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Participants:
LaKesha Anderson
José Castro-Sotomayor
Edward Maibach
Bridie McGreavy

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Introduction:
This is *Communication Matters, The NCA Podcast*.

LaKesha Anderson:
Hello, I'm LaKesha Anderson, Direction of Academic and Professional Affairs at The Communication Association, and I'm your host on *Communication Matters, the NCA Podcast*. Thank you for joining us for today's episode.

Climate change is one of the most pressing issues facing the world today. According to a recent Pew Research survey, 64% of Americans believe that climate change is a top priority. However, there is often division along partisan lines, in part because people may evaluate scientific expertise and messaging differently. In addition, some communities may feel the effects from climate change more than others. Today's episode of *Communication Matters: The NCA Podcast* will delve into environmental communication with scholars José Castro-Sotomayor, Edward Maibach, and Bridie McGreavy. First, a bit about today's guests.

José Castro-Sotomayor is an Assistant Professor in the Department of Communication at California State University, Channel Islands. Castro-Sotomayor researches in the areas of environmental and intercultural communication, environmental governance, transboundary community organizations, ecocultural systems of meaning and identities, critical and decolonial pedagogy, and environmental activism. With Tema Milstein, Castro-Sotomayor is a co-editor of the *Routledge Handbook of Ecocultural Identity*, which received the NCA Environmental Communication Division's 2020 Tarla Rai Peterson Book Award. Hi, José, and welcome to the podcast.

José Castro-Sotomayor:
Thank you for the invitation. I'm glad to be here.

LaKesha Anderson:
Edward Maibach is a University Professor and Director of the Center for Climate Change Communication or 4C at George Mason University. Maibach's research, which has been funded by NSF, NASA, and private organizations, focuses on public understanding of climate change and clean energy; the psychology underlying public engagement; and cultivating TV weathercasters, health professionals, and climate scientists as effective climate educators. From 2011 to 2014, Maibach co-chaired the Engagement and Communication Working Group for the 3rd National Climate Assessment. Maibach advises myriad government agencies, museums, science societies, and civic organizations on their climate change public engagement initiatives. Hi, Ed, and welcome to *Communication Matters*.

Edward Maibach:
Hi, LaKesha. Thanks for having me.

LaKesha Anderson:
Bridie McGreavy is an Associate Professor in the Department of Communication and Journalism and a Faculty Fellow in the Senator George J. Mitchell Center for Sustainability Solutions at the University of Maine. McGreavy studies how communication shapes sustainability and justice efforts in coastal shellfishing communities, river restoration and freshwater conservation initiatives, and diverse collaborations to address complex problems. McGreavy is also a lead investigator on a National Science Foundation-funded project focused on environmental monitoring. Hi, Bridie, and welcome to podcast.

Bridie McGreavy:
Hi. Thanks. It's great to be here.

LaKesha Anderson:
José, your recent edited volume focuses on ecocultural identity. What does that mean and how does it help us gain further understanding about the relationship between humans and the environment?

José Castro-Sotomayor:
Well, the ecocultural identity is a concept and a framework that contributes to the ecological turn to sociocultural understandings of self. The cultural turning conceptualizations of identity stems from assumptions that humans are made of, are part of, emerge from, and constantly contribute to both ecology and culture. So as a cultural beings, we humans produce and act upon and constantly perceive and make meaning through both ecology and culture. So as a concept, ecocultural identity differs from other eco-oriented approaches because I believe that's very important because you do find other kind of theorizations about the influence of the environment

or nature. I prefer using the term more-than-human world when I talk about the environment and nature to not reproduce the binary and the separation between humans and humans or humans and environment. So we have several examples of these eco-oriented identity theories. For instance, we have ecological identity, environmental identity, or green identity. However, these conceptualizations stem from social psychology which could render some analytical limitations. First, for instance, these e-oriental definitions require static definitions of ecology and the environment which can be misinterpreted as separate spaces from humans. The second limitation is that individuals of the groups must consciously pursue enacting these eco-oriented identities which leads us to a third analytical limitation actually. That is that the ecological green or environmental identity are normative because the development of these identities and the realization of these kind of things of things themselves depend on the individuals and groups conscious engagement with behaviors that are considered environmentally friendly, for instance, recycling or buying local food production or participating in pro-environmental movements or even enacting ways of living that show a deep and respectful connection to what we call nature. We can go even from actions like holding trees or becoming vegan. Some of those actions that are considered environmentally friendly or ecologically friendly.

So it is important to know that ecocultural identity is not normative or eco-centric by default. So contrary to the ecological, environmental, or green identities, ecocultural identity is not prescriptive. And what I mean by this is that the actions associated with cultural identities are not always positive or beneficial to the environment. Let me give you an example. So in terms of your cultural identity, a local farmer, a miner, a hunter, a logger, a surfer, an environmentalist all have ecocultural identities as their sense of self is defined by their beliefs, their values, their attitudes that inform how they act upon the more-than-human world in general. So as a framework, ecocultural identity framework helps to avoid kind of essentializing ostensible environmentally friendly identities sometimes. For instance, think about a farmer who engages in an organic way of growing food, let's say in a way that is respectful and sustainable to the ecology of the place. This farmer would be performing what I would call kind of regenerative ecocultural identity. But this ecocultural identity is different from a farmer that might engage in a more industrialized way of planting the crops with the sole purpose of massively produced food. So this farmer would be performing an exploitative ecocultural identity. So therefore, an ecocultural identity helps us to gain further understanding about the relationship between humans and the more-than-human world, and it challenges the very anthropocentric human centered assumptions on which the cultural is built and understood. And ecocultural identity seeks to understand humans at the intersection between the symbolic, which is the cultural, and the biotic, which is the ecology.

One important thing is that ecocultural identity is, whether latent or conscious, as a concept ecocultural identities are at the center of who we are as humans and informs our emotional, bodily, mental, and political sensibilities within and in relation to the wider world. And I would like to close,

let me close with an example, for instance, to how the concept and the framework of ecocultural identity can help understand the formation of new identities that directly emerge from the climate crisis that we're experiencing right now. For instance, the identification of climate refugees is becoming more prominent in our political vernacular for sure. However, what I noticed is that when the issue of climate refugees is discussed, first, an undifferentiated nature or environment is the force that pushes people into their current conditions, right? Second, I usually noted that in the aftermath of a climate-induced catastrophe, climate refugees' new life situation is discussed mainly in cultural terms that is focusing on how they map or adapt or struggle with navigating the new cultural differences of political system in which they are kind of replaced many ways. But if we consider, if we think it through an ecocultural lenses, the shock is not only cultural, but it's always and already ecocultural. So the ecological dimension I mentioned is vital to understand the climate refugee condition and sense of self. Just imagine being displaced from an island replaced in a city in the Texas panhandle, right? Or living nearby a California redwood forest that is gone because of the wildfires which forces people to relocate in a completely different environment. So therefore, the trauma is ecocultural because it is not only about the cultural laws but also about the laws of the ecology and the web of life in which their sense of self are valued and are historically entangled and connected to it.

