

In this Issue

I'm excited to report that **Mission: Water** is emerging as a significant forum for those with a passion for protecting our most valuable resource—water. And as always, I'd like to thank all of the contributors to this and previous editions who have shared their stories, science and expertise. Without your involvement, this publication would not be possible.

In our 3rd edition we highlight the exceptional work of EarthEcho and its founder, Philippe Cousteau. It's a truly inspirational story of how a strong will and vision can engage the next generation of environmental stewards. We also continue to cover stories from across the globe, including grassroots efforts to monitor Concentrated Animal Feeding Operations (CAFOs), high speed monitoring on the Baltic Sea, and much more!

We hope you enjoy the magazine. Let's continue to solve the world's most challenging water issues, "Let's Solve Water".



Timothy a. Leons

Timothy A. Grooms

Director of Marketing - Xylem Analytics, NA

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FFATURF • STORY

VOICE of WATER Q&A with Philippe Cousteau

Discussing the Cousteau family legacy and empowering the next generation of environmental stewards.

ABOUT PHILIPPE

Philippe Cousteau has established himself as a prominent leader in the environmental movement. An awardwinning television host, producer, author, speaker, philanthropist and social entrepreneur, Philippe is the son of Philippe Cousteau Sr. and grandson of Jacques Cousteau. His life-mission is to empower people to recognize their ability to change the world.

Philippe is the host and executive producer of Xploration Awesome Planet, a new series that airs every Saturday morning syndicated on Fox and then Sunday free on Hulu. As a special correspondent for CNN he has hosted several award-winning shows including Going Green and Expedition Sumatra.

In 2004 he founded EarthEcho International. a leading environmental education organization that is creating a whole new generation of environmental citizens youth equipped with the knowledge to understand environmental challenges, critical thinking skills to solve them, and the motivation to do so.

Author

Advocate

Entrepreneur

TV Host

MISSION: WATER STAFF

#WATERHEROES





Q. Tying back to your family roots - what was it like growing up in a family of explorers?

Philippe: My father passed away six months before I was born. So, there was both inspiration and some tragedy from an early age, but thank goodness I had my grandfather and my mother there to support me.

My mother spent 13 years on expedition with my father. So, between the two of them, and my father's films and books, I was inspired. People may not remember, but [my father, Philippe Cousteau Sr.] filmed, produced, and directed 26 episodes of the series *The Undersea World of Jacques Cousteau*, which was popular at the time. He had his own award-winning series, *Oasis in Space* and was as much of a pioneer as my grandfather... he was the right hand to so much that [Jacques Cousteau] did. He led conservation efforts and was a global environmental advocate in his own right. So, I was in that environment growing up and it was a huge inspiration.

I always like to say first and foremost, I believe my father and grandfather both left behind a legacy of problem-solving. People think of my grandfather as this tall, lanky, Frenchman - as a global visionary, and leader in conservation, an explorer, a filmmaker, and all of these things, and he certainly was all of those. But for me, he was a problem-solver. When he started out as a young man, he had no ambition to explore the oceans.

His goal and ambition, initially, was to fly with the Naval Aviation Program. Unfortunately, he broke his back in a car accident, which I like to call the most fortuitous or luckiest car accident in history — both for the world because it eventually changed history by setting him on a different course, but also for me because all of the remaining members of his Naval Aviation class were killed in the early days of World War II.

If it wasn't for that car accident, I literally wouldn't be here, so I'm grateful for it. And... the world would be a very different place because he was told to swim in the Mediterranean every day to rebuild his back strength.

He was struck by this [undersea] world that he saw and a friend gave him a pair of homemade goggles to use. Those weren't things you could go down to the store and buy back then. And he used those goggles to start freediving and he became frustrated that he couldn't spend more time underwater.

Some people may forget the only way we could explore the oceans in the early 1900's was through hard helmet diving that you see in the old Jules Verne movies...or through freediving. That was a problem [for Jacques] so he sought a way to solve it.

To make a long story short, he met an engineer and they coinvented scuba diving as we know it today. Then he wanted to figure out ways to film what he was seeing underwater to share the experience with others, so together they figured out ways to create underwater cameras. So, every step along the way, there was a problem that he sought to solve.

