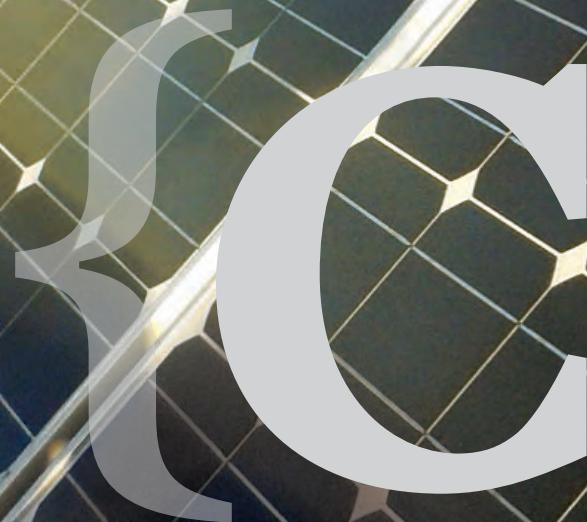


Union of
Concerned Scientists



Catalyst

Volume 15, Fall 2014

Solar Power on the Rise

*A bright future for
energy from the sun*

Raging fires,
spiraling costs

Every day is
Halloween for kids

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SENIOR EDITOR
Bryan Wadsworth

EDITOR
Heather Tuttle

DESIGN
Rigsby Hull

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The Union of Concerned Scientists puts rigorous, independent science to work to solve our planet's most pressing problems. Joining with citizens across the country, we combine technical analysis and effective advocacy to create innovative, practical solutions for a healthy, safe, and sustainable future.

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CHAIR
James J. McCarthy

PRESIDENT
Kenneth Kimmell

NATIONAL HEADQUARTERS
Two Brattle Square
Cambridge, MA
02138-3780

PHONE
617.547.5552

EMAIL
ucs@ucssusa.org

WEB
www.ucssusa.org

[FIRST PRINCIPLES]

A Historic Opportunity



By Ken Kimmell



As I mentioned in the fall issue of *Earthwise*, President Obama and the Environmental Protection Agency (EPA) are making history by requiring states to lower heat-trapping carbon dioxide emissions from power plants. However, if we want to avoid the worst consequences of global warming, the rule can and must be strengthened. The EPA proposes to cut power plant emissions 30 percent below 2005 levels by 2030—but we've already reduced emissions 15 percent since 2005, so another 15 percent is too modest.

UCS is working hard to build a groundswell of grassroots support for a tougher standard that, unlike the current proposal, assumes strong growth in renewable energy. This growth is exemplified in our cover story (see p. 6), and provides a strong foundation upon which a more

UCS is working hard to build a groundswell of grassroots support for a tougher standard that supports clean energy development.

ambitious EPA rule could build. Indeed, UCS analysis has shown that we can cost-effectively cut emissions by 50 percent if we unleash the full potential of renewable energy, as well as benefit from greater electric reliability and lower stress on water supplies (see www.ucssusa.org/climategamechanger). At press time, nearly 10,000 UCS members had already submitted comments to the EPA calling for a more aggressive target, and more are expected to respond before the comment period ends December 1.

Once the rule is finalized next June, the action will shift to the states. UCS will work with state officials across the country, encouraging them to embrace renewable energy, energy efficiency, and regional plans as the best pathway to lower carbon emissions. With your help, enough states will heed our call that this enlightened path becomes the “new normal,” creating a tipping point for national policy. {C}

Ken Kimmell is president of UCS.

What more can be done to build support for sustainable agriculture and food that is healthy, affordable, and accessible?

When schools include gardening—growing vegetables and fruit for school lunches and snacks—kids become really invested in what appears on their plate. Teaching them to grow their own food is the beginning of the revolution in how and what we eat.

Audrey David, New York, NY

Follow the example of the French supermarket chain Intermarché, which is featuring imperfect produce at 30 percent off the normal price. A huge marketing campaign preceded the introduction of this produce, and it is selling very well. The shops also sell fruit juices and soups made from this produce that would otherwise be thrown away.

Karen Rudin, Oberrieden, Switzerland

More heirloom seed “libraries” (check out a few [seeds], grow plant, return a few seeds). Some of us have very limited space, so whole packets of seeds are wasted.

Debra Golden, Kirkland, WA

Help mayors across the country start city garden co-ops, and for a person or garden to be a member, no chemicals can be used. The city would provide a place to sell the produce or flowers. Each member would receive proceeds based on their contribution to the city market.

Ask all reputable supermarket chains to carry local produce and organic produce. Ask all such stores to put out a call in their areas for people to sell their organic produce to the local supermarkets.