LaKesha Anderson:
Thanks for explaining that. One of the things that you mentioned really struck a chord with me because I grew up in a community that is very mining and logging and farming focused and has certainly not been an area that's been concerned about the environment forever. But with the shutdown of a lot of mines, we're seeing people try to find another way to make a living. And so they've started to really capitalize on the ecotourism that's available in the area in which I grew up because it's gorgeous. It's right in the central Appalachian Mountains. There's a lot of hiking and waterfalls. And it's gorgeous land. But they've never really focused on that because they've been tearing the land up for a very long time. And now that they have to kind of refocus and reimagine what their life is going to look like there, it's interesting to watch how the change in identity and the change in how they feel about the environment has come about just in the past five, six years. It's been really interesting to watch people who maybe had absolutely no idea or were climate change deniers really come about a different way of thinking and be very protective of the environment now. So that struck a chord with me just because of something I'm actually watching unfolding.

José Castro-Sotomayor:
Even before, even people who were engaged in those kind of economic activities, they actually have a particular orientation toward the environment which is kind of defined by how they perceive the environment, in this particular case, a very commodified environment if you think about loggers or miners. So what you're describing here is basically a shift in their ecocultural identity

in terms of how they connect or reconnect sometimes with the more-than-human world that is kind of offering all these opportunities to changing their work or their way of living.

LaKesha Anderson:
That's definitely interesting to watch. Ed, you've done a lot of research on how the public understands climate change and how to improve public understandings in this critical area. Over your years of research, what trends have you seen and have recent years seen more widespread acceptance that climate change is a scientific fact?

Edward Maibach:
Yeah, my colleague Tony Leiserowitz at Yale and I have been incredibly blessed to be able to run the Climate Change in the American Mind Polling Project for the past 13 years. We've been doing surveys pretty much every six months for 13 years now. We're on our 27th survey at the moment. And the benefit of that is we get to watch trends develop, both the heartening ones and the disheartening ones. But you put your finger on it exactly right, LaKesha. For the most part, it's been really heartening, right? We've watched what I call a climate awakening in America. It was not that long ago, let's just say five or six or seven years ago, that the sort of the two ends of the continuum with regard to their views about climate change, we've identified six groups. We call them global warming six Americas, and they are pretty much a continuum from the group that we call the alarmed people like me and probably like you to people on the other end of the continuum that we call the dismissive people, like perhaps some of your family members until recently. And both groups, the alarmed and the dismissive, we feel really strongly about the issue. We've just reached entirely polar opposite conclusions about climate change. And over the past five or six years, we've seen the one group, the alarmed group grow enormously. So let's just say six years ago, they were about 12% of the population or give or take, 1 out of 10 of us were alarmed. Today it's more like 3 out of 10. So almost a tripling of the size of that group over a very small period of time. Conversely, the dismissive group, which again about six years ago was about 1 out of 10, 12% to be exact, and they have contracted. They're down to about 7%. That's actually a finding that probably we wouldn't have anticipated. Once people make up their mind about something, it's pretty startling to see them change their mind. But as is the case with members of your family, some of them have been changing their mind. So that's the good news. We've seen this dramatic heightening of public engagement, public concern about climate change.

On average, what we've seen is a shrinking of the psychological distance that Americans experience when they think about the issue. By psychological distance, I mean for pretty much the entirety of the time we've been doing this polling, most Americans have told us that climate change is real, but they saw it as a distant threat. Distant in time so maybe the year 2100 but not the year 2010 more or less when we started the poll. Distant in space. So maybe sub-Saharan Africa but not Cincinnati. And distant in species, perhaps mostly distant in species. Polar bears

for sure but not people. So over the past 10 years or so, we've seen a real change in how people see the threat. They're increasingly coming to see it as a here, now, us threat as opposed to the way they've previously seen it as a sometime in the future, somewhere else, and to some other species. And that's a real game changer because once people recognize a threat as relevant to them, relevant to them and their loved ones, they start thinking about it differently.

Here's the one disappointing trend over that 13-year period that we've watched. And that is although there's been this enormous growth in concern about climate change, we haven't really seen an enormous growth in the proportion of the public who are engaging as citizens to advocate for climate action. So today on Capitol Hill and in state houses around the nation, there are conversations about that are the right conversations, trying to answer the question what should we be doing about this, what should we be doing differently, what kinds of policies do we need to create real solutions to these problems. And so while elected officials see that more and more of their constituents are concerned about it, what they're not feeling is the increase in number of constituents who are contacting them, calling them, sending them emails, showing up in their offices on Capitol Hill or in their home district. And that is really, as best I understand the nature of political change, you need public will. We've clearly seen a growth in public will, but you need to mobilize public will if you want to create political will. And the mobilization happens when members of the public engage with their elected representatives.

LaKesha Anderson:
I just have a follow-up question for you. With the tripling of people who are starting to at least see that climate change is an issue and that it's important, why do you think that that's happening? Like how important are things like the climate clock, for instance, in getting people to move over to the other side of their belief?

Edward Maibach:
Yeah. I have often said that climate change doesn't teach. It just punishes. It punishes us through extreme weather. It punishes us through a variety of different ways that in which it's harming our health. And for the longest time, we needed somebody to narrate that experience for us, to explain what's going on, to help us connect the dots that yeah, in fact, I've lived here in my current home for 30 years, and I have noticed that the weather has gone kind of crazy and it seems to be getting more dangerous. And so one thing that is driving the trend of increased engagement is that climate is punishing us with greater frequency and greater severity. A second thing that's going on, and I'll hold this because I'm going to hope you'll ask me again about this later, a second thing that's going on is there are more trusted voices in America who are educating their constituents about the fact that climate change is here and now and it's bad for us and you can see it with your own eyes if you pay attention. And so it's the confluence of those two factors that I think is driving this heightened public engagement.