Eventually, over the course of a decade or more of diving and exploring the Mediterranean, he saw all of these aquatic environments for the first time and he was the first to show it to the world.

At this point in time, most people knew very little about the ocean. They only knew what we pulled out of it and ate, and the trash we'd dumped into it. Over the course of a decade or so, [my grandfather] witnessed a precipitous decline in the health of the environment.

In the Mediterranean, in particular, the population explosion post-World War II and corresponding trash, waste, and overfishing threatened the ocean. It was shocking.

His thinking evolved from exploring the oceans to recognizing he had a responsibility to protect them. So that's it...it's a long answer, but it kind of gives a little bit of context to our family's thinking and how I grew up.

Photos Courtesy: EarthEcho Internationa



Q. At what point, as a kid, did you start to realize you were part of something bigger? Was there a turning point where you said, "I want my life to focus on advocating for the environment"?

Philippe: Yeah. Well, the best part of my job is that I'm able to travel, see the world, explore, and learn new things. And it really goes back to when I was about 16 years old and I had an opportunity to go on an expedition to Papua New Guinea.

I was in the southeastern part of the island, diving on a liveaboard with a researcher, Dr. Eugenie Clark, for two weeks. The trip was just spectacular. Here we were in this incredible, remote part of the world and we were doing research on a couple of new fish species that Eugenie had discovered. And I was thinking to myself, "My God, you can make a living doing this. You're traveling and you're seeing these amazing placeswhy would I want to do anything else?"

That was the turning point for me. I was hooked.

Q. Once you started to show interest in that side of your family's life, did they encourage you to keep going?

Philippe: Well, my grandfather passed away when I was 17, a little less than a year after that experience in Papua New Guinea. And so he was certainly an important part of the inspiration leading up to that point, but by then it was my mother who encouraged me to keep moving forward in this world. She inspired me and pushed me forward to pursue my dreams.

We had family, friends and people who'd known my father and grandfather and they provided opportunities for me to start getting involved in research. But, I went off to university and it wasn't until I got out of school and moved to Florida to work with an oceanographic institution that I got back on this path. I knew I needed to do something to honor this legacy and that's when EarthEcho was born.

Q. Tell me a little bit more about EarthEcho and how it's different from other environmental organizations.

Philippe: From its inception, **EarthEcho** was a response to a problem. I looked around at the environmental movement and realized there was already a duplication of effort. There were many groups out there focused on conservation. And, in many ways, we're not really a conservation organization. While that's an essential tenet to EarthEcho, we're more of an environmental education organization.

There were a lot of conservation groups out there doing good work, but few offered a strategy for youth. If you look at the big NGOs (non-government organizations) like the WWF or the Ocean Conservancy, they have virtually no youth strategy to speak of. And that was a problem for me and I recognized it was a need.

We don't like to duplicate effort, that's a very important part of the organization, and our philosophy, and our culture. Without a youth strategy, I don't believe the environmental movement has a strategy.

My grandfather was a big proponent of young people and recognized they are truly the trendsetters of society and have tremendous influence on the corporate world and even their parents.

EarthEcho is unique because we leverage the history and the connection with the Cousteau legacy, but drive change by youth engagement.



Q. Can you speak to how EarthEcho empowers youth specifically? And what strategies you've used to get more buy-in from the younger population?

Philippe: Yeah, we've evolved over the last 14 years, of course, just as technology and society has. I see organizations doing pretty much the same thing they were 30 years ago, and I think that that's an impediment to being effective.

It's hard to change. It's hard to grow and it's hard to look at new technologies. There weren't any smartphones 14 years ago when we founded EarthEcho. We've seen a huge evolution in society in how young people communicate, from video games to mobile devices. You have to keep up and look for new ways to engage with them.

Also, I think that what else sets us apart is that we're not a purely educational organization either. Our mission, our goal, is to engage people with action. We have a saying at EarthEcho, "awareness doesn't lead to action, action leads to awareness." We start with the idea of getting people engaged and getting them outdoors.

