Solution search
Finding what works in conservation

TransRe™
We value risk.

Reducing Our Risk:

Innovation for Disaster Preparation

ONE JUDGE'S IMPRESSIONS

From the desk of Michael Sapnar
President and CEO, TransRe

It is vital that exposed communities prepare for disasters. The most effective preparation involves learning from the experiences of others. That's why I was delighted to be a part of Solution Search's work, and it is why I applaud every entry, big and small. They all demonstrated hard work, imagination and a desire and drive to improve.

I hope this summary reaches another community somewhere, and helps them to learn and adapt these lessons to their needs. After all, recycling ideas is just as green as recycling material!

Resilience Improves Recovery

The most important lesson of all is that being ready saves lives. Insurance is for everything else – it helps communities get back on their feet more quickly, but nothing can adequately compensate anyone for the loss of life of family, friends and neighbors. We know that, and so did the best ideas we encountered. Being ready also saves property. This is a benefit to society, not just to (re)insurers. Better prepared communities also pay lower premiums, but the best prepared don't waste their community's resources in the first place. 'Build it right, build it once' may turn the old adage on its head, but it is just as true.

Ideas Are Good, Experience Is Better

We read and discussed an astonishing range of ideas, from equipment designed in a shed to sophisticated cross-state software. The projects ranged from brand new ideas to fully executed 'show and tell' storyboards. We were extremely impressed by the range and ingenuity on display, and we would note that the best ideas brought multi-disciplinary skills to bear to solve a problem. It is very rare that a single person can make a societal impact, and some ideas got bogged down in the details of patents, trademarks and business plans. We also noticed a trend among the best ideas – that they had learned from and adapted prior ideas. This trial and error approach spoke to the practical experience and tested nature of the solution – not just an idea, but an engaged community of experimentation.

It Isn't (Just) About The Money

The competition came with a $25,000 prize and an invitation to a gala party in Washington D.C. However, it was clear to us that nobody was in this for the money. Every entry was about reducing the human, environmental and financial costs resulting from extreme weather events. Every community touched by one of these projects is safer and stronger because of it. They are all winners. Indeed, many of the

ONE JUDGE'S IMPRESSIONS

entrants actually explained how the money would help their community become safer. Further, it is clear that every idea required far more time, effort and volunteer effort than $25,000 could ever cover. The effort and the success of the project is the prize. The competition has simply generated more publicity and dissemination of ideas. For example, in going through the voting process the finalists collectively garnered over 300 million media impressions and developed new networks when attending the workshop and the awards ceremony. Those new contacts and opportunities are worth more than the money.

In This Competition, As In Life, The Community Is The Team

Community engagement is a critical component for success of any solution. For example, in Flagstaff, AZ, the Flagstaff Watershed Protection Project built support across often disparate groups to pass a municipal bond. In Ottawa, IL, the city management redesigned the city to work with the floodplain and avoid flood-prone areas. To win the contest, the finalists also needed their communities to join the team and get behind the proposal. The People's Choice Award went to the organization able to garner the most public votes. This process required the finalists to engage local media and call their networks to action, raising awareness about the topic and their organization and encouraging communities to support their local efforts.

Sometimes, It's The Story, Sometimes It's The Telling

At TransRe we spend most of our time working with other businesses. We make and receive a high number of presentations each year. During this competition, we have had the opportunity to receive and review new ideas from new sources. This experience has generated two different observations:

First, that the best solutions don't always come from where you expect– Solution Search's open-source approach has brought us a wide range of new ideas and contacts.

Second, we noted that not every submission was made by experienced business presenters. That shouldn't matter, but it does. We identified a clear difference between those organizations that regularly pitch their solutions and those that do not. The submissions and impact were judged on their merits, but well written, clear descriptions and impact statements helped the judges see the merit of the idea more easily. This concept extends beyond the contest. Even the best ideas still need someone to sell them.

