

Summary of Forests—Water—Health Luncheon

In 2015, the United Nations identified 17 goals for a sustainable world; of those Sustainable Development Goals, the World Forestry Center identified 16 that relate to forests. In recognition of the impact that forests have on societal needs like clean water, affordable energy, economic growth, and human health, the World Forestry Center (WFC) decided to embark on a new endeavor of hosting conversations about the role of forests in our world.

For the event, titled Forests–Water–Health, held on December 14, 2016, WFC convened a three-person panel comprised of Bobby Cochran, executive director for the Willamette Partnership; Todd Gartner, senior associate for the World Resources Institute’s Food Forests and Water Program; and Howard Frumkin, professor of environmental occupational health science for the University of Washington School of Public Health, to discuss the linkages within these three subject areas. Representatives from the healthcare, natural resources, nonprofit, and water management sectors were invited to join the conversation.

In his opening remarks, WFC’s Executive Director Eric Vines outlined four goals that he wanted the attendees to accomplish:

1. We want to get our groups to begin thinking at a high level about the connections between forests, water, and health.
2. We want to build solid relationships that continue beyond a one-time meeting.
3. We want to discover next steps in the conversation.
4. We want to identify some collaborations that can carry our work to the next level.

Vines observed that with nearly 90 attendees participating, “we should be able to solve something together.”

Opening Remarks by the Panelists

Following the opening remarks, Moderator Nick Viele invited Cochran, Gartner, and Frumkin to introduce themselves and highlight the “work that they do in the communities we care most about.”

Cochran opened his remarks by describing the Willamette Partnership as a conservation nonprofit whose mission is to expand the pace, scope, and effectiveness of conservation. “But in the last couple of years,” he said, “we’ve really realized that there is no way we’re going to succeed at that unless we are comparably developing social benefits at the same time. And for us that means human health, economic development, and social equity.”

Although the Willamette Partnership focuses on quantifying the value of flood plains, sage grouse habitat, and water quality and encouraging investment in these issues, Cochran said that they realized this work could also apply to human health. “There’s a base of research that basically says more time outdoors can improve physical activity, mental health, and social cohesion, and it does that in measurable terms,” he explained. “This made us realize the conservation community should be thinking of itself as one of the most important public health providers in this country.”

Cochran discussed the Willamette Partnership's involvement with the Oregon Health and Outdoor Action Framework that was launched last fall. This initiative not only encourages people to spend more time outdoors, but it's also targeted to communities facing health disparities, such as African American, Latinos, Native Americans, rural Oregon, and people with disabilities.

In his closing remarks, Cochran emphasized the state of Oregon has "every authority we need so that Medicaid can pay for trees" in an effort to promote health. However, it's not enough to encourage people to be outdoors if they can't access nature; there needs to be an integration of systems, such as transportation to reach trailheads and infrastructure like sidewalks in rural towns. "Importantly on this health and nature link," he concluded, "it lets us start building new coalitions so we can start bringing communities of color or organizations, outdoor recreation, environmental groups [together] and start talking about what the future of Oregon really needs to look like to be more livable and equitable."

Where the Willamette Partnership works at the local level, The World Resources Institute tries to scale "the incredible work that groups like Willamette Partnership are accomplishing on the ground," Gartner said in his introduction. Being a global environmental think tank that focuses primarily on forest and water quality, Gartner admitted that when asked to speak at the event, he had second thoughts because "the work I do isn't necessarily tied to health, but the more I thought about it, the more I realized it really is."

"When we think about needing to increase investment in natural systems—agricultural systems, forests, wetlands, and the like—we think about three core things and I started to think about that in the framing of a health context. First cost savings—a health pocketbook—we're never going to get where we need to go if we don't figure out cost-effective ways to incorporate natural systems into our water provisioning and our forest management."

"The second core thing is around resilience. We think about that in a lot of different contexts, but in the face of climate change, in the face of more people moving to our urban centers, so many pressures on our rural areas, how do we think about including our green and our gray systems to create a much more resilient system and deal with the inevitable uncertainties that the future has in store for us. There's a health component to that resilience piece as well."

"And then finally it's the true social and economic components of healthy communities...Really looking at what these types of approaches mean to sustainable and livable communities from very classic health metrics to access the outdoors and also the things that [rural citizens] prioritize...Looking at how those pieces come together really drives that connection between forests, water, and health."

Gartner saw the importance of the messenger, not just the message to move the discussion forward. "We must move these ideas out of the choir and put it in the hands of those who are running the systems, those who are running the city planning initiatives, having them try to guide us through the inevitable obstacles that are preventing us from a more holistic sustainable way of living."