Gail Yborra, Wilmington, DE

WE WANT TO KNOW

What large-scale initiatives should be undertaken to reduce electricity consumption in the United States?

We will publish selected responses (edited for length) in the spring issue of *Catalyst*. You can respond via:
EMAIL: catalyst@ucsusa.org
FACEBOOK: www.ucssusa.org/observations

Help improve access to fresh produce in food deserts—perhaps by connecting produce brokers with corner stores and liquor stores. Could liquor stores be offered tax breaks or some other sorts of incentives for selling fresh produce?

Shosh Blachman, Berkeley, CA

Subsidize farmers growing organic vegetables and fruits and raising pastured chickens and livestock. Expand SNAP [Supplemental Nutrition Assistance Program] coverage to more farmers markets. Reduce or eliminate unhealthy junk food items that may be purchased with SNAP and/or offer a SNAP discount on vegetables and fruits.

William Roberson, Brooklyn, NY



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Hospitals Can Make Diets Healthier

UCS recently partnered with the Johns Hopkins Center for a Livable Future to demonstrate how health care institutions can prevent illness in their communities by encouraging healthy eating. This partnership is part of an effort to bolster an innovative new U.S. Department of Agriculture (USDA) program. In stark contrast with farm subsidies that underwrite unhealthy processed foods, this new program provides funding to help low-income consumers buy more fruits and vegetables at farmers markets, supermarkets, and elsewhere.

Our resulting policy brief (www.ucssusa.org/hospitalsandhealthyfood) uses examples set by several health care institutions around the country

to show how access to healthy foods can be expanded. Hospitals have established on-site farmers markets and provided “prescriptions” for free fruits and vegetables, while health insurers have offered discounts to healthy eaters. But more investment in healthy eating is needed, and our brief recommends that hospitals partner with community groups and the USDA in that effort.

We unveiled our recommendations at the start of National Farmers’ Market Week in August, and received coverage by multiple media outlets including the Spanish-language TV network Univision. Highlighting these successes for a broad audience will help build momentum for further action at local and national levels.



At a farmers market in Washington, DC, UCS Agricultural Economist Jeff O'Hara discusses our recommendations for expanding communities' access to healthy foods.

Landmarks at Risk—Here and Abroad

As we uncovered in our May report *National Landmarks at Risk*, archaeological, cultural, and historical sites around the country are already suffering from the impacts of climate change—and this threat is not unique to the United States. UCS will bring this message to a global audience at the World Parks Congress in Sydney, Australia, in November. The week-long event, held once every 10 years, brings together more than 3,000 park managers, conservation biologists, and government ministers. Adam Markham, director of climate impacts at UCS, will moderate a panel convened by UCS and the National Park Service on managing protected archaeological and historical sites in the face of global warming.

Our efforts are intended to fill a gap in the major scientific climate assessments, including those by the U.S. Global Change Initiative and the Intergovernmental Panel on Climate Change, which have not dealt with climate-related threats to cultural heritage. The stories in our report (www.ucssusa.org/landmarksatrisk) will help us build awareness, the political will to significantly reduce global warming emissions, and a network of experts and advocates who will push for additional protections at vulnerable historical and archaeological sites.

Bring More Healthy Food to Your Community

Most people aren't familiar with the government policies that determine how the ingredients in their meals are grown, how their favorite grocery stores are

Most people aren't familiar with the government policies that determine how the ingredients in their meals are grown.

stocked, or how their kids' school cafeteria menus are planned. But now UCS has created a resource to help everyone have a say in these decisions, *Healthy Food in Your Community: A Toolkit for Policy Change* (www.ucssusa.org/foodtoolkit).

The food policy landscape may be complex, but you can help shape local policies in a way that will ensure everyone in your community has access to healthy food. The resources and tips in our toolkit will help you understand the scientific connection between food and health, navigate the policy landscape in your community, and become an informed voice for change.

Science Must Help Protect Our Oceans

Andrew Rosenberg, director of the Center for Science and Democracy at UCS and an oceans expert, was recently invited to serve on the steering committee and as a panelist at a conference convened by Secretary of State John Kerry to address the health of our oceans—an issue often overlooked by the media. Marine pollution, overfishing, and ocean acidification stemming from climate change are challenges that affect society as much as military conflicts.