> ***"the best solutions don't always come from where you expect"***

THE TEN FINALISTS

Photo: Blackfoot Challenge

FLAGSTAFF WATERSHED PROTECTION PROJECT

ARIZONA

The Situation

Flagstaff, Arizona is surrounded by forest, and each spring that forest dries out. From spring to summer, before the monsoon season begins, hundreds of potentially devastating wildfires occur. The monsoons, once signaling reprieve, have become a source of further anxiety. Fires can result in injury, death, home loss, smoke and economic decline. Flooding can destroy neighborhoods, downtown businesses, the Northern Arizona University Campus and the municipal water supply. Flagstaff has two critical watersheds, so the effects of wildfire and subsequent flooding can be truly disastrous.

The Solution

The Flagstaff Watershed Protection Project is funded through a municipal bond that has 74 percent public support. The project area is 15,500 acres and covers land from the City of Flagstaff Open Space, the Arizona State Trust Land, Coconino National Forest and Navajo Nation owned land. Treatment plans include hand thinning and prescribed fire, as well as traditional, cable, helicopter, and specialized steep slope harvesting and other forest treatment methods. The best combination of these methods will be used to make the forest as healthy as it can be and reduce risk of wildfire.

As the Flagstaff watersheds become more resilient to the weather changes that make the air warmer and drier, the community will be more resistant to the destruction that results from fire and flood. Additionally, natural habitats for species like the Mexican Spotted Owl and the Northern Goshawk will be protected and restored, making the Flagstaff Watershed Protection Project truly beneficial to all stakeholders.

UNIVERSITY OF NEW ORLEANS CHART

LOUISIANA

The Situation

Recently, tropical cyclones have become the biggest threat to Louisianans' lives and livelihoods. The risk is especially high in the southern part of the state, where elevation is low and coastline is nearby. Some groups are more vulnerable than others; groups with low literacy are inherently less prepared for natural disasters than their higher-educated counterparts. The National Assessment of Adult Literacy from 2003 estimates that 16% of Louisiana adults lack basic literacy skills. This group of the adult population would not be able to read news reports or instructional materials that are relevant to understanding disaster preparedness.

The Solution

The University of New Orleans' Center for Hazards Assessment, Response & Technology developed the Risk Literacy curriculum to help reduce the vulnerability of at-risk populations with low literacy. Put through rigorous testing and given very frequent feedback, the curriculum was built from scratch and developed into the first edition, which included a student manual and a facilitator's guide. Even more feedback led the team to create Preparing for Storms in Louisiana, 2nd Edition, which includes a student manual, a student take home guide, flashcards and a facilitator's guide.

The materials were created using plain language and graphic design, and are useful to both adults with low literacy and children learning English as a second language. The take-home guide is available in English and in Spanish in order to cater to a broader population, and the flashcards contain information in both languages, with one language on each side of a card.

UNO-CHART's Risk Literacy curriculum is truly revolutionary. It is one of only a few programs that teach disaster preparedness and literacy simultaneously. Not only do students learn how to prepare for, react to and recover from tropical storms, but they also improve their literacy skills, making all aspects of life easier.

2,410 downloads of the original manual and

3,500 hard copies distributed

16% of Louisiana adults do not have the literacy skills to read the most basic forms of continuous text

MAKE IT RIGHT

LOUISIANA

The Situation

New Orleans has a high annual probability of disaster declaration due to flooding. It receives heavy rainfall and is at great risk from tropical storms and hurricanes. The city sees, on average, over $200 million of flood loss damage each year. Tornadoes, tropical storms, and high wind storms each have a 25% chance of occurring annually. The Lower 9th Ward is particularly vulnerable—it sits lower than most of the city, and low income and minority communities are significantly more vulnerable to natural disasters. Ten years after Hurricane Katrina hit the Gulf Coast, it is still struggling to recover.

The Solution

Make it Right aims to demonstrate that high-quality homes can be built on a low budget. Building codes were altered after Katrina, but many homes continue to be built to just meet the minimum requirements, if even to that point. Make it Right builds homes 2' or more above the 3' Base Flood Elevation to give residents additional security. Additionally, they use durable hurricane fabric for doors and windows that can be reused, and deliver better protection than the commonly used plywood. Sidewalks, parking pads and walkways are built with pervious concrete in order to allow water to avoid the drainage and pumping system, as well as to reduce soil subsidence.

