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cultural life*

Trust

The Pew Charitable Trusts



Against the Tide

The Empty Nets of Honest Fishermen Signal a Global Problem:
Illegal Fishing Is Looting the World's Oceans

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Cover Photograph by Frank Hallam Day for The Pew Charitable Trusts

Who We Are

The Pew Charitable Trusts is a public charity driven by the power of knowledge to solve today’s most challenging problems. Working with partners and donors, Pew conducts fact-based research and rigorous analysis to improve policy, inform the public, and invigorate civic life.

Pew is the sole beneficiary of seven individual charitable funds established between 1948 and 1979 by two sons and two daughters of Sun Oil Company founder Joseph N. Pew and his wife, Mary Anderson Pew.



Ready for the Future

We love to celebrate milestones. Last year The Pew Charitable Trusts turned 65. This year marks the 50th anniversary of the Wilderness Act. And in October, Pew honored the first American woman to walk in space; Dr. Kathryn Sullivan took that remarkable journey 30 years ago. But my colleagues and I also agree with President John F. Kennedy, who said, “Those who look only to the past or present are certain to miss the future.” That’s why Pew is committed to assessing and preparing for the days—and decades—ahead.

Back in 1992, I attended a conference on how information technology would change society. Among the speakers’ predictions: We would be using personal computers to buy airline tickets, worship, go to school, and find dates and marriage partners. What was a startling forecast two decades ago is commonplace today. The World Wide Web, which this year celebrates its 25th anniversary, is now essential to the way we live and work, and to the global economy.

Pew began studying the impact of the Internet when online technology was in its infancy. Sir Tim Berners-Lee, who created the Web, recently commented on that work, “When the deep Pew Research Center analysis in the U.S. and data from global studies...are considered together, they can inform decisions that will shape the world.”

Today, Pew’s Internet project is continuing its data-driven analysis of where the digital revolution is heading. It canvassed technology

and social science experts, asking them to look 10 years ahead and predict how the Internet will change. Most respondents agreed that the Internet will become more adaptable, scannable, wearable, and embeddable. Details of their answers are discussed in this issue of *Trust* in the article “Our Lives Online.”

“The World Wide Web is now essential to the way we live and work, and to the global economy.”

Another long-time commitment is our work on ocean policy. If you walk into the Massachusetts State House in Boston you’ll see a woodcarving, 4 feet 11 inches long, of an Atlantic cod. Known as the “sacred cod,” this memorial first graced the Statehouse in 1784 and honors the two-century tradition of fishing for cod in the north Atlantic. This long legacy is a story of fishing rooted in family, community, culture, and the impact of fishing on the history of our country.

But there is another fishing story that isn’t about the past; it is about a worrisome present and future. Cod—once thought to be an inexhaustible resource in the Gulf of Maine—are rapidly reaching numbers that are so low they will no

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longer support commercial fishing. And in places like the coast of Africa, fishing is often illegal, unreported, and unregulated. The vast scope of this kind of industrial fishing threatens the world's fisheries, the oceans' ecology, and the principal food source for tens of millions of people. You will learn more about illegal fishing, which accounts for 20 percent of the world's annual catch, in this issue's cover story. The article focuses on a fishing village in Ghana but calls attention to the global effort—led by Interpol, governments and regulatory agencies, NGOs, and Pew—to end illegal fishing and rebuild fish stocks to ensure sustainable fishing for future generations around the world.

Pew also has a long tradition of working to preserve the iconic symbols of America's art, history, and culture, especially in Philadelphia. These projects include renovating the Benjamin Franklin Museum and Independence Mall, home to the Liberty Bell, as well as joining with others to assure that the 19th century artistic masterpiece "The Gross Clinic" remains in Philadelphia. But as cultural tastes and styles evolve, Pew is ready for the future. The Pew Center for Arts & Heritage continues to seek out new works, help art organizations expand their audiences, and increase appreciation for the importance of Philadelphia's cultural life to the economy and human spirit. You can read more about our arts and heritage work in the article "Art for All."

Another sign of Pew getting ready for the future is in your hands. This is a newly designed version of *Trust* magazine. The layout and typography are bolder, more accessible, and easier to read. You'll also find a new digital version of *Trust* on our website, which is easily available on your smartphone or tablet. But even as Pew moves forward in how we communicate about our work, the values of stewardship, nonpartisanship, and rigor that began with our founders continues to guide our present and future efforts to improve public policy, inform the public, and invigorate civic life.



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THE BIG PICTURE

Katye Martens/The Pew Charitable Trusts





“Because of Christopher’s illness, I find myself drawn to the news regarding foodborne illness and I can’t shut that off even though I wish I could.”

Gabrielle Meunier,
whose son was sickened by salmonella from
peanut butter crackers when he was 7

 *Gabrielle Meunier talks about her son
at pewtrusts.org/safe-food*



Pew Scholar Wants to Empower Citizen Scientists

Manu Prakash promotes what he calls “frugal science” and has his own example: Foldscope, an origami-inspired paper microscope. Employing 3-D printing technology, the device can be assembled from a single sheet of paper and a glass bead. It weighs less than two nickels, costs less than a dollar, and can magnify samples 2,000 times.

Prakash, named a Pew biomedical scholar last year, envisions Foldscope bringing diagnostic science to remote areas where labs are scarce but diseases such as malaria and dengue fever are endemic. He showed his device to a gathering of more than 100 Pew scholars and fellows at their meeting this year in Herradura, Costa Rica.

“You had a roomful of scientists, including two Nobel Prize winners, staring at this in wonder,” Mike Eisen, an associate professor in molecular biology at the University of California, Berkeley, and a 2001 Pew scholar, recalled to *The New York Times*. “There is something magical about doing things like this.”

Prakash’s Ten Thousand Microscope Project asks scientists, teachers, children, and other interested individuals to test the microscope and develop a crowdsourced user manual. Applications to participate have poured in from over 130 countries.

The 34-year-old scientist studied computer science and engineering at the Indian Institute of Technology, earned master’s and doctoral degrees in applied physics from the Massachusetts Institute of Technology, and conducted postdoctoral training in biophysics and organismic biology at Harvard University.

Along with 20 other biomedical scientists named Pew scholars in 2013, Prakash was selected for his proven creativity. Launched in 1985, the program has recognized 590 promising scientists at the assistant professor level, with the scholars receiving \$240,000 over four years to expand their research. Three Nobel laureates rank among the program’s alumni.

Left

Manu Prakash’s origami-inspired paper microscope can magnify samples 2,000 times.
James Duncan Davidson

Right

A humpback whale feasts on menhaden with the New York skyline as a backdrop.
Artie Raslich

“This is one of the best scientific communities I have ever interacted with,” Prakash says. “The researchers at the meeting had a sense of openness and respect for the various ways of thinking that make science what it is.”

Growing up in India, Prakash was inspired to manipulate materials as a way of making the most of scarce resources. In addition to Foldscope, his lab at Stanford University has developed OScan, a smartphone app to detect oral cancer, as well as an award-winning chemistry set created from parts of a music box. And with Pew’s support, the scientist is developing tools to monitor insect-borne parasites to better understand and eventually prevent malaria infections, which lead to more than a million human deaths a year. He ultimately aims to create cellphone applications that citizen scientists can use to map the spread of disease.

“Pew was the first biomedical funding program to select me, and that in itself has had a huge impact on me personally,” says Prakash. Others have taken notice. In June, he was invited to demonstrate Foldscope at the first White House Maker Faire. In August, he was included among *MIT Technology Review*’s list of “35 Innovators Under 35” for 2014. And in September, he made *Popular Science*’s “Brilliant Ten” list, which honors the brightest young minds in science and engineering.

“The program’s aim is to select out-of-the-box scientists as Pew scholars. Prakash, who is using his background and training as a computer scientist and engineer to advance human well-being, exemplifies the type of scientist we support,” says Anita Pepper, director of Pew’s biomedical programs. “He is not afraid to lead the charge in tackling the largest problems in global health with intensity and passion, and he is making great strides in creating technologies that will achieve solutions.”

—Chelsea Toledo



A Mouthful of Menhaden in Manhattan

New York might not be the first place you’d think of for a nature experience, but wildlife lovers there are thrilling to the sight of whales and dolphins within view of the city’s skyline. And the resurgence of these magnificent animals is partly due to the humble fish called menhaden.

Photographer Artie Raslich of the conservation group Gotham Whale captured some fantastic images of a humpback whale rising from the water against the backdrop of the Empire State Building. But what really catches the eye are Raslich’s shots showing dozens of menhaden spilling from the whale’s mouth.

Menhaden are sometimes called “the most important fish in the sea” because of their vital role in the ocean food web—which is to be eaten. These smallish fish school in huge numbers, consuming mass quantities of plankton and converting it into the type of protein and fat that other animals depend upon. That makes Atlantic menhaden a key forage species for whales, dolphins, and many other predators.

Unfortunately, the Atlantic menhaden population had plummeted to just about 10 percent of historic levels. That’s why The Pew Charitable Trusts and many other conservation groups fought for the science-based catch limit that fishery managers implemented a little over a year ago. Thanks to that action, fishing for menhaden has been reduced by about 25 percent. In the catch limit’s first year of operation, we had roughly 300 million more of these little fish in the water, and that’s good news for Gotham whales, dining dolphins, and the rest of the animals that depend on them for food.

—Peter Baker



Kathryn Sullivan, left, was one of America's earliest women astronauts, joining Sally Ride on a 1984 flight that was the first to include two women. NASA

NOAA Administrator Sullivan Visits Pew

Thirty years ago, as Kathryn Sullivan floated through space, she looked past her astronaut boots to see Venezuela drifting below her. Sullivan, the first American woman to walk in space as part of the nation's pioneer class of female astronauts, recalled a pretty "cool view." "The way we could see Earth was entirely different ... entrancing," she said during an Oct. 8 appearance at the Washington offices of The Pew Charitable Trusts.

That perspective has guided her career as a scientist and explorer ever since, especially informing her views as administrator of the National Oceanic and Atmospheric Administration. During a question-and-answer session with broadcaster and author Lynn Sherr, Sullivan marked the anniversary of her spacewalk nearly 30 years after that day, Oct. 11, 1984. She reminisced about the gender barriers she and five other female astronauts faced: "Imagine 1960s male engineers designing a feminine hygiene kit." Explained what it's like to sit on a rocket ship awaiting launch: "The vehicle is alive. You have a sense it's ready to go and wants to leave." And described her first glimpse of Earth, flying upside down minutes into her first orbit, seeing the Atlantic Ocean and white clouds over England: "It literally took my breath away."

She made three space shuttle flights and was inspired by those views—as well as her experience as a deep-sea oceanographer—to devote herself to the study of the Earth. As NOAA administrator, she leads the nation's "environmental intelligence agency," collecting weather data and setting policies for oceans and fisheries.

Thanks to the innovations of the space age, NOAA's weather forecasting is more precise, saving lives during hurricanes and other storms. Modern technology is also behind Sullivan's priorities for NOAA in the coming years: that the National Weather Service continues to evolve; that investments grow for satellites, ocean buoys, ships, and planes that collect atmospheric data; and that the information gathered helps communities remain healthy in a changing environment. She includes fish habitats in those communities and wants to make them more resilient during an era of industrial fishing—also a longtime priority of Pew's environmental agenda.

"You're just trying to protect the whole planet," Sherr told Sullivan. The NOAA administrator's reply was quick: "Why not?"

—Daniel LeDuc



Above

A new monument in Pacific Ocean includes the Palmyra Atoll, where some 130 stony coral species grow. *Randy Olson/Getty Images*

Right

The sun sets over Manayunk, a middle-class neighborhood in Philadelphia. The city has the second-largest decrease in homeownership among the 30 biggest U.S. cities. *Holly E Clark/Stocksy.com*

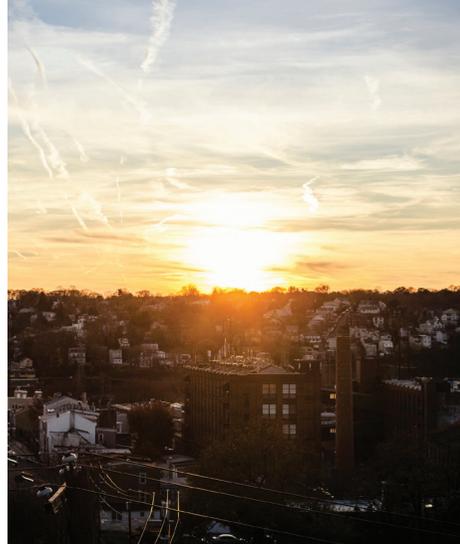
U.S. Creates the Largest Protected Area on Earth

The Pacific Remote Islands Marine National Monument now covers three times more area than all of America's National Parks combined and has become the biggest marine reserve in the world. In September, President Barack Obama enlarged the monument beyond its initial boundaries created by President George W. Bush in 2009, extending it from its original 87,000 square miles to more than 490,000 square miles.