Rosenberg is an expert on fisheries and ocean management and was the lead

author of the oceans chapter in the third National Climate Assessment released earlier this year. He spoke to the 300-plus attendees—who included heads of state, advocates, philanthropists, and scientists—about the science behind ocean assessment reports, and how their findings can help push meaningful policy action. After the conference, he was hopeful about the prospects for progress despite the lack of U.S. action (the United States has not yet signed the Law of the Sea). A follow-up conference has been scheduled for next year.

across the globe together at Princeton University to discuss international security and arms control issues with UCS staff and other senior security experts. At this latest annual installment of the International Summer Symposiums on Science and World Affairs, which UCS has convened for more than 20 years, each participant gave a presentation on the topic of his or her choice, encompassing such issues as verification of nuclear arms control treaties, missile defense, nuclear power, and controls on nuclear materials.

The symposiums help early-career scientists begin to apply their technical expertise to policy issues, and are frequently the first opportunity for these young researchers to travel internationally or participate in an event outside their regular academic environments. Over the years, these events have been integral to building and strengthening a technical security community internationally. To learn more, visit www.summersymposium.org.

The Next Generation of Security Advocates

For eight days this past July, UCS brought 42 young scientists and engineers from



Young scientists and engineers from 10 countries attended the UCS International Summer Symposiums on Science and World Affairs in July.



SOLAR POWER ON THE RISE

As the costs come down, rooftop systems are going up. And UCS sees an even brighter future for energy from the sun.

BY JOHN ROGERS

Left: Solar panels create clean electricity for a ski resort in Aspen, CO.

Massachusetts resident Dennis Villanueva lives far from the Sunbelt region. But that hasn't stopped him from being an active participant in a solar revolution now under way across the United States.

When Villanueva and his family purchased a solar photovoltaic (PV) system last October, they joined the ranks of a rapidly growing number of solar home owners—people taking charge of their energy destinies and taking advantage of vastly improved economics and smart policies. Paired with recent energy efficiency improvements, the Villanuevas' new 6.25-kilowatt PV system supplies essentially all of the home's electricity needs. Tax credits, rebates, and other incentives are reducing the time it takes for the system to pay for itself to less than 5.5 years.

When asked what motivated Villanueva and his family to switch to solar energy, he simply says, "It is good business!" As the new UCS report *Solar Power on the Rise* documents, Villanueva's assessment is increasingly accurate even in many northern states like Massachusetts that receive less intense sunlight than those in the South. Massachusetts ranks sixth in the nation in total installed solar capacity.

Nationwide, the pattern is unmistakable: installed capacity for rooftop solar tripled from 2010 to 2013 and continues to grow at an astonishing rate of more than 50 percent every year. Solar PV systems now adorn some 400,000 homes—13 times more than

In 2014, a PV system is projected to be installed in this country every 2.4 minutes.

just eight years ago. Last year, solar energy accounted for almost 30 percent of newly installed electricity capacity in the United States, and in 2014, a PV system is projected to be installed in this country every 2.4 minutes.

This remarkable rate of adoption ensures that solar power will meet an ever larger share of our overall electricity needs in the years ahead. And there is plenty of room for continued growth: even in the most solar-friendly states, it accounts for 2 percent of total electricity generation.

MULTIPLE BENEFITS—FOR A PRICE THAT KEEPS DROPPING

At the core of rooftop solar installations, PV panels are relatively simple: photons of light striking certain materials in the panels cause electrons to be released. When the panels are connected to a circuit, these electrons provide electricity. Solar



The solar panels on Dennis Villanueva's home in Massachusetts meet virtually all of the family's electricity needs.

panels involve no moving parts, no fuel other than the sun, and no other inputs or by-products. Unlike fossil fuels, solar panels generate electricity without air pollution, global warming pollution, or solid waste.

The plummeting costs of solar power, along with innovative financing approaches, are a big part of its recent success, dramatically improving access to the technology. From 2010 to 2013, the price of a typical household system dropped by almost 30 percent: a typical system that might have cost \$32,000 in 2010 may now cost \$23,000, even before tax credits and other incentives. In some states, these incentives could bring the final cost below \$10,000. Leasing or power-purchase arrangements, which can give home owners the benefits of solar power with low or no up-front costs, are also popular: two-thirds of new residential systems are third-party-owned.

Along with these increasingly attractive economics and its environmental benefits, solar power creates jobs: the U.S. solar industry employed more than 140,000 people in 2013—a 53 percent

increase over 2010. The industry comprises more than 6,000 companies spread across all 50 states.

Another important benefit of rooftop solar power is that it can provide electricity to the grid when and where that power is most valuable. For example, in many places, electricity demand generally peaks in the afternoon on hot, sunny days when air conditioning use is high—coinciding with hours of strong solar output.

But what may be most surprising is just how plentiful a resource solar energy is: the sunlight available for PV generation varies by less than 30 percent across much of the country (see the map). In Portland, ME, for example, a PV system can generate 85 percent of what the same system would generate in Los Angeles, 95 percent of what it would in Miami, and 6 percent *more* than it would in Houston.

