APRIL 24, 2017

CQ

PLANETARY DISTURBANCE

The first Earth Day of the Trump era has much of the world worried

SCORCHED EARTH DAY

By ELVINA NAWAGUNA
Graphics by Randy Leonard

THE TRUMP ADMINISTRATION'S ASSAULT ON REGULATIONS THREATENS TO UNDO DECADES OF ENVIRONMENTAL PROGRESS

EARLY LAST MONTH, former Rep. Pete McCloskey, now 89, spent part of his morning making a list of Republican lawmakers who had recently voted to undo Obama administration environmental regulations.

McCloskey, who co-chaired the first Earth Day in 1970 when he was a California Republican, planned to share the list with student groups and activists who would confront those lawmakers at town hall meetings during the Easter recess.

Concerned about the deregulatory fervor driving the new, fully Republican-led government, McCloskey — whose legacy also includes co-authoring the Endangered Species Act — believes college students will be the ones to hold Republicans' feet to the fire as they attempt to weaken environmental protections.

"All of the great movements that I have seen in my lifetime have been led by students," says McCloskey, who served in the House from 1967 to 1983 and became a Democrat in 2007. "If the young people, who I think are environmentally minded [step up], they will in 2018 end the Republican majority and the administration that is against the environment."

Forty-seven years since the inaugural Earth Day launched a nationwide and global environmental movement, green groups and public health advocates fear the Trump administration, stacked with fossil-fuel-friendly Cabinet members, will work with a Republican Congress to draw the U.S. away from environmental commitments it has made over the past five decades.

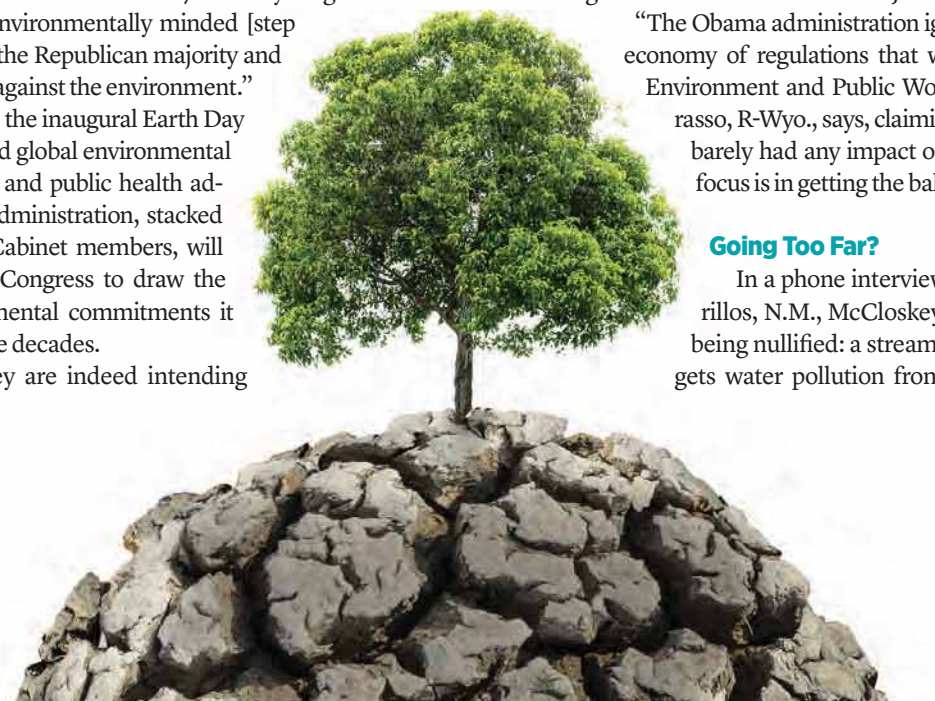
"All signs are that they are indeed intending to dismantle environmental regulations," says Amanda Rodewald, director of conservation science at Cornell University's Department of Natural Resources. "They are consistent on that message of pulling back."

Energized by the presence of an ally in the White House, Republican lawmakers have used the Congressional Review Act — a tool successfully deployed only once before this Congress — to nullify Obama administration regulations they have criticized as anti-business, overreaching and unnecessary.

Senior Republican Sen. James M. Inhofe of Oklahoma says the Obama administration regulations were just a solution in search of a problem and should be gutted. "We need to get rid of regulations that are damaging to commerce," he says.

The Congressional Review Act allows Congress to block rules within 60 legislative days after being finalized, making Obama-era regulations issued as far back as June vulnerable.

"The Obama administration ignored the impact on the economy of regulations that were expensive," Senate Environment and Public Works Chairman John Barrasso, R-Wyo., says, claiming that those regulations barely had any impact on the environment. "My focus is in getting the balance right."



Going Too Far?

In a phone interview from his ranch in Cerrillos, N.M., McCloskey rattles off a list of rules being nullified: a stream protection rule that targets water pollution from open pit coal mining;

Fish and Wildlife Service regulations limiting shooting of Alaskan bears and wolves; and a rule banning the use of lead pellets for fishing and hunting.

President Donald Trump, who has alternately dismissed climate change as a Chinese hoax and acknowledged that it may be real, has since signed resolutions of disapproval to block those rules. House Republicans have also passed a CRA resolution to kill a Bureau of Land Management rule limiting methane emissions from oil and gas operations on public lands. The measure is still pending in the Senate.

"These are terrible votes against the environment," McCloskey says, adding that he fears Republicans will also "eviscerate" the Endangered Species Act, which was signed into law in 1973 by President Richard Nixon.

McCloskey is tracking key votes on the environment.

Philip Dolin/Audubon

And Democrats, handicapped by minority status and defecting red-state senators, have an uphill battle against the GOP majority, though they vow to keep pressing.

"There are way too many of us in Congress who are going to push very hard against the U.S. walking away from those environmental protections," says Sen. Ron Wyden, D-Ore., a member and former chairman of the Energy and Natural Resources Committee. "We will do it on the floor, we have the power of the purse and we have shown repeatedly that political change starts at the grass roots."

Green Movement Begins

The genesis of Earth Day — a day to educate the nation on environmental protection — was inspired by the student-driven anti-war movement of the 1970s. The late Democratic Sen. Gaylord Nelson of Wisconsin thought he could channel the same energy into driving environmental issues to the top of the nation's agenda.

Nelson invited McCloskey to work with him to start the annual event, which paved the way for some of the nation's biggest bipartisan environmental statutes.

In the decades since, laws including the Clean Air Act, the Clean Water Act and the Endangered Species Act — which mandates protection of animals and birds listed as threatened with extinction — have symbolized U.S. leadership in environmental protection. Earth Day has become a worldwide event, drawing thousands to the streets every year.

Regulations under those laws, expanded upon generously by the Obama administration, are now in the cross hairs of Republicans who want them rewritten and weakened.

"I think the Trump administration is indeed willing to walk away from the bipartisan, long-standing commitment to environmental protections," says Judith Enck, a former regional administrator in Obama's EPA, describing what she calls an "aggressive anti-climate, anti-environment" agenda.

For this year's Earth Day on April 22, scientists planned a march in Washington to protest what they view as a "war on science" by Republicans and the Trump administration. A climate march is also planned in the city on April 29 to protest Trump's assaults on environmental protections and rejection of the consensus by 97 percent of climate scientists that human activity significantly contributes to global warming.

The rhetoric coming from the new administration runs counter to Trump's message of making America safe, says Denis Hayes, and sounds almost "like in the 1960s," a period where there was meager support for environmental protection and little understanding of the link between environmental problems and human health. Hayes is president of the Bullitt Foundation, a Seattle-based environmental group.

Many environmentalists, and some national security experts, argue that protecting the environment is a crucial national security issue that requires urgent attention.

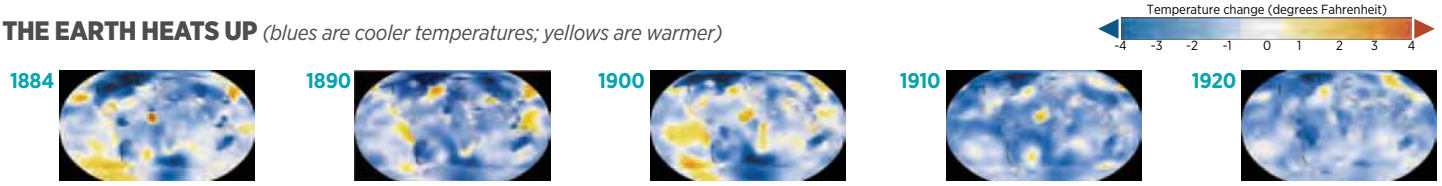
A 2009 EPA study determined that carbon dioxide and other greenhouse gases like methane and nitrous oxide that build up in the atmosphere are a risk to public health, cause climate change and make the oceans more acidic.

The EPA's findings are echoed by scientists who have linked extreme weather and climate events like more forceful hurricanes and storms, heavy flooding, wildfires and increased drought to a warming globe. According to the National Oceanic and Atmospheric Administration, 2016 was the warmest year on record.