The monument is actually five protected areas that include Johnston Atoll, Wake Atoll, and Jarvis Island and the pristine ocean there will stay that way, protected from commercial fishing, dumping, and mining. Research has shown that highly protected marine reserves are essential to rebuilding the abundance and diversity of ocean species and to increasing the resistance of habitats and ecosystems to climate change.

"The expansion will protect some of the world's most important ocean habitats and provides sanctuary for rare and endangered sharks, seabirds, turtles, and marine animals," says Matt Rand, who directs Pew's Global Ocean Legacy project, which advocates for establishment of large marine parks around the globe. "We hope the government's move will spur similar action by other nations considering how to protect more of the world's great ocean treasures."

—Daniel LeDuc



Homeownership Down in Philadelphia

The title of the Pew report sums it up: *Homeownership in Philadelphia: On the Decline*. The city's rate of homeownership fell from 59.3 percent in 2000 to 52.2 percent in 2012—the second-largest decrease among the 30 biggest U.S. cities. Still, the city's proportion of owner-occupied homes remains relatively robust; it is slightly above the average of those 30 cities, and Philadelphia has a high percentage of low-income homeowners.

Housing experts cited several reasons for the drop: tight credit, rising home prices, stagnant incomes, and hesitation by young adults to purchase homes. As the number of owner-occupied units declined by 47,082 to 302,551, the number of rentals grew by 36,885 to 277,323.

"The drop in homeownership in Philadelphia has gone largely unnoticed, perhaps because the city was not hit as hard as some other communities by the housing crash," says Larry Eichel, director of Pew's Philadelphia research initiative. "The shift from owning to renting, should it continue, has the potential to be a major change. Having fewer homeowners could alter the character of various sections of the city in any number of ways."

—Carol Hutchinson





Against the Tide

Illegal, unreported, and unregulated fishing takes millions of tons of fish from the ocean each year, harming the environment—and the livelihoods of legitimate fishermen around the world.

...

Story by John Briley

Photos by Frank Hallam Day

Just after dawn in the busy fishing village of Elmina, Ghana, and residents are gathering on a bridge overlooking the town's harbor to issue their daily fishing report. As the sun rises over low-slung roofs, the boats begin streaming in—burly, colorful canoes up to 140 feet long, each hull carved from a single tree. Locals clap as each catch-laden canoe passes below the bridge. The bigger the haul, the louder the applause.

These days, there's not much clapping. After a full night of fishing, canoes float back to Elmina—whose 33,000 residents are bunched along a sweeping coastline about 100 miles west of Ghana's capital, Accra—bearing just a smattering of fish, a fraction of a night's average catch from a decade ago. Elmina, among the largest of the dozens of artisanal fishing communities in Ghana, is not alone. Throughout West Africa and the rest of the developing world, coastal enclaves, whose fates are tied to the sea, are reeling because of rapidly declining fisheries. One major reason for the depletion: large-scale illegal, unreported and unregulated, or IUU, fishing by foreign vessels that roam the seas, poaching fish by the ton with little regard for the law, the commercial fishermen who obey it, or the harm they're causing the world's waters.

"We are supposed to be in bumper season," says Jojo Solomon, 52, a lifelong fisherman who served as the elected Chief Fisherman of Elmina. The annual upwelling of cold water in August has historically brought swarms of herring and other pelagic fish to the surface and into waiting nets. "But the catch is low, and it has been going down every year for the past 10 years."

As recently as the 1980s, few people in Ghana, or elsewhere, worried about the number of fish in the sea or how they were caught. But dizzying leaps in vessel size, range, and capabilities mean that large-scale fishing boats can now lawfully scour virtually every acre of the world's oceans and transfer catch to processing vessels hundreds of miles from any shore, allowing them to fish almost without pause. That sort of industrial fishing puts ample pressure on the world's fisheries.

But today IUU fishing, in which illicit operators exploit a patchwork regulatory and enforcement system in

need of modernizing, is dramatically compounding the problem. A 2009 peer-reviewed study found that illegal and unreported fishing accounts for about 20 percent of the world's entire annual catch from the ocean, or as much as 108,000 pounds of fish removed illegally every minute.

Gaps in fisheries monitoring, enforcement, and accountability have helped rogue vessels scoop tens of millions of dollars' worth of Patagonian toothfish—more commonly seen on U.S. menus as Chilean sea bass—from the Southern Ocean. They have allowed an executive from a multinational seafood company to sneak lobster stolen from South African waters into the United States, where it was falsely labeled and sold to restaurants and other retailers. And they have emboldened another major international firm to forge documents in an attempt to continue fishing illegally, even after being caught netting tons of fish in a restricted area in Liberian waters.

The fishermen get away with this because there is no standardized system of vessel identification and they are not required to carry radio or satellite transponders that would allow regulators to monitor their locations. Vessel owners can easily and legally change a boat's identity—its name, flag of registration, and radio call sign—to stay one step ahead of authorities. And crews have even been spotted painting new names on their ships while at sea when trying to elude officials.

"Illegal fishing is a global problem, unrestrained by national borders, where criminals exploit the varying policies and enforcement capabilities of countries," says David Higgins, head of Interpol's environmental security unit. Most often, IUU fishing happens in countries where poor coastal residents, such as those along West Africa's coast, rely on fishing to survive. As Higgins says, "By preying upon countries that lack the resources to sufficiently patrol their own waters, criminal fishers disproportionately victimize some of the world's neediest people."

That's why Pew and the government of Norway, which has a long history as a leader in international fisheries management, helped Interpol launch Project Scale in February 2013. The new initiative fights illegal

“Illegal fishing is a global problem, unrestrained by national borders, where criminals exploit the varying policies and enforcement capabilities of countries.”

David Higgins



Previous

Residents of Elmina, Ghana, watch fishing boats return each morning at sunrise with fewer and fewer fish.

Above

With a decline in prized species such as *sardinella*, a highly sought herring, local markets in Elmina rely on selling lesser quality, cheaper fish.

fishing by improving coordination and information sharing among the international police organization’s 190 member countries. Pew’s involvement is part of its efforts to conserve ocean life and to help sustain fishing as an essential economic virtue. Pew’s work to end illegal fishing, which is supported by a partnership with the Lyda Hill Foundation and the John D. and Catherine T. MacArthur Foundation, is also seeking to require that vessels have specific, traceable identification numbers, to leverage technology to better monitor fishing, and to encourage ratification of a worldwide treaty that would prevent ill-gotten catch from reaching the market. Pew also has helped establish a partnership in southeastern Africa called Fish-i, in which seven countries share information, monitoring, and enforcement resources to combat illegal, unreported, and unregulated fishing in their waters.

In its first 12 months, Interpol’s Project Scale issued worldwide alerts for four vessels that authorities said had been used in high-volume illegal fishing for many years. The alerts are



“If we can shut down the gateways for illegally caught fish to enter into the market, we can greatly increase the opportunity costs for those involved in illegal fishing.”

Tony Long

intended to raise awareness among port officials and fisheries enforcers around the globe, increasing the chances that the vessels will be spotted and detained or, at least, reducing the chance that they can continue to move illegally caught fish to market.

But illegal fish are still finding their way to land, sometimes even in the United States. From 1987 to 2001, South African seafood magnate Arnold Bengis schemed to ignore quotas and smuggle rock lobster from South African waters into the United States for sale. Bengis’ firm, Hout Bay Fishing Industries, underreported catch and bribed South African inspectors, according to a 2004 indictment in the U.S. District Court for the Southern District of New York.

In 2012, the court ordered Bengis and his accomplices to pay \$55 million to the South African government, the largest settlement ever ordered under the Lacey Act, a 114-year-old U.S. law that prohibits the trade in illegally obtained fish, wildlife, or plants. (A judge later reduced that award to \$29 million.) Despite such prominent cases, the problem continues close to home: A study this year in the journal *Marine Policy* found that up to 32 percent of U.S. seafood imports may have been caught illegally.

One hot spot is the Mexican border. Federal law enforcement officials say that fish poached from U.S. waters in the Gulf of Mexico are brought to shore in Mexico, falsely labeled as legal catch, and trucked into the United States. In 2012, a single Texas Parks and Wildlife Department patrol boat recovered nearly 25 miles of illegal longline and more than 10 miles of gill net with 6,000 sharks, 300 red snapper, and an “uncountable number of Spanish mackerel,” authorities said—all caught illegally by Mexican fishermen. U.S. Coast Guard patrols routinely board Mexican boats fishing illegally and find thousands of pounds of fish stolen from U.S. waters.

“If we can shut down the gateways for illegally caught fish to enter into the market, we can greatly increase the opportunity costs for those involved in illegal fishing,” says Tony Long, a former British Royal Navy officer who directs Pew’s work to combat criminal fishing. “Eventually illegal fishermen will find that the cost of the crime outweighs the profits.”

...

On a brisk fall day in 2011 in Leines, Norway, 93 miles north of the Arctic Circle, Gunnar Album was staring at a computer screen showing fishing boats on the



move half a world away. The former commercial fisherman, who established the Trygg Mat Foundation, which monitors ship activity around the globe, watched a vessel off the coast of Liberia track back and forth, the telltale pattern of trawling.

But Liberia's waters were closed to all industrial fishing, as the government set up a monitoring, control, and surveillance system. Album knew this and, working with the Botswana-based organization Stop Illegal Fishing, alerted authorities.

The 262-foot-long purse seiner that he was watching, named Premier, is owned by Dongwon Industries, the South Korean parent company of StarKist tuna. Premier was heading for the Indian Ocean, but its run came at the same time that Fish-i—the information-sharing partnership among southeastern African countries sponsored by Pew and Stop Illegal Fishing—was beginning to operate.

When the fishing vessel arrived in Port Louis, Mauritius, in December 2012, officials there were ready. At Liberia's request, Mauritian officers inspected the boat and found documents confirming it had fished illegally in Liberia. The inspection also revealed forged licenses and other official documents that appeared to have been altered. Mauritius shared its findings with its Fish-i partners, which all denied the Premier's request for licenses to fish the western Indian Ocean.

Left

A boat leaves from Elmina for a night of fishing. The crew says they often see industrial-sized trawlers illegally enter the close-to-shore zones set aside for local boats.

Above

Fishermen in Kokobrite, Ghana, pull their boat ashore. Their catch of *sardinella* has dropped throughout Ghana since the mid-1990s because of illegal fishing.



Fishermen in Kokobrite, Ghana, detangle their nets after a day on the water. Ghanaian law stipulates a minimum mesh size to help prevent the catch of juvenile fish and to preserve species that are on the verge of collapse.

Shut out of one of the world's most fertile tuna fishing regions, Dongwon Industries agreed to pay a \$1 million fine. The Premier left Mauritius—still carrying 1,100 tons of unsold tuna. In September 2013, Dongwon changed the name of the vessel to the Adria. No one knows what happened to the tuna.

The case of the Premier was a clear success in Fish-i's early stages.

"Fish-i is working because the member countries are empowered to protect their own resources," says Kristin von Kistowski, an adviser to Pew who works on the project. "They recognize that by uniting in the fight, they can mount a stronger defense against illegal fishing than any one of them could alone."

...

Programs like Fish-i help individual nations police their waters. But on the high seas—those vast expanses of ocean beyond the 200-mile national waters of coastal countries—monitoring and enforcement are far harder.

No worldwide policies protect international waters; instead, regional fishery management organizations, or RFMOs, establish fishing rules on the high seas. More than a dozen of these

organizations around the world set policies, most through the lumbering process of consensus among member countries, and each keeps its own records of illegal vessels. These policies typically apply only to countries that have voluntarily joined the RFMO, which means that boats registered to nonmember countries can fish with impunity. And RFMOs don't have police forces, making enforcement on the high seas a challenge; a 2005 report commissioned by the British government estimated that 14 to 31 percent of all illegal fishing occurs on the high seas.

Pew staff members participate in RFMO rule-setting processes to promote fair, sustainable policies, including mandatory vessel ID numbers and consistent port controls, and the work has yielded results. In November 2013, the Commission for the Conservation of Antarctic Marine Living Resources, which sets fishing policy in the Southern Ocean, became the first fishery management body to require that all fishing vessels in its waters have unique ID numbers. Since then six RFMOs and one other fishery management body have adopted the identification number requirement for large vessels and for those fishing high-value species, such as tuna and swordfish.

In addition to working with RFMOs, Pew also is collaborating with two organizations—the U.S. company SkyTruth and the UK-based Satellite Applications Catapult—to develop satellite monitoring of fishing vessels. That will allow authorities to see movement patterns to help determine whether a boat is fishing or has entered an off-limits marine reserve, giving global scale to the work of Gunnar Alum and others.

...