LaKesha Anderson:
I would also like to hear about local perspectives on climate change and sustainability. Bridie, your research has dealt specifically with communities in Maine. Why is it so important to engage local communities in sustainability efforts?

Bridie McGreavy:
Yeah. I so appreciate this question and honestly, in preparing for this, felt like this could be a podcast in and of itself, maybe a series of podcasts that more fully engage the question of community engagement because there are a lot of important reasons for taking a community engaged approach to climate change focused work. And I just want to highlight a couple that in the context of the work that I've been doing and as it connects with environmental communication have been really crucial. So environmental communication as a field includes scholars who are deeply interested in but also very concerned about a whole host of complex problems that occur at this intersection of communication which includes human communication but, as José mentioned, goes well beyond human centered communication to think about more-than-human communication and environmental change. So we're concerned about phenomena like environmental racism which names the disparate impact of pollution and climate change on minoritized communities, many different forms of colonialism, and how those intersect with environmental processes like nuclear colonialism. This is work that Danielle Endres has done for a long time in energy colonialism. Catalina de Onis has been doing a lot of work on this and has a recent book out on it. Whole host is related to natural resource management and the kinds of decisions that managers have to make in the context of widespread biodiversity loss, invasive species, wilderness conservation. I could go on and on.

And the point is not to elaborate these problems, but that in this context and especially in the work that I've been doing that focuses on the intersections of coastal resilience river restoration environmental justice, we've found that we really can't like wrap our minds around any of these problems if we're not engaging multiple forms of knowledge. So like this includes the multiple forms of knowledge that you have in academic institutions working across disciplines. They have many collaborations with colleagues in the biophysical sciences, in other social science fields. We've increasingly been engaging with arts and humanities to be able to open up that space for artistic practice and be able to connect with communities on their own terms which is vitally important. But we've also found that connecting with the authentic knowledge that community members themselves bring to any of these issues really helps understand the nature of what's going on and what would be both ethical and workable solutions. So like to really center the questions of equity in any kind of solution that we're trying to develop. So for me in doing this work with planning communities, I do a lot of work on coastal resilience and climate change adaptation, clamors are essential in helping us understand what's going on on the ground, how are they already feeling the effects of climate change, bringing that kind of local knowledge to bear on the

identification of policy solutions that in doing this work over a number of years, we've actually been able to scale up these kinds of solutions to a statewide scale, making changes to, for example, how aquaculture is regulated in ways that make that process more equitable for people who are trying to advance climate adaptation.

In the work that we've been doing with representatives from natural resource departments in Wabanaki Tribal Nations including the Penobscot nation and the Houlton Band of Maliseet Indians, we've found real value in finding ways to center indigenous knowledge, really connect with indigenous worldviews but to do so in a way that is very careful about cultural appropriation. And so thinking about what is meaningful participation for indigenous peoples in this work. So connecting with these diverse forms of knowledge which also includes different forms of governance knowledge as well. We have partnerships with people in state agencies, and they give us so much information about the governance context and what's even possible from a policy standpoint. So all of that has been really essential. We've also found that academic institutions are in a unique position to really facilitate bringing these diverse forms of knowledge together. And the group of us who are working in the Mitchell Center for Sustainability Solutions also really feel like academic institutions have a responsibility to show up for these kinds of partnerships and figure out how to find the knowledge that we need to bring to bear on these problems and create spaces for people to participate in ways that actually work for them.

And then I guess the final thing I'll raise is more of a personal note. I've been doing this work now for more than a decade, and I've just found that working in community partnerships enriches my life as an academic. There are a lot of pressures in academia, and many of these pressures are intensifying because of these global changes. But the kinds of relationships that form through community partnerships can be incredibly meaningful. It moves from research subjects to partners to friends, and there's that trust and mutual understanding that both enriches the work but also makes life as an academic more enjoyable and meaningful.

LaKesha Anderson:
José, you've also looked at how communities have addressed climate change. You've examined a specific indigenous organization located at the border between Ecuador and Colombia. How do the members of that organization communicate about climate change and how important is it to pay attention to the ways in which indigenous people make sense of and deal with climate change?

José Castro-Sotomayor:
My collaboration was with the Grand Familia Awa Nationale. So it is indigenous organization that is located at the border between Ecuador and Colombia. And what Bridie said about collaborating with organizations, just you reminded me how humbling and inspiring was my collaboration with

this organization. Because not only it offered me the opportunity to challenge myself, and I'm saying scholar, but also to actually investigate something that I was always interested in, is how basically communities who do not speak the dominant language make sense of Western scientific knowledge or global concepts like sustainability, development, and climate change. So in the case of the Awa people, the native language is Awa Pit. It is an endangered language because they have gone through an accelerated process of acculturation and cultural homogenization. And there are only currently 40,000 people who speak the language according to the last survey. So it's a language that increasingly is in danger. So language is central to understand the work of this organization because members communicate and how they communicate about climate change. I would say that it is also crucial to acknowledge that indigenous people's communication and how they make meaning about these concepts in climate change in particular occurs within the politics of science communication. That is to say that despite the cause for more integral cross cultural communication and collaboration, environmental decision and policy making still privileges Western scientific knowledge over indigenous traditional knowledge. And I believe the work of my colleagues here is kind of addressing that directly which is great because I believe that's the way to go in these matters. So addressing this lack of balance in this relationship has been central for environmental communication scholars for a while already. With that being said, well there are specific words used to translate the development of sustainability in Awa Pit, they use the word whatnilna ***[phonetic 00:25:50]*** which basically translates into good living so that the notion of buen vivir that is well-known in Latin America that started in Ecuador and then in Bolivia and there is some, it has become part of the environmental discourse of several indigenous environmental movements in South America especially.

But still that the concept of climate change for the Awa community is an alien concept, not because these communities do not have the knowledge or capability to understand the scientific definition of climate change. This is not the case. It is because the scientific definition is perceived as disembodied from their territory. So what do I mean by this embodied definition of climate change? I mean that the notions like ozone cape and atmospheric changes and greenhouse effects, abstractions that do not resonate with the bodily experience of the communities and the changes that they experience that are happening in their territory's larger body because they consider their territory as part of their body. It's the larger body of connections and engagements with the more-than-human world within that territory. So the Awa people as indigenous people make sense and communicate about climate change by in placing its definition. And I believe this is very interesting what Ed mentioned about how people are start shifting their understanding of climate change because it's become closer and it becomes part of their immediacy, part of their environment. So the same is happening because the meaning making of climate change for Awa people is inextricably linked to Awa territoriality. Territoriality demands attending to their ecocultural ways of living and their socio-political forms of organization at the same time. To emplace a global concept such as climate change and sustainability and development for that

matter entails kind of foregrounding the central non-human actor, the territory in their terms and to integrate the physical transformation of the territory to the ways of thinking, knowing, and valuing the world.