The U.S. Centers for Disease Control and Prevention says climate change can affect public health through "disruptions of physical, biological and ecological systems" both domestically and abroad. Those disruptions, the agency says, can cause increased respiratory and cardiovascular disease, injuries and deaths related to heavy storms, increases of food- and water-borne illnesses in new areas, infectious diseases and threats to mental health.

"If we are really talking about American lives, we would do better making the environment safer than building the wall," Cornell's Rodewald says, referring to Trump's plan to build a barrier at the

THE EARTH HEATS UP *(blues are cooler temperatures; yellows are warmer)*



U.S.-Mexico border to keep out undocumented immigrants. "It's hundreds of thousands of deaths in the U.S."

Leadership Vacuum

While the White House has yet to make clear what it intends to do with the Paris Agreement that President Barack Obama negotiated with other world leaders to cut global carbon emissions, there is concern that Trump's actions could undermine U.S. global leadership in fighting climate change.

"It's important for the U.S. to lead by example," says Delaware Democratic Sen. Thomas R. Carper, ranking member of the Environment and Public Works Committee. "It's not just going to happen with us sitting on the sideline and saying, 'yeah, you go for it.'"

The U.S. power sector is the largest industrial source of greenhouse gas emissions and the environmental community sees cutting pollution from power plants as a critical step toward meeting the goals of the Paris Agreement. Moreover, without U.S. leadership, some Trump critics fear other countries could walk away from the pact or be less motivated to pursue carbon-control policies.

Republicans have aligned themselves with influential conservative think tanks, including the Heritage Foundation and the Competitive Enterprise Institute, which are aggressively pushing for a stripped down EPA and say the agency's environmental regulations hamper economic development as well as usurp the free market's role in determining winners and losers in the energy industry.

Myron Ebell, who advised the Trump transition team on energy and environment, says that the first step to undoing environmental regulations is withdrawing the EPA's so-called endangerment finding that greenhouse gas emissions — including carbon dioxide, methane, nitrogen oxide and hydrofluorocarbons — contribute to global warming, the basis for many of the agency's climate rules.

"It is important to understand that all these policies are closely connected and that striking down most but not all of them will not be sufficient to undo the damage done by President Obama's energy-rationing policies," says Ebell, head of environmental policy programs for the libertarian Competitive Enterprise Institute.

Some on the right are insisting on revocation of the finding, which the EPA reached in 2009, but Pruitt has said it is unlikely the courts would go along with rescinding a finding that has already been upheld.

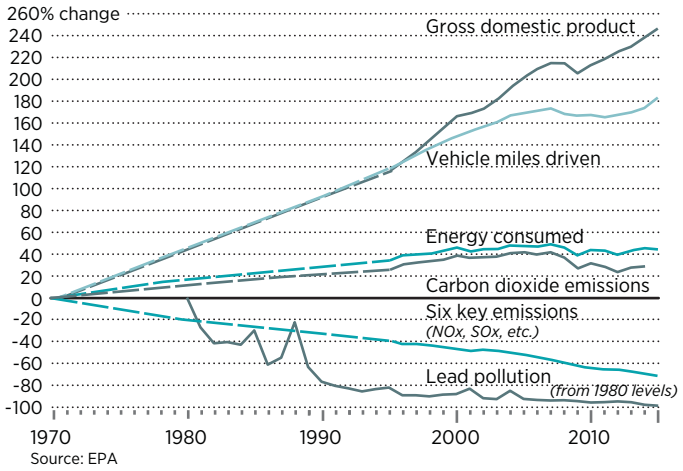
At the same time, Trump's proposal for deep cuts in EPA funding is facing pushback from members of his own party, based on polls showing that GOP voters care about environmental protection.

Signs of Denial

Within hours of Trump taking office in January, any mention of climate change disappeared from the White House website. Instead, the site included an energy agenda that promised to boost coal and

Clean Air and the Economy

Since 1970, emissions of key pollutants have dropped while productivity increased.



Source: EPA

"embrace the shale oil and gas revolution" to create more jobs and increase wages by more than $30 billion over the next seven years.

Trump's initial budget proposal released last month further rattled green groups and public health advocates. The outline called for a 31 percent cut to the EPA budget from 2017 enacted levels and the elimination of 3,200 EPA employees. The agency has already lost more than 1,600 employees over the past decade.

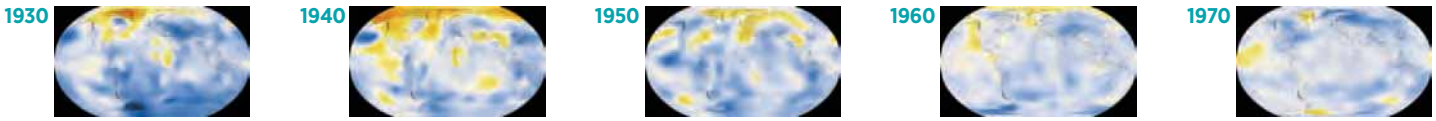
"I'm extremely concerned about the budget," former EPA official Enck says. "The budget cuts at EPA are not really about fiscal saving; it's about making sure the EPA doesn't do its job."

The budget was followed by the most aggressive assault yet to Obama's environmental legacy when on March 28, Trump signed an executive order directing the EPA to reconsider the Clean Power Plan, an ambitious climate rule that set the nation's first limits on carbon emissions from power plants across the country. The order also instructs the Interior Department to end an Obama administration moratorium on new federal coal lease sales and calls for rescinding EPA rules to control emissions from hydraulic fracturing, the fast-growing form of oil and gas drilling known as fracking.

Patrick Michaels, director of the Center for the Study of Science at the libertarian Cato Institute, says that while the U.S. has had many successes in environmental protection, many of the Obama administration rules were "fairly extreme" and not very logical.

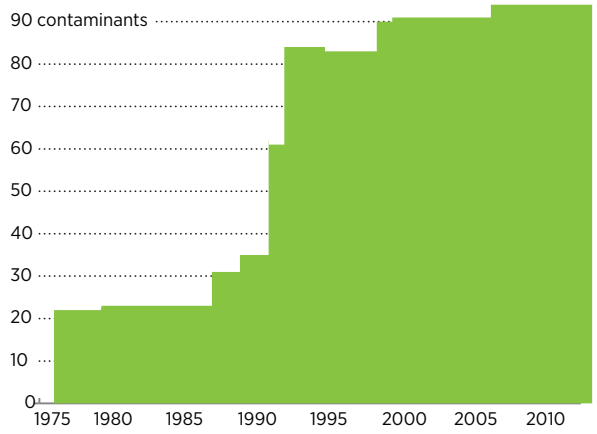
"I think that any reasonable perspective will say that the EPA since its inception has done so many good things," Michaels says. "But current debate centers on whether after having had all these successes — and they are many — that they have gone too far."

Both Republicans and Democrats laud the EPA for a number of policies they consider successful, including reducing acid rain,



Drinking Water Regulations

More than 90 contaminants are now regulated under the Safe Drinking Water Act



Source: EPA

banning lead in gasoline and maintaining the agency's brownfields program, which funds cleanup and restoration of toxic industrial sites for reuse. There also have been failures, more recently in preventing and mitigating the lead poisoning of drinking water in Flint, Mich., and the agency's role in the Gold King Mine accident in Colorado that spilled toxic waste into the drinking water of Native American tribes in the Southwest.

Michaels says he believes the EPA will continue to protect the environment as required by laws like the Clean Air Act, but it is not clear what policies the Trump administration will pursue. "I need to see concrete proposals and I haven't seen any yet," he says.

A White House spokesman says Trump believes the best path for the U.S. involves a pro-growth, pro-environment agenda, and that his actions will undo burdensome regulations that have accomplished little.

Trump's moves may not have an immediate effect on climate change as many of the rules he and Republicans have cut had not yet been enforced or are caught up in legal challenges. But in the long term, his actions could complicate the work of future policymakers. Rules rescinded under the Congressional Review Act may not be replaced later with "substantially similar" rules.

Also worrisome for Trump's critics: his choice of Cabinet members friendly to industry, including former Oklahoma Attorney General Scott Pruitt, a vocal and litigious EPA critic, as the agency's administrator, and former Exxon Mobil CEO Rex Tillerson as secretary of State.

Pruitt has already canceled an Obama administration plan to write rules limiting methane emissions from existing oil and gas operations, and has reopened a review of vehicle emissions and fuel efficiency standards meant to reduce greenhouse gases.

On March 29, the agency reversed a proposal to ban the use of the toxic pesticide chlorpyrifos, while at the same time saying that residues of the chemical on food crops and in water exceed federal safety standards, and expressing concern for workers who "mix, load and apply" the product. The previous administration had proposed banning the widely used pesticide following a petition from environmental advocates.

Path Ahead Unclear

The agency did not respond to CQ's request for comment on what environmental protection priorities Pruitt intends to pursue.