Midnight on the Gulf of Guinea, three miles offshore from Elmina, and the CRF 267, a 35-foot wooden trawler, pitches in the swell. The captain and crew of five pull up a trawl net by hand. As legal commercial fishing goes, this is about as far as one can get from the robotic, industrial operations of big vessels.

Almost nothing is mechanized on the boat, save for a 190-horsepower inboard diesel motor and a naked lightbulb swaying over the deck. The men fish by sight, looking for flashes of bioluminescence in the water that signal a school of fish. There is no radio on board. To check water depth, a crewman throws a rope overboard, weighted by a rusty ball of iron, and checks markings on the line.

The night's yield is paltry, a few dozen fish, some shrimp, and two eels. Three crew members squat on the deck as the boat lurches into position for another trawl and sort the scrawny fish to be sold at the town market. One of the fishermen, Abraham, eyes the catch and grimaces: "Not good."

This tiny trawler and thousands of others like it in Ghana fish an area called the inshore exclusive zone, a slice of Ghana's national waters that is off-limits to industrial trawlers.

In much of West Africa, the industrial and inshore fleets often work within sight of each other, competing for the same fish; captains of boats large or small can be tempted to ignore a boundary, and the law, in pursuit of profit. Reports abound of trawlers ramming canoes, intentionally snarling their nets and otherwise threatening and intimidating local fishermen. As soon as the large boats cross into the inshore exclusive zone, they're fishing illegally.

"Industrial trawlers frequently cross into the IEZ to chase high-value cuttlefish and squid," says Richster Nii Amarh Amarfio, co-convener of the Fisheries Alliance, a coalition of nongovernmental organizations in Ghana. "They will claim it's an accident," he says, "but it's not."

A key study on illegal fishing, published in 2009 in the peer-reviewed journal *PLOS ONE* determined that there was more illegal fishing in this area, the eastern-central Atlantic Ocean, than anywhere else in the world. The authors concluded that in the 1980s and 1990s, more than a third of the catch from this region was taken outside the law.

The crew of the CRF 267 sees the effect of that illegal fishing every time the trawler leaves port. This night nothing more is caught. Instead crew members stare across the water, as if asking the sea itself where it is hiding the fish.

...

Ghana's woes, like those of many nations grappling with persistent fisheries crimes, are partially self-induced: The United States and the European Union cited Ghana in 2013 for failing to act aggressively enough to stem rogue fishing in its waters.

The National Oceanic and Atmospheric Administration's National Marine Fisheries Service

tagged Ghana for a rash of problems, from lapses in data-reporting to overfishing of numerous species, especially bigeye tuna. And the EU said that if the country does not address its concerns by January 2015, Ghana will be barred from exporting seafood to the EU until the problems are corrected.

In many countries the problems don't stop on the water. To reach market, all commercially caught fish—fresh, frozen, whole, or processed—must pass through a port, and illegal fishers have had little trouble finding poorly run or corrupt havens to land their ill-gotten catch.

Recognizing the need for more international cooperation to close ports to illegal fishing vessels, Pew supported efforts to draft the Port State Measures Agreement. The agreement is a U.N. treaty that could drastically reduce the profit incentive for illegal fishing.

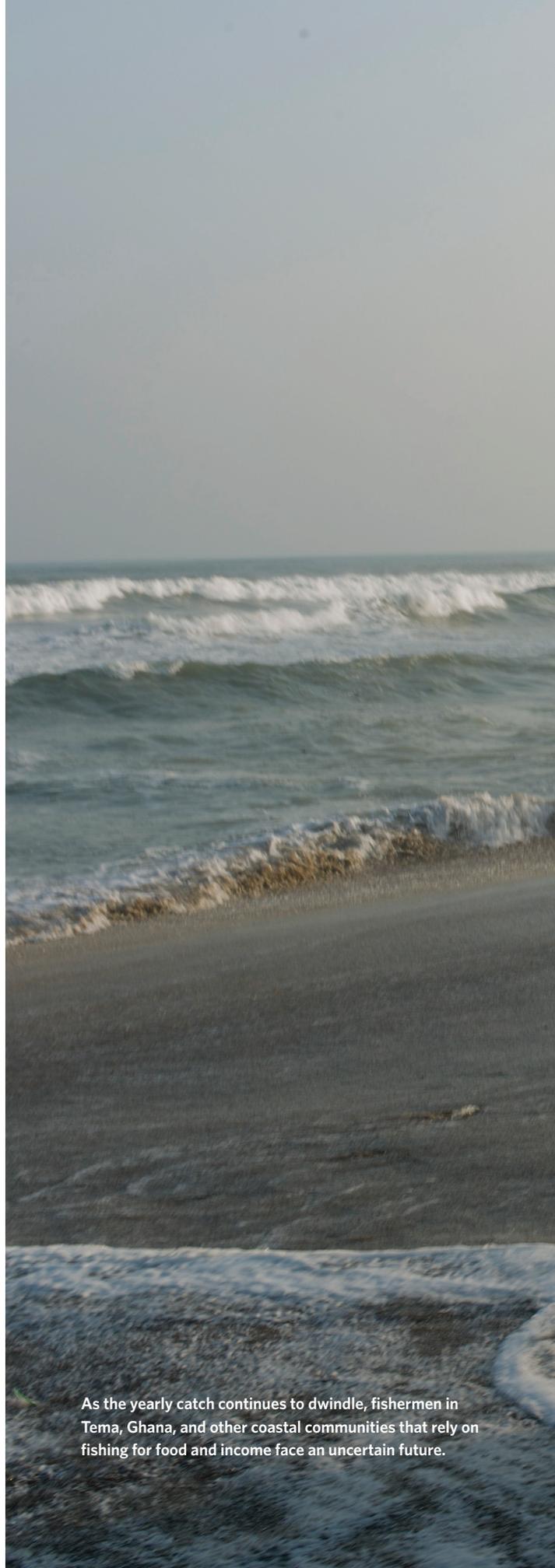
The treaty requires that foreign-flagged fishing vessels notify a port at least 24 hours before arriving. Based on a boat's history and documentation, officials can order an inspection and, if any illegal activity is suspected, block the vessel from offloading catch and receiving port services. Officials would also alert other countries in the region, to help prevent the vessel from landing its catch elsewhere. The port states treaty will take effect once 25 parties have ratified it. As of October 2014, 11 parties had signed the agreement: Myanmar, Sri Lanka, the European Union, Norway, Chile, Uruguay, Seychelles, Oman, Gabon, New Zealand, and Mozambique.

Many more countries will need to sign the agreement to effectively close ports around the world to illegal fishing vessels. And ending illegal, unreported, and unregulated fishing will require better vessel identification, stronger monitoring of boats, and more enforcement and cooperation among nations. But without those measures, the sea and those who depend on it for their living remain in peril.

"We all need to be part of this solution," says fisherman Jojo Solomon in Elmina. "To the big illegal trawlers, this is just another business. When all the fish are gone, they can go home and find another way to make money. For us, it will be the end of our livelihood." 🐟

John Briley is a Trust staff writer.

 See more photos from Ghana at pewtrusts.org/ghana



As the yearly catch continues to dwindle, fishermen in Tema, Ghana, and other coastal communities that rely on fishing for food and income face an uncertain future.



<The World Wide Web turns 25, and the Pew Research Center reports on the past, present, and future of the Internet and American life./>

<Our Lives Online/>

Story by
Janice Maloney

Illustration by
Bailey Farnsworth

Unless you've been in digital detox—shut off from the Internet, phone, and TV—for the past few months, the mere mention of the ALS Ice Bucket Challenge will give you chills.

The philanthropic campaign was, in essence, a social media-powered video dare. Created to raise awareness for amyotrophic lateral sclerosis, or ALS, it traveled like a digital tsunami across the nation last summer. Through Facebook, YouTube, Twitter, Instagram, and Snapchat, nearly every American could become the star of his or her own charity event, goading friends and family to dump a bucket of ice-cold water over their heads and make at least a \$10 donation to the cause.

Everyone from former presidents to television celebrities such as Jimmy Fallon participated in the ALS Ice Bucket Challenge, a multimillion-dollar fundraising event made possible by the World Wide Web. *NBC/Getty Images*



Failure to accept the challenge mandated, at least in theory, a \$100 donation to ALS research. Everyone from former President George W. Bush to Beyoncé to Bill Gates to Tom Cruise posted comic videos of getting soaked.

In one month, the campaign raised \$101 million, with more than 3 million people contributing. According to the ALS Association, that's a 3,500 percent increase compared with \$2.8 million raised during the same month in 2013.

The New York Times reported that people shared more than 1.2 million ice bucket challenge videos on Facebook between June 1 and August 13 and mentioned the phenomenon more than 2.2 million times on Twitter between July 29 and August 17.

Like so much else in our lives, this viral philanthropy wouldn't have been possible without the World Wide Web, which turned 25 in March. It's easy to take for granted how profoundly the

Web has changed the way we live and work. It's upended the way we socialize, making it easier both to keep in touch with far-flung friends and sometimes, to avoid true intimacy. It's either made us smarter or dumber, depending on which scholar, analyst, or psychologist, has the floor. It has created and killed countless businesses, changed the fortunes of tycoons and would-be tycoons, altered how we practice democracy, taken over the news media, and enabled any

“As the Web enters its next quarter century, we urgently need even more data to inform the current debate on what it will take to enhance and defend the Web.”

Sir Tim Berners-Lee

of us to “share” information with more people than ever. In short, the Web has been the driving, disruptive global force that shaped the last quarter century of world history and its evolution promises to bring equally disruptive change for the next 25 years and beyond.

The Pew Research Center, which has been studying the Internet’s impact on American life since 1995, is issuing a series of reports that look back on the past 25 years and also is canvassing thousands of experts in the fields of technology, psychology, science, education, and global economics to paint a picture of what life enmeshed in the Web could look like in 2025.

“As the Web enters its next quarter century, we urgently need even more data to inform the current debate on what it will take to enhance and defend the Web,” says Sir Tim Berners-Lee, inventor of the Web, who was knighted in 2004 for his achievements. “The Web community—and the world at large—are wrestling with tough issues around security, surveillance privacy, open infrastructure, net neutrality, content protection, and more. These global decisions must be made based on the best possible information. When the deep Pew Research Center analysis in the U.S. and data from global studies such as the World Wide

Web Foundation’s Web Index are considered together, they can inform decisions that will shape the world.”



As with so many great innovations, the Web was born out of frustration. In 1989 Berners-Lee was a young software consultant for CERN, a large physics lab in Geneva with over 5,000 scientists, many working in remote offices around the world. Hampered in his research by the challenges posed by CERN’s multiple offices and incompatible technologies, Berners-Lee wrote a proposal for an “information management” system to efficiently link research and documents across countries, time zones, and disparate computer platforms and to share it in a single, global information space. That document is the foundation for the Web, and its release on March 12, 1989, marks the Web’s birthday.

Berners-Lee wrote the code for the Web on a \$10,000 NeXT computer and on Christmas Day 1990 launched his creation. The World Wide Web, originally named Mesh, “sits” (to use a non-technical term with, in this case, great technical import) atop the Internet—a massive, global network connecting millions of computers. So while we tend to use “the Web” and “the Internet”

interchangeably (as Pew does in its reports), the Web is actually one of the ways we make use of the Internet. And while it’s all well and good to understand the infrastructure, the true beauty and joy of the Web for most of us is that it puts information from all over the world in one place. “It is a discovery machine,” says Lee Rainie, director of the Pew Research Center’s Internet project, “where you can learn anything about anything.”

By 1993, Berners-Lee convinced CERN to make the Web available to anyone to use for free. His altruism did not make him other-worldly wealthy, but his commitment to keep the Web open and free was arguably the tipping point that paved the path toward its ubiquity. Over the past 25 years innovations that use the Web have become household names: Yahoo!, Amazon, eBay, Craigslist, Match.com, Google, Wikipedia, Facebook, Twitter, YouTube. By October of this year, according to the WorldWideWebSize site, the Web contained 4.44 billion pages, not all of which—contrary to common belief—contain images of adorable kittens.

The Web has become essential to us, with 87 percent of adult Americans online, according to Pew’s initial report in the series “The Web at 25.” That rate, which

“In the next 10 years, we’ll wear the Internet. We’ll walk into rooms that are connected rooms. We’ll walk down streets that are full of connected devices. We’ll drive in the Internet. It will be so embedded in our lives that we’ll be less and less aware of it. Like electricity, we’ll only notice it when it’s not working”

Lee Rainie

is even higher for young, college-educated, affluent Americans (in excess of 95 percent), crosses gender, race, age, socioeconomic, and geographic boundaries. And as the Web has matured, where and how we use it has changed, too. People in the United States have untethered themselves from desktop computers; now, 68 percent of U.S. adults connect to the Internet with mobile devices such as smartphones and tablet computers. And as we’ve changed devices, our dependence on the Web has grown: A full 53 percent of the people surveyed told Pew researchers that the Web would be “very hard” to give up, harder than TV, landline phones, or cellphones.