So the idea of emplacing a concept opens possibilities to express different ways of feeling, even a notion of feel or sense differently. So this rhetorical move in terms of emplacing a concept suggests actually a very experiential and embodied based conceptualizations of climate change that complements but at the same time questions conceptualizations of climate change that tend to only feature Western scientific conceptualizations of what this concept means, right? So based on the experience that I had with collaborating with the indigenous Awa people, I think that to pay attention to the ways indigenous people make sense of and deal with climate change is necessary I would argue in two ways, right? The first because it confronts us scholars in communication everywhere with the fact that we are far from justice and inclusion. While progress has been made in terms of symbolic and material acknowledgements of indigenous rights, we still need to work on ways to challenge the exclusionary deployment of very specialized jargon that appears to, what I said, disembody the meaning of climate change from place or territory. And this I believe risks undermining indigenous peoples' grounded and lived experiences of the effects of climate disruption. But also this marginalization of indigenous organizations is still very prevalent if we consider that indigenous organizations that directly work with communities are still organizations at the margins, right? This marginality especially in the places I work results from the geographical location inevitably. Most of them are not located in urban spaces. These organizations have limited access to technology due to limited or inexisting infrastructure, and also suffer from digital illiteracy, right? But most relevant to what I'm trying to convey here is that this organization uses a non-dominant language as a central element of their collective identity and struggles. In the case of the Awa people, they speak Awa Pit in the majority of the communities that are not engaging with mestizo communities or with the government. They usually use the native language.

So these points bring me to kind of the second reason that what I think we must pay attention to indigenous understanding and conceptualizations of environmental discourses such as climate change. We must attend to non-dominant languages. It's something that environmental communication scholars should engage more vehemently I would say. And to do so, we must engage with I would say an expanded notion of translation, that it is not only in linguistic terms but inside of communication practice and also as historicist inquiry which means basically we need to think about translation as intrinsic of decolonial. It is not a metaphor. We're using as a metaphor, but actually as a way to carve out new identities, relationships, places, and agencies in our relationships, right? So in this sense, I think collaborating with indigenous communities and scholars, of course, is crucial to environmental communication so far as we must continue reflecting on ways to address the uncritical use of terms such as sustainability, development, and

climate change based on assumptions seen as translatable across contexts and whose meaning are in equivocal and regardless of the specific situations of the language.

LaKesha Anderson:
I think the conversation about language that you're having is really interesting to me because as I was working with some individuals who will be on the opening session panel at convention this year, a lot of what they wanted to talk about was language and keeping the language of their tribes and of their people and ensuring that other people knew how to communicate with them because we're going to be talking in the opening session at convention, if you're not aware, about native Seattle and a lot of the different issues that they faced in that community. But one of the things that they were very focused on talking about was language and getting people to understand the ways that they see the world and the ways that they communicate about a variety of things. And I have to say that wasn't one of the things I thought that would come up when I started having that conversation with them. But language was very important to almost everyone that I spoke to in that community. And so we're definitely going to be having a conversation about language at the convention. So it's really interesting to me as someone who doesn't always think in that direction. I think very much in terms of quantitative data and things like that so I don't often see things that way immediately. So it's always a great conversation for me to have and one for me to, I really enjoy hearing you talk about that. Okay. So let's shift gears just a little bit. Ed, you helped create the Center for Climate Change Communication at George Mason which was established in the Fall of 2007. I was at GMU at the time, and I remember that being a really exciting time period not just for faculty but for students, many of us who were sitting health and risk were excited to explore how our interests linked or connected to or were impacted by things like climate change because it's not something that most of us had really studied before. So we thought that that was really cool from a student standpoint. But can you talk a little bit about the impetus for establishing the center as well as its goals and how the center has grown over time?

Edward Maibach:
Yeah, happy to. Thank you. So prior to coming to Mason, I was happily doing important public health work, right? I was fighting the tobacco industry. I was trying to assure Americans that vaccines are safe and in their children's best interests. Earlier in my career, I had worked on the global HIV epidemic. And all of these are incredibly important public health goals, public health programs, ways of spending time. I never had a five seconds of a midlife crisis. But then climate change found me and convinced me that this is really the mother of all public health threats going forward. If we don't take immediate action to stabilize our climate, humans are in a world of pain going forward. And that's when I decided to come to Mason and create a Center for Climate Change Communication. Why Mason? Because Mason has extraordinary breadth and depth in climate science, and I was a public health guy who knew just a little bit, enough about climate change to recognize it as our biggest public health problem that we faced. And like José and like

Bridie, I take a lot of gratification in actually doing work that matters, getting involved in people's lives and working with them to try to make things better. So I set up the Center for Climate Change Communication as a highly applied research center. We sometimes call it a think and do tank. The thinking part is the research. The doing part is once we've identified something in our research that we think might make a difference, we explore it, we test out whether or not there's any there.

So coming back to our survey work, in our very first climate change in the American Mind Survey, we learned that TV weathercasters are a highly trusted source of information about global warming by adult Americans. Who knew? I mean literally that came as a complete surprise out of our first survey. And a local TV weathercaster, a very senior meteorologist in the Washington area, he contacted me when he saw that. And he said, Ed, I'd like to come talk to you about this. His name was Joe Witte. He eventually came and entered our graduate degree program. You might remember him, LaKesha. But Joe basically said, look, your survey has shown me that me and my colleagues, weathercasters, we have a real opportunity to help people understand climate change better, but understand the personal relevance of it. So joe and I and Heidi Cullen and others, we decided to give it a go, and we found a weathercaster in Columbia, South Carolina, a man named Jim Gandy who wanted to actually test out this idea. We helped Jim report 13 local climate stories, local to Columbia, South Carolina over the course of a year. We conducted audience surveys before and after that year. And we learned that folks, local news viewers in Columbia who watched Jim and his station, the CBS affiliate WLTX, became much more likely over the course of that year to recognize climate change as their problem than were people who watched the other local news stations. So right away we knew we had something there. There's some real potential. We have scaled this program up. The program is called Climate Matters. we now have almost 1,100 weathercasters, almost half of the weathercasters across America who we help by providing them with localized climate reporting materials that let them tell compelling stories and show members of their viewing audience how the climate is changing in their backyard now. That's a really great example of our sort of think and do tank mentality. We recognized an opportunity, we explored it, it looked like it had some real potential so we scaled it up nationwide.