Make it Right has built beautiful, sustainable homes for residents of a high-risk area. They have expanded their practices, educating more contractors and improving more communities as they go. These houses will have greater resistance to destruction in a flood, saving building materials and money, so individuals and communities can thrive.

$40 million
per year is spent pumping water out of New Orleans

There have been
49 hurricanes
in the last
50 years

AMERICAN LITTORAL SOCIETY

NEW YORK

The Situation

The tidal salt marshes of Jamaica Bay are disappearing at an alarming rate, with causes ranging from storm water run-off to overwhelming increases in nitrogen input.

From 1994 to 1999, over 220 acres of salt marsh were lost at a rate of 47 acres per year, and scientists estimate that approximately 1,400 acres of tidal salt marsh have been lost from the marsh Islands of Jamaica Bay since 1924.

Hurricane Sandy demonstrated the value of coastal environments in protecting adjacent communities: in some areas, large, healthy expanses of salt marshes lessoned the energy of incoming waves, helping to reduce the damage to inland communities. In Jamaica Bay, however, these important coastal environments had been destroyed or damaged due to erosion, pollution, fill and alteration. The resulting damage to the surrounding community from storm surges, wind, fire and flooding cost the community over $19 billion.

The Solution

While it is impossible to eliminate the risk of flooding in coastal areas, the American Littoral Society's Initiative seeks to reduce its frequency and effects by mitigating the impacts of sea level rise, storm surges, and wave inundation by rebuilding badly degraded marsh islands in Jamaica Bay.

The Initiative is ongoing and has restored upwards of 40 acres of salt marsh. It has enhanced the ecological function and value of these natural resources and engaged environmental organizations, government agencies, regional businesses, and more than 3,000 members of the community in working to create a solution to the growing problem of sea level rise and storm surges.

In addition to improving water quality and habitat in Jamaica Bay, the restored marsh will strengthen coastal buffers, mitigating waves, wind, tides and floods and protecting the surrounding neighborhood of 500,000 residents from future storm events.

Population impacted:

500,000

Jamaica Bay has lost approximately

1000 acres

of salt marsh since 1924

BLACKFOOT CHALLENGE

MONTANA

The Situation

After several years of changing weather and water cycle patterns, those most affected by recurring drought—ranchers and irrigators, conservation organizations, state water and fisheries management agencies and river outfitters—formed the Blackfoot Drought Committee to implement a voluntary drought response effort in the watershed. Montana Fish, Wildlife and Parks (FWP) has set minimum flow targets, and in the last 13 years, low flows have triggered drought response in the Blackfoot Watershed eight times, demonstrating the issue of chronic drought impacts to watersheds and residents. With local economies based largely on agriculture and outdoor recreation, drought planning and stewardship are critical to community sustainability.

The Solution

From ranchers to fishing outfitters, stakeholders hold a "shared sacrifice" in response to an in-stream flow right held by Montana FWP to balance their own water needs with the river's native fisheries.

The plan offers an alternative to traditional enforcement of Montana FWP water rights (and pending tribal rights) and angling restrictions, enabling those who participate in voluntary drought restrictions to continue to use the river with conservation in mind.

Blackfoot Challenge works with the established Drought Committee to disseminate water supply information, update individual drought plans and coordinate drought response. They also work to quantify water savings, aiming to increase participation in critical river sections and help educate the public about the program's benefits.

With more than 90 individual drought plans in place and active participation from several leading outfitters, the Blackfoot community benefits from a reliable water savings each year that drought response is enacted.

CITY OF OTTAWA

ILLINOIS

The Situation

Centered on the meeting point of the Fox and Illinois Rivers, the City of Ottawa is the watershed for nearly 12,000 square miles of Illinois land. Flood events have caused millions of dollars in damage to infrastructure and property, and have threated lives and businesses for years—and they are only increasing in frequency and severity. Within the last seven years, Ottawa has seen three all-time record flood events. Buildings like the high school, the hospital and the wastewater treatment plant run a high risk of flooding.

The Solution

Within the last 25 years, the City of Ottawa's government has taken great steps to reduce the threat that flooding poses to the city. The mayor and the city council initiated a buyout program in 1990, with the government-purchased properties now permanently designated as open space. Nearly twenty years later, in 2009, the Flood Commission formed and changed community regulations to include additional flood protection and compensatory storage.