The EarthEcho Water Challenge is a perfect example of this. It's a program that we're really excited about. It was developed initially by the EPA around 15 years ago and has continued to evolve over the years. Other groups like the Water Environment Federation, WEF, took it over from the EPA for a couple of years and then they were seeking another partner that was more youth-focused to take over, and they chose us.

We were quite honored to be able to inherit that program two years ago, and it's a perfect example of action leading to awareness. We get people outdoors in their own communities, connecting with water, which is our most precious substance. They begin to understand where that water comes from and how it's tested.

It's the beginning of a powerful conversation, which is symbolic of what EarthEcho is all about. That conversation is a jumping off point to people thinking more critically about what's happening in the environment over the long-term.

EarthEcho Water Challenge educates on the fundamentals of water testing.

Q. What's your vision for the challenge moving forward?

Philippe: Well, as soon as we took over [the Water Challenge program], we spent a lot of time and resources updating the logistics of the program and how we could digitize and streamline how we communicate to participants. There was a lot of behind-the-scenes work and investment to bring us to where we are today. That continuous improvement is a big part of our strategy moving forward.

We also want to emphasize the action component of the challenge. Now that participants have personally tested the water and see the results, what are they going to do? Will they run cleanup projects, lobby for legislation, or seek funding? How will they improve or protect the water in their own community? There are all sorts of different ways that people can get involved.

Also worth mentioning, is expanding the different water quality parameters that we can test for. We're hearing back from many of our partners that the tests we have currently are a terrific starting point, but they're interested in collecting data on phosphates and nitrogen.

But why stop there? Can we look at nutrient loads in a water system that have a huge impact on our water? Eventually, could we build a program to test for things like *E.coli* and other indicators of water health?

Ultimately, our goal is to make the EarthEcho Water Challenge the premiere water quality program, and I believe in many ways it already is. It's the largest global program of its kind, but we're never satisfied. We want to continue to grow it to meet the diverse needs of each community around the world.



EarthEcho Water Challenge is the largest water quality program of its kind.

Q. What lessons have you learned from both your grandfather and father to fuel the work you do today?

Philippe: One very important lesson is that tenacity is a virtue. Most people read the glorious headlines and saw all the accomplishments of my grandfather; all the films, and the success stories, and all his other projects. What you don't hear about are the struggles; how difficult it was to raise money for a nonprofit to do films and to do all the hard work that went into them. There were constant challenges he had to overcome, but he made it look easy.

Growing up with those stories, I recognized early on that you can't give up when things get difficult. Just a few years ago, the financial crisis took the rug out from under everyone. Yet, nonprofits didn't get a bailout, even though the nonprofit industry [in the U.S] is the backbone of our society and employs more people than financial services and auto industries combined.

It was a difficult time. When the economy suffers, charity suffers.

but threaten everything you've

Overcoming those types of challenges – many of which you have no control over,

#WATERHEROES

and outreach in the media have affected your conservation efforts and helped further your mission?

Philippe: In the media space, we have an opportunity to continue to be outside and involved in fieldwork. As an advocate for sustainability and the environment, it's really important to get out and into the thick of it. **You can't be an armchair conservationist.**

To speak to an issue and be passionate about it, you have to see it, touch it, and feel it, in person. The filmmaking and other related work allows me to do that, while also providing the added benefit of providing a platform to share those stories and experiences with millions.

We have many different shows and programs and they're all designed to inspire people, to engage them, and to keep them asking questions about the world around them. To honor this legacy and that's when EarthEcho was born.

EarthEcho's central philosophy:
"Action leads to awareness."

Photos Courtesy: EarthEcho International





Q. Has there been a moment or a special experience during your filming that stands out above all others?

Philippe: A big part of what we do is connecting the dots. We help people understand that human beings are intimately connected to the environment. My father and grandfather always said, "You can't build environmental sustainability without human sustainability."

There are so many different things that come to mind, but one that really impacted me was in Haiti. I was doing a special for CNN and for 10 days we examined local communities and how they were transforming themselves with hopeful and engaging work around solving the problems that they faced there, which are myriad and daunting, to say the least.

One community, in particular, was in a place called Cité Soleil, which in French, means the City of Sun. It's the largest slum in the western hemisphere, located in Port-au-Prince. There are a few hundred thousand people living there in a shantytown of shacks and tents, dealing with extreme poverty, pollution, crime, gangs, etc.