“The Web is becoming more like electricity,” says Rainie. “In the next 10 years, we’ll wear the Internet. We’ll walk into rooms that are connected rooms. We’ll walk down streets that are full of connected devices. We’ll drive in the Internet. It will be so embedded in our lives that we’ll be less and less aware of it. Like electricity, we’ll only notice it when it’s not working.”



If Rainie’s vision feels like the plot for a science fiction film, consider how far society has come in two

and a half decades. Picture a mall in Anytown, USA, in 1989. With Madonna’s “Like a Prayer” blaring from every store, Americans shopped, ate, and socialized. They found out what was happening in the world by listening to the radio, or, more commonly, watching the evening news on television. Cut to today, when we request “instant-delivery” on everything from diapers, wine, batteries, to hand-crafted ice cream, not from a shop clerk, but from our smartphones using our digital wallets, as we walk down the street. Movies, music, books, anything made up of bits and bytes, can be ours instantaneously with the click of a button. Twitter scoops CNN, with citizen journalists first breaking the news of the 2013 Boston Marathon bombing as well delivering the initial reports that Osama bin Laden had been killed. We now live in a world where NASA chose to announce its discovery of ice on Mars with a tweet.

This sort of information sharing has made social media increasingly important to political campaigns. The Center found that 66 percent of Americans using social media engage in political activities on sites like Facebook and Twitter. According to the research, posts on these sites have inspired 25 percent of

individuals surveyed to become more active politically and 16 percent revealed they had changed their political views after reading political posts or following certain discussions. Mark Pfeifle, a former deputy national security adviser for President George W. Bush, calls social media the “new soft weapon of democracy.”

It is being used around the globe. YouTube, Facebook, and Twitter played seminal roles in exposing social injustice, poverty, and government corruption in Tunisia, Egypt, Libya, and Syria, helping prompt the Arab Spring uprising in late 2010 despite attempts at media blackouts by ruling regimes. This form of Internet-based activism is expected to increase during the next 10 years, according to canvassings of experts’ predictions by both Pew and Elon University’s Imagining the Internet Center. Rui Correia, director of Netday Namibia, a nonprofit organization supporting advances in information technology for education and development, believes new tools will make social change easier for individuals living under oppressive regimes. “With mobile technologies and information-sharing apps becoming ubiquitous,” Correia said, “we can expect some significant improvement in the

Sir Tim Berners-Lee committed to making the Web free to anyone and has launched a global campaign to make unfettered Internet access the equivalent of a human right. *Amy E. Price/ Getty Images*



awareness of otherwise illiterate and ill-informed rural populations to opportunities missed out by manipulative and corrupt governments. Like the Arab Spring, we can expect more and more uprisings to take place as people become more informed and able to communicate concerns.”

Indeed, the belief that the Internet will help facilitate a more informed, educated, and, in turn, open-minded global populace is

one of the overarching, optimistic themes found in the Pew reports. Many of the experts interviewed predict that, with more advanced technical tools such as increased bandwidth and with more widespread access to the Internet, the Web will finally deliver on what many of the experts consider its greatest promise: education for the masses.

“It seems clear that education is ripe for revolution,” wrote Brough

Turner, founder of Internet service provider netBlazr Inc., “and the Internet makes that possible, even inevitable. Giving 7 billion-plus people access to information and education on any and all possible topics will trigger the biggest revolution since the Renaissance.”

Many of the experts think massive open online courses, or MOOCs, are the key to transforming higher education on a global scale. Already, hundreds of

In 1995, only a half-dozen years after the World Wide Web was created, Internet cafes had become gathering places for people to surf the Web and check their email.

Jonathan Elderfield/Getty Images



schools around the world offer online classes. Several top-tier universities, including Stanford and MIT, collaborate with companies such as Coursera and nonprofits including edX to create Web-based classrooms where students from countries as far-flung as Mozambique, Kazakhstan, and Turkey have access to the same engineering

class as a matriculated student at MIT. Outside the university model, Khan Academy, a free, online educational website created in 2006, is upending the conventional notion of a K-12 classroom. Teachers assign students to watch Khan's online video tutorials as homework and use classroom time for hands-on practice and in-depth discussions

in subjects as far ranging as Trigonometry, Prehistoric Art, and Microeconomics.

Hal Varian, chief economist for Google, told Pew's researchers he believes the Internet's biggest impact on the world will be universal access to all human knowledge. "The smartest person in the world could currently well

<Hal Varian, chief economist for Google, told Pew’s researchers he believes the Internet’s biggest impact on the world will be universal access to all human knowledge. />

be stuck behind a plow in India or China,” said Varian. “Enabling that person—and the millions like him or her—will have a profound impact on the development of the human race. Cheap mobile devices will be available worldwide, and educational tools like Khan Academy will be available to everyone. This will have a huge impact on literacy and numeracy and will lead to a more informed and educated world population.”



Rainie believes many of the experts’ predictions about education in 2025 reflect their hope for the future, as much as it reflects a real prediction. “Our motives for doing this work in the first place are partly to answer questions about, ‘What’s coming next?’ and partly to crowdsource the future,” he says. “Our main mission is to look at the social impact of the Internet.”

Few of the experts canvassed doubt that 2025 will mark the era of “The Internet of Things,” as one of the Pew reports is titled. This is when we will see the rise of embedded and wearable computing devices, connecting us to the world. As of 2013, there were 13 billion Internet-connected devices, according to Cisco. By 2020, the networking giant anticipates there will be 50 billion devices connecting the digital and the physical. These will

include phones, chips, sensors, implants, and devices we have not yet imagined. Eighty-three percent of the 1,606 experts who participated in Pew’s research on the Internet of Things believe it will have widespread and beneficial effects for us personally, for our homes, our roads, and the buildings we work in, as well as for the environment. Already there are products in development that monitor and adjust household activities from pre-heating the oven to running a bath to alerting homeowners when too much moisture or heat is building up in various parts of the home.

If you don’t foresee a need for your refrigerator to tell you when you’re running low on milk, you may be more intrigued with what the Internet of Things can do for your morning commute. Many of the Internet experts interviewed believe that by 2025 we will live and drive in world where ubiquitous sensors and GPS readouts route us in our driverless cars around traffic snags. These smart roadways and bridges, as well as the buildings we work in, will provide ongoing feedback on their state of wear and tear and provide alerts when repairs or upgrades are needed.

The promise of improved health care at both a micro (inside our bodies) and a macro level (how and where we are actually treated and the very method of treatment itself) is another

hot topic throughout these Pew reports. Websites such as Google, WebMD, and the MayoClinic are often the first stop for anyone who wants information on a health issue. These types of sites have far surpassed simply providing information for people in remote areas, or for exhausted parents seeking answers at 2 a.m. about a sudden, inexplicable rash on their toddler’s toes. According to Pew’s survey on health and the Web, 72 percent of Internet users looked online for health information within the past year. And the Internet is poised to go beyond giving us medical information to helping us learn how to modify our diet and exercise on a personalized basis.

“We may well see wearable devices and home and workplace sensors that can help us make ongoing lifestyle changes and provide early detection for disease risks, not just disease,” Aron Roberts, software developer at the University of California, Berkeley, told the Pew researchers. “We may literally be able to adjust both medications and lifestyle changes on a day-to-day basis, thus enormously magnifying the effectiveness of an ever more understaffed medical delivery system.”

Many prognosticators don’t stop there but go on to imagine a world where robotic and remote surgery becomes commonplace. “Telemedicine will be an enormous

<One of the downsides of putting ourselves out there on social media sites is that we have left ourselves open to identity theft. />

change in how we think of health care,” Judith Donath, a fellow at Harvard University’s Berkman Center for Internet and Society, said. “Some will be from home—chronically ill or elderly patients will be released from hospitals with a kit of sensors that a home nurse can use. For others, drugstores (or private clinic chains—fast meds, analogous to fast foods) will have booths that function as remote examining, treatment and simple surgery rooms.”

The surgical telemedicine scenarios require bandwidth, lots of it, and there is much debate among the experts Pew interviewed as to how quickly we will build network capacity that can support these massive sets of data. In the Internet’s early days slow modems could handle email; faster dialup modems helped websites become useable; early broadband rollout allowed for quicker sharing of relatively big files, such as MP3 music files; later broadband advances allowed for streaming activities that have given rise to services such as YouTube, Amazon Instant Video, and Netflix. Advances in wireless speeds have enabled everything from massive adoption of social networking sites to location-based sharing services on smartphones.

Tests underway around the United States and across the globe are working to achieve network speeds that are 50-100 times faster than today’s average high-speed connection. Kathryn

Campbell, a partner with Primitive Spark, an interactive marketing firm in Los Angeles, says that’s more than just a technical upgrade: “Bandwidth will play the same kind of transformational role in reshaping society that railroads and freeways played in our past,” she says.

There is, of course, a darker side to these scenarios, a grim future in which everything we do will be automatically tracked and recorded, from the TV shows we watch, to the contents of our texts and emails and the chemicals in our bloodstream. It’s a future where people will have less choice about being under some kind of surveillance. Throughout Pew’s reports, pundits cautioned that to dismiss signs of the loss of privacy, equality, and access online comes at our own peril.

In Pew’s report *Net Threats*, 35 percent of the 1,400 experts who responded said they believe that in a little more than a decade there will be significant changes for the worse, in the way we get and share content on the Web today. Just as optimists cite the Arab Spring as an example of the Web’s power, many experts pointed out that authoritarian regimes facing political unrest have blocked Internet access to control information and used surveillance tools to locate and neutralize opponents.

Governments are hardly the only threat to privacy. One of the

downsides of putting ourselves out there on social media sites is that we have left ourselves open to identity theft. Facebook is arguably the largest, legally created database of personal information in history. (If the social media site were a country, it would have the third highest population, behind China and India.) Many of us, without much thought about the consequences, have posted to the site photos of ourselves; records of marriage, birth and death; our email addresses; our employers; our political affiliations; as well as our cellphone numbers. We bank online and have willingly turned credit card numbers and our Social Security numbers into bits and bytes for the convenience of shopping online. A great many of us have protected this data with passwords a 6-year-old could crack, leaving us vulnerable to cyber-takeovers. Experts cited recent examples such as the theft of credit card numbers and passwords from Target and Home Depot, as well as the corporate surveillance of consumers by sites such as Amazon and Facebook as the types of problems that need to be addressed as our lives become more deeply intertwined in the Web.

To that end, Sir Tim Berners-Lee, who now runs the World Wide Web Consortium as well as the Web Foundation, has proposed a Magna Carta for the Web. This digital bill of rights would guarantee the Web’s openness,

as well as the right to privacy and to access for all of us using the Internet. Using the Web's 25th birthday as a launching pad, Berners-Lee created a global campaign called the "Web We Want." He has been encouraging government officials around the world—and met with some success in Brazil and Chile—to create policy that would basically turn access to an unfettered Web into the equivalent of a human right.

In the U.S., Pew's "Web at 25" reports are laying groundwork that may ultimately help shape how the future unfolds by sparking conversations between tech enthusiasts and policymakers. "So many conversations about the Web have a theological quality to them," says Pew's Rainie. "Utopians say this is all for the good, while dystopians argue the Web is a dangerous place. Often the arguments they are making on both sides of the conversation are data-free."

These Pew reports, he says, are a guide that can serve policymakers and the creators themselves to make the Web of the future one we can not only live with but thrive in. 

Janice Maloney is a San Francisco-based technology writer who has contributed to The New York Times, Time, and Fortune.

Pew Research Reports: The Web at 25

The Web at 25, released in February, on the Internet's impact and its future

Digital Life in 2025, released in March, with experts' expectations for the Internet over the next decade

The Internet of Things, released in May, on the tech revolution tied to embedded and wearable computing devices and sensors

Net Threats, released in July, about the battles in the next decade to preserve unhindered Web access

Artificial Intelligence, Robotics, and the Future of Jobs, released in August, on digital automation in our homes and workplaces

Killer Apps in the Digital Age, released in October, in which tech experts anticipate a deepening human dependency on machines

The Prospects for Cyber Attacks in the Coming Decade, released in October, with experts saying attacks between nations are likely and invasion of corporate and personal accounts inevitable

Being Informed in the Digital Age, due for release in November, on whether the Internet helps people become better informed about matters important to them

What's Your Web IQ? due for release in November, on what people know about using technology

Being Productive in the Digital Age, due for release in December, about how deeply digital technologies have penetrated work life for most Americans

The Future of Privacy, due for release in December, in which experts say a privacy regime that satisfies individuals and corporations will emerge in the next decade

 [Read the full reports at *pewresearch.org/web25*](http://pewresearch.org/web25)



Art for All

For a quarter of a century, Pew has enlivened Philadelphia's cultural life, supporting art in great civic institutions and in venues as ordinary as a railroad right of way.