"We really have never had such an anti-environmental EPA administrator," Enck says of her former workplace.

Other Cabinet members have histories that some view as contrary to the mission of their departments.

Energy Secretary Rick Perry once proposed eliminating the agency he now leads. And Interior Secretary Ryan Zinke, who touts his admiration for President Theodore Roosevelt's conservation ideals, has voted for measures to open up more public lands to fossil-fuel development.

On his first day at Interior, Zinke overturned a last-minute Obama administration ban on the use of lead ammunition and fish tackle on federal lands and waters. While the U.S. has moved to eliminate the toxic metal from gasoline, paint and drinking water pipes, the use of lead in hunting and fishing had largely remained unregulated.

Oren Cass, a senior fellow at the conservative Manhattan Institute, says the Trump administration and GOP actions do not mean environmental protection will be undermined, but instead will restore "the equilibrium" offset by Obama's "pretty egregious" policies with which the courts and some in Congress disagreed.

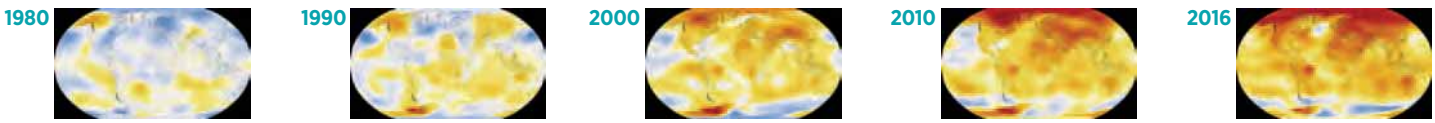
Rules like the Clean Power Plan and Waters of the United States were placed on hold by court rulings even before enforcement had begun. A federal court in June also struck down the Obama administration's hydraulic fracturing rules before they took effect.

"Those are things that you're seeing are being reversed," Cass says. "I don't think any of that suggests walking away from environmental protections."

Still environmentalists are gearing up to take on the administration and have already challenged Trump's OK of the Keystone XL pipeline, which previously was thwarted by the Obama administration mainly for environmental reasons. The Natural Resources Defense Council also has sued to block Trump's executive order directing that for any new federal regulation issued, two must be eliminated.

"Our groups are going to fight hard to protect these vital protections for public health," says Environmental Defense Fund counsel Sean Donahue.

Source: NASA Scientific Visualization Studio



WAR ON MANY FRONTS

By ELVINA NAWAGUNA

ENVIRONMENTALISTS EXPECT CONFRONTATIONS OVER RULES TO PROTECT AIR, LAND, WATER AND THREATENED SPECIES

PRESIDENT DONALD TRUMP wasted no time in delivering on campaign promises to dismantle Obama-era environmental rules that endeared him to coal communities and the oil and gas industry.

Three months into his presidency, Trump has already signed into law measures passed under the Congressional Review Act to nullify protections for streams and wetlands from open pit coal mine runoff, to undo predator-control restrictions in Alaska wildlife refuges, and to rescind rules strengthening federal control over public lands.

Congressional Republicans see in Trump an ally who shares their deregulatory ambitions.

"We have to get rid of what's not working," says Oklahoma GOP Sen. James M. Inhofe, a member and former chairman of the Environment and Public Works Committee. "There are some things that have nothing to do with the environment, that have everything to do with slowing down commerce, slowing down our ability to run this machine called America."

The anti-regulatory efforts will face fierce resistance from environmentalists and Democrats, and even some congressional Republicans are unlikely to support drastic cuts in programs to

protect drinking water and air quality.

Although Trump pledged during his February address to Congress to "promote clean air and water," his administration has not yet laid out policies to achieve that.

On the contrary, the president's fiscal 2018 budget outline released last month proposed cutting EPA funding by 31 percent from 2017 levels and eliminating 3,200 jobs at the agency, now led by one of its harshest critics, former Oklahoma Attorney General Scott Pruitt.

The administration has also proposed eliminating more than 50 programs, including cleanup efforts such as the Great Lakes Restoration Initiative and the Chesapeake Bay Program.

Following is a look at seven issues expected to be major flashpoints in the escalating environmental debate.

CO_2 CLEAN POWER PLAN

STATE OF PLAY

After nearly two years of conservative outrage, Trump on March 28 signed an executive order directing the EPA to re-evaluate the Obama administration's most ambitious climate rule, the Clean Power Plan, a move that could lead to its cancellation.

The executive order, Trump's most sweeping assault yet on Obama's environmental legacy, was immediately followed by the administration's petition to pause a court case challenging the rule as the EPA undertakes its review.

The Clean Power Plan, finalized in 2015, placed the first ever caps on carbon emissions from power plants nationwide as part of an aggressive effort to slow global warming. Under the rule, states must begin reducing greenhouse gas emissions from existing power plants by 2022, and by 2030 they must reduce those emissions by 32 percent from 2005 levels.

Officials in 27 mostly conservative states argued that the requirements usurped states' rights, could tamper with the electric grid and would kill jobs. Together they sued and succeeded in getting the regulation blocked by the Supreme Court in February 2016. The case was sent to the U.S. Court of Appeals for the D.C. Circuit where a final decision is expected anytime, unless the court grants the Trump administration's request to halt the case.

EPA Administrator Pruitt helped lead the legal challenge to the plan during his time as Oklahoma attorney general, a fact that worries critics of his appointment to the agency in charge of enforcing the plan.

THE DEBATE

Opponents of the Clean Power Plan argue that it attempts to re-engineer the electric grid and could raise costs for the industry and consumers. If the court strikes down the rule, the Trump ad-

The goal of the Clean Power Plan is to cut utility emissions by about a third.

iStock

ministration would not defend it in any other challenges. Environmentalists vow to take the case before the Supreme Court if they don't prevail in lower courts.

Even if the court were to uphold the plan, Pruitt's EPA is unlikely to prioritize its implementation. The plan was targeted in the White House budget proposal released last month, which called for its defunding in an overall 31 percent cut to the agency's budget.

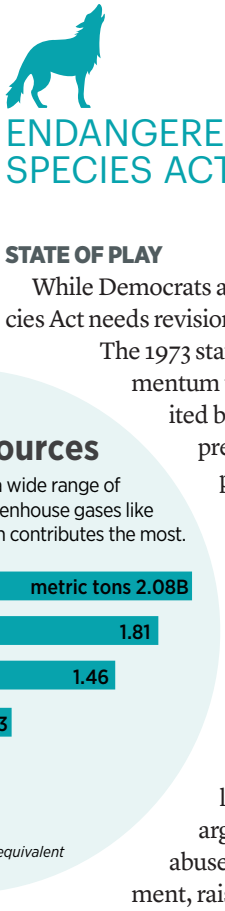
AT STAKE

The U.S. power sector is the nation's largest industrial source of greenhouse gas emissions and the Obama administration saw controlling pollution from the industry as a crucial step toward reducing the country's carbon footprint.

The EPA's December 2009 endangerment finding — the basis for many Obama administration regulations to slow climate change — concluded that greenhouse gases like carbon dioxide, methane and nitrous oxide contribute to global warming and risk public health, including asthma attacks and other respiratory diseases.

While the Clean Power Plan has never taken effect and could be tied up in court for years, clean air advocates fear Trump's move to review the rule will set back the country's effort to provide a safer environment and combat climate change. There is also concern that Trump's actions will undermine U.S. global climate leadership and make it hard to meet its obligations under the Paris Agreement.

With competition from cheaper natural gas and in the face of other regulations, coal has declined from providing half to a third of power generation, resulting in a quarter reduction in carbon emissions from the power industry from 2005 levels.



ENDANGERED SPECIES ACT

STATE OF PLAY

While Democrats and Republicans agree the Endangered Species Act needs revision, they differ on what direction to take.

The 1973 statute, a product of the environmental momentum that followed the first Earth Day, is credited by the Center for Biological Diversity with preserving 99 percent of the species under its protection from extinction, including the bald eagle and the Yellowstone grizzly bear.

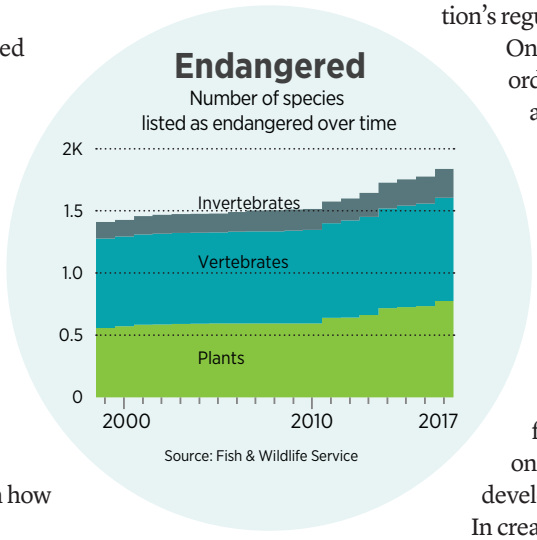
THE DEBATE

Democrats, propelled by scientists' predictions that climate change could soon cause massive extinctions capable of eliminating up to 50 percent of the world's plants and animals, want stronger protections under the statute. But Republicans, especially those from Western states, argue the Endangered Species Act has been abused in a way that hurts economic development, raises costs for businesses and oversteps states'

rights to manage their own wildlife.