Coming back to my focus on public health, I'm currently very involved in trying to help the health community in America and around the world explain climate change as a human health problem and perhaps even more importantly, explain climate solutions as profound human health opportunities. Because one thing that our colleagues in in the field of behavioral economics have taught us all is that we humans, we tend to be impatient and unwilling to make investments that won't pay off for a long time. And most people think about climate solutions as involving making in investments that won't pay off for a long time, and therefore, they become reluctant to make those investments. But when we reframe climate solutions as health solutions, talking about how accelerating that transition to clean energy will almost overnight help us clean up our air and our

water, which will almost overnight allow us all to enjoy better health, will allow children with asthma to be less prone to have serious asthma attacks, it will allow our seniors who have chronic lung conditions, chronic obstructive lung disease, for example, to live more easily without having to spend a part of their day on an oxygen tank. So the beauty of helping health professionals find their voice on climate change, and again, we focus on health professionals because our audience research told us, showed us that the public trust health professionals above and beyond any other category of professionals in America and around the world. So helping health professionals find their voice on this issue allows us to once again take it out of being a future issue or asking people, communities, states, nations to make investments that will pay off in the future. And we're asking them to make investments that will pay off today and pay off primarily in the community that makes the investment.

So I live in Maryland, and when my community in Maryland, when we take actions to decarbonize our energy supplies, we're the primary beneficiaries of that cleaner air and that cleaner water and that better health. And we get those benefits almost immediately. So that's what we're up to at our center, Centre for Climate Change Communication at George Mason. We do research to try to identify actionable insights, and then we test out the potential impact of those insights. And if they have impact, we try to scale them up or to pass them off to other organizations who are capable of scaling up those communication programs.

LaKesha Anderson:
Bridie, you're currently working on an NSF-funded project called the Maine eDNA project. Can you tell me a bit about that project and how it will help researchers and educators better understand Maine's coastal ecosystem and what that can mean for the local community?

Bridie McGreavy:
Yeah, sure. So the Maine eDNA project is funded through, as you mentioned, The National Science Foundation grant. It came through NSF's EPSCR program. The EPSCR program stands for the Established Program to Stimulate Competitive Research. This is a special designation within The National Science Foundation which certain states, there's somewhere around 26 states that are qualified to apply for EPSCR grants, and these are the states that need additional support in terms of research capacity. I've been involved in a number of what are called Track 1 EPSCR grants including doing my PhD with a large EPSCR project. I had a post doc with EPSCR. I had an early career grant. There was an EPSCR funded grant. And now the eDNA project. I keep showing up for these large and sometimes messy, complicated, collaborative projects because in terms of NSF funding, the EPSCR program is trying to build the capacity for both basic and applied research that's a hallmark of the kind of research that you see at major research universities but also engage in the outreach and workforce development that can really strengthen those broader impacts that NSF is also deeply interested in. So I think EPSCR creates this unique

context for that kind of funded research, and I found it really rewarding in multiple ways to be involved in these types of projects including in the Maine eDNA Project.

So this project is intending to advance Maine as a leader for environmental genomics research. Environmental DNA refers to the bits of genetic material that will slough off of living organisms. Now the lobster biologists that I work with will probably point out that you can also get it from the guts of lobsters, but that's kind of splitting hairs. But it's DNA that circulates within the environment and that can tell you a lot about environmental change. It can address questions about species distribution and when new species are coming into a region. Gulf of Maine, as you may know, is warming faster than many oceanic bodies on the planet. And so we're already seeing a host of changes and people working in many different sectors asking eDNA-focused questions. So it's been through my work with communities that when I was invited to join the eDNA project, I immediately recognized the value of developing a technology like this. Like folks who are working on river restoration and especially in the Penobscot Nation, the Houlton Band of Maliseet Indians wanting to understand the impacts of the restoration efforts, dam removals, and whether alewives and salmon are coming back are interested in using eDNA to detect those kinds of changes. Clamors who I'm working with in coastal communities who are addressing water pollution, really widespread problem in Maine, are using a pretty outdated technique called microbial source tracking that eDNA has the potential to really transform and make more effective. And so the work that I'm doing on the project is trying to facilitate those kinds of applications because we've learned that while we may have a commitment to transdisciplinarity, to like doing knowledge in ways that really connect with societal action, it doesn't happen by magic. That like it's really important to have people on the project who are paying attention to the formation of those partnerships and how to help people work across disciplines and engage communities in effective and equitable ways.

So our communication and team science research is aimed at studying how communication is shaping the eDNA project but then doing so in such a way that we're feeding back into it so that we can really create a learning organization or an adaptive research organization that can change over time. And in that, we've really developed a focus on an ethics of eDNA. And what we're trying to do here is push on this discourse that you have in some of these collaborations that emphasize communication effectiveness of like getting past our jargon, right? And using the terms that work which is important. And we're doing some of that. But to really center questions of ethics in mind and in right ways.

LaKesha Anderson:
I'm sure a lot of listeners are wondering about how they can advocate for sustainability in their own communities or maybe even in their classrooms. José, you've written about the inside-out

classroom and its relevance to environmental communication. Why is the inside-out classroom a useful pedagogical tool to help students understand human ecological relations?

José Castro-Sotomayor:
Thank you for bringing the topic of pedagogy and education in general. I've been very interested in this topic for several years. I started teaching back in my home country Ecuador at high school level and then in Colombia at the same time. So I've always been interested in developing different kind of educational models. Particularly, the inside-out classroom model was initially elaborated by Tema Milstein, and I worked with her for several years during my doctoral program. And basically, this model, it's kind of tried to respond to Robert Cox's call for actively engage the field's ethical duty. And I believe that connects with what Bridie just said about the ethical consideration of the kind of communication we are engaging with. So this model has sprouted kind of in different directions. To me, the inside-out classroom model seeks to co-create the classroom as a transformative space within which we can raise ecocultural consciousness, discuss the ideals and paradoxes of democracy so it becomes very political space. It's a space of experiencing empowerment, some of the actions we can take. But most importantly, my teaching usually what I take is how can we envision other possible worlds, right? And I believe that's the key idea for this model.