By Tom Infield





Amtrak riders arriving in Philadelphia from the north pass through the remains of the city's once-mighty industrial corridor, flashing past empty factories and graffiti. Leaders with the City of Philadelphia Mural Arts Program had an inspiration: What if this gray vista could be enlivened by unexpected splashes of mural-art color? Might it call needed attention to blight that many passers-by would prefer to ignore? Might it even provoke the question "What is art?"

Katharina Grosse's "psychylustro" painted the landscape along the railway into North Philadelphia, becoming one of the most accessible art exhibits in Philadelphia.

Steve Weinik

The Pew Center for Arts & Heritage embraced the idea and in 2013 provided a supporting grant for the project. Paula Marincola, the center's executive director, says the murals fulfill one of Pew's objectives in its commitment to art in Philadelphia: to make art available to the general public. Art, Marincola says, doesn't flourish only in great civic institutions such as the Philadelphia Museum of Art; it also can be found in venues as ordinary as a railroad right of way.

So, since May 2014, rail passengers glancing out the windows as they zip through North Philadelphia have seen massive eruptions of greens, oranges, and pinks on once-dreary walls, old tires, dumped appliances, dead weed trees, and brush. Gone in seconds, the color bursts designed by German artist Katharina Grosse reappear once, twice, a

third time, with entire stretches along the tracks spray-painted in neon brightness. The impact on the first-time viewer is jarring, almost unnerving.

Even the project name is provocative: "psychylustro."

The title is meant to convey the psyche and illumination and to intensify how viewers experience the landscape, the organizers say. Each day, those viewers—an estimated 34,000 riders, not just on Amtrak, but also on regional rail lines operated by New Jersey Transit and the Southeast Pennsylvania Transportation Authority—pass by "psychylustro," making it one of the most widely accessible art exhibits in Philadelphia.

"I think it takes people out of their day-to-day reality. For a moment, you're in a new universe," says Jane Golden,



executive director of the Mural Arts Program. “Art can transport us, and that is what this does.”

From the Opera to the Zoo

The mural project illustrates the sort of innovation and excellence that Pew has sought to foster in Philadelphia’s rich cultural scene. As part of a long-standing effort to enhance the region’s cultural and economic vitality, Pew since 1989 has provided competitive grants and fellowships to the arts in Philadelphia and its four Pennsylvania suburban counties. The Pew Center for Arts & Heritage, created in 2005, is now the institution’s focal point for supporting the arts.

“Pew believes in the importance of the arts in their own right and as part of the civic health of a region,” says Michael Dahl, a Pew senior vice president who directs the institution’s Philadelphia program. “At the same time, the arts and arts tourism have been an important economic driver for the city. In almost every study or poll we conduct, quality of life is one of the main things that attracts millennials to a major urban center. And one of the huge components of that quality is the city’s arts and cultural offerings.”

In 2014 alone, The Center for Arts & Heritage awarded more than \$9.3 million in the form of grants of up to \$300,000, plus as much as \$60,000 to defray overhead, given to 35 arts projects. These included a U.S. theater premiere at the Philadelphia Fringe Festival, a retrospective of works by a major postmodern choreographer at Bryn Mawr College, and a community-driven exhibit on “the concept of home and homelessness” organized by the Asian Arts Initiative.

In addition, 12 artists were chosen to receive fellowships of \$60,000 each, over one or two years, to enable them to pursue their craft. The new fellows are four poets, two visual artists, a filmmaker, a pianist and composer, a harpist, a vocal artist, a choreographer, and a scenic designer. And in a new funding category for 2014, the center also awarded two advancement grants of \$500,000 each. One went to Opera Philadelphia to help it reinvent itself in an era when the audience for classical music is aging and when busy people are less likely to commit themselves to season-long subscriptions. “Opera Philadelphia is at the forefront of trying to address the challenges facing performing arts organizations, particularly traditional performing arts organizations,” says Doug Bohr, of Pew’s Philadelphia program. The opera used the funding to commission sophisticated audience research on ways to reach people in venues beyond the concert hall, generate new support, and sustain its traditional fans.

The other advancement grant went to the Philadelphia Zoo to help it expand an innovative effort called Zoo360. The initiative has drawn national and international attention for getting animals out of confined habitats and letting them safely explore the larger zoo in wire-mesh tubes and trailways 14 feet over the heads of visitors.

Animals and visitors
see each other in
new ways at the
Philadelphia Zoo,
which with Pew's
support is now
"a kind of living
museum."

*Katye Martens / The
Pew Charitable Trusts*







Pew arts fellow Zoe Strauss' "Antoinette Conti" was one of 54 photos on billboards across Philadelphia in an exhibit loosely based on Homer's *Odyssey*.

Zoe Strauss

Pew's philosophy in designating funds for the arts has evolved. At one time, the institution set aside money in seven categories. But because it found that dance might be particularly strong one year and theater the next, Pew leaders felt it made sense to adopt broader categories and more flexible funding. In the case of Opera Philadelphia and the zoo, Pew was also looking to help organizations that have strong leadership and clear plans for the future.

"We typically don't support business as usual," Marincola says. "That doesn't mean everything we support has to be cutting-edge, avant-garde work. It can be a reinterpretation, a rethinking of a

Chekhov play, for instance. Or something that is a recognized masterpiece but interpreted in a new way."

Hugs and Kisses, Too

The "psychylustro" project, with its emphasis on bringing art to the widest possible audience, is compatible with other outdoor visual-arts projects Pew has backed in recent years. One of these brought together a traditional institution and a street artist from the city's Mayfair section, Zoe Strauss.

Strauss' art has focused on the lives of working-class people in the neighborhoods she knows well. In

2001, she mounted a one-day exhibition of her photos on the pillars under an Interstate 95 overpass in South Philadelphia. The exhibition was up for only a few hours, after which she invited residents of the neighborhood to take home any photo they wanted, free of charge.

The show became an annual event that soon attracted the attention of Philadelphia's art community. In 2005, Strauss received a Pew arts fellowship, which enabled her to devote all her time to her photography. In 2010, the 10th and final year of the underpass exhibitions, *The Philadelphia Inquirer* hailed the "unusual egalitarianism" of the event: "For free you could walk to an unexpected place and gaze at a couple of hundred photographs. For \$5, you could walk away with a signed Strauss. Hugs and kisses from the photographer, no extra charge."

Although thousands of people had seen Strauss' work under I-95, the Philadelphia Museum of Art thought it deserved even greater attention and asked The Pew Center for Arts & Heritage for a grant to do its own showing of Strauss' work. With Pew's support, a four-month exhibit titled "Zoe Strauss: Ten Years" opened in January 2012 in the Grecian-style building at the head of the Benjamin Franklin Parkway.

In keeping with the egalitarian theme, the Strauss photographs hung not only in the museum's galleries but spread down the hallways and onto the streets of the city. The images appeared on 50 large billboards scattered throughout Philadelphia and its suburbs.

Strauss says Pew's support changed the trajectory of her life and career. She used her fellowship money to fund a 2005 trip to Louisiana to photograph the aftermath of Hurricane Katrina—work that later was featured in the biennial exhibit of the Whitney Museum of American Art in New York.

"I don't come from a high-art background," Strauss says. "I wouldn't have had access to any number of things—ideas, people, connections, places—without the support of Pew. I wouldn't have a career as a working artist without the support they've given me throughout the years. It's not just the money. It's also the kind of gravitas—the weight—that the Pew fellowship gave to me."

Since 1992, Pew has funded 299 fellows in Philadelphia, many of whom have gone on to national and even international recognition. Jennifer Higdon, a 1999 fellow, won the 2010 Pulitzer Prize for music for her Violin Concerto. She won a 2010 Grammy Award for a different work, Percussion Concerto, and she received the Pennsylvania Governor's Award for the Arts in September 2014.

Higdon says the Pew fellowship provided her with a lengthy period in which she didn't need to struggle to make a living and enabled her to devote all of her energy to enlarging her understanding of long-form orchestral music. "It made all the difference in the world to me," she says.

"I don't come from a high-art background. I wouldn't have had access to any number of things—ideas, people, connections, places—without the support of Pew. I wouldn't have a career as a working artist without the support they've given me throughout the years."

Zoe Strauss

It's Philly, Not New York

Fellows are not selected by Pew's staff or even the local art community. Rather, they are chosen by outside panels of experts from across the nation.

Jock Reynolds, director of the Yale University Art Gallery and a former panelist, says Pew's impact in Philadelphia has been magnified by the steadfastness of its support for the arts over the long haul. Some funders have short attention spans, Reynolds says, and will launch an initiative but then lose interest and move on to something else. "Pew has stayed with its commitment," he says.

He believes that Pew has significantly boosted Philadelphia's art community. "I think Philadelphia—which has a great university and art-school culture and some of the greatest museum collections in the country—has become a very active art community," he says. "We have students from Yale now regularly moving to Philadelphia rather than to New York."

The center's Marincola, a lifelong Philadelphian, attests to the change. Artists have long moved to Philadelphia because apartments and studio space are cheaper than in New York. But now, she says, the art scene has become a magnet.

"My belief has always been that Philadelphia shouldn't feel second to any city in terms of arts and culture and that great work can happen anywhere," Marincola says.

Finding Excellence

At every step, The Center for Arts & Heritage has sought to expand the audience for all types of art. "You need to have both the large and the small; you need to have both the traditional and the more avant-garde," Pew's Michael Dahl says. "You need to reach out to the changing demographics of the city. You need to assure that, as the city changes, the arts scene changes as well. You don't



invest all of your eggs in one basket. Rather, you try to pursue excellence wherever you find it."

One of the places where Pew looked was WXPN, the radio station at the University of Pennsylvania, which sought funding for a yearlong initiative to bring Louisiana zydeco music to Philadelphia. Pew previously helped the station produce a live concert series by Mississippi blues artists.

Why zydeco? Why Mississippi blues? Why not just stick with Philadelphia music? Because "this is going to broaden our diversity of performers and music," says station manager Roger LaMay. "We regularly present music from our area. So we try to use these grants to do something we wouldn't otherwise be able to do."

Pew is also helping to bring together musical performers from different global cultures. Thanks to a 2014 grant, an Arab cultural organization in Philadelphia called Al-Bustan Seeds of Culture has commissioned two works of music by Arab-American composers to be jointly performed by Al-Bustan's Takht Ensemble and a Western choir, the Crossing, which will sing in Arabic.

The project "creates a framework for non-Arabs to connect to Arabic music," says Hazami Sayed, founder and director of Al-Bustan, "and it also gives those accustomed to listening to Arab music something different."

"Something different" might also describe The Center for Arts & Heritage's support for the Philadelphia Zoo, perhaps an unexpected venue for an arts funder. But Dahl points to the zoo's



role in the city's heritage—chartered in 1859, it was the country's first zoo—and calls it "a nontraditional art form, as a kind of living museum."

With 42 acres, the Philadelphia Zoo is smaller than many large-city zoos. The Pew advancement grant will enable it to make maximum use of space by dramatically expanding the system of overhead passageways for animals. Officials from other zoos have traveled to learn what Philadelphia is doing, and city zoo leaders have gone to China to share their innovation.

So far, the zoo has opened three sets of animal trails: one for treetop animals such as monkeys and lemurs, one for large primates such as orangutans, and one for big cats. "It's almost like you're sharing a space with them in nature," says Angie Micciolo, a visitor from Bucks County, Pennsylvania, looking at the 600-pound tigers strolling 14 feet above her on a September day.

Andrew Baker, the zoo's chief operating officer, says Pew's support will enable

the Zoo360 initiative to include a greater variety of animals, starting with zebras, giraffes, and a rhino. The eventual goal is to give most of the large animals in the zoo wider room to roam. This should enhance the zoo-going experience for human visitors, but "the biggest impact is going to be on the quality of life for the animals," Baker says.

Impact—that's what The Pew Center for Arts & Heritage is always aiming for.

Reynolds, the Yale museum director, says Pew's long-lasting commitment to the arts is especially vital at a time when government and corporate support has waned. "The fact that Pew resources have been there continuously has helped to make what is produced in the city stronger and stronger," he says. "Philadelphia is a very healthy arts community, and Pew has had a lot to do with that." 🎭

Tom Infield, a former reporter and editor for The Philadelphia Inquirer, last wrote for Trust about Pew's report on the city's middle class.

Left

Asphalt Orchestra performed in 2010 at the Philadelphia Bang on a Can Marathon, presented by FringeArts, which brings cutting-edge artists from around the world to the city.

JJ Tiziou via Pew Center for Arts & Heritage

Right

Former members of the Merce Cunningham Dance Company performed during the Philadelphia Museum of Art's 2012 exhibition "Dancing Around the Bride," which explored the American legacy of painter Marcel Duchamp.