For Frumkin, his background as a primary care internist motivated him to care for patients at the individual level, and when he migrated from clinical medicine to public health, he became frustrated seeing patients become ill from preventable causes. Because of this, he considers himself an upstreamist. "If we intervene upstream, we can do much more to prevent people from getting sick in the first place and to keep them healthy," he said.

After transitioning into the environmental public health field, Frumkin focused on four areas of study. The first is climate change, which he considers to be the “biggest public health threat of the 21st century. You may not think of it as a health issue, but it is.” The second is the built environment and how it can be designed to health promoting or undermine human health. Energy policy is the third area of study because Frumkin said that “no energy choice, whether hydro, fossil fuel, or nuclear, is without consequences “Understanding the health implications of energy choices and then feeding that insight into our social decisions about what energy we will rely on is a very important task.” And the final area of study is green space and nature contact.

“[Green space and nature contact] turns out to provide an extraordinary set of benefits for health...If we had a medication that promotes health as much as nature contact at as low of cost and with as few side effects, we would not be sitting here at lunch. We would be running to the stockbroker to buy stock in companies that make this medication....We have this incredible tool in nature contact and green space.”

What Frumkin came to realize during his career was that all four areas were in fact connected, and he used urban street trees as an example of this connection. For example, putting street trees on the city streets, is not only soothing and restorative, but these trees also reduce the urban heat island effect, which in turn contributes to a reduction in energy consumption, and by extension, pollution. As a result of seeing these linkages, Frumkin concluded, “I’ve become a systems thinker...all of this is about creating healthy, sustainable human habitats.”

What is the surprising connection, from your point of view, between forests, water, and health?

Following their introductions, Viele asked the panel to respond to the following question, “What is the surprising connection, from your point of view, between forests, water, and health?”

Gartner shared that he has been working to understand the intimate connection between forests, water, health, and climate change in the context of catastrophic wildfire. “I think if we’re able to focus on just one or two core elements, such as wildfire, it’s going to take us a long way to coming up with some strategies that can begin to really connect the dots.” His reasoning for focusing on wildfire is that “when you think about of human health, catastrophic wildfire is one of the biggest issues we need to address,” not just with the loss of human lives but also the impacts upon water provisioning, water infrastructure, and recreational access.”

He sees the need to develop a solution set of strategies. For example, how could different financial flows be leveraged to deal with the variety of issues that are being seen on the landscape when there isn’t a healthy forest system? A recent analysis that said over a trillion dollars will be spent over the next 15-20 years in drinking water infrastructure. “[Why don’t] we think about carving off some of that money to do forest health treatments?”

Frumkin offered two connections that he sees as surprising between forests, water, and health. First, the connections are based on science, but that the science underlying our understanding of these connections still need to be further researched. “The science isn’t that rigorous when it comes to the benefits of nature contact, but we’re moving in that direction. We know a lot [and] we know enough to act, [but we] still need to learn some more things.”

The second connection he sees is our understanding of climate change as “a really profound health issue.” Altered ecosystems, such as forests and wetlands, can affect infectious disease ecology, resulting in “a number of infectious diseases rearing their heads, expanding their ranges and endangering more people.” The reason for considering the public health risks of infectious disease, as compared to wildfires, is that the former affects hundreds of millions and for years or decades, while the latter is generally in the thousands or millions and generally for weeks.

Another aspect of public health that Frumkin advised we should consider is mental health. Beyond the obvious connection between higher temperatures and air pollution affecting mental health, “as ambient nature is degraded, mental health suffers—there’s a phenomenon called *sola nostalgia* described by an Australian scholar, which is the despair, the pain people feel when they watch the environment they have grown up in, into which they have become accustomed, degrade.”

For Cochran, the surprising thing is that people experience nature differently. “The health benefits that I get being out in Forest Park may be very different than a young high school student from Roosevelt High School who thought Forest Park in Portland was not for them,” he explained. “We think nature in Oregon is everywhere, but if you don’t have a driver’s license and you don’t have a car, you can’t get to it.”

When it comes to acting upon these connections, Cochran sees the biggest traction with storm water utilities. Individuals who are managing green infrastructure and urban environment are now asking, “I want the tools that will optimize my investment in green infrastructure to promote health and equity,” he said. “So we’re in desperate need of taking the existing evidence we have and moving it into planning tools, and we’re falling into a [funding] gap.” The reason for this funding gap is because there is a disconnect of what the health-focused or environmental-focused organizations will fund. “I think we got an opportunity to really move aggressively on some of this,” Cochran concluded, “but we need coordinated investment and work from everyone in this room.”

Following these responses, Viele invited the attendees to have a five-minute conversation about what resonated with them. He then called upon for volunteers to report to the group about what their table discussed.