THE REVOLUTION SCALES UP

While rooftop solar installations are the most visible part of this story, large-scale solar installations—both large-scale PV and concentrating solar power (CSP, which uses the sun's heat to make steam that drives electricity-generating turbines)—have their own amazing stories to tell. The cost of electricity from new large-scale PV projects was 50 percent lower in 2013 than 2010, the installed costs were 60 percent lower than rooftop solar's, and the growth rate of these projects has been even more impressive than rooftop solar's. CSP, meanwhile, is set to have its best year ever: 2014 has already seen the startup of the world's largest solar facility (in California) and more is on the way. Large-scale solar can add some environmental

challenges but efforts are ongoing to manage them, helping to increase the technologies' overall benefits.

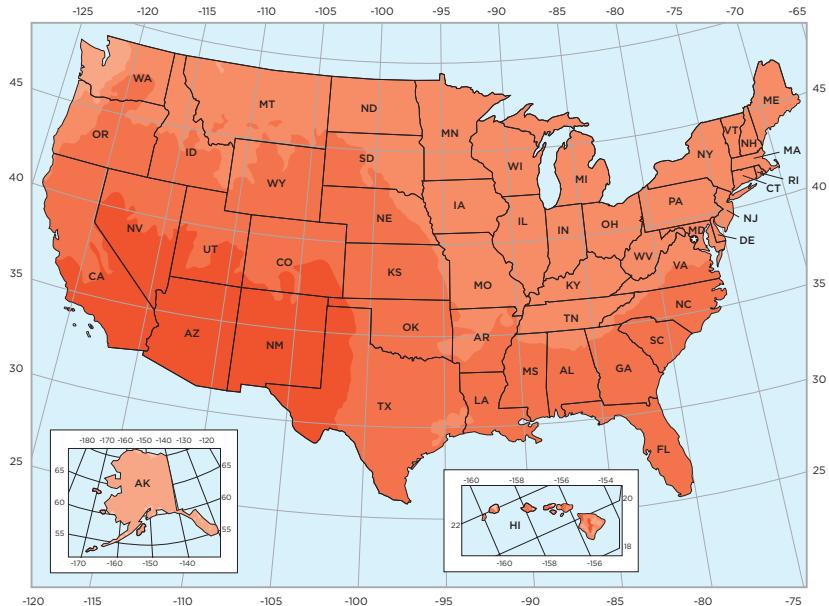
Keeping the solar revolution advancing on all fronts will require attention to a range of issues and policies. The federal tax credit, for example, will need to be renewed to help continue driving investments in solar technology. Further investments in scale, technology improvements, and energy storage will help, as will strong renewable electricity standards, state plans that give solar power a key role in meeting the federal government's new power plant carbon standards, and assistance for utilities and regulators in developing business models that accommodate increasing amounts of rooftop solar.

In light of findings by UCS and others that rooftop solar may become cheaper than utility-supplied electricity in more than half of all U.S. states in the very near future, it seems clear that solar power will play a major role in our energy mix. By 2020, rooftop solar is likely to be serving not hundreds of thousands, but millions, of homes.

Dennis Villanueva says rooftop solar is more than meeting his expectations: “Our investment is generating returns that are hard to beat, and will be giving us benefits for many years to come.” And his enthusiasm is making a difference: Villanueva has already motivated three colleagues to invest in their own rooftop systems. [\(c\)](#)

John Rogers is a senior analyst in the UCS Climate and Energy Program. Read more from John on our blog, The Equation, at <http://blog.ucsusa.org>.

Solar Resources across the Country

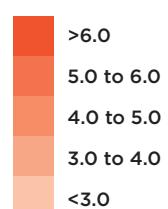


In the United States, the sun's energy is strongest in the Southwest, but the sunlight available for PV generation varies by less than 30 percent across much of the country.

NOTE: Annual average solar resource is for PV panels tilted at an angle equal to the latitude of each location.

SOURCE: ADAPTED FROM NATIONAL RENEWABLE ENERGY LABORATORY.

Kilowatt-hours per
Square Meter per Day





RAGING FIRES, SPIRALING COSTS

UCS research shows that climate change and development patterns are sending the costs of western wildfires soaring.

by Seth Shulman

Mark Lowderman, the assessor for El Paso County, CO, knows firsthand about the devastating costs of wildfires: over the past three years, his county has experienced two of the most destructive fires in state history. In both cases, the job of accurately accounting for the losses has fallen to him.

“Estimating the value of homes lost is the most straightforward part,” he says, matter-of-factly recounting that the 2013 Black Forest fire decimated 488 homes valued at \$106 million. The 2012 Waldo Canyon fire burned 355 homes, including many in an expensive neighborhood, for a loss of \$121 million.