Constance Mensch/The Philadelphia Museum of Art



Using fewer human antibiotics means Perdue's chickens grow significantly slower than other companies' chickens, but given the benefits to consumers a company spokesman says "we think that's a good trade-off." *iStockphoto*

When It Comes to Antibiotics, Less Is More

In a significant advance for public health, Perdue Foods reduces the use of human antibiotics in its chickens. Federal experts plan even more action to fight superbugs that resist lifesaving medicines.

By Jodi Enda

Since the 1970s, scientists and health advocates have grown increasingly concerned about poultry producers giving chickens antibiotics that are intended for humans. As consumers have become aware that the practice could increase bacteria's resistance to the lifesaving drugs, they have begun demanding—and buying—meat from chickens and other livestock raised without the antibiotics. The federal government has taken up the cause, with regulators now contemplating policies to prevent food producers from routinely giving animals the same antibiotics that doctors use to treat people.

In September, Perdue Foods became the nation's largest poultry producer to eliminate antibiotics in its hatcheries, the latest and most significant step in its dozen-year effort to curtail use of human antibiotics.

The company started reducing use of human antibiotics in 2002 in response to consumer demand and mounting scientific evidence about antibiotic resistance. Five years later, Perdue stopped placing human antibiotics in chicken feed, a common practice

intended to speed growth and ward off disease. Now, it gives the drugs to no more than 5 percent of its chickens a year, solely to treat illnesses.

Pew, which has been working since 2008 to phase out the overuse of antibiotics in poultry and other livestock, praised Perdue's announcement and said it hoped other food producers would follow suit.

"This is a big deal because of Perdue's large share of the market. The company deserves credit for doing what the public health community has been seeking for some time," says Gail Hansen, a veterinarian and expert in Pew's project on human health and industrial farming. "The antibiotics Perdue was using are the same ones that people take to treat disease. Anytime you administer antibiotics, you can increase the chance of antibiotic resistance—and every one of those little chickens is like a little petri dish where resistance can develop."

Overuse of antibiotics in agriculture and human medicine breeds resistance. Last year, the Centers for Disease Control and Prevention affixed numbers to the problem, estimating that antibiotic-resistant infections kill at least 23,000 Americans and sicken 2 million more every year.

Just two weeks after Perdue's announcement, the White House turned its own spotlight on antibiotic-resistant bacteria, declaring the proliferation of these superbugs a national security priority. President Barack Obama signed an executive order launching sustained, high-level government action to combat antibiotic resistance, including the creation of a task force co-chaired by the secretaries of defense, agriculture, and health and human services.

The White House announcement also included the release of a report by the President's Council of Advisors on Science and Technology, which says that antibiotic resistance "is now occurring at an alarming rate and is outpacing the development of new countermeasures capable of thwarting infections in humans." Pew expert Allan Coukell, who contributed to the report, calls it a road map for government action.

This dearth of new drugs, which the president's executive order seeks to address by attracting greater private investment in the development of new antibiotics, increases the importance of taking human antibiotics out of the food people eat, Hansen says.

To achieve that goal, the Food and Drug Administration has issued voluntary guidelines for the industry to eliminate use of antibiotics for growth in food animals and to increase veterinary oversight of the drugs.

Perdue's recent changes move faster than those proposals. "Our chickens do grow slower than most people's chickens, significantly," says Bruce Stewart-Brown, Perdue's senior vice president for food safety, quality, and live operations. Considering the benefits to consumers, he adds, "we think that's a good trade-off."

To complete this last shift away from human antibiotics, Perdue improved sanitation at its 14 hatcheries, ensured that eggs were clean when they arrived from farms, and figured out a new, cleaner way to vaccinate the eggs without introducing bacteria. The company also removed animal byproducts, which can contain risky bacteria, from its feed; added probiotics, microorganisms that improve health; and increased use of vaccines in egg-laying hens and in the chickens that people consume.

Perdue, a family-owned company that ranks third in the U.S. by chicken sales and fourth by production, now is the leading producer of both organic and no-antibiotics-ever chickens. Stewart-Brown, who is a veterinarian, said Perdue also is working to find natural remedies—including oregano and yucca products, essential oils, and additional probiotics and prebiotics—to keep chickens healthy and further reduce the need for antibiotics.

Pew is urging Perdue to be more transparent about the administration of antibiotics that are used only in animals. At the same time, Pew experts say they hope Perdue's latest action on human antibiotics will spur others to follow suit.

"We're very pleased with what Perdue has done. We think the company has set a new bar for the chicken industry," says Laura Rogers, who directs Pew's campaign on human health and industrial farming. She notes that Perdue has exceeded other proposals under consideration by the FDA to limit antibiotic use and even gone beyond all proposed local, state, and federal legislation that Pew has seen that would curtail use of the drugs in food animals.

"We're also hoping that someone from the swine industry and someone from the cattle industry will step forward and be a leader like Perdue," Rogers says. 

Jodi Enda is a Washington writer and frequent contributor to Trust.

Mary Sue Milliken's Border Grill restaurants serve only sustainable seafood. *Border Grill*



Questions & Answers: Mary Sue Milliken

Chefs can have a big impact on influencing people to choose more sustainable fish.

Mary Sue Milliken is co-chef and co-owner of the Border Grill restaurants and food trucks in Los Angeles and Las Vegas. She is the author of several cookbooks and is also a television personality who has appeared on "Top Chef Masters," "Today," and hundreds of episodes on the Food Network with her business partner of more than 30 years, Susan Feniger.

Milliken operates her business with an eye toward protecting the environment, including use of organic fruits and vegetables, meats grown without antibiotics, and lesser-known varieties of sustainably caught seafood. She has also become active in supporting

efforts by The Pew Charitable Trusts and other organizations to encourage West Coast fishery managers to improve conservation of forage fish as a key component of a healthy ecosystem.

Thriving ocean ecosystems rely on plenty of oil-rich forage fish such as sardines, anchovies, and herring. These small schooling fish occupy the crucial midpoint of the ocean food web and are preyed upon by many species of seabirds, marine mammals, and commercially and recreationally important fish such as salmon, tuna, groundfish, and other predators.

Many forage populations are not monitored or managed, and fishing regulations do not explicitly account for their value as a crucial food source for predators. Developing a new approach, one that balances the needs of an ecosystem as a whole, will ensure that we maintain the food base that is vital for a healthy ocean and sustainable fishing industry.

Sustainable seafood is a cause Milliken has always been passionate about. However, she became increasingly aware of the need for change about a decade ago at Monterey Bay Aquarium's annual Cooking for Solutions event.

During a recent conversation with Pew at her restaurant's downtown Los Angeles location, she recalled the moment when she decided to get deeply involved in the sustainable seafood movement and detailed why she believes people should become more engaged in advocating for ocean conservation.

What was it about the Monterey event that resonated with you?

Milliken: It was a conference pairing chefs with marine biologists and oceanographers who explained that 90 percent of large fish have disappeared from the world's oceans and that chefs have a role in helping people make sustainable choices. I thought, "That is horrifying! I have two kids, and hopefully I'll have grandkids. What if they can't enjoy eating fish?" I realized that, as consumers, we have an enormous impact on the world's seafood supply, and I've been passionate about sustainable seafood ever since.

How much difference can chefs make?

The vast majority of all seafood consumed in the U.S. is eaten in restaurants, so chefs can have a big impact on influencing people to choose more sustainable fish. If I can make smaller fish from lower on the food chain sexy, that's a great win.

Speaking of eating down the food web, you've made a point of occasionally serving sardines and squid—two species caught right here off the California coast. What do your customers think of nontraditional seafood like sardines?

All the foodies love them and order them right away, but other people say, "I want my chicken taco."

I actually think eating tuna should be something you do once a year and that we should encourage people to eat little fish like sardines, herring, and mackerel. They're high in Omega 3 oils and low in pollutants like mercury. Right now, much of the sardine catch in the United States ends up in fish oil capsules or as commercial bait or feed for larger farmed species like salmon. That's not what I'd call the best use of resources; it takes about three pounds of sardines to raise just one pound of salmon.

You have also advocated for forage fish conservation. How do you square the need to conserve forage fish with your desire to eat them?

Forage fish are sort of the building blocks of an ecosystem. Those little forage fish are like the topsoil of the ocean. We need to conserve forage fish, because so many other animals depend on them. At the same time, if we're going to feed a growing population efficiently, we should be eating lower on the food chain.

Has your willingness to source sustainable food helped or hurt your business?

Being part of the sustainability movement has been very beneficial and rewarding for our business: Customers come here because of it. We've also got 450 employees, and we know that when they feel good about the work they're doing—that it's about more than just a paycheck for them—our retention is higher.

It's one thing to undertake sustainable practices for your business, but you've gone a step further and advocated conservation of marine resources through the Pacific Fishery Management Council and other bodies. Why have you chosen to get involved in the policy arena?

There's only so much each individual consumer can do. Even though most of the world is covered by water, the ocean is always going to need more advocates because it's not familiar to most people. We don't live underwater; we live on land. So it's easier for people to hop on the bandwagon for water conservation or clean air or trees than it is to support the health of the oceans. The oceans are still very mysterious, but thinking logically, their health has got to have an impact on our health. 🌊

Protecting the “Land of the Ancestors”

A First Nations aboriginal community takes the lead role in a planned boreal forest park

By Sheldon Alberts



On bright summer afternoon on the East Arm of Great Slave Lake in Canada's Northwest Territories, Alizette Lockhart sits at a wooden picnic table, clutching a sturdy sewing needle in one hand and a bundle of smooth leather in the other. She and a dozen other members of the Lutsel K'e Dene First Nation have set up a moose hide tanning camp here on the shores of the lake, practicing an aboriginal tradition that sustained their ancestors for generations.

Nearby, Pete Enzoe stretches a fleshed moose hide over a large timber frame. Madeline Catholique, a Dene woman in her 80s, methodically scrapes another hide, pausing only to wipe her brow and sip from a cup of hot coffee.

Tanning moose hides takes days of intense labor but was vital to the survival of the Dene people during the long, cold winters in Canada's North. Moose hide was a staple for jackets, moccasin slippers, gloves, and other clothing.

“Every part of the animal is used,” Lockhart says, gesturing behind herself to a fire where slabs of moose, caribou, and porcupine meat are being cured into jerky. “We never throw anything away.”

That conservation ethic runs strong among the residents of Lutsel K'e, a village of some 300 people about 115 miles east of Yellowknife, the capital of the Northwest Territories.

The Lutsel K'e Dene have stewarded their traditional lands in Canada's boreal forest for centuries. Today,

they are at the forefront of efforts to ensure that their historical knowledge guides environmental protection and development practices in a region rich in ecological diversity and mineral resources.

The centerpiece of that conservation plan is Thaidene Nene—or “land of the ancestors”—a proposed Canadian national park reserve that would cover 7.4 million acres in the heart of the Lutsel K'e Dene homeland. Thaidene Nene sustains large herds of migratory caribou and other wildlife: muskoxen, grizzly bears, wolves, lynx, moose, mink, and many waterfowl and migratory songbirds. It includes parts of Great Slave Lake that have North America's deepest freshwater reserves. And it is a land of legends for the Lutsel K'e Dene, a place where their cultural foundations were laid.

In 2013, the Lutsel K'e initialed a framework agreement with Canada's federal government to jointly manage the park, a draft deal that recognizes Dene authority. The Lutsel K'e Dene, the Canadian government, and the government of the Northwest Territories are negotiating final boundaries and shared responsibilities. In June, leaders of the community outlined their vision for land stewardship to members of the Boreal Leadership Council. The council, which is supported by The Pew Charitable Trusts, is a decade-old Canadian organization composed of conservation groups, First Nations, investment firms, and resource industry companies that advocate a balance between conservation and sustainable development in the boreal forest region.

Council members traveled to Lutsel K'e aboard a chartered de Havilland Dash 8 flying over an astonishing network of lakes and trees that extended uninterrupted in every direction as far as the eye could see.

At the meeting, former Lutsel K'e chief Addie Jonasson explained the sacred importance of Thaidene Nene to the Dene people and emphasized the need to protect it from being fragmented by mineral development.

The surrounding area has deposits of uranium, diamonds, and precious metals, and it has drawn interest from mining companies in the past decade.

The Lutsel K'e First Nation recently negotiated an "impact benefit agreement" with developers of a major diamond mine elsewhere on their traditional lands. That deal would secure training, employment, and other financial benefits for the community if the project proceeds.

But Thaidene Nene is to be off limits.

"We are very outspoken when it comes to resource development, and also when it comes to protection of our traditional territory and homeland," Jonasson says. "And that is because we want to make sure that our traditional territory is protected, that the land is protected, and that the water, the wildlife, animals, the birds are protected."

Thaidene Nene's conservation area would include important ecological features, including a portion of representative northwestern boreal uplands. It also would cover traditional Lutsel K'e fishing and hunting grounds.