Republicans in the last Congress introduced dozens of measures to weaken portions of the law, including limiting lawsuits pushing for protection of certain species, reducing restrictions on logging activities and barring some species from being listed as endangered. During his short time in Congress, Interior Secretary Ryan Zinke, who touts his conservationist ideals, voted for such legislation.

Conflicting amendments over the greater sage grouse protection that have hampered Interior-Environment appropriations processes in recent years illustrate the difficulty ahead as Congress tries to agree on how to rewrite the statute.



With Republicans enjoying a firm hold on the government, they are looking to build consensus on an ESA revamp to address some of the concerns they have with economic development being affected by the listings, including fossil fuel development, infrastructure construction, agriculture interests and outdoor recreation.

AT STAKE

Conservatives, who tend to favor more fossil-fuel development on public lands, argue that some endangered species designations can amount to federal land grabs, involving protracted bureaucratic assessments. Meanwhile, agricultural communities fear their livelihoods and economic development can be upset in the process of endangered species listings. A coalition of Western governors has called on Congress to review the law and give states the upper hand.

Conservationists, however, want a stronger statute and increased funding for state grant programs, arguing that pre-emptively protecting species will help keep them from being listed as endangered. The Republican majority in Congress is unlikely to boost funding for tougher enforcement.

In the meantime, the scientific community continues to sound the alarm that without stronger protections for animals and plants in peril, the effects of a warming earth, including extreme weather events like droughts, could wipe out entire animal groups.

WATERS OF THE U.S.

STATE OF PLAY

Throughout his presidential campaign, Trump singled out the Waters of the United States rule as one of the Obama administration's regulations he would quickly kill.

On Feb. 28, the president signed an executive order directing the Army Corps of Engineers and the EPA to "review and reconsider" the rule, which had expanded federal authority over streams and wetlands under the Clean Water Act.

THE DEBATE

Since its inception, landowners and small farmers with the backing of conservative leaders have fought the rule referred to as WOTUS, arguing it is federal intrusion that criminalizes activities on private property and hampers economic development.

In creating the rule, the Obama administration said it was responding to an urgent need to "improve and simplify" the process for identifying waters that were protected under the Clean Water Act, and that the regulations were important for guarding and restoring those water sources.

An appeals court, however, placed the rule on hold in October 2015 after several states and agricultural groups sued. The Supreme Court is expected to decide which court has jurisdiction over the case.

AT STAKE

EPA's Pruitt, who as Oklahoma attorney general sued to block WOTUS, has said he plans to immediately follow Trump's order to review the rule. But environmentalists and Democrats say they fear that without such protections, pollutants like pesticides could be dumped with impunity into water sources that supply drinking water to millions of people and wildlife habitats.

EPA

A fracking operation near Lost Hills, Calif.

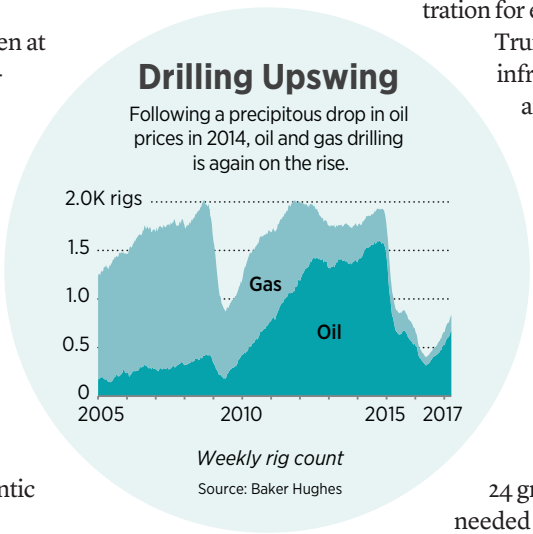
David McNew/Getty Images

OIL AND GAS DRILLING AND PIPELINES

STATE OF PLAY

The oil and gas industry has most often been at loggerheads with the environmental community and that tension escalated during the Obama years, which were characterized by tougher regulations to rein in greenhouse gas emissions, conserve public lands and control the harmful effects of drilling activities.

The 2010 Deepwater Horizon spill in the Gulf of Mexico prompted the Obama administration to get even tougher on companies, demanding they show they can prevent and control such disasters. That included excluding large parts of the remote and frigid U.S. Arctic and portions of the Atlantic from oil and gas development.



THE DEBATE

Trump has already taken executive action to unravel such regulations, including Interior and EPA rules limiting methane emissions from oil and gas operations and federal standards for hydraulic fracturing written in May 2015 to ensure adequate well control, prevent groundwater contamination and increase transparency about the materials used in drilling.

In the meantime, as part of his plan to boost the oil and gas industry, Trump quickly green-lighted two controversial pipeline projects previously rejected or delayed by the Obama administration for environmental reasons.

Trump has promised to spend $1 trillion on infrastructure, and while there is bipartisan agreement on the general need for roads, bridges and airports, Republicans and Democrats sharply disagree when it comes to pipelines and other fossil fuel projects.

The Obama administration for seven years delayed and eventually rejected the Keystone XL pipeline, which would have been a conduit from Alberta's oil sands to Nebraska, connecting from there to Gulf Coast refineries.

But the Trump administration on March 24 granted Keystone the presidential permit it needed to continue construction.

Trump also reversed the Obama administration's decision to halt the contentious Dakota Access Pipeline, granting the project expedited environmental reviews and clearance to continue. Construction quickly resumed and the pipeline started moving oil in late March despite a pending court challenge from

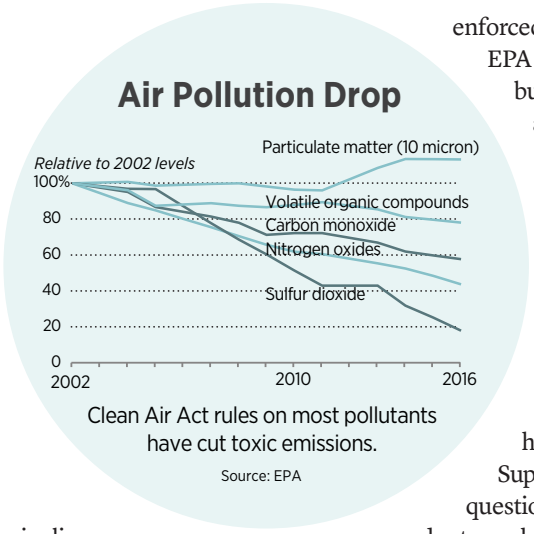
the Standing Rock Sioux and green groups.

AT STAKE

Environmentalists fighting to keep fossil fuels in the ground fear the Trump administration will circumvent crucial safeguards, disregard the industry's contribution to global warming and trample tribal rights as it opens up more public lands to oil, gas and coal interests.

The Standing Rock Sioux and supporters have argued that the Dakota Access Pipeline risks contaminating their water source, and that construction has damaged their sacred burial grounds. Environmental groups, which also plan to fight the Keystone pipeline, argue that green-lighting oil and gas pipelines only encourages more fossil fuel extraction at a time when the country should be focusing on clean energy development.

But these groups and Democrats are up against a fully Republican pro-fossil-fuel government that has signaled it is just getting started.



CLEAN AIR ACT

STATE OF PLAY

While it's clear that Trump wants to reverse efforts to curb carbon dioxide emissions under the Clean Air Act, Democrats and environmental groups wonder and worry about the new administration's stance on the dozens of other regulations that protect air quality.

"There's an enormous question mark hanging over the Trump administration's air pollution agenda," says John Walke, who heads the clean air division at the Natural Resources Defense Council and who hears doublespeak from the administration.

On the one hand, the new EPA head Pruitt lambastes Obama era climate regulations while also giving at least rhetorical support for core air and water priorities. As Oklahoma attorney general, however, he unleashed a steady barrage of attacks on clean air and water regulations, joining lawsuits to block them.

"The problem is what comes out of the other side of Pruitt's mouth very consistently before becoming EPA administrator," Walke says.

THE DEBATE

The Clean Air Act is the basis for a wide range of regulations, including those for vehicles, power plants, acid rain, ozone and radon. Enacted in 1970 and later amended in 1977 and 1990, the law tasked the EPA with setting air standards to be primarily enforced by the states. It is common course for EPA regulations to face court challenges from business interests as well as environmental activists, seeking to push the regulations in their favor.

During Pruitt's confirmation hearings in January, he evaded answers on how — now that he is ostensibly on the government's side — he'd defend against three ongoing legal cases challenging regulations on mercury, arsenic, lead, ozone and pollution that crosses state borders.

