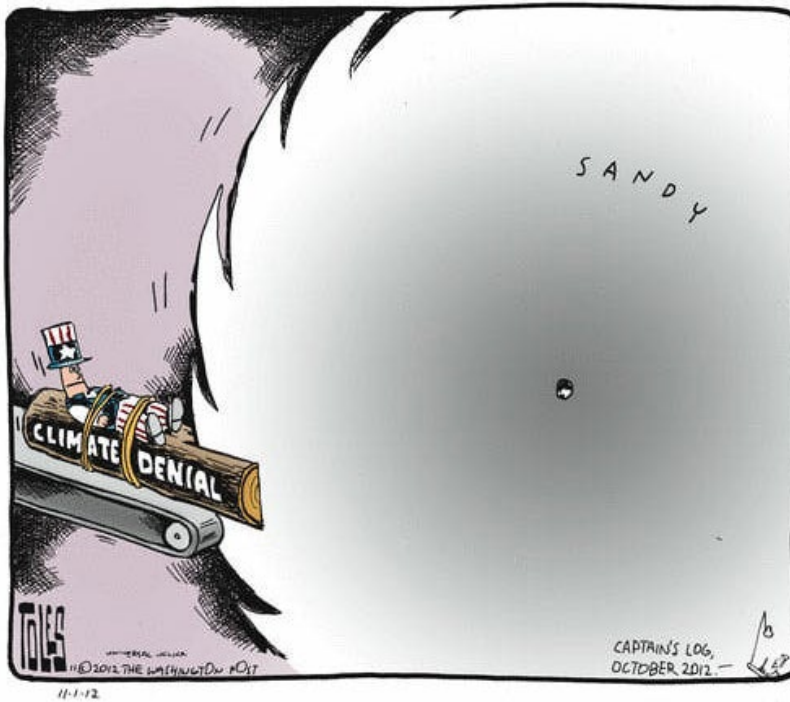
High exposure to food-borne toxins: Preschool children particularly vulnerable to compounds linked to cancer, other conditions (November 13, 2012) -- In a sobering study, researchers measured food-borne toxin exposure in children and adults by pinpointing foods with high levels of toxic compounds and determining how much of these foods were consumed. ... > [full story](#)

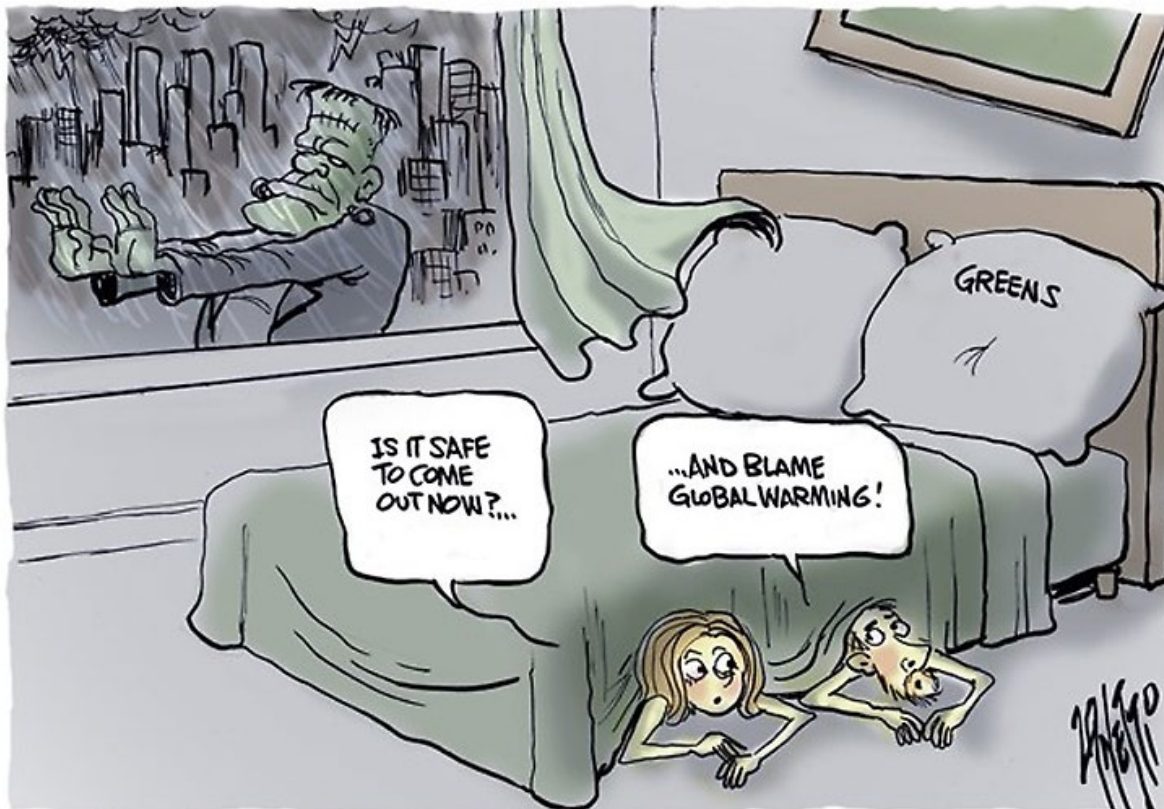
Even low-level radioactivity is damaging, scientists conclude (November 13, 2012) -- Even the very lowest levels of radiation are harmful to life, scientists have concluded, reporting the results of a wide-ranging analysis of 46 peer-reviewed studies published over the past 40 years. Variation in low-level, natural background radiation was found to have small, but highly statistically significant, negative effects on DNA as well as several measures of health. ... > [full story](#)