With Canada's courts increasingly confirming First Nations' rights and title to traditional territory, aboriginal peoples are assuming a central role in conservation planning in the boreal forest region.

Lutsel K'e's hopes for Thaidene Nene provide insight into one First Nation's vision.

The community is seeking to establish a \$30 million trust fund to help develop ecotourism infrastructure and support education for young community members in key fields such as environmental monitoring and resource management. Dene stewardship traditions would be a foundation of the training.

The hope is the new park will generate a sustainable tourism economy with jobs for Lutsel K'e, which would serve as the gateway to the Thaidene Nene reserve.



Members of the Lutsel K'e Dene First Nation have tanned moose hides for generations to make jackets, moccasins, and other clothing. Sheldon Alberts/The Pew Charitable Trusts

Lutsel K'e's business plan envisions Thaidene Nene potentially attracting more than 1,000 visitors a year. That's a tiny fraction of the number of tourists who flock to iconic, accessible Canadian wilderness areas such as Banff National Park, but it would be a boon for a small community.

A significant component of the plan is the creation of a "Watchers of the Land" program, in which community members would be trained as stewards to protect the ecological and cultural integrity of sacred Dene sites within the park. They would provide interpretative tours for visitors, and pass on cultural and scientific knowledge to other members of the community.

That tradition of teaching was on display at the moose hide tanning camp, which showcased the enormous pride the Lutsel K'e Dene have in their heritage, and their strong connection to the land.

"We wake up to this view every day," says Steven Nitah, a former Lutsel K'e chief, and the community's lead negotiator on creation of Thaidene Nene. "We are born conservationists. We are born environmentalists." 

Sheldon Alberts is a Trust staff writer.



Working Together for Lasting Change

Sally O'Brien explains how Pew welcomes partners to work in tandem on important challenges and achieve measurable results on common goals.

Senior vice-president Sally O'Brien oversees Pew's philanthropic partnerships. She sat down with *Trust* to talk about the latest ways Pew's collaborations with donors are achieving long-lasting, transformative change.

Why does Pew work with philanthropic partners?

Although Pew began as a traditional foundation more than six decades ago, it has evolved into an international, nonpartisan public policy organization. We operate programs like any other NGO and philanthropic partnerships are now essential to our efforts to create lasting solutions to great challenges. Whether it's helping states develop more efficient corrections programs or conserving the Arctic where melting ice is dramatically altering the ecosystem, we can achieve greater success when joining with others to share knowledge and leverage resources. In fact, partnerships now support about 20 percent of Pew's programmatic efforts.

Who are some of Pew's current donors?

Our funders represent a range of foundations and individuals from around the world who share our

commitment to finding solutions to complex problems and making a lasting difference in the world. For example, Pew's Global Ocean Legacy project has developed collaborative relationships with several philanthropic partners interested in creating the world's first generation of marine parks. One of these, the Geneva-based Bertarelli Foundation which has a strong emphasis on marine conservation, joined with Pew to pursue the creation of a 270,000 square mile (about 700,000 square kilometers) fully protected marine reserve in the exclusive economic zone of Easter Island, a special territory of Chile.

The majority of our donors work in partnership with us to accomplish shared goals, but occasionally we receive unexpected gifts. For example, we recently learned that we were the beneficiary of a gift from the estate of a sociology professor from Kansas who had never contacted us in the past and whom we didn't know. And while we are fortunate to count a number of signatories of the Giving Pledge among our donors, we also receive support from those who are just beginning their philanthropic journey. Not long ago a group of Girl Scouts in Oregon and Washington raised \$109 for Pew's global sharks conservation campaign.

Why are philanthropists interested in Pew?

My sense is that they are attracted to Pew's mission and the values defined by our founders. Those principles continue to drive our work—seeking the highest return on philanthropic investments, providing benchmarks to show progress toward measurable goals, and evaluating the impact of funding decisions. In addition, I think our partners recognize and value Pew's expertise in independent research and advocacy and our ability to broaden the scope of what their philanthropy can achieve.

How does Pew decide what to work on with partners?

Our research guides our agenda. We delve deeply into subjects, draft proposals for improving policy based on pragmatic goals, and work with decision-makers to reach lasting solutions. The underlying philosophy is, how can we create the greatest impact to bring the greatest good. Then we seek allies, or our efforts are noticed by others with a shared interest. Here's an example: Pew developed some of the first and most authoritative research into underfunded public pensions throughout the United States. These present tough fiscal problems for state policymakers and threaten the retirement security of public workers.

Our research and policy proposals attracted the attention of the Laura and John Arnold Foundation, which also had been working in the field. The foundation saw an opportunity to leverage its resources and formed a partnership with Pew to provide technical assistance to policymakers to help them address this important issue. And those efforts have produced real results. Last year, for example, Kentucky passed bipartisan legislation that is projected to improve the fiscal sustainability of its public pension system by billions of dollars while protecting the retirement security of current and future workers.

How do partnerships work?

We tailor each relationship to suit the donor's needs. We have built funder consortiums around shared goals, like the Voting Information Project, which provided essential polling place locations and candidate information through the Internet and mobile devices to more than 25 million of the 90 million people who voted in 2012. That project has been supported by Pew and a group of funders, including the

Rita Allen Foundation, the Democracy Fund, the Ford Foundation, the William and Flora Hewlett Foundation, the John D. and Catherine T. MacArthur Foundation, the State Infrastructure Fund at NEO Philanthropy, and the Open Society Foundations, as well as major technology companies, including Google, Microsoft, and Facebook.

For other partners we have helped create donor-advised funds. And in other instances we have built coalitions between organizations and individuals. Pew's campaign to preserve a billion acres of the Canadian boreal forest is a partnership with the Hewlett Foundation, the Gordon and Betty Moore Foundation, the Prince Albert II of Monaco Foundation, Robert and Michelle Friend, and Ducks Unlimited, Inc.

There are many options for how to organize a partnership, but in every instance donors gain the advantage of Pew's policy and strategic expertise, as well as our experience in program planning and evaluation, and the support of our finance and legal departments. That's particularly attractive for those who don't want to create their own philanthropic infrastructure.

And, of course, Pew benefits not only from our partners' philanthropy, but from the knowledge and experience that they bring to the table.

How do prospective partners learn more?

Pew frequently shares information about our work and the opportunity to partner with us at conferences for thought leaders and philanthropists. Recently we've spoken at the *Economist* World Ocean Summit; gatherings of The Philanthropy Workshop in New York, San Francisco, and Washington DC; and at the Aspen Ideas Festival. The National Center on Family Philanthropy held its trustee training meeting this year at Pew's Washington Conference Center.

While you can look for us at meetings like those and find information at our website, pewtrusts.org, you can call or email me directly at any time.

My phone number is 202-540-6526, and my email is sobrien@pewtrusts.org. 



New restrictions on international trade will protect great hammerhead sharks. *Shutterstock*

Improving
public policy

Informing
the public

Invigorating
civic life

The Pew Charitable Trusts is driven by the power of knowledge to solve today's most challenging problems. Pew applies a rigorous, analytical approach to improve public policy, inform the public, and invigorate civic life.

Improving Public Policy

Historic shark protections give threatened species a chance to recover

On Sept. 14, nations around the world began enforcing new restrictions on the international trade of porbeagle and oceanic whitetip sharks and three species of hammerheads—scalloped, great, and smooth—as well as all manta rays. The commercial exploitation of sharks has decimated their populations worldwide.

The restrictions approved by the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) are the first international measures targeting the large-scale shark fin trade. CITES' 180 member countries agreed last year to add the sharks and rays to the list of species that can be sold only if the trade is legal and doesn't hurt the animal in the wild. In the 18 months since, Pew's shark conservation project has played a leading role by presenting workshops on implementation in Sri

Lanka and Fiji and a third specifically for Hong Kong, the global hub of shark fin sales. Sessions provided guidance to government officials from around the world on how to identify shark species from their fins and how to develop the scientific assessments necessary to determine whether trade in a species would harm its survival.

“Putting these new regulations in place will change the global shark fin trade forever,” says Imogen Zethoven, Pew’s director of global shark conservation. “Still, we must continue to develop shark protections globally so we can ensure the health of the oceans we all share.”

New protections for Atlantic bluefin in the Gulf of Mexico

On Aug. 29, the National Oceanic and Atmospheric Administration moved to protect bluefin tuna in the Gulf of Mexico by restricting the use of surface longlines, one of the most destructive fishing gears in the world. Stretching as far as 30 miles behind fishing vessels and baited with up to 1,000 hooks designed to catch yellowfin tuna and swordfish, the lines also catch and kill large numbers of bluefin tuna at precisely the time when bluefin migrate to the Gulf to reproduce. In addition, the lines kill at least 80 other marine species, including hammerhead sharks, blue marlin, and leatherback sea turtles. Pew worked with scientists and fishermen in the region to promote the new policy, which also establishes protected areas that cover about 27,000 square miles and are 30 percent larger than ones outlined in an earlier draft proposal from the U.S. government.

Tax incentive evaluations in Alaska and Washington, DC

Many states and cities enact tax incentives intended to promote a variety of policy goals such as job creation and redevelopment. Pew research on how to evaluate the effectiveness of these incentives played a key role in legislation passed in Alaska and the District of Columbia this year. In June, the Council of the District of Columbia began requiring evaluations of the city’s tax incentives on an ongoing five-year schedule; Pew worked with Council Member Mary M. Cheh to craft the legislation. In July, Alaska Governor Sean Parnell signed legislation requiring that all tax incentives—as well as other types of tax credits, exemptions, and deductions—be evaluated. Pew’s research helped shape the bill.



The FDA has new guidelines for compounding pharmacies that closely align with Pew recommendations. *Getty Images*

New guidelines to make drugs safer

The Food and Drug Administration issued guidelines July 1 that will shape how compounded medicines are made. Recent expansion of compounding pharmacies, which traditionally have created customized medicines for patients with special needs, has put some on a scale closer to pharmaceutical manufacturing—but without the same oversight or quality standards. This has led to serious health problems, including a nationwide outbreak of fungal meningitis in 2012 that was linked to contaminated injections from a compounding pharmacy in Massachusetts. After successfully advocating in 2013 for legislation to address oversight gaps for drug compounding, Pew has been working to ensure strong implementation of the law. The FDA’s guidelines closely align with the recommendations of a Pew-commissioned paper on quality standards for compounding facilities.

Thousands of vulnerable families to be helped

Pew’s home visiting team worked with Massachusetts lawmakers in July to earmark \$4 million in new funding for family support and coaching programs for expectant mothers and their families. The team also worked in June with Michigan legislators, who budgeted \$2.5 million to expand services for several hundred pregnant women as well as families with young children in the state’s rural north and Upper Peninsula. Michigan also pledged \$1.5 million for a new outcome-based, public-private partnership pilot program, which will focus on

home visiting. These appropriations increase to \$12.5 million the new funding for family support that the home visiting team has helped states budget this year alone, already surpassing the project's two-year goal.

Saving the land 'Down Under'

The Australian federal government and the Tjumu Tjumu Aboriginal Corp. on Sept. 10 announced creation of a 10.6 million-acre Indigenous Protected Area (IPA) in the Central Desert region of Western Australia.

Large sand dunes and red soil plains with salt lakes and freshwater wetlands dominate the Kiwirrkurra IPA, which is home to the threatened bilby marsupial, the great desert skink lizard, waterbirds such as the scarlet-chested princess parrot, and other important wildlife. The IPA creates an integral link in Australia's Outback among national parks, state parks, and other large IPAs, which now make up an expanse of reserves totaling over 100 million acres. These interconnected conservation areas represent more than one-third of Australia's National Reserve System and are the largest complex of protected arid lands in the world.

Pew's Outback Australia staff has been leading advocacy efforts for continued strong federal funding for the IPA Program and the Indigenous Rangers (Working on Country) Program.

Protecting consumers' finances

On July 10, the Consumer Financial Protection Bureau took enforcement action against Ace Cash Express, one of the nation's largest payday lenders, for exploiting customers' inability to repay loans. The agency's new focus on borrowers' ability to repay mirrors the recommendations of Pew's small-dollar loans project, which advises that payments be limited to an affordable percentage of a borrower's income (typically 5 percent). The bureau released a report July 31 on checking account overdraft fees that raised many of the concerns that Pew highlighted in earlier research. The federal study's conclusions are consistent with a Pew report in June, *Overdrawn: Persistent Confusion and Concern About Bank Overdraft Practices*. The bureau found that most debit card overdraft fees—which average about \$34—are charged on transactions of \$24 or less and are paid back within three days, equating to an annual interest rate of more than 17,000 percent.