Democrats and environmental groups have also raised alarm over the views of Supreme Court Justice Neil Gorsuch, who has questioned the validity of a long-standing precedent on which thousands of administrative rules are based. Known as the Chevron deference, it leans on the agencies to interpret the law when there is a lack of clarity.

That line of thinking could resonate with an administration bent on dismantling what it considers over-regulation, Pat Gallagher, head of the Sierra Club's environmental law program, told senators as they mulled the judge's confirmation last month.

"Judge Gorsuch's opinion that the Chevron deference violates the Constitution echoes the current White House's extreme anti-agency demagoguery," he said, pointing to proposed cuts to the EPA budget and efforts to roll back regulations.

AT STAKE

The GOP wants to reduce the effect of air regulations on business and the economy. For instance, the EPA estimated that the cost to comply with a recent ozone rule could be $2.2 billion annually.

These recent rules still being litigated face the most substantial challenge. Not maintaining them would result in "vastly higher amounts of air pollution," Walke says.

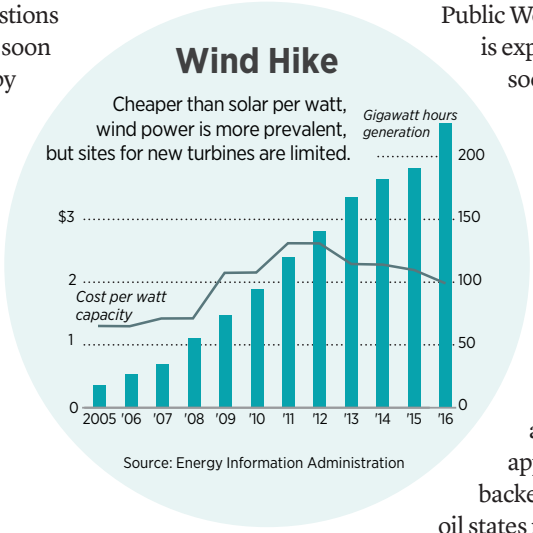
While it may color Gorsuch's position in other matters, a

Children sign a plea for senators to act on climate change in July 2016.

Bill Clark/CQ Roll Call

change from Chevron and the cascading questions on long-standing rules are not likely anytime soon because his view is shared on the court only by Judge Clarence Thomas.

Environmental groups are also alarmed by several House GOP legislative efforts to reduce the regulatory power of the administration and give Congress more control over regulations, but those more drastic proposals do not appear to have enough support in the Senate.



RENEWABLE ENERGY

STATE OF PLAY

Renewable energy resources including solar and wind enjoyed immense support from the Obama administration, which considered them crucial to weaning the U.S. off fossil fuels and reducing greenhouse gas emissions from power plants.

Federal assistance, including an expanded Energy Department loan guarantee program, has been credited for the fast growth of the solar industry and for the development of alternative fuel vehicles like Tesla.

The Trump administration, with oil- and gas-friendly Cabinet members and a Republican Congress, is expected to chart a different course. The White House's "America First Energy Plan" makes no mention of renewable or clean energy; it calls for embracing the "shale oil and gas revolution" and reviving coal. The White House has also proposed cuts to the Energy Department's clean energy research programs.

THE DEBATE

While environmentalists and Democrats on Capitol Hill see renewable energy as important in efforts to combat climate change, they are up against a Republican majority whose members largely cast doubt on climate science or the human role in global warming.

Trump's budget outline proposes eliminating DOE's Advanced Research Projects Agency-Energy, which funds alternative energy projects in the private sector and the State Energy Program, which helps states pay for programs to meet their clean energy goals.

In Congress there is some bipartisan agreement on nuclear power as an alternative low-carbon energy source. A bill that would speed licensing for advanced nuclear reactors that produce less waste is gaining traction. The bill, led by Senate Environment and Public Works Chairman John Barrasso of Wyoming, is expected to be considered on the Senate floor soon.

There is still, however, a cloud of uncertainty over the renewable fuel standard, so far the most successful federal program in promoting biofuels. It sets minimum volumes of renewable fuels to be mixed into the nation's transportation sector and has been a boon for corn and soybean growers in places like Iowa and Illinois.

While Trump promised Iowa farmers he would protect the program, his actions since taking office, including the appointment of his oil-friendly Cabinet, worry backers. Corn-state lawmakers and those from oil states remain at loggerheads over whether the program should be scrapped or revised to be friendlier to oil refiners.

Lawmakers like Illinois Democratic Sen. Tammy Duckworth and Iowa Republican Sens. Joni Ernst and Charles E. Grassley are pushing to preserve the program because of its importance to their rural constituents. In the House, Rep. John Shimkus, an Illinois Republican who chairs the Energy and Commerce Environment Subcommittee, has said overhauling the program will be among his priorities this year, although he acknowledges mixed signals from the White House could complicate such efforts.

Instead, changes to the RFS could come from the EPA's Pruitt, who has worked closely with oil and gas companies and needs no congressional approval to reduce ethanol requirements.

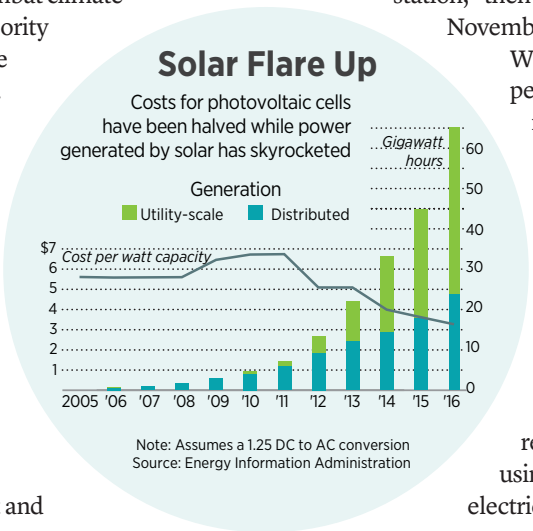
AT STAKE

Despite concern over the new administration's seeming lack of enthusiasm for alternatives to fossil fuels, backers of solar, wind and other renewable resources believe these are the future of U.S. electricity.

"The train to a global, clean energy future has already left the station," then-EPA Administrator Gina McCarthy said in November.

While tax incentives for oil and gas are written permanently into the tax code, those for renewables remain uncertain. Congress allowed tax credits for biofuels to expire on Dec. 31 even as the industry begged for an extension. Incentives for wind and solar were renewed in 2015 until 2019, with some solar subsidies running through 2021.

Even with little Republican support, renewables could still get a lifeline from the increasing number of states adopting renewable portfolio standards that call for using more renewable sources to generate electricity.



Volunteers stack bottled water supplies for Flint, Mich., residents in February 2016.

Tom Williams/CQ Roll Call

DRINKING WATER

STATE OF PLAY

While the lead poisoning of drinking water that sickened residents of Flint, Mich., resulted from a decision by authorities to channel corrosive water through old pipes, the crisis also highlighted the need for improved EPA oversight and for updating the nation's aging drinking water infrastructure.

The American Society of Civil Engineers gave the nation's water infrastructure a "D" in its recent report and the EPA estimates about $384 billion is needed over the next two decades to keep the nation's systems up to date.

Last year, Congress approved around $170 million for states' water infrastructure projects, including in Flint.

THE DEBATE

Trump and Pruitt have both said clean water would be among the EPA's top priorities. The drinking water revolving loan fund is one of the few nondefense budget items to escape cuts in the president's initial budget outline. The fund would instead receive an increase of $4 million.

Trump's budget, however, proposes eliminating the Agriculture Department's water and wastewater loan and grant program, which provides money for safe, reliable drinking water and sanitary systems to rural households and businesses, saying those areas should look for private funding or tap into the drinking water revolving fund.

Critics fear Trump's overall proposal to sharply cut the EPA budget and eliminate at least 3,200 employees would cripple the agency and weaken protections for clean water and air.

Trump also has signed a Congressional Review Act resolution to kill a rule meant to protect water sources from toxic runoff from open pit coal mining.

And he has signed an executive order to review the Waters of the U.S. rule, which expanded federal authority over streams and wetlands across the country.

Without such regulations, critics fear, pollutants like toxic pesticides could find their way into drinking water sources for millions of people.

AT STAKE

The Flint water crisis prompted many communities to examine their own systems, revealing that the problem of lead in aging and corroded pipes was more widespread across the country than previously thought.

Trump has promised an ambitious $1 trillion in infrastructure spending, some of which is expected to pay for updating drinking water systems, if Congress approves. Republicans, averse to spending increases, however remain divided on how much the federal government should be involved in local drinking water projects, and that debate could determine what level of funding goes to water projects.

Still, Trump's critics say his promises for clean water contradict his budget proposals, and they fear weakening the EPA — which was criticized for failing to protect Flint — would make it harder for the federal government to ensure communities across the country have safe drinking water. ■

Randy Leonard contributed to this report.