John Wilkenson, a WFC board member, said his table discussed the dichotomy between people wanting to get out in the forests and that most wildfires are human caused. There is also the issue of costs associated with opening private forestland to the public, such as road maintenance or damage to the landscape, and when the private land is closed, the public is angry. Wilkenson reasoned that the reason for the anger is because the public doesn’t recognize the costs and damage caused by access.

Wildfires were also discussed at their table, said Catherine Mater, who is with Mater Engineering Lt. and a fellow with The Pinchot Institute. She shared that new scientific data has found that the release of carbon emissions from wildfires in Oregon is not as significant as previously thought. What this could mean is a shift in the wildfire discussion from forests and carbon to forests and health or forests and infrastructure. And this shift in discussion could mean a shift in where the money goes, breaking through the silos. Mater said that in Oregon, the lottery funds are apportioned to agencies by a formula, and one of the ways to change where the money is spent could be accomplished by having a provision that requires funds to connect projects concerning forests and water, or water and green infrastructure.

For another table, the cumulative impacts of climate change really struck them, especially the impacts on people and the spread of disease, said Ecotrust's Brent Davies. "This is something we ought to be paying more attention to." They also discussed the issues surrounding vulnerable communities and how to bring them to the table. "That's something we wondered, if we're talking to the choir and if we should be reaching beyond our traditional allies." Another item that was discussed was the cost savings associated with forests and water. Because the water within the city of Portland's Bull Run Watershed is so clean, the city received a waiver from the EPA to forgo water treatments and is saving \$100 million as a result. And lastly, Davies said that the group observed that "we're animals and we're meant to move so that connection in nature and moving in forests is obvious."

Another table discussed connecting infrastructure projects with health benefits, and leveraging projects to deliver the maximum benefit to communities. They also saw a need for coalition building, grass roots efforts, and political movements to bring attention to the connection between forests and health. "That coalition building is key whether you're talking about single projects or a system-wide change," their table representative said.

For the final table report out, they discussed Cochran's comments regarding funding, and their representative posed the question, "What is your messaging in terms of 'selling it' so that the connections within that systems approach can be fundable?" She highlighted that in Oregon, there is a concept of health in all policies, enabling all state agencies to have health outcomes and share combined health outcomes across all departments. They also discussed the role of messaging and engaging communities in the face of public uncertainty about climate change.

[From your point of view, what can organizations do differently to move the needle on projects addressing issues in this area?](#)

Frumkin raised three solutions, the first of which is working across silos. "We really get so much done if we work with different organizations from different sectors toward shared goals." He shared that although he liked the idea of incorporating health in all policies, he saw a drawback in that approach. "It's what we in public health say when we're going to people in utilities or education or environmental protection and say 'Please include our goals in what you do,'" he said. "The way I prefer to ask the question is how can I help you achieve your goals and where do our goals overlap so the things we do together can benefit both of our sense of goals? So it's each of our policies in each of the other policies."

To work across silos, Frumkin encouraged participants to work with sectors that they hadn't considered working with, such as law enforcement, K-12 education, agriculture, or economic development. He asked the room whether they belonged to each of these respective sectors, and there was only one person each from K-12 and agriculture. "These are four areas that have an awful to do and an awful lot of overlap with the kinds of things we're talking about," Frumkin observed, "but we typically, even if we are brave and creative enough to get outside our silo, we go to the adjacent silo or maybe two silos over. But we need to think very expansively in pursuing those relationships."

One of the reasons why Frumkin thinks law enforcement should be included in the discussion is because nature contact helps prisoners regulate their behavior better, improves their quality of life, reduces violence in the prisons, and moves people toward probation more effectively. "Who would have thought

that the nature contact agenda in the law enforcement and prison agendas could overlap? But they do," he said.

The second solution Frumkin offered was precision medicine, which is crafting treatments specific to an individual's genome. This approach is now being practiced in public health as precision public health, because it's known that particular populations or particular circumstances may require a particular intervention. However, Frumkin goes one step further and offers precision nature contact for specific populations. "Are we thinking a lot about how nature contact benefits elders and in what form? Are we thinking about immigrants who may have grown up in an entirely different ecosystem and they relate to nature differently not only out of access or fear but because where they come from the desert is the norm and here you got all these trees? How are they going to enjoy that?"

Frumkin concluded with the third solution that was the need to normalize climate change. He observed that the discussed had become politicized, which has slowed down the discussion. "We don't debate whether earthquakes happen. We don't really debate whether e. coli is real and a bad thing. We tackle them," he remarked. "They're problems and we tackle them. But to our great misfortune and great misfortune of the world, we've overlaid an ideological frame onto climate change and it's really getting in the way of making progress." To address the politicizing of the issue, Frumkin suggested stripping away the ideology and calling for science-based solutions that are also good for other reasons, such as increasing tree canopy in cities.