Central to this model, the classroom works as a space that basically we start challenging the dualities such as human nature, culture nature, human animal, and so forth. And one way the inside-out classroom model counters this and interrupts these separations is by foregrounding the more-than-human world as co-communicator with whom we are in content process of international communication. Lately, in this particular model, I have incorporated one concept that you can find kind of in the ecocultural identity volume that is the concept of the humilocene that was put forward by David Abram. And the idea of the humilocene is what he calls a new epoch of humility, and this concept of the humilocene stems from both humiliation and humility for humans. So in that term, the humilocene is a regenerative ethical and empathetic framework within which multiple ecologists on sensory experiences interlocked, and also, it is an epoch that demands a long-due dialogue between ancient and renewed ways of being human as a species, as animals, as sensory bodies. And most importantly, I would say that using the humilocene as a framework allows me in my classes to bring attention to and break from the prevalent kind of contemporary even narcissistic human posture that is threatening our existence in our planet.

So the inside-out classroom model also entails kind of acting against of what is called academic schizophrenia, being one person in the classroom and being another outside of the classroom. In other words, that is why the kind of the inside-out classroom model in this model, both kind of students and the instructor are learners in the process. If you can separate this model, the inside in the equation refers to the inner knowledge and the organic forms of awareness that grow from

the learner's everyday experiences with both human and more-than-human worlds. And together, learners, students, and instructors think of ways to embrace, share, and antagonistic inner concerns, passions, and the way our bodies feel in particular ecologies, feelings, thoughts, and values regarding our future in the earth. The out in the equation refers to ways to extend the knowledge building and engagement outside the classroom walls and the institutional boundaries. And I believe what Ed was describing about what they're doing in their center, that's a perfect example of kind of the implication of this kind of pedagogy.

One central component of the inside-out classroom pedagogy is actually in practice inevitably. So I mean an integral part of this model is developing critical and ecological thinking to formulate ideas that address problems and opportunities to find, that the students find their communities and the ecologies within the ***[inaudible 00:48:55]*** practically. And to close, the inside-out classroom model is a useful pedagogical tool to help students learn and understand human ecological relations because it guides learners to embrace the inward path to attain outwards connection. And that's why this particular methodology starts from your very embodied experience in the teaching, right? So what this model tries to do is basically to ground knowledge in students' experiences, but also, at the same time, we're very critical about how our bodies move and experience and connect with the larger body of the ecology, right? And I could offer kind of several examples about how methodology could work. So for instance, it has become very common in environmental communication as a pedagogy, going into field work or doing very embodied experience in that matter.

To give you an example, a brief example of what I've done so far is I've always been curious about what I call the snack culture here in the United States. This is something that it was very impactful to me to see that people eat all the time. It's very impactful to me. And when I went to the field work with the students, we did a hike to a very beautiful cliff in the Santa Rosa Island here in the Channel Islands. And we had gotten breakfast around 8:30. The hike was one hour. So the first thing that I noticed is there was a lot of snacks provided for students, and I could see the frenzy of the students who's trying to choose from all the packages that they work. They were choosing and throwing away what they didn't like or they like. So just gather and gather. Again, to me, I'm not from here so it's very impactful to see that kind of frenzy to get the food. But it was 8:30 in the morning. We took the hike, one hour. One-hour hike. We arrived to the place. And when we arrived, there was this opening. You could see the beautiful kind of the blue colors of the sea, this beautiful black this little cliff with black rocks against the waves were crashing. But when I arrived there, I was kind of enjoying being emplace at that moment. And suddenly, I started hearing noises on the back, and what I could hear was students just eating snacks. The sound of the packages were kind of very disturbing. The crushing and the cracking. The sound was very disturbing. And I noticed, I thought to myself, we've been only hiking for a one hour. These are kind of very strong able-bodied students that you can hike for an hour. But immediately, place

was not in their mind, right? So that kind of engagement with the body and with pushing the boundaries of that is something that brought me to my attention. And I said, I'm going to restrict the amount of snacks. I'm going to actually put a schedule when you can snack or not in order to actually move time and space in or include time and space and body into the pedagogy. Because I do believe that the only way that we can actually start seeing the changes that we are experiencing around is precisely by noticing what are the changes our body also experiencing when we face these radical changes and for the effects of climate change. So the inside-out classroom model allows me to have these kind of approaches in order to challenge students' perceptions and perspectives in very body manner.

LaKesha Anderson:
Ed, I think we're to the question that you were thinking of earlier. Could you speak to the role that younger activists such as like Greta Thundberg are taking on and how are they shaping public communication about climate change?

Edward Maibach:
Yeah. Isn't it wonderful and amazing? And don't we, don't I, as an adult, owe it to them to do everything I can to be their ally and to support them? And the answer to that is yes, I do, and I do try to support them. For example, we're trying to create alliance between health professionals and youth activists because it's sort of a perfect alliance between those people who professionally have decided their role in our world is to look after our health and well-being and our future and those people who they are doing their best to look after it and who are telling us you're not doing enough. But let me tell a quick research story. So in our surveys, our Climate Change in the American Mind Surveys, we often ask, as I've already intimated, we often ask about how much do you trust different categories of professionals or sometimes we even ask how familiar are you and how much do you trust as a source of information about climate change specific people? Greta was one of those specific people we asked our respondents about a couple of years ago. I don't remember exactly which survey that was. But a master's student at University of Cambridge in the UK, Anna Sabharwal, she used that data to answer that exact question. Like what is the impact of Greta's advocacy on us, on her elders? And from a qualitative point of view, it's so obvious to me that she has a profound impact for those of us who understand we are in the midst of a climate crisis. We look at her, and we can't help but to be inspired and we can't help it to be challenged to do more, to do better. And Anna's analysis of our data was absolutely brilliant in terms of what it showed as the mechanism of exactly what it is about Greta and her advocacy that is so inspiring.