At the same time, a team obtained certifications in floodplain management and joined the Community Rating System and the Illinois Association of Floodplain and Stormwater Managers. The City's Flood Threat Recognition and Response plan has the highest program rating in the state. Communicating with and educating the community about floods and the program resulted in very broad support and also helped the community when FEMA raised the Base Flood Elevation, affecting over two hundred properties in Ottawa.

The program's success was especially evident when the City saved millions of dollars after a massive flood in 2013, all due to the prevention of a significant amount of flood losses. Senator Sue Rezin noticed the difference between her district's flood damage and the relative lack thereof in the City of Ottawa, and with the help of the City, she formed the Illinois Valley Flood Alliance. The Alliance was built on the idea that with sufficient education, communities can effectively manage their own floodplains, and with collaborative efforts, communities can hold each other accountable and benefit everyone involved.

BILLION OYSTER PROJECT

NEW YORK

The Situation

Until Superstorm Sandy, the New York Harbor and waterfront were never regarded as particularly vulnerable to weather events. That changed when Sandy caused nearly $62 billion in damage and left more than seven million people without power. Not all of this damage occurred in New York, but the city did see disastrous effects that residents never would have thought possible.

The Solution

The National Science Foundation granted $5 million to fund the Billion Oyster Project Curriculum and Community Enterprise for New York Harbor Restoration in New York City Public Schools (BOP Schools). The program is a partnership of many high-level institutions, including but not limited to: Pace University, the New York City Department of Education, Columbia's Lamont Doherty Earth Observatory, and UMD's Center for Environmental Science. BOP trains teachers in the public school system in order to create a more long-term opportunity for students to get involved.

Oyster reefs used to fill the water surrounding New York City. They filtered water, improved the habitat for aquatic species and reduced the effects of large waves. Before BOP, the Harbor had almost completely lost that. Now, they are rebuilding and restoring those oyster reefs that are so essential to the marine ecosystem.

Students from local middle schools, as well as the New York Harbor School's Career and Technical Education marine science and technology programs, act as the driving force behind this project. They grow and maintain oyster nurseries for the project, navigate boats, dive to plant and monitor the oyster reefs, assess the reefs, track their progress, maintain boats, and build infrastructure. BOP also partners with local restaurants to recycle oyster shells.

The Billion Oyster Project engages with the New York City community to improve the function of its harbor, and in doing so, educates a new generation of sustainable learners and difference-makers.

RESTORE AMERICA'S ESTUARIES

VIRGINIA

The Situation

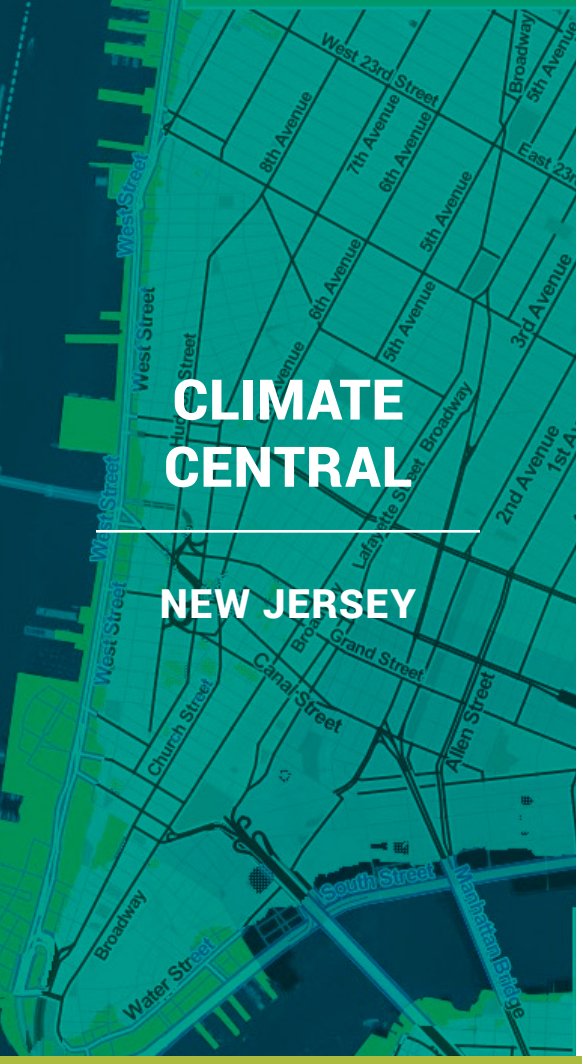
Due to their low-lying nature, coastal communities are highly vulnerable to flooding, storm surge, and erosion, and significant damage in the coming years from these events is a certainty. As a result of sea level rise and increasing storm intensity, coastal flooding will become more frequent, affect more areas and have even greater impacts.