For his three solutions, Gartner said that they pair nicely on top of Frumkin's and they are even more granular in some respects. When it comes to working across silos, such cross-sectorial cooperation is rarely seen, he said, and a way to address this is incentivizing the cooperation and building it into the compensation package. "Starting with performance goals and putting it into bonuses and merit increases, really having incentives and quantified metrics of success of what it means to work beyond your comfort zone, your team, your program, your organization and your sector," he offered. "Those entities that really experiment with this have suggested that it's been a major way forward, very cost effective and it changes the mindset of the whole organization to be thinking outside their comfort zone."

Gartner's second solution is that when engaging in this cross-sectorial work, ask for your goals and their goals to be incorporated into each organizations' respective mission. He shared his experience of working in Brazil with the city of San Paulo's utilities that are fed by the Atlantic Forest. "We're talking about green infrastructure and the importance for them to think outside their four walls and what they said to us is 'Prove it.'"

"And this goes to Brent's [earlier report out] comment before about \$100 million dollar cost savings. We need to do a better job of moving beyond the qualitative arguments of how important these connections are and really be able to quantify and monitor what the successes are. And I separate those things very intentionally because more and more you're seeing modeling done that suggests what those cost savings could be, but our monitoring regimes are way behind. So we need to be thinking now what we will be able to say in terms of what was successful and what was not three, five, ten years from now to be able to put ourselves in a position to take it to the next level of scale."

The third solution Gartner offers is how to really drive ideas into action. He used WRI as an example; the think tank has produced nearly 300 publications but there's been no uptake of these ideas. "What do we

need to do differently?” Gartner asked. “I give a lot of credit for the Willamette Partnership, who a couple years ago were talking about this and now they’re actually driving implementation.”

He offered that incentives are one way to move from theory to application and to actually try things, even if the answer is it can’t be done or it’s not in our jurisdiction. In closing he remarked, “If there is any window of opportunity with the new administration, the normal rules seem to be out the window, let’s really try to drive some new stuff.”

Cochran’s comments revolved around the need to pull all the research that’s happening around the country and building a base of evidence, which can then drive policy, especially public health policy. “I would love to see Oregon and Washington become a research center.”

“Similarly on policy, if infrastructure investments are going to be made, most of our policies on health focus on keeping us away from bad stuff. I don’t think the [definitions of public health in the] Clean Water Act, the Endangered Species Act, National Environmental Policy Act, or the Water Resources Development Act, have caught up with the science of public health. So thinking in terms of how do you create health benefits...I think there are ways to insert definitions around improving public health, optimizing for public health on some of these pieces.”

Following these comments, Viele invited everyone to stand and form groups of three and four to have a five-minute discussion on what the experts said that resonated. After the discussion, Viele asked for tables to report out.

Jae Douglas, the environmental health director for Multnomah County Health Department, said that her group had a fascinating conversation that contained all levels of understanding from “still trying grapple with what does this mean” to “dealing with feeling overwhelmed by information.” They also discussed how to keep the messaging consistent across groups and individuals.

Another group mentioned that when messaging, perhaps a more personalized approach is needed. Rather than focus on climate, focus on health to make it more personal.

At another table, they discussed the need for coordinated research because of the interconnectedness of the issues. There is also a need to tell the stories so they are meaningful to the decision makers and to the public “What a challenge it is to get over the perception of how public money should be spent,” their table representative said, “particularly when there isn’t an inherent connection for many people in how the systems that support clean water work or how our bodies interact with our built and natural environments to create health.”

As the representative for her table, Emily Roth with Portland Parks and Recreation said that they discussed how to integrate government agencies to share money and resources to move forward, especially when regulatory programs are being defunded. She mentioned a project that Portland Parks and Recreation is starting called Nature Smarts to help communities of color to feel comfortable and safe going out into nature.

At their table, Don Moore, with the Oregon Zoo, said they discussed the need to “get out of our bubbles.” This means not only getting out of your comfort zone to collaborate with other groups but also understanding how to tailor your message to these other groups.

Takeaway comments

Throughout most of the discussion, the need for increased engagement across organizations and with the public was emphasized, along with increasing communication efforts to share what is known about the health benefits of nature. John Wilkinson, a WFC Board Member and long-time forester, shared that he hadn't previously heard a public discussion of the scientific evidence regarding the public health benefits of forestry.

To aid in the messaging, it would also be worthwhile to explore organizing the growing body of scientific evidence regarding nature contact and the interplay between these three issues. As Cochran pointed out, right now the research is dispersed throughout the country and not organized.

And although many attendees mentioned the need to engage with communities of color, Gartner pointed out afterwards that these communities weren't in attendance and that it's important to "practice what we preach about cross-sector collaboration."