So the more that people told us they were familiar with Greta, and there's a high degree of familiarity and trust. So essentially the more people were familiar with her, the more they trusted her as a source of information about global warming. So the more familiar they were with her, the

more likely they were to say, I intend to do better going forward to do better specifically in terms of engaging in collective actions, actions that will build political will, things like engaging with political candidates to make sure that they're actually going to take climate change seriously, spending time working for political candidates who will take climate change seriously. So there was a direct course, Greta to the degree to which we're familiar with her and her advocacy, it inspires us to intend to do more in terms of creating political will. And the mediating mechanism of that, the factor that influences and mediates the relationship between our belief and Greta and our intention to do better going forward is a sense of enhanced collective efficacy. She makes us feel like we can work together to do better, to do more. And to me, that is a beautiful research story because it confirms what I see in front of my very eyes in the real world, and sort of from a theoretical perspective, it's very elegant because it teaches us that one person, in her case, one brave relatively small person and young person can inspire a lot of us and make us believe that we can link arms, work together, and get more done. And that's a beautiful story.

LaKesha Anderson:
I have a follow-up question just out of curiosity. I'm wondering if the person who did this study based on your work, does she happen to break that down by gender or age? And the reason that I ask is because it seems just from what I'm seeing amongst my kids' peers, and my children are 15 and 17, is that people specifically like Greta Thundberg make a bigger difference with the female population. And I have theories about why that could be obviously. But does that bear out in research at all?

Edward Maibach:
We didn't look at gender. we did look at age. We looked at political ideology. It's a fairly robust effect. The biggest thing is essentially people who are concerned about climate change, it helps them close the gap between their attitudes and their intentions which is really helpful because those of us who study people for a living, we know there's often this huge gap between our attitudes and what we actually do. It's not at all surprising that you would notice that Greta would be more inspiring to young women than to young men because she's a heck of a role model, a heck of a role model for young women. And she's not the only one. Many of the most inspiring youth climate activists around the world are young women, and they inspire us all. But while I don't have any data to prove your instinct on this, your intuition, I suspect it's dead on.

LaKesha Anderson:
Okay. Bridie, you're also part of an NSF research traineeship (NRT) program in conservation science. Can you talk a little about what the NRT does and why transdisciplinary research is so important in addressing climate change?

Bridie McGreavy:
Sure. Listeners may be familiar with an earlier version of the NRT which was called the IGERT or the Integrative Graduate Education Research and Training Program. So the NRT is the next phase of that NSF program. And U. of Maine has the distinction of having three current NRTs. So we have one that's focused on arctic science, another that connects with one health initiative, and the one I'm involved in focuses on training students in transdisciplinary approaches to conservation science. It's led by Dr. Sandra De Urioste-Stone in the School of Forest Resources and involves a number of collaborators across the social and biophysical sciences as well as a whole host of conservation partners who have worked with us from the earliest stages of writing this grant into the development of the program itself and in hosting student internships and being involved in many aspects of the student training program. We have taken an open source approach to the development of this project. So if people are interested in learning more about this or are working on similarly developing transdisciplinary and interdisciplinary training programs on their own campuses, we have a whole host of resources that are available on our website, many of which are more like internal types of documents about program specifications and requirements and those kinds of things. We just want to share freely to try and encourage this type of program at other academic institutions.

And though it's focused on student training, it really does have a commitment to graduate student education, we've also found ways to really connect our research with graduate student education. So in the project that I've been leading through the NRT, we've developed an organization called the Maine Shellfish Learning Network, and the mission of this organization is to promote learning, leadership, and equity across Maine and Wabanaki wild clam and mussel fisheries. I've had the great privilege of working with Gabby Hillier who's a PhD student on the project and her co-advisor Dr. Tony Sutton in advancing the development of this network that grows out of many previous years of doing work in shellfish co-management. And I point to that because Gabby recently had an experience that I think really helps identify one of the most important features of our approach to the NRT, and that is the development of these conservation internships. So Gabby had an internship this summer with an organization called Manomet which is doing some really innovative work at the science policy interface in Maine but also internationally. And she was able to do this internship in such a way that she advanced research that's feeding into her dissertation and conducted a series of interviews with people who have been working on climate adaptation projects, trying to essentially grow baby clams and running into some real policy barriers in their ability to do so. In like these projects that are really about intertidal mud flat restoration are being regulated as aquaculture, and people who are trying to do this work have to go through this really extensive policy process that many rural Maine communities do not have the resources to try and navigate. It just takes too much time and energy. So she was able to do research in partnership with Manomet to understand this situation. The end of her internship, she actually presented a series of recommendations to the Shellfish Advisory Council which is a state level advisory body

and is now moving forward with actually enacting short and longer term policy changes to try and address this this major issue for coastal communities. So it's really building capacity for graduate education but also engaged research and sustainability focused policy in pretty transformative ways.

LaKesha Anderson:
Thanks. I have literally no understanding of shellfishing or clamming or anything. So to hear you talk about this is really cool for me to hear. It's really interesting and a type of research that I would never be involved in because I have no idea how to do it.

Bridie McGreavy:
Ten years ago, I didn't either. I had never dug clams. I was doing this engaged research as part of my dissertation, focused on a conservation action planning process. And this organization wanted to engage with clamors and get their perspective about conservation priorities in this region called Frenchman Bay but couldn't get the clamors to show up to their meeting because they were held at times that didn't work for clamors, like low tide or in really kind of like more technical types of spaces. So I started showing up at their meetings instead which were held in this rural town hall in Maine and found myself stepping into a world I didn't know existed but where clamors engage in really complex forms of negotiation and decision making to try and figure out how do we sustain this way of life that has existed in this region for millennia. So it's really a fascinating context.

LaKesha Anderson:
So you got into it by meeting people where they were which is one of the first things we have to do when we're trying to get a message across. That's what I'm always telling my students. Okay. As we look ahead to the future of the planet and the fact that climate change may cause unprecedented challenges for future generations, can you speak to just how much communication matters when it comes to having a real and lasting impact on climate change?

José Castro-Sotomayor:
Communication matters, particularly you would think about the contemporary media ecology in which we're living, right? It's been called the post-truth media ecology where we have the proliferation of individual truths filtered through market interests and where there is no main avenue through a trusted authority can definitely debunk malicious information or quote-unquote truths that are circulating and not only forming but deforming the public sphere and the public screen. So I would say to have a real and lasting impact on climate change, specifically communication scholars and research must be cautious I would say to on falling into the kind of the media game of proliferation of truth, feedback big data and the corporatization and marketation of strategic communication sometimes and that might hinder some collaboration. I

believe the example that Bridie said, meeting people wherever they are is one amazing step that I kind of have been engaging with at the same time. And I would like to kind of in usually my research, I usually bring some scholars from Latin America because I don't see them much, the environmental communication scholarship. And so I would say that one way to avoid and at least critically engaged with the overwhelming media centrism that sometimes communication research has especially in the West is to continue reflecting on how to have ***[inaudible 01:05:02]*** three principles of what Arturo Escobar or other Latin American scholars called the Pluriverse. I have been kind of engaging with these ideas and wrapping my head around these ideas. So Arturo Escobar kind of puts forward three design or redesign principles that I would like to almost quote him here because they are very interesting and I would like to convey my point clearly in this matter.