Pew worked to ensure U.S. fisheries policy remains rooted in science. Shutterstock

Environmental review for U.S. ocean fisheries management

Pew helped generate nationwide media attention, a bipartisan letter from members of Congress, and nearly 200,000 public comments to defeat a proposal from the National Oceanic and Atmospheric Administration that would have weakened how the nation manages its fisheries. NOAA withdrew the proposal July 14 after considering it since 2008. The rule would have weakened a required analysis of the environmental impact of changes to fishing policy. That analysis, mandated under the National Environmental Policy Act, is critical for mitigating the effects of fishing on whole ecosystems rather than on single species.

Keeping voting records accurate

Louisiana and Minnesota became the 11th and 12th members of the Electronic Registration Information Center when they joined ERIC during the summer. The center, created in 2012 with assistance from Pew, identifies situations in which voters' records might be out of date and then alerts state election officials. So far, the 10 states participating in ERIC have identified nearly 2 million voters whose records were inaccurate and registered hundreds of thousands of new voters with data they received from the center.



Parishioners attend Sunday Mass at Saint Mary Catholic Church in Franklin, Massachusetts. Pew found that three-quarters of the U.S. public think religion is losing influence in American life and most think that's a bad thing. *Dina Rudick, The Boston Globe via Getty Images*

Informing the public

Americans divided on religion in political life

Nearly three-quarters of the U.S. public—72 percent—thinks that religion is losing influence in American life, according to a Pew Research Center survey of more than 2,000 adults. Although most people who believe religion's influence is waning say this is a bad thing, the public is split as to whether houses of worship should keep out of political matters, according to the findings issued Sept. 22. Americans are similarly divided about same-sex marriage. The survey found a slight drop in support for gay marriage, with 49 percent of Americans in favor and 41 percent opposed.

U.S. remains more popular than China

In a major survey of 44 nations that examined views of the United States, China, and the global balance of power, the Pew Research Center found widespread opposition to U.S. eavesdropping but little evidence

that it has severely harmed the overall image of the United States. A median of 65 percent of the people surveyed hold a positive view of the U.S., while 49 percent hold a positive view of China, according to the analysis issued July 14. Center experts presented the results in Washington, London, and Warsaw, including briefings for the National Intelligence Council, the State Department, Senate Foreign Relations Committee staff, the Royal Institute of International Affairs, the Polish Ministry of Foreign Affairs, the Australian American Leadership Dialogue, the U.S. Global Leadership Coalition, and the U.S.-China Business Council.

Share of never-married adults is up

A Pew Research Center analysis found that a record 20 percent of American adults ages 25 and older—about 42 million people—have never married, marking a major



Just two reporters cover the South Dakota statehouse, the lowest number of any state. *Shutterstock*

demographic and social shift in the United States. In 1960, only 9 percent of adults in that age range had never been married. About half of all never-married adults say they would like to marry someday. Never-married women place a high premium on finding a spouse with a steady job, but changes in the labor market have contributed to a decline in the pool of available employed young men.

Widespread concerns about the global economy

A series of reports from the Pew Research Center released this fall, which analyzed public opinion on global economic issues in 44 nations, found that six years after the onset of the Great Recession, a global median of 60 percent of respondents perceive their countries' economies as performing poorly. Top concerns around the world include a lack of jobs, rising prices, and the gap between rich and poor. People in developing countries showed the strongest support for international trade and foreign investment, but their counterparts in many advanced economies are more skeptical about the subject. Americans are among those least likely to hold a positive view of trade's impact on jobs and wages. Pew's Bruce Stokes shared the findings in a briefing with Cathy Novelli, the State Department's under secretary for economic growth, energy, and the environment, and high-level staff of the United States Trade Representative.

Declines in statehouse reporting

The first detailed look by the Pew Research Center at the nation's statehouse press corps, issued July 10, found that 1,592 journalists across the country inform the public about the actions and issues of state government, but only half of those reporters—741—are assigned to cover state government full time. That averages 15 full-time reporters per state, but the actual number varies widely, from a high of 53 in Texas to just two in South Dakota.

Unauthorized immigrants are remaining in U.S. longer

Although growth of the unauthorized immigrant population in the United States has stalled, the length of time that most of this population has lived in the country has increased. According to a Pew Research Center analysis released in early September, 11.3 million unauthorized immigrants were living in the U.S. in 2013, with 61 percent having lived in the country for 10 years or longer. Pew's director of Hispanic research, Mark Hugo Lopez, and senior demographer Jeffrey Passel briefed Homeland Security Secretary Jeh Johnson on the findings. They also presented them to diplomats at the Mexican Embassy in Washington and to several high-ranking officials from the Mexican Ministry of Foreign Affairs, including the Secretary of Foreign Affairs, Undersecretary for North America, and Mexican Ambassador.



Pew fellow Jennifer Higdon was recognized by Pennsylvania's governor. Candace di Carlo/Pew Center for Arts and Heritage

Invigorating Civic Life

More recognition for Pew fellows in the arts

Ukrainian textile artist Vera Nakonechny, a 2008 Pew fellow, received the 2014 National Endowment for the Arts National Heritage Fellowship. The award honors folk and traditional artists for lifetime achievement, excellence, and contributions to the nation's traditional arts heritage. Nakonechny, who lives in Philadelphia and learned Ukrainian embroidery from her mother, has devoted her career to studying and preserving the varied styles of this tradition that were nearly lost under Soviet-era policies.

Composer Jennifer Higdon, a 1999 Pew fellow, received the Pennsylvania Governor's Distinguished Arts Award, which recognizes a Pennsylvania artist whose work and reputation have international reach. Winner of the 2009 Grammy Award for Best Contemporary Classical Composition and the 2010 Pulitzer Prize in Music for her Violin Concerto, Higdon was also recently co-commissioned by Opera Philadelphia, Santa Fe Opera, and Minnesota Opera to compose the score for a new work based on the novel *Cold Mountain*, set to premiere in Santa Fe, New Mexico, in August 2015.

"The Object Lesson," an absurdist one-man show by theater artist Geoff Sobelle, a 2006 Pew fellow, won the Carol Tambor Best of Edinburgh Award at the 2014 Edinburgh Festival Fringe, one of the world's premier performing arts events. The artist calls the

piece "a meditation on our attachment to the past" and encourages audience members to interact with a collection of objects to spur their nostalgia, inspiring them to question the meanings we attribute to everyday items and keepsakes. Funded by The Pew Center for Arts & Heritage in 2012, the show debuted at the Philadelphia Fringe Festival and was greeted with favorable reviews in major media outlets. "The Object Lesson" will return to the United States in November, when it opens at the Brooklyn Academy of Music.

Franklin Institute expansion brings 'Your Brain' to the Parkway

In June, Philadelphia's Franklin Institute—one of the oldest centers of science education in the United States and a longtime recipient of Pew support—opened the Nicholas and Athena Karabots Pavilion, the largest expansion in the institution's nearly 200-year history. The 53,000-square-foot pavilion includes a gallery for traveling exhibits, a state-of-the-art conference center, an education center, and the exhibit "Your Brain," which *The New York Times* called "the largest permanent exhibition at this venerable institution, and one of its best."

Pew-supported projects recognized for design and sustainability

Two Pew-supported projects, Sister Cities Park and Lenfest Hall at the Curtis Institute of Music, were among nine winners of the Urban Land Institute Philadelphia's inaugural Willard G. "Bill" Rouse III Award for Excellence. The award recognizes outstanding and transformational developments in the Philadelphia region that demonstrate quality planning and design, promote environmental sustainability and energy reduction, and meet community needs. Lenfest Hall—a dynamic addition to one of the top music schools in the country—has been called "a remarkable achievement of culture" by *The Philadelphia Inquirer*. The award's jurors described Sister Cities Park, a 1.3-acre site along the Benjamin Franklin Parkway, "a cozy family room for Philadelphia's downtown core, welcoming to children and adults alike." The park's transformation included the installation of a Children's Discovery Garden, stream, boat pond, cafe, and plaza that features a fountain commemorating the Sister Cities program, which connects Philadelphia with 10 cities around the world. **i**

How To Keep Cities Out of Bankruptcy

States need to monitor local governments' finances.

By Susan K. Urahn

Detroit's bankruptcy has added urgency to the discussion of how state and local governments should respond when a municipality faces financial distress. The Motor City's revenue shortfall is unusually large, mirroring its sharp population decline, but Detroit isn't alone in its struggle to balance its books after years of poor fiscal management and excessive reliance on debt. Tenuous finances have pushed other municipalities to the brink of receivership or bankruptcy, often requiring state policymakers to decide whether to intervene.

A small number—about 10—of the nation's 55,000 local governments and special tax districts file for Chapter 9 bankruptcy protection each year. In addition to Detroit, recent high-profile examples include Jefferson County, Alabama; Stockton and San Bernardino, California; and Central Falls, Rhode Island. While fiscal distress usually builds up over several years, a variety of events or factors can push local governments into financial crisis. In Jefferson County, it was a failed sewer project. In the California and Rhode Island cities, it was escalating public-pension costs. Detroit's situation was more complex, the result of decades of decline in its tax base and the restructuring of the automobile industry.

In a recent Pew Charitable Trusts report, "The State Role in Local Government Financial Distress," we found that 19 states have passed laws allowing them to intervene in local-government fiscal crises. In dire cases, states have set up advisory commissions, receivers, emergency managers and financial control boards to oversee the local governments. These mechanisms are intended to prevent bankruptcy, which officials consider to be so harmful that only 12 states specifically authorize local governments to file for bankruptcy protection. In a state such as Alabama, which has no law to authorize intervention in local-government financial emergencies, the city or county is on its own to resolve a crisis. Jefferson County and the city of Prichard sought bankruptcy protection as a last resort.

Regardless of the approach that states choose, it's prudent for officials to monitor local governments' budgets and borrowing practices. North Carolina, a state hit hard by the Great Recession, has proved that this practice works. Local governments must send financial data at regular intervals to the state, which compiles profiles of each city and county and posts them in a public database. If the budget numbers show a potential shortfall, the state steps in to make sure that local officials resolve the problems. If necessary, the state can assume control of day-to-day operations—an action it has taken five times since the 1930s. North Carolina also approves and sells local-government bonds through a state commission.

In New York state, where upstate communities have struggled economically for years, Comptroller Thomas DiNapoli has begun issuing scores for local governments' level of fiscal stress based on about two

Detroit isn't alone in its struggle to balance its books...

dozen financial indicators submitted by local officials. Outgoing California Controller Bill Lockyer has called for a similar early-warning system in that state to prevent future Stocktons and San Bernardinos.

Monitoring also underscores the need for local

governments, as well as states, to adopt long-term financial plans that align revenue and expenses over several years. These plans should include projections of public pension and retiree health care costs, which are increasing pressure on governments at all levels.

Failure to oversee finances and embrace multiyear budget plans can produce harsh consequences, as seen in the bankruptcies in Detroit and elsewhere: service cuts, government-employee layoffs, high property taxes, lower public-pension checks, losses for bondholders and higher borrowing costs. Instead of putting themselves in the position of having to react to local-government fiscal crises, states should work harder to stop them from happening in the first place. **i**

Susan K. Urahn is an executive vice-president of The Pew Charitable Trusts.



5 FACTS: Should the Postal Service Offer Financial Services?

From 1911 to 1967, the U.S. Postal Service offered savings accounts and today it still provides more domestic paper money orders than any other source. This year, the Postal Service Inspector General proposed that post offices begin to offer prepaid cards, small-dollar loans, and bill payment services. In July, Pew hosted a day-long conference on the idea that produced 5 FACTS:

1 Banks are inaccessible for many.

Over 3.5 million Americans live more than 10 miles from the nearest bank.



2 People who use alternative financial services would like to have those options at post offices.

Although most Americans are indifferent to whether the postal service should offer financial services, a large majority of people who use the products say they'd welcome low-cost alternatives at post offices.



3 Postal banking is common around the world.



Three out of four postal services around the world offer financial services, which are used by more than a billion people.

4 The U.S. Postal Savings System was not as well-received as programs in other countries.

At its peak in 1947, the postal savings system had nearly \$3.4 billion in savings deposits but only offered services at 7,000 to 8,000 post offices and was prohibited from paying more than 2 percent interest.

5 Consumer needs are changing.

Letter delivery dropped nearly 20 percent worldwide over the last decade while postal financial services grew 28 percent.



Infographic by Sara Flood

Speakers at Pew's conference included U.S. Rep. Darrell Issa (R., CA) and Sen. Elizabeth Warren (D., MA). See their comments and more at pewtrusts.org/postal-financial



“If our goal is to have banking services for the underserved that is subsidized, then, in fact, we can do it better. We can do it targeted. We can do it in the areas that are determined on a flexible basis to be in need.”
Rep. Issa



“There’s nothing extraordinary about this business model. This is just an opportunity for the post office to use its space and to use its employees more efficiently to bring needed services to more Americans.”
Sen. Warren

“Detroit isn’t alone in its struggle to balance its books after years of poor fiscal management and excessive reliance on debt.”

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