And in the middle of this, in the middle of this place, there's a program called **The Jaden Tap Tap**, which is a beautiful community garden. The gentleman who started this program, created an oasis – a Garden of Eden – in the middle of this port. His purpose is to help kids and community members grow fresh vegetables, so they can get proper nutrition with healthy food. He also built a place where kids could come and play soccer (football) in a safe place, away from gangs. It was truly a paradise in the middle of one of the worst slums in the world.

That moment reminded me that connecting people to nature, particularly young people, can transform lives. It was an impactful experience to see people striving amidst truly daunting circumstances.

Q. What is your advice for young people thinking about following in your footsteps as a conservationist?

Philippe: No matter what you're interested in, ask questions, and always be interested and engaged in the world around you. Remain open-minded and inclusive because that allows you to learn, grow, and to change your opinion. I think that's one of the big problems we face today. People are so rigid in their ideology and thinking that they're unwilling to engage with others that don't necessarily share their views.

My other practical advice is to study communications. I always tell young people that – whether you want to become a doctor, scientist, an explorer, or a lumberjack – through the course of your education you should understand how to better communicate with people.

Take a public speaking class. Take a class in communications because those are the types of tools that will last a lifetime, and they're practical skills that a lot of young people today aren't getting. I was just speaking with some kids studying marine biology, and while it's great to have all that information and all that knowledge, if you can't talk to people about your work, it doesn't do the world much good.

You have to be able to communicate to people, and you have to be able to get others excited about your work, or else you'll just be piling away a research paper up on the shelf somewhere in the library, which should not be the goal.



Firing people up about these issues should always be the goal



Check out Philippe's upcoming TV shows on FOX, Hulu, and the Travel Network.

Xploration Awesome Planet, Season 4

Each week Philippe hosts a 30-minute riveting earth science documentary series that explores the most spectacular places – on the earth, inside the earth, and above the earth.

> Saturday Mornings, FOX (Seasons 1-3 Available on Hulu)

Caribbean Pirate Treasure

Later this summer, join Philippe and Ashlan as they dive into maritime mysteries, explore pirate history and investigate the lore of lost treasures in the Caribbean.

> Season 1 Premiers August 20th at 10:00pm, Travel Channel







EARTHECHO

Decades before EarthEcho International existed

Philippe Cousteau Sr., award-winning filmmaker and son of legendary explorer Jacques-Yves Cousteau, believed in a world where "every single child can breathe fresh air, drink clean water, and walk on green grass under a blue sky." This belief, along with others, about the importance of protection our planet for future generations became the guiding principles for his children Philippe Jr. and Alexandra. Tragically, in June of 1979, Philippe Sr. died in a seaplane accident in Lisbon, Portugal, leaving Philippe Sr.'s widow to keep the Cousteau legacy alive for their children. Jan Cousteau spent 13 years on expedition with her husband, providing her with insight and experiences to instill in their children – the same beliefs and passion that she and her husband shared for the planet.

Growing up fantasizing about traveling on expeditions as their parents did spurred the siblings to establish **EarthEcho International** in their father's memory. At its core, EarthEcho International is a nonprofit organization founded on the belief that youth have the power to change our planet. For more than a decade, the EarthEcho team, now led by 37-year old Philippe Jr., have worked with thousands of young people, educators, and youth leaders to support change through action.

Today, all of the EarthEcho's programs are designed to equip new generations of leaders and problem solvers to identify and tackle environmental challenges in their own communities and beyond:



The EarthEcho Water Challenge is an international program that equips anyone to combat the global water crisis by starting in their own communities. Through the simple acts of testing their local water, sharing the results, and taking action to restore and protect their resource, anyone can play a critical role in ensuring the overall health of the environment.







All living things - plants, animals, and human beings - require clean water. As users of water and citizens of planet Earth, we must take responsibility for our impact on water quality. Recognizing that education and awareness are important first steps toward action, we challenge you to test the quality of your waterways, share your findings, and protect our most precious resource.

Philippe Cousteau, Jr.