But, as Lowderman notes, houses are just a part of the story. “People had auto losses and vast amounts of personal property destroyed,” he says. “In many cases people had nothing left that could be salvaged—not even clothes other than what they were wearing when they evacuated.” Add to that the deaths of horses and cattle, the value of lost timber, and a potential decline in property values, and the toll from a large fire quickly mounts. The Black Forest fire, for example, which burned more

[The number of large wildfires on federally managed lands in the West has increased by more than 75 percent since the 1980s.]

than 14,000 acres and forced the evacuation of some 38,000 people, caused insured losses estimated at nearly \$300 million—not counting the \$14.8 million (in 2012 dollars) spent to fight the blaze over a harrowing two-week period.

Of course, many wildfire-related losses are difficult to calculate in terms of dollars and cents. Aside from the family heirlooms and memorabilia incinerated, and the emotional toll on residents’ mental health, wildfires leave communities reeling in myriad ways including deaths and injuries to residents and firefighters, health care costs associated with treating smoke inhalation and asthma and heart and lung diseases exacerbated by particulate matter in the air, increased risks of flooding and mudslides in burned-out areas, damage to infrastructure such as roads and power lines, harm to watersheds, and the potential loss of tourism and commerce for years to come.

AN INCREASINGLY COMBUSTIBLE SITUATION

Unfortunately, Lowderman’s experience in Colorado is part of a much larger—and growing—regional problem. The average annual number of large wildfires on federally managed lands across 11 western states has increased by more than 75 percent since the 1980s. And the western wildfire season has lengthened from an average of five months in the 1970s to seven months today.

Climate change is a driving force behind the growing threat from wildfires (see the sidebar). As detailed in the recent UCS report *Playing with Fire: How Climate Change and Development Patterns Are Contributing to the Soaring Costs of Western Wildfires*, the threat of wildfires is projected to worsen in coming years as rising temperatures and drought in the region make forested areas more vulnerable for a longer period of time every year.

Meanwhile, the costs associated with fighting wildfires in the United States have soared, surpassing \$1 billion every year since 2000. Since 1985, U.S. fire suppression costs have increased nearly fourfold—from \$440 million to more than \$1.7 billion in 2013. (All figures are in 2012 dollars.)

And, as noted above, smoke can aggravate asthma and heart and lung diseases, resulting in significant costs associated with their treatment. One study of the 2008 fire season in the vicinity of Reno, NV, for instance, found that wildfires led to almost \$2.2 million in hospital costs there.

MORE OF THE SAME WON’T WORK

Lowderman and others who have been forced to confront the grim realities of wildfires in their communities recognize the growing risks, especially when they see how dry their forests are for many months of the year. The problem is compounded in some areas by past forest management and fire suppression practices, which have led to an overaccumulation of flammable biomass that raises the risk of wildfires. As Lowderman recalls, prior to the Black Forest fire “it was clear to people here that the forest was a Roman candle waiting to go off. We knew that one bolt of lightning, one careless smoker, was all it would take.”

Climate Change Is Increasing Wildfire Risks

- Temperatures in the American West have increased by roughly twice the global average since the 1970s.
- Snow is melting earlier in the spring, creating hotter, drier conditions over a longer period of time.
- The western wildfire season has grown from an average of five months in the 1970s to seven months today. The number of large wildfires each year has increased by more than 75 percent.
- The threat of wildfires is projected to worsen over time as rising temperatures lead to more frequent, large, and severe wildfires and even longer fire seasons.



Homes and developed areas near wildfire-prone forests in the western United States are particularly exposed to threats like the 2012 Flagstaff fire near the University of Colorado-Boulder campus (shown here).

He also says that living through two wildfires brings home the need for changes in policy. His insurance premium increased by 20 percent after the two fires, and some of his neighbors have faced even steeper hikes. In the Waldo Canyon fire, he notes, “it was clear that if those higher-end homes hadn’t been built right up against the national forest, the losses wouldn’t have been nearly as great.”

Wildfires now pose a high risk to some 1.2 million homes in the West—a combined value estimated at more than \$189 billion.

As for what Lowderman and his fellow residents of El Paso County can do about the threat, he says, “Pruning trees and shrubs away from houses can help some. But there’s no getting around the fact that we have to address development issues, such as how we handle new subdivisions as cities expand right up into forested areas.”

Across the west, the scale of the problem is immense. As *Playing with Fire* documents, wildfire now poses a high risk to some 1.2 million homes in the West with a combined value estimated at more than \$189 billion.