TERRITORIAL SHIFT

By JEREMY DILLON

ON TWO FRIGID DAYS IN MARCH — following the warmest February in history — Michael Picker stood outside the EPA and Department of Energy headquarters in Washington, D.C., to hand out job opportunity flyers.

Picker, president of the California Public Utilities Commission, hopes that like characters in the "Grapes of Wrath," career federal employees will decide to head west to progressive California to continue their climate analysis as President Donald Trump makes good on his promise to dry out the EPA and DOE's environment and climate research programs.

"On climate action, there's a dark cloud hanging over Washington right now," Picker says. "If climate scientists and experts want the opportunity to continue doing important work for the good of our planet, my message is simple: Come West, California is hiring."

As Trump moves the federal government away from climate change priorities, states like California are looking to pick up the slack, although a pro-business, bare-bones EPA budget could offer roadblocks to those efforts.

And that may be the exact setup the Trump administration — especially newly installed EPA Administrator Scott Pruitt — envisions for the nation's overall environmental oversight responsibilities: state-led, with limited federal involvement outside of Clean Air Act and Clean Water Act requirements.

THE TRUMP TEAM'S GOAL OF CUTTING FEDERAL ENVIRONMENTAL PROGRAMS COULD GIVE STATES MORE POWER BUT LESS MONEY

During his confirmation hearing and throughout his first actions as EPA head, Pruitt has preached his vision of cooperative federalism at the EPA, citing a willingness to depart from what he deems federal and executive overreach of regulations by the Obama administration.

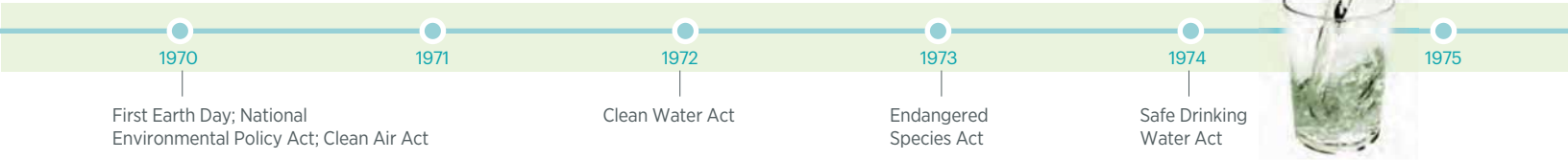
"The days of coercive federalism are over," Pruitt said in a letter to governors announcing the impending death of the Clean Power Plan. "Accordingly, I look forward to working with you, your state experts and local communities as we develop a path forward to improve our environment and bolster the economy in a manner that is respectful of and consistent with the rule of law."

Pruitt, the attorney general of Oklahoma from 2011 to 2017, previously sued the agency he now leads on 14 occasions for promulgating regulations that he said impede states' abilities to determine the appropriate level of environmental protections.

"I seek to ensure that we engender the trust of those at the state level, that those at the state level see us as partners and not as adversaries," Pruitt told EPA employees in his initial address as administrator.

The criticisms of Obama's EPA were not baseless when consid-

Environmental Policy Timeline



Pruitt greets EPA employees on Feb. 21.

Aaron P. Bernstein/Getty Images

ered from a state perspective, says Alexandra Dapolito Dunn, executive director of the Environmental Council of the States — a nonpartisan association of state and territorial environmental agency leaders.

Those environmental agencies see an opportunity to have a simpler, results-based permitting processes under Pruitt's EPA, Dunn says, compared to the lengthier, sometimes politicized processes the states were subject to under previous administrations.

"If you look at the major federal environmental laws, states and the federal government are joined at the hip on these issues," Dunn says. "So, there is going to be an interface between states and the EPA by the nature of the laws, and states are looking forward to reframing how that oversight authority plays out in a practical manner with the new administration."

But cracks are already appearing in that federalism rhetoric, especially in the Trump administration's proposal to cut important grants to the states from the EPA budget.

The Trump administration's "skinny budget," released in March, would slash the EPA's overall funding by 31 percent from 2017 levels, reducing its total to $5.7 billion in fiscal 2018. One of the biggest hits would be to state environmental protection grant programs, which would receive $597 million, just more than half the current level.

For most states, those EPA grants make up about a quarter of their environmental budgets, with the remaining funding coming from state appropriations and permitting fees, Dunn says. And states — already strapped for cash to balance their budgets — are unlikely to give more money to fill those federal gaps.

"It's unlikely states' legislatures would step in with appropriations because it would be a breach of the understanding of the state

1976 — Toxic Substances Control Act

1977 — Amendments to Clean Water Act and Clean Air Act; surface mining control law

1978 — State of emergency declared at toxic waste site in Love Canal, NY

1980 — Superfund law enacted

1981

role after [taking over] a lot of the oversight functions of these laws from the federal government," Dunn says. "Budget cuts would likely result in a fee increase for the regulated community, which may not be the outcome the administration is hoping for."

Congressional appropriators say those cuts will never happen, though.

"They are a proposal, but they are imaginary," Hawaii Democrat Sen. Brian Schatz says of the administration's budget plan. If the cuts were enacted, "it would be catastrophic, and there is no way that any local agency could pick up the slack. The most important thing to remember, though, is that they won't be enacted."

In a letter to Appropriations Committee leaders, 37 Senate Democrats said the budget cuts would limit federal and state abilities to protect the environment.

"Unfortunately, instead of maintaining environmental protections, President Trump's FY2018 budget blueprint would simply eviscerate the EPA's core functions and adversely impact state budgets that rely on EPA grants for environmental remediation," the Democrats wrote.

State attorneys general, meanwhile, have already expressed dismay about Pruitt's federalism, vowing to fight the EPA in court if the agency begins to roll back regulations that affect cross-state pollution, such as standards for emissions of toxic air pollutants like mercury, arsenic and metals from power plants, or ozone air quality standards.

A group of Democratic state attorneys general, led by New York's Eric Schneiderman, wrote to EPA congressional oversight leaders to express their concern about Pruitt's federalism beliefs. They cited the need for federal involvement in environmental issues, especially those affecting cross-state pollution.

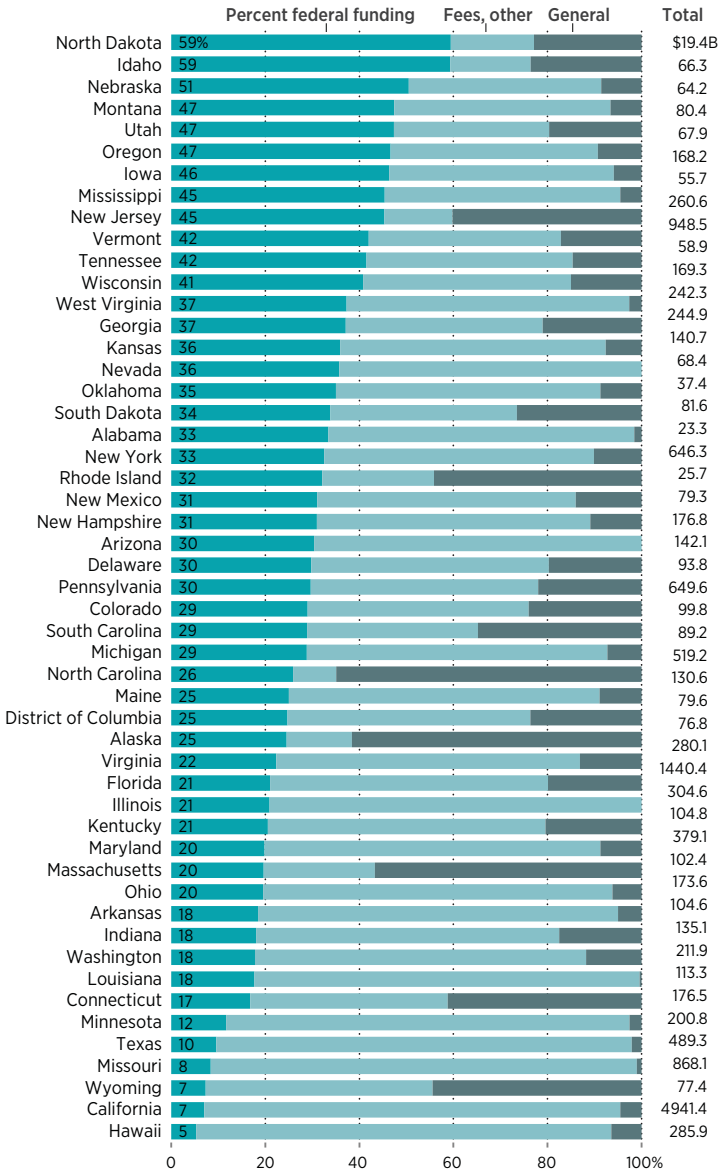
"Because pollution does not recognize state borders, the strong partnership between the federal government and the states has been a hallmark of successful efforts in the U.S. to address environmental pollution," the group wrote. "But Mr. Pruitt has sought to turn the clock back, advocating that states should be left to decide for themselves what constitutes clean air and water, no matter the effects on other states."