Weekly soft drink consumption bubbles up knee osteoarthritis; especially in men (November 11, 2012) - Sugary soft drink consumption contributes not only to weight gain, but also may play a role in the progression of knee osteoarthritis, especially in men, according to new research findings. ... > [full story](#)

7. **IMAGES OF THE WEEK**



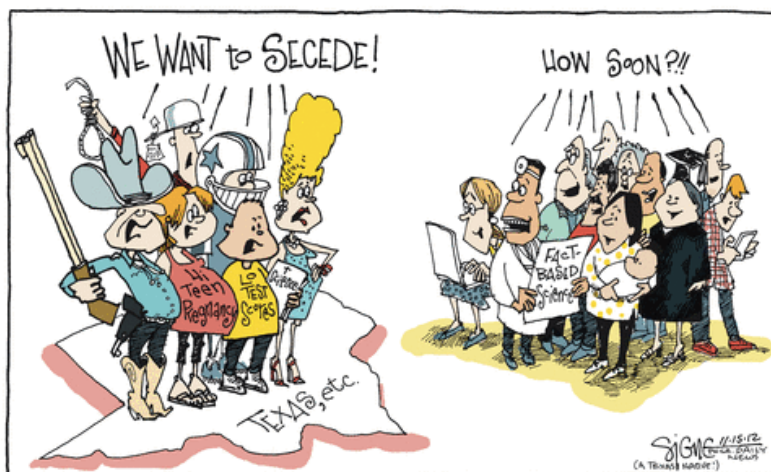
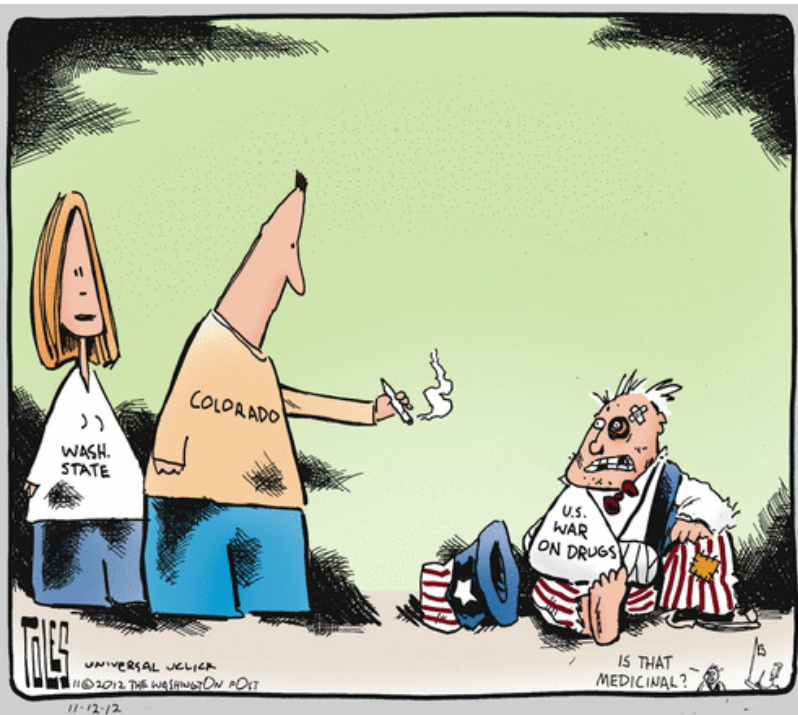
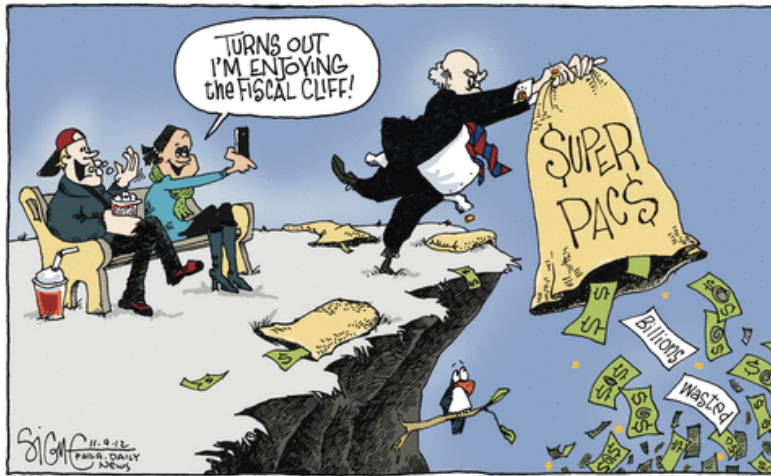