Particularly vulnerable groups include homeowners and local businesses in coastal communities, as well as underserved populations lacking the financial resources to prepare for, evacuate from, or respond to such disasters. The scope of the destruction they will face is overwhelming, including injury and loss of life, damage to public infrastructure and private homes and economic losses in the billions.

The Solution

Restore America's Estuaries (RAE) is advancing use of "Living Shorelines" to protect coastlines from erosion, flooding, and storm surge while preserving ecological systems through the strategic placement and site-specific combination of plants, stone, and sand fill. Living shorelines effectively complement shoreline dynamics and can absorb storm surge and retain flood waters, increasing shoreline resilience against weather-related disasters in coastal communities. Additionally, living shorelines can adapt to changing environmental conditions while maintaining their ecological function, enhancing habitat for fish and wildlife.

Living shorelines present a viable alternative to traditional "hard" structures that can exacerbate erosion, create a false sense of security, and increase flooding. RAE seeks to boost understanding and adoption of living shorelines among private property owners and public coastal entities alike, by promoting their advantages over hard structures, educating stakeholders, and creating a community of practice to encourage the dissemination and exchange of information. If they can be adopted nationwide, coastal communities can see decreased shoreline erosion and increased protection against flooding of coastal property in the face of ominous changes to sea levels and storm intensity.



The Situation

Much of the United States lies on a coast, and rising sea levels everywhere increase the risk of storm surge and subsequent flooding. Floods have the power to damage nearly every aspect of a coastal community—individuals, businesses, water treatment and power plants, roads and transportation systems—as well as to destroy fragile ecosystems. Not all communities are subject to the same risk, however, and it can be difficult to assess the probability of flooding and determine what to do about it.

The Solution

Climate Central has developed the Surging Seas Risk Finder (SSRF), an online tool to help communities, planners, and leaders better understand the effects of sea level rise. The SSRF provides users with more concrete information specific to their individual situations. For example, vulnerability in a low-income community will be different from in an affluent community nearby. SSRF's zip code search gives residents more relevant information about the risks posed to their individual communities and how to deal with the impacts of climate change.

SSRF has been useful to all levels of government, as well as to NGOs and individuals involved in their local communities. It provides risk assessments that take into account more than 100 demographic, economic, infrastructure and environmental variables to make the most accurate hypotheses possible.

Climate Central developed this web tool to help reduce the impacts on coastal communities when rising sea levels and storm surge threaten to flood them. However, it also provides education to everyone from the White House to regular American citizens about the ways in which the world we live in is changing and how that affects each and every one of us.

ECOSYSTEM RESTORATION SUPPORT ORGANIZATION

FLORIDA

The Situation

Between the early 1970s and the late 1990s, the quality of Pensacola Bay declined dramatically due to the impact from industrial and domestic wastewater disposal, non-point source runoff, and other anthropogenic causes. In addition, the coverage of natural habitat such as sea grass beds and oyster reefs declined significantly. The development of coastal areas also added to the problem, reducing available floodplain areas and increasing the risk of storm damage.