Those state officials also fear the EPA could try to establish federal rules to pre-empt any strengthening of state standards created as a buttress against weakening national regulations.

Most notably at risk are California's vehicle emission standards. Those rules exist because of a waiver granted by the EPA to allow California to issue more restrictive regulations than the federal requirements because it had its own rules in place before the federal

Making Ends Meet

Most states rely on federal funding for less than half of their budgets for environmental regulation, covering the remainder with fees or general funds.



Note: Does not include State Revolving Funds for all states. New Mexico data is for fiscal 2014, North Carolina for fiscal 2017, all others fiscal 2015.

Source: Environmental Council of the States, state budgets

1982 Nuclear Waste Policy Act

1983

1984 Former EPA official Rita Lavelle sentenced to prison for lying to Congress about Superfund cleanups

1985 Community Right-to-Know Act

1986 Safe Drinking Water Act amendments

government set its first standards in 1975.

During his confirmation hearing, however, Pruitt would not commit to California Democratic Sen. Kamala Harris, a former attorney general herself, that he would keep that waiver intact. He said instead that he would "review" the waiver to see if it is still appropriate.

In announcing a review of the federal standards, the White House said it would not immediately ask the EPA to revoke California's waiver. But concerns remain.

Partly in response to the Trump administration's move to rework the EPA's Corporate Average Fuel Economy standards, the California Air Resources Board voted in late March to reaffirm its commitment to its own more stringent standards.

Such affirmations have become more common as blue states take up the mantle for climate work in the absence of the federal government.

After Trump's March 28 executive order to reconsider the Clean Power Plan, the EPA's regulation to reduce greenhouse gas emissions from power plants and the centerpiece of the Obama administration's strategy to combat climate change, California and New York vowed to continue their climate efforts.

"Together, California and New York represent approximately 60 million people — nearly 1-in-5 Americans — and 20 percent of the nation's gross domestic product," Democratic Govs. Jerry Brown and Andrew Cuomo said in a joint statement. "With or without Washington, we will work with our partners throughout the world to aggressively fight climate change and protect our future."

And while other states did not offer such strongly worded responses, state efforts to promote cleaner energy — including statutes requiring more renewables in their electric generation mix — are already underway. Despite its best efforts, the Trump administration is unlikely to change that.

Known as renewable portfolio standards, 29 states have adopted requirements for a specified percentage of their power generation to come from renewable resources, and many state legislatures are considering expanding those rules.

Last year, California enacted a new standard, upping its requirement to 50 percent renewable energy by 2030. In the last two years, Hawaii boosted its standard to 100 percent by 2045, New York increased its to 50 percent by 2030, and Oregon to 50 percent by 2040. Minnesota, Nevada and New Mexico are considering bills to increase their renewable mandates.

"In Minnesota, the clean energy economy isn't just the future — it's the present," says Democratic state Rep. Erin Maye Quade. She has proposed a bill to take the state from its current goal of 25 percent renewable energy by 2025 to 50 percent by 2030.

"Clean energy is already providing jobs, saving families money and making our nation more secure," she says. "And we know we've only begun to scratch the surface."

According to a January report by the Department of Energy's Lawrence Berkeley National Laboratory and the National Renewable Energy Laboratory, an analysis of current standards across the country revealed that renewables will provide 26 percent of total U.S. electricity generation by 2030 and 40 percent by 2050, compared to 21 percent and 34 percent under a scenario without state goals.

Some states have moved to reduce or eliminate the standards, influenced by arguments that they require government to pick energy winners and losers. But in most places, such as Ohio, the argument has been beaten back by advocates who note that the standards help boost the clean energy economy — and produce jobs.

And the renewable push by states has only been bolstered by the private sector as more companies announce plans to move toward their own 100 percent renewable standard. Google and Anheuser-Busch InBev are among companies that have begun seeking power-purchase agreements with states that guarantee their electricity comes from renewable sources.

Such moves ultimately could be the most convincing reason for a clean energy push, as seen in the Indianapolis suburb of Carmel, Ind.

The town, under Republican Mayor Jim Brainard, has embraced environmental improvements to save money. Carmel switched its streetlamps to LED light bulbs, moved its city vehicles to hybrid and biofuel-driven engines and built 102 traffic roundabouts — the most in the nation, according to Brainard — to save the city taxpayer dollars through efficiency.

Brainard, who was one of four Republicans on Obama's White House task force for climate change, says the employment and health benefits from moving toward cleaner energy should be argument enough for conservatives to embrace renewables.

The most consistent source of environmental policy over the last 20 to 30 years has come from local government, Brainard says. "They haven't originated from the federal level. They have come because people in their local communities wanted to clean up their air quality, make sure they had safe drinking water, were concerned about the Earth and wanted to conserve their resources."

He adds, "I have yet to meet a Republican or Democrat that wants to pollute the Earth, drink dirty water and breathe dirty air." ■

987 Clean Water Act amendments

1989 Exxon Valdez spill in Alaska

1990 Oil Pollution Act; amendments to Clean Air Act

1991

1992 United Nations Framework Convention on Climate Change is established

OCEANS OF TROUBLE

By MIKE MAGNER

NEW LEADERS IN WASHINGTON MAY BE IN DENIAL, BUT THE EFFECTS OF CLIMATE CHANGE ARE A REALITY FOR MILLIONS OF AMERICANS

WHEN THE PEOPLE OF NORFOLK, VA., began looking for ideas to fend off flooding from rising sea levels a few years ago, they came up empty.

"What we found is there's nothing on the shelf — even the Dutch have no plans," at least for projects smaller than dikes, says one of the key players in the effort, environmentalist and former congressional aide William "Skip" Stiles.

Students at Norfolk's Old Dominion University came to the coastal city's rescue, designing shoreline improvements, permeable roads and new types of cisterns that could reduce the frequency of storm surges or high tides seeping into Chesterfield Heights, a historic neighborhood. Many of its roughly 500 homes were built in the 1920s, when the local relative sea level was more than a foot lower than today, partially due to the ground in that coastal region sinking.

The plans were entered in the U.S. Department of Housing and Urban Development's National Disaster Resilience Competition and came out a big winner: The project won a HUD grant of $120 million in January 2016, and planning is now underway to implement the project over the next several years.

Norfolk city planners, working now with students from the University of Virginia, are now turning their attention to an adjacent neighborhood, Ingleside, where 500 homes and a number of apartment buildings face intermittent flooding year-round.

But many doubt the Ingleside project will get past the design stages since President Donald Trump signed an executive order in

1993 — 300,000 Milwaukee residents made ill by tainted water supply

1995 — Nevada lawmakers block nuclear waste storage site at Yucca Mountain

1996

1997 — Kyoto Protocol signed by 82 countries and the EU; Senate votes it down 95-0

1998 — Warmest year on record to this point

March to cut most of the federal spending for climate change programs started by his predecessor.

Those include the HUD grants for climate resilience projects, research on the long-term effects of climate change and, most significantly, federal efforts to reduce greenhouse-gas emissions such as President Barack Obama's Clean Power Plan and his administration's moratorium on new coal leases on public lands.

"The early indications at the beginning of the administration are that they are going to back away from a leadership role in dealing with greenhouse gas emissions," says Bob Perciasepe, president of the Center for Climate and Energy Solutions and a former deputy administrator of the Environmental Protection Agency.

"What the consequences of that are I don't know, but I think the economy of the country is better off if the government takes leadership in this so we can capitalize on it," Perciasepe says.

A neighborhood in Norfolk is flooded as high tide approaches on Nov. 13, 2009.

Stephen M. Katz, The Virginian-Pilot/AP

Trump justified the order as a move toward greater energy independence that would "eliminate federal overreach, restore economic freedom and allow our companies and our workers to thrive, compete and succeed on a level playing field for the first time in a long time."

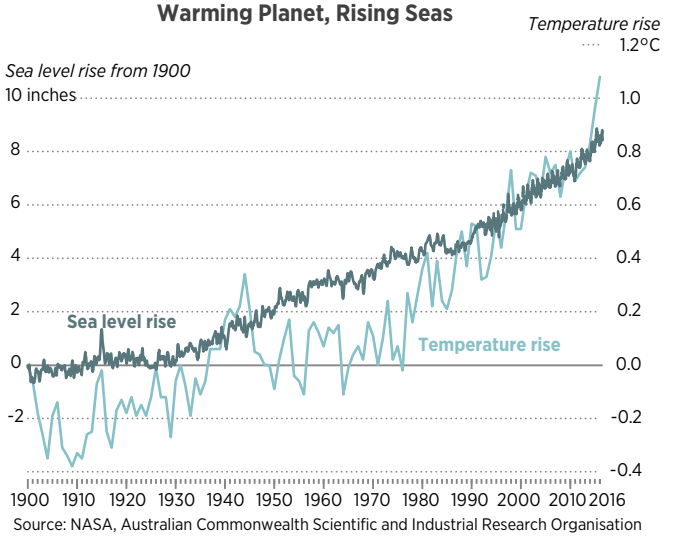
Advocates for action on climate change say the new administration is turning its back on what is clearly a trend toward more extreme weather events and coastal flooding as a result of global warming and rising sea levels. Each of the past three years set a record high for average global temperatures, according to NASA data, and communities all along America's coastline are wrestling with the threat of encroaching seas.