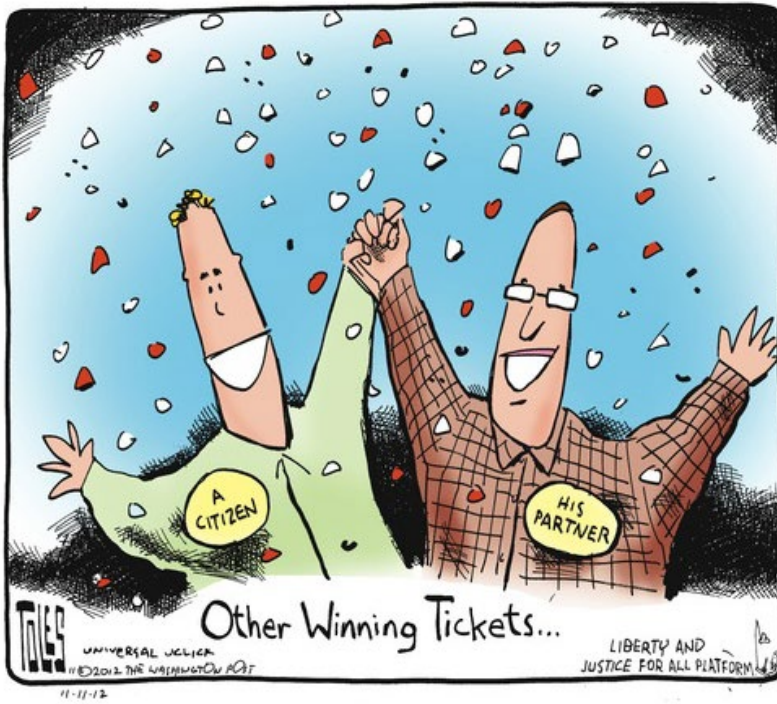


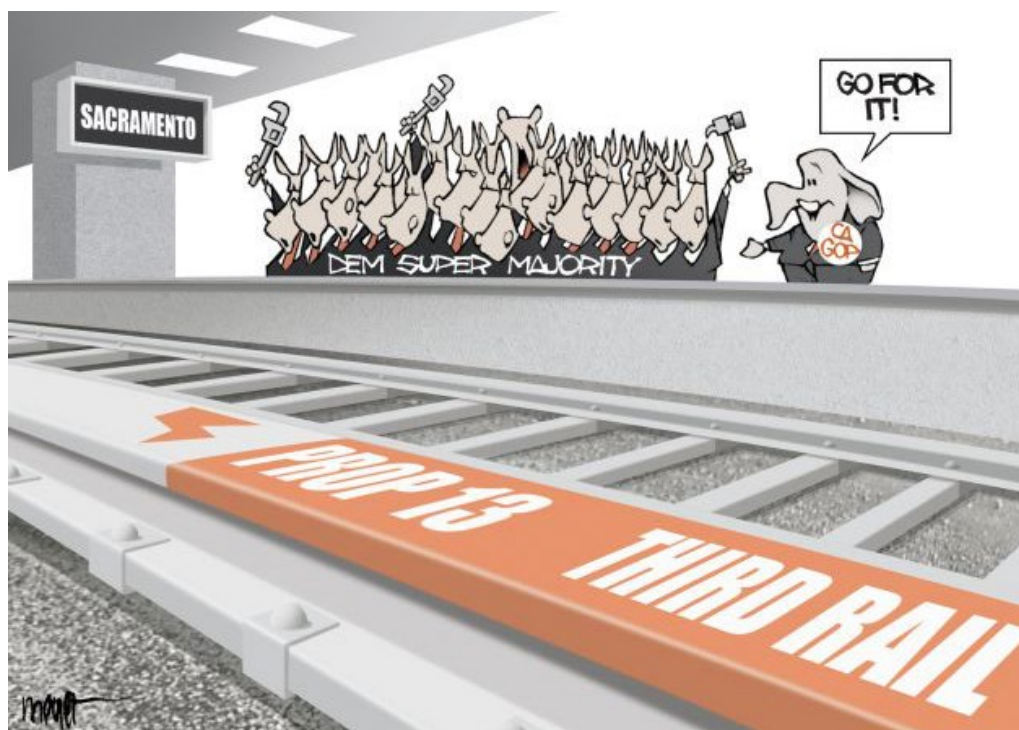
BODY ARMOR for TODAY'S MILITARY LEADER











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