BUILDING RESILIENCE

In light of these costly trends, we clearly need to manage our resources better to help protect people and property. Limiting the expansion of development in zones near fire-prone forested areas is the single best way to reduce our exposure to wildfire risks in the short term. Coordinated action will be needed among federal, state, and local policy makers to help secure less risky development plans.

Also important is the need to incorporate the latest science to improve wildfire mapping and prediction, and to invest in fireproofing and fire safety measures. One simple strategy, as Mark Lowderman knows, is to prune trees and bushes back from homes in fire-prone areas to establish a vegetation-free buffer zone around a house, which can not only slow or even stop fires from spreading but also help keep firefighters safe. Investments in forest management to help reduce wildfire risks and maintain healthy forests are also critical.

A national climate resilience fund is urgently needed to help communities cope with the impacts of climate change, including wildfires. But in the long run, reducing wildfires’ destructive impacts will require cutting the heat-trapping carbon emissions that drive rising temperatures and climate change. {C}

Seth Shulman is a senior writer for the Union of Concerned Scientists.

Persistence Pays Off on Fuel Economy

By Aaron Huertas

UCS Clean Vehicles Program Director Michelle Robinson was standing outside the U.S. Senate chamber. It was 2005 and senators were debating whether automakers should make cars go farther on a gallon of gas. The auto industry and its allies, however, were determined to keep fuel economy idling. As the debate continued, Robinson watched as industry lobbyists made bets on how wide a margin of victory they would enjoy. The amendment ultimately failed by a vote of 67 to 28.

Stagnant standards had kept the average car's fuel economy at about 27 miles per gallon for 20 years. Automakers were using technology improvements to make vehicles larger and more powerful, rather than more efficient. Robinson and her colleagues also had to fight off

attempts by automakers and members of Congress to *weaken* the existing standards. "That was a dark time," she said. "But we wouldn't be deterred." UCS made the case that increasing fuel economy would dramatically reduce oil consumption and global warming emissions while saving consumers billions at the pump.

READY WHEN THE TIME COMES

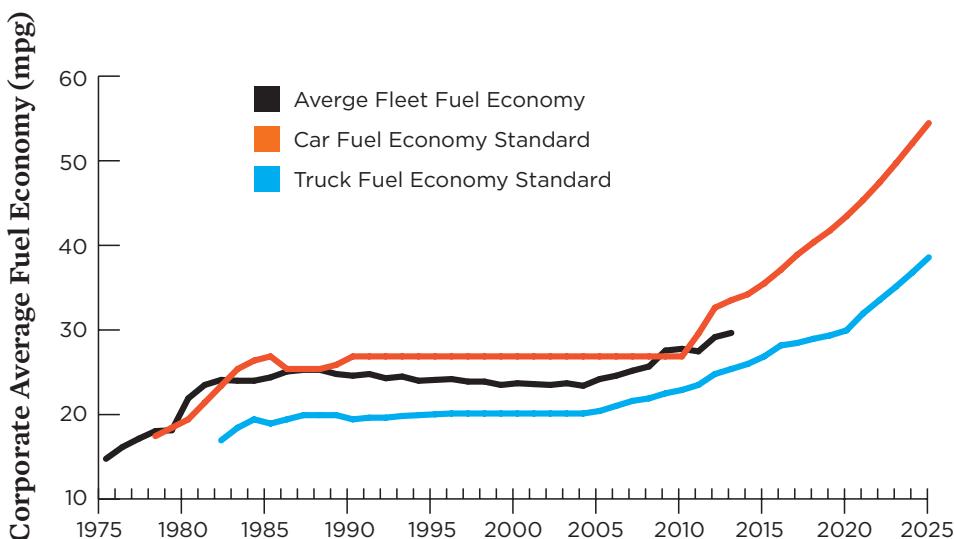
Just two years later, the political landscape had shifted. Gas prices were climbing and dealerships were filling up with unsold SUVs. The military was fighting two wars in the Middle East, and President George W. Bush admitted that, "America is addicted to oil."

Robinson and her UCS colleagues pushed Congress to take the issue up again. Several senators cited our analysis

as they voted, for the first time in more than 30 years, to set higher fuel economy standards. This legislation, along with

[Several senators cited our analysis as they voted to make cars go farther on a gallon of gas.]

Big Improvements on the Way



Thanks to new standards, fuel economy is increasing dramatically after a period of stagnation.

BASED ON DATA FROM THE ENVIRONMENTAL PROTECTION AGENCY AND NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION

tighter tailpipe emissions regulations, is expected to increase car fuel economy to the equivalent of more than 50 miles per gallon by 2025. This will lower U.S. oil use by more than 3 million barrels per day by 2030 and prevent 570 million metric tons of carbon dioxide emissions from being released into our atmosphere in that year—the equivalent annual emissions of more than 140 coal-fired power plants.