"Most projections are for a 3- to 6-foot rise by the end of the century," says Andrea Dutton, a climate scientist at the University of Florida who is considered one of the leading experts on sea level rise. The high-end estimate is based on "business as usual" in emissions of greenhouse gases from burning fossil fuels, she says. "It could be higher," Dutton says. "I usually say it's a minimum."

Even a 3-foot sea level rise could be catastrophic for some of the nation's most populous regions.

Southern California could lose up to two-thirds of the beaches from Santa Barbara to San Diego by 2100 as a result of higher tides in the Pacific Ocean, the U.S. Geological Survey said in a report last month.

Miami Beach, Fla., has developed plans using local storm water fees to spend up to $500 million on pumps, seawalls and retention basins to protect coastal properties — "and that's just in Miami Beach," not any other parts of sprawling Miami-Dade County, Dut-



Source: NASA, Australian Commonwealth Scientific and Industrial Research Organisation

1999

Scientists warn of largest-ever mass extinction of species

2001

9/11 diverts attention from environment

2002

2003

Climate denier James Inhofe becomes chairman of Senate environment committee

2004

ton says.

Overall, nearly 7 million homes along the Atlantic and Gulf coasts are currently "at risk of storm surge damage," with replacement costs for those structures estimated at more than $1.5 trillion, according to the latest annual report by CoreLogic, a California firm that specializes in risk management.

The U.S. military is also on high alert for climate change effects.

"On American shores, 3 feet of sea level rise — a mid-range estimate that could occur by 2100 — would threaten 128 coastal bases valued at $100 billion," said an expert panel report published last fall by the Center for Climate and Security, a nonpartisan think tank staffed largely by retired military commanders.

"At least four bases in Florida, Virginia and South Carolina — including the Marine Corps Recruit Depot Parris Island — could be mostly submerged by century's end," the report said. "Likewise, parts of the U.S. Naval Academy in Annapolis, Maryland, where tidal flooding now occurs 50 times a year, could also be under water."

The Virginia base highlighted in the report is the Norfolk Naval Station, headquarters of the Atlantic fleet and the largest naval base in the world. It sits on more than 6,000 acres near the mouth of the Chesapeake Bay, where sea levels not only are rising but the land is sinking at the rate of several millimeters per year, according to studies by the U.S. Geological Survey and the Virginia Institute of Marine Science.

"The Navy is saying sea levels here will rise 2 feet by 2060," says Stiles, the Virginia environmentalist who leads a statewide group called Wetlands Watch that worked with the city of Norfolk on upgrades for the Chesterfield Heights neighborhood. "In Norfolk now we're getting flooding that is persistent and perceptible. And most of the money that's been spent to address it has been from federal sources that are now drying up."

Stiles was an aide to Democrats on the House Science Committee in the 1990s, when global warming was first becoming a high-profile issue in Washington. His seat-of-the-pants estimate of national costs for dealing with rising sea levels could easily reach "Iraq War range." As an example, Stiles says, "the city of Norfolk raised one block of one street by 18 inches and it cost $1.2 million."

Larry Atkinson, co-director of the Climate Change and Sea Level Rise Initiative at Old Dominion University, agrees that costs will easily be more than $1 billion for every coastal city forced to adapt to higher tides. "It's the same situation up and down the coast," Atkinson says. "And there are similar costs at every airport like [Reagan] National and [New York's] JFK that is built on fill" and sitting next to a tidal river or bay.

Perciasepe says it is not realistic to expect the federal government to cover all those costs. "Even with the money that exists in the current federal budget, you can't start spending $100 million in every neighborhood on the coast," he says. "It's great to have an example of how you can do it, but it wouldn't happen [on a large scale] under almost any circumstances."

Trump's environmental team joined him at EPA headquarters on March 28.

On top of that, it's not just coastal areas that are dealing with climate change, Perciasepe adds. "We also have in the interior parts of the country greater swings in precipitation, more intense precipitation delivered more quickly so you have localized flooding, and in the interim periods you have drought."

Ann C. Phillips, a retired Navy rear admiral now living in the Norfolk area, recently helped lead 17 municipalities in the region on a two-year study of ways to deal with increased floods. "The objective was to get the federal, state and local people at the table together and we did," she says. "There was a strong federal role."

Now that the region has a game plan — though not a cost estimate — the trick is figuring out how it will be financed, Phillips says. "The federal role is absolutely essential," she says. "Without federal oversight we can't get anything done."

Will that change under a president seeking to cut climate programs? "That is a concern," Phillips says. "My biggest personal concern is there will be restrictions on federal agency coordination with the locals. There is concern that they will be constricted."

"I think collaboration is strong and it's being maintained," says William V. Sweet, an oceanographer at the National Oceanic and Atmospheric Administration who studies water levels throughout the United States and their impacts on coastal communities.

"We run all the tide gauges around the country which are very important for commerce," Sweet says. "These kinds of issues really transcend politics. We have a very strong mission that is required.

2005 — Energy Policy Act largely drafted by fossil-fuel industries on Cheney task force; new record set for warmest year

2006

2008 — Financial crisis leads to Great Recession and less focus on climate change

2009 — New climate accord reached in Copenhagen; House narrowly approves cap-and-trade bill, but it dies in the Senate

2010 — BP spill is nation's worst environmental disaster; another record for warmest year

Rex Features via AP Images

No one wants their tide gauge removed."

But Sweet acknowledges that the larger problem of rising tides requires a global response. The Norfolk region, he says, is "extremely vulnerable," with current data showing sea levels there are rising at a rate of 1 inch every six years. That means that within just 20 or 30 years entire communities could be incapacitated by severe flooding five or more times per year, he says.

"A 3- to 6-foot rise would be a tremendous challenge," Sweet says, "and that's ultimately what we are looking at by the end of the century and beyond." However, Sweet adds, "there's a potential for making a big difference in the long run" if emissions of greenhouse gases are reduced on a large scale.

David Titley, a retired Navy officer who was a top official at NOAA before becoming director of the Center for Solutions to Weather and Climate Risk at Penn State University, has some hope that the Trump administration could come around on climate change.

Tom Williams/CQ Roll Call

Inhofe

"Trump does not seem to be ideologically committed to anything," Titley says. If Trump's daughter, Ivanka, and her husband, Jared Kushner, win out over the anti-government forces in the rest of the White House inner circle, "maybe there will be some kind of Nixon-to-China breakthrough," he says.

"It would probably be much better to have a president who talks more sensibly about this," Titley says. "It is not a hoax. It is real. It is in fact, whether we like it or not, a problem that will need solving. It's time to start talking about ways to do that, and stop talking about denial. ... Let's not be stupid here. Let's try to get ourselves out ahead of this issue."

Titley adds that as rising sea levels start to affect more people, pressure will mount for Congress to do something. "Congress will act when their constituents start to understand this issue is personal to them," he says. "We're starting to see that. I don't think Congress will lead, but I think Congress can be led by that public opinion."

Just this month Sen. Bill Nelson of Florida, the top Democrat on the Commerce, Science and Transportation Committee, held a field hearing in West Palm Beach, which he called "ground zero of the impacts of climate change in the U.S."

Nelson told reporters afterward that he has had conversations with Vice President Mike Pence about moving forward on the president's $1 trillion infrastructure bill with some of it aimed at addressing climate issues.

"We talked about the infrastructure that is needed to help get the water off the land as the sea level is rising," he said. Two sources for funds could be the elimination of tax loopholes and the prospect of lower taxes to coax companies to repatriate trillions in profits held abroad, Nelson said.

Dutton, the climate scientist at the University of Florida, says that in her state, "the locals are stepping up" because Republican Gov. Rick Scott "won't even use the term climate change" and because help from Washington seems unlikely, especially now.

"I really think this has become much more of a social problem," she says. And ultimately the choices are not appealing.

"One way or the other we're going to have to retreat," Dutton says. "You can build walls and live in a bowl for as long as it holds, or you can retreat. In the long term the ocean is going to win." ■

Ed Pesce contributed to this report.

For more information, and to see interviews with the writers go to:

Video: *http://bit.ly/EarthVid*
Podcast: *http://bit.ly/EarthPod*

2011

2012 — James Inhofe book "The Greatest Hoax" is published

2013

2014 — Flint water crisis begins; warmest year on record to this point

2015 — Another record for warmest year; Paris climate accord reached by 195 nations; Obama's Clean Power Plan approved

2016 — U.S. signs Paris Agreement by decree; another record set for warmest year