So these principles are, the first one is what he calls the re-communalization of social life. That is kind of his address to counter individualizing imperatives of human interaction. The second principle, he talks about the relocalization of activities like food and health and education and the strengthening of local and regional economies to counter capitalism and globalization and foster convivial modes of living. And the third principle is the strengthening of collective local autonomies and direct forms of democracy. And what he means by that is kind of the intention of this is to lessen the dependence on norms established by experts of the state and to critically revalorize local knowledges and values and promote kind of horizontal political strategies based on people's self-organization. And when I've been hearing to my two colleagues here, I believe even though it is not explicitly mentioned, I believe their work speaks directly to these three principles. And I believe I know the work we are doing not only in the classroom but also engaging with communities ***[inaudible 01:06:32]*** communication with the hope and care we all need right now.

Bridie McGreavy:
So my background before I turn to communication was in environmental studies and conservation biology as my master's degree is in. And I found myself backing into communication because so many of the complex problems that many of us have spoken today are about communication. They constitute these problems, and our ability to do anything about them requires communication, multiple forms of communication. When I first came to environmental communication as a field, I think I really was in search of the kind of framing and messages especially about climate change that Ed's work has really helped expand. And I still think that that is crucially important to pay attention to the ways in which we frame messages and connect with people authentically. I've also over time really increasingly been interested in and focused on discourses of climate change and how the ways we talk about climate change are also about power. And this is where I think José's work in grounding understandings of climate change and the discourses of local and indigenous communities is so essential to really understand what climate change means on their terms and to start there. So that careful critical attention to

discourse and how dominant climate discourse plays out in local communities is really essential. We name climate change as a problem or we talk about like the urgency or the unprecedentedness of climate change and how we need to act now. To think about the kinds of logics that that reproduces, especially like logics of time that can be very linear and reinforce neo-liberal ways of relating to each other and the earth, the way that unprecedentedness forgets the massive devastating consequences of colonization and indigenous genocide and slavery, that climate change is a current manifestation of these very old logics of exploitation that we really need to turn our attention to transform these intellect systems of oppression. And here I'm thinking with Kyle White's argument about crisis epistemology as well as Catherine Yusoff and Tiffany Lethabo King's work that makes similar points. So those are some of the questions that I'm currently grappling with and what does it mean to address climate change at the level of those kinds of discourses and logics and how does that change how we then collaborate and who we collaborate with.

LaKesha Anderson:
Ed, do you want to wrap that up for us?

Edward Maibach:
I do. Thank you. And I'm so glad I get to speak after listening to Bridie's answer and José's answer. And that is over the past hour I've heard a number, all of you actually talking about the need to reimagine, envisioning other possible futures, other possible worlds, colonization, such important constructs, such important parts of our reality, whether we know it or not. And I spend a lot of time trying to identify how the fossil fuel industry has colonized my mind, and I believe I'm not alone. They happen to sort of stalk me on my Twitter account, and everywhere in my life, I am stalked by greenwashing by the fossil fuel industry. And I'm sure I'm not alone. And so they are actively working to colonize my mind and to make it difficult for me to imagine a future that isn't powered by fossil fuel. But yet, we desperately need to imagine a future and create, get busy creating a future that isn't powered by fossil fuel. And our most powerful tool in doing that is communication. We're not solving this problem, this incredible interrelated set of problems unless we find ways of using communication more effectively to help people identify the colonization, that is the intentional colonization of their ways of thinking and to understand and imagine that better futures are possible and all we need to do is get busy creating them.

LaKesha Anderson:
Great. Thank you for joining me today on *Communication Matters*. I hope that you found this discussion about environmental communication enlightening.

NCA News:
In NCA News, there's still time to register for the NCA 107th Annual Convention to be held November 18th through 21st in Seattle, Washington. Members can save on convention registration by registering before November 14th at natcom.org/register. We also remind attendees that they must be fully vaccinated to attend the convention and should bring proof of vaccination with them to the Seattle. Visit natcom.org/convention-and-covid to learn more about the vaccination requirement and NCA's precautions related to the COVID-19 pandemic. We hope to see you at the NCA Annual Convention next month.

Also in NCA News, NCA recently published its 2020-2021 Academic Job Listings in Communication Report. The report draws on data from job postings in the online NCA Career Center and NCA's daily COMMNotes email blast. Specialists in strategic communication, PR, and advertising were the most sought after, accounting for nearly 13% of the total number of postings. Read the full report at natcom.org/reports-discipline.

And listeners, I hope you'll tune in for the next episode of *Communication Matters*, The NCA Podcast on November 11th. The episode will focus on the legacy of NCA's Learning Outcomes in Communication (or LOCs) project. LOC project participants David Bodary, Elizabeth Goering, Lynn Disbrow, and David Marshall will join the podcast to discuss the development of the LOCs five years ago, how the LOCs have influenced curriculum development in communication departments, and the continuing value of the LOCs to the discipline.

Conclusion:
Be sure to engage with us on social media by liking us on Facebook, following NCA on Twitter and Instagram and watching us on YouTube. And before you go, hit subscribe wherever you get your podcasts to listen in as we discuss emerging scholarship, establish theory and new applications, all exploring just how much communication matters in our classrooms, in our communities and in our world.

The National Communication Association is the preeminent scholarly association devoted to the study and teaching of communication. Founded in 1914, NCA is a thriving group of thousands from across the nation and around the world who are committed to a collective mission to advance communication as an academic discipline. In keeping with NCA's mission to advance the discipline of communication, NCA has developed this podcast series to expand the reach of our member scholars' work and perspectives. *Communication Matters,* organized at the national office in downtown Washington DC, is produced by Assistant Director of External Affairs and Publications Chelsea Bowes with writing support from Director of External Affairs and Publications Wendy Fernando and Content Development Specialist Grace Hébert. Thank you for listening.

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