Robinson is proud of this accomplishment, but already has her sights set on the next milestone. "Making real progress on fuel efficiency was just the beginning," she says. "As oil gets dirtier and more expensive to produce, the smarter path is to cut all U.S. oil use in half by 2030." Our Half the Oil plan (www.ucsusa.org/halftheoil) provides practical steps to lock in fuel economy gains, produce better fuels, and invest in electric vehicles, smart growth, and public transit. {C}

Aaron Huertas is a science communications officer at UCS. Read more from Aaron on our blog, The Equation, at <http://blog.ucsusa.org>.

Supporting Science—and the Human Race



For almost 60 years a large photograph of Albert Einstein has hung in the den of Jeane Bertsch's Southern California home. She and her late husband Don admired the physicist not only for his discoveries, but also his civic engagement—especially his 1939 warning to President Roosevelt about Germany's atomic research, and later his stance on the threat nuclear weapons posed to humanity. "The photo was our pride and joy, and still is," she says.

Jeane and Don were teenagers from neighboring Illinois towns when they married shortly after the Japanese attacked Pearl Harbor. Don served in the army in World War II while Jeane worked as a navy supply inspector. After the war, Don became a traveling salesman with R.L. Polk, a publisher of city directories.

"If we would learn to take care of the planet and each other, it could almost be heaven on earth."

A SEMINAL MOMENT

Life on the road ultimately led the Bertsches to La Jolla, CA, where Jeane's life changed after reading the book *The Ascent of Man* by the acclaimed mathematician and biologist Jacob Bronowski. "It made me realize how important humankind is," she recalls. "If we would learn to take care of the planet and each other, it could almost be heaven on earth."

Since Don's passing three years ago, Jeane has attempted to do "her part" to address global problems. "I researched lots of different groups, and to me, UCS is the best suited for the time we're living in and the condition of the planet."

Last December she made a \$50,000 legacy gift to UCS from her IRA. "When you have money left over, you want to make sure you do some good with it," she explains, "and I'm just so pleased with what UCS scientists are accomplishing." We thank Jeane for her generosity and trust. [\[C\]](#)

Envision a Brighter Future

In partnership with members like you, UCS uses rigorous, independent science to develop solutions to our planet's most pressing problems. A legacy gift helps ensure our ability to continue this work for decades to come



A simple gift from your estate ...

Naming UCS as a beneficiary of your will, living trust, IRA, or other retirement account is easy to do, and can be revised at any time. Legacy gifts of all sizes are welcomed.

... Or a gift that can increase your income

A charitable gift annuity is a win/win for you and the planet, providing an easy way to support UCS while receiving guaranteed income for life along with the potential for tax savings.*

If you are interested in learning more about creating a lasting legacy, contact Ken Dolbashian at (617) 301-8014 or kdolbashian@ucsusa.org.

*minimum gift of \$10,000

Coastal Communities Must Cope with Flooding

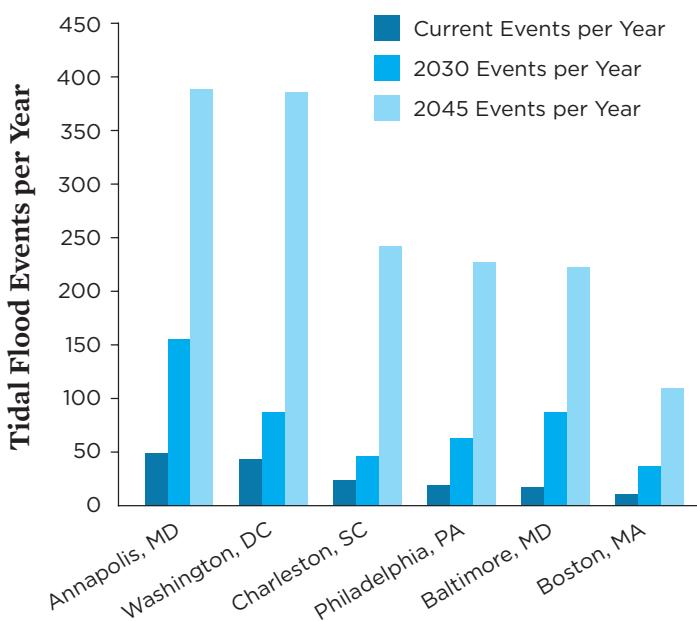
By Melanie Fitzpatrick

Flooding associated with high tides is becoming increasingly common along the United States' East and Gulf Coasts as sea levels continue to rise. According to new analysis by UCS, places such as Annapolis, MD, and Washington, DC, are likely to endure more than 150 tidal floods every year by 2030; by 2045 (within the lifetime of today's typical home mortgage) many communities can expect this kind of regular tidal flooding as a matter of course.