The Solution

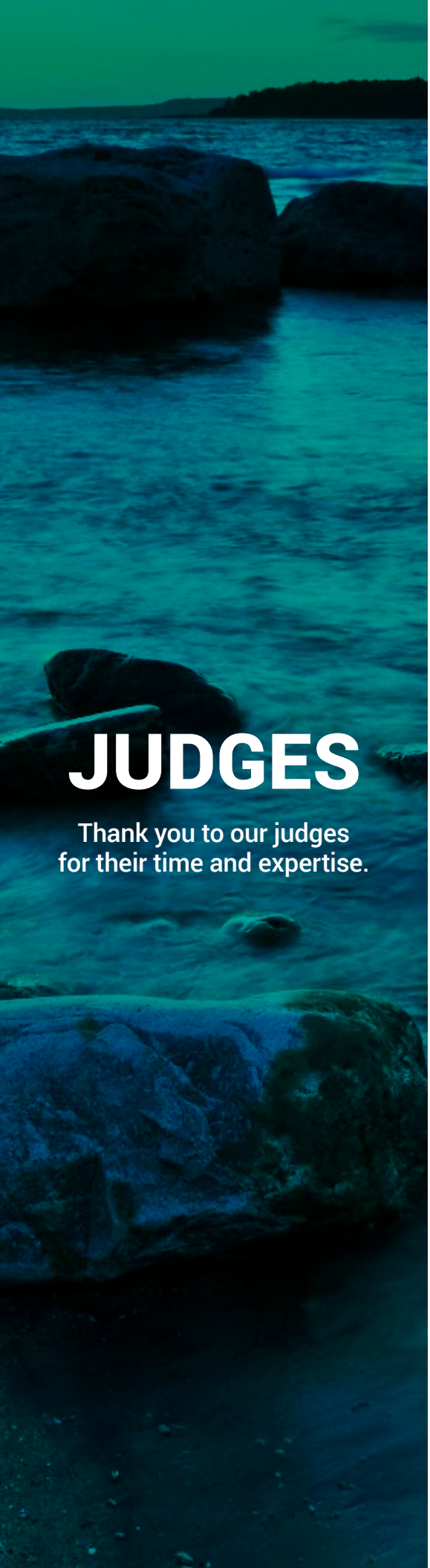
Beginning in 1999, Gulf Power and the Florida Department of Environmental Protection's NW District (FDEP) partnered to develop a demonstration project that would begin to address many of these issues. Gulf Power donated $100,000 and the name Project GreenShores (PGS). FDEP leveraged the $100,000 investment into a total investment of approximately $6,000,000 ($2,797,000 cash and $2,828,043 in kind donations). PGS includes 30 acres of oyster, salt marsh and seagrass habitat along two miles of urban waterfront in downtown Pensacola that protects public infrastructure; provides habitat for birds, fish, oysters and crustaceans; improves water quality and provides recreational opportunities.

Project GreenShores' first and second sites have resulted in a 30 acre living shoreline comprised of oyster reef, salt marsh and seagrass. PGS has survived two major hurricanes (Ivan in 2004–one year after completion of Site 1 and Dennis in 2005). During these storms, the public infrastructure directly behind the site was significantly less damaged than it was in adjacent unprotected areas.

The site was built using raw materials including limestone, recycled concrete from old runways, fossilized shell, sand from previous dredging operations and seagrass propagated at FDEP's Ecosystem Restoration Section lab. The majority of saltmarsh planted was grown and planted by community volunteers, which provided an opportunity for public education on the value of these natural systems and their role in protecting and enhancing Pensacola Bay's coastal communities.

The Pensacola area is brushed or hit with a tropical storm on average

every 2.29 years



JUDGES

Thank you to our judges for their time and expertise.

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Former U.S. Treasury Secretary

Michael C. Sapnar
President & CEO,
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Jim Cantore
Meteorologist,
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Sir John Hood
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Former NOAA Administrator

Anthony J. Kuczinski
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President of
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KNOW A SOLUTION? WE'RE LOOKING FOR MORE.

Innovative, community-led conservation solutions exist all around us. The question is, how to unearth these bright spots, study them and help replicate successful projects in those areas of the world that can most benefit? Solution Search is working to do exactly that. With more than 450 million eyes on Solution Search, it's clear the conservation and development communities can learn a lot from what is already working.

Solution Search will continue to launch contests to surface locally-led efforts to so that people and nature thrive. Join us by becoming a partner, suggesting problems that need solutions or sending us your conservation success.

BE THE SOLUTION.

Solution search

Finding what works in conservation

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