EarthEcho Expeditions is an annual program that brings the thrill of discovery to STEM classrooms by taking educators to the frontlines of our planet's most pressing environmental issues in a new location each year. These teachers interact with leading experts who are solving or mitigating these complex issues. This first-hand experience with experts, thought leaders, and environmental advocates on the front lines is the basis for the creation of timely and exciting video and printbased classroom materials that are shared free of charge on EarthEcho's digital platforms.



EarthEcho's **STEMExplore** highlights relatable voices and exciting life experiences to make careers in Science, Technology, Engineering, and Math (STEM) come alive. STEMExplore kindles youth interest in solving problems and becoming critical thinkers about the world around them. EarthEcho brings modern-day explorers and trailblazers to students and classrooms with a no-cost online destination, featuring dozens of relatable, day-in-the-life interviews with scientists and engineers from a variety of industries.



EarthEcho's Youth Leadership Council (YLC) is a platform for today's emerging trailblazers and visionaries in the environmental space. Comprised of 19 diverse leaders from across the country, ages 15-22, each YLC member has demonstrated an ability to engage and mobilize their peers and their communities to change the world. Through EarthEcho's platforms, YLC members are empowered to develop programs and conduct outreach to youth around the world.



Life Takes WATER

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Because Every Drop Counts

Xylem Watermark is proud to sponser the EarthEcho Water Challenge program.

IT IS UP TO US TO BETTER UNDERSTAND AND PROTECT OUR WATER RESOURCES.

The idea of global water shortages may seem overwhelming and distant, but when a water crisis occurs—the value of clean water and healthy waterways becomes apparent.

7/()%

of our planet is covered with water

97%

is in the oceans in the form of SALT WATER



2%

is locked in ICE CAPS and GLACIERS



<1%

is FRESHWATER for CONSUMPTION needed by all living creatures, including plants and animals



SAFE DRINKING WATER IS A PRIVILEGE

Many of us often take it for granted, but it is important to remember that water doesn't just come from our tap. Our drinking water comes from **SEVERAL SOURCES**:



STREAMS



RIVERS



LAKES



GROUNDWATER

Water in U.S. Communities

2.9
MILLION
MILES
of RIVERS
in the U.S.



One of the largest drinking water sources in the United States, is the LOWER COLORADO RIVER

2017
it was named
America's Most
ENDANGERED

River

It provides drinking water to over **30 MILLION PEOPLE**



and is responsible for growing 90% of our nation's winter **VEGETABLES.**



BY THE NUMBERS



(2005-2016)

143 Countries



76,790

Bodies of water Water Quality tested (oceans, lakes, Monitoring rivers, streams, etc) events



Water Quality Monitoring Kits distributed

1,499,068Participants



1 OUT OF **3**

Americans get their drinking water from a river



\$97
BILLION

SPENT ANNUALLY

on U.S. river-related recreation and tourism

AT EARTHECHO INTERNATIONAL ...

"We believe that all of us have a role to play in the fight for clean water and healthy waterways worldwide...and that the best place to start is in your own community. The **EarthEcho Water**Challenge is a program that can do just that - equip anyone to be an advocate for water resources. The Water Challenge is a water monitoring program that helps individuals, students, families, and organizations take the first step in creating positive change in their own communities."

Join Us: monitorwater.org



Have your team's work featured, reaching **over 80,000** environmental professionals around the globe!

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- National Corvette Museum
- Western Kentucky University
- St. Johns River Water Management District
- Dauphin Island Sea Lab
- The Water Institute of the Gulf



Xylem | 'zīləm|

- 1) The tissue in plants that brings water upward from the roots;
- 2) a leading global water technology company.

We're a global team unified in a common purpose: creating advanced technology solutions to the world's water challenges. Developing new technologies that will improve the way water is used, conserved, and re-used in the future is central to our work. Our products and services move, treat, analyze, monitor and return water to the environment, in public utility, industrial, residential and commercial building services, and agricultural settings. With its October 2016 acquisition of Sensus, Xylem added smart metering, network technologies and advanced data analytics for water, gas and electric utilities to its portfolio of solutions. In more than 150 countries, we have strong, long-standing relationships with customers who know us for our powerful combination of leading product brands and applications expertise with a strong focus on developing comprehensive, sustainable solutions.

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