Sea levels are rising due to a variety of factors: climate change is causing ocean water to expand as it warms, and land ice in Greenland and Antarctica to melt; in some places, the land is also subsiding. A recent report from the National Oceanic and Atmospheric Administration (NOAA) showed that in many coastal communities, flooding at high tide has already increased significantly. In Annapolis, for example, this problem has grown nine-fold since 1960.

Our analysis used data from 52 NOAA tide gauges along the Atlantic and Gulf Coasts to project what kinds of flooding cities and towns will experience when high

The Growing Threat of Coastal Flooding



Locations up and down the East and Gulf Coasts will experience a large increase in flooding at high tide within the next several decades. See a full list of cities affected by tidal flooding at www.ucsusa.org/encroachingtides.



During an extreme high tide along the coast of Jamaica Bay, NY, a high school student wades through shin-deep water on her way to the subway station.

tides occur on top of higher seas. As our results for many locations suggest, the mid-Atlantic region could experience some of the worst increases in flood frequency (see www.ucsusa.org/encroachingtides for more details).

SMART PLANNING AT THE LOCAL LEVEL

To learn more about how tidal flooding is already affecting communities, and what they are doing to protect themselves, UCS analyst Erika Spanger-Siegfried and I spoke to business owners, emergency responders, city councilors, town planners, and activists in communities up and down the East Coast. We found that many cities are already taking action.

Philadelphia, for example, has adopted a master plan for its waterfront that includes the creation of wetlands to provide the city with a buffer zone against flooding. In Boston, the city is collaborating with property managers and developers on strong new building codes that require boilers, generators, and other critical utilities to be situated above the first floor. In frequently flooded Norfolk, VA, some local officials are using Twitter to disseminate information about flood conditions and road closures.

Given the scale of the problem, however, cities can't bear the burden of coping with rising seas and higher tides alone. That's why UCS continues to push for climate resilience funding as a national priority, and for steep reductions in the heat-trapping emissions that drive climate change.

Melanie Fitzpatrick is a climate scientist in the UCS Climate and Energy Program. Read more from Melanie on our blog, The Equation, at <http://blog.ucsusa.org>.

When Every Day Is Halloween

By Karen Perry Stillerman



It's nearly time for the scariest day of the year: Halloween, when children transform into ghouls and goblins, then gorge on candy. But what is *really* scary is that every day has become Halloween for our kids.

Federal data show that America's children are consuming way too much sugar. The amount varies by age, gender, race, and household income, but on average, young people between the ages of 2 and 19 consume 124 grams of sugar, or 29 teaspoons, every day. Teenage boys in particular consume a whopping 161 grams—more than three-quarters of a cup—daily. That's nearly equivalent to 18 "fun size" Snickers bars or peanut M&M packs!

When Halloween is every day, children's future health suffers. Sugary processed foods and drinks crowd out healthier choices such as fruits and vegetables. Studies show that early dietary patterns can persist into adulthood, so with excess sugar consumption

[On average, young people between the ages of 2 and 19 consume 124 grams of sugar, or 29 teaspoons, every day.]

linked to weight gain, heart disease, and diabetes in adults, changing how children eat today is critical for their future well-being.

IT'S NOT KIDS' FAULT

The government recommends that all Americans cut back on sugar and fill half their plate with fruits and vegetables at each meal. Yet food and farm policies have long undermined these recommendations by funneling taxpayer dollars into farm subsidies that make meat and junk food cheap while polluting our air and water, and by underwriting school lunches that rely on processed foods. Even though Congress acted in 2010

to improve school nutrition standards, industry lobbyists are looking to roll back that progress.

Congress will reauthorize child nutrition programs in 2015, and UCS will push back against misguided subsidies that benefit junk food companies while harming children. You can help us defend—and even improve—the standards for school lunches; go to www.ucssusa.org/halloweeneveryday to see how. {C}

Karen Perry Stillerman is a senior analyst and deputy director of the UCS Food and Environment Program. Read more from Karen on our blog, The Equation, at <http://blog.ucssusa.org>.

WHAT'S REALLY SCARY?
FOR AMERICAN CHILDREN,
EVERY DAY IS HALLOWEEN

Teenage boys eat the sugar equivalent of
18 fun size candies every day.

ucssusa.org/halloweeneveryday

SUPPORT
HEALTHY FOOD
FOR
HEALTHY KIDS
TODAY!

Source: CDC, National Health and Nutrition Examination Survey 2009-2010

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