The Vandal Theory: Episode 3
Beyond the science, climate change and society in Idaho

Leigh Cooper: Hello, everyone, and welcome to "The Vandal Theory," a podcast about science and research from the University of Idaho in Moscow. My name is Leigh Cooper, and I'm a science writer here at U of I. Over the past two podcasts, we've explored the effects of climate change across Idaho. We've learned that changing rain and snow patterns are leaving our summers warmer and drier. And that this is leading to longer and more intense fire seasons as well as sometimes creating difficulties for growers. For this podcast, we're talking about a number of topics in which climate change intersects with society — topics that can often get overlooked in climate change discussions. I reached out to three U of I faculty including a geographer who specializes in community planning, a lawyer who focuses on Native American law and water rights, and an English professor who teaches climate change literature. First up is…

Andrew Kliskey: Andy Kliskey. I'm a professor at University of Idaho and director of the Center for Resilient Communities.

Cooper: Andy studies how humans respond and adapt to environmental change. Andy, you not only work in our College of Natural Resources, but you're also part of our landscape architecture department. That seems like a really interesting blend of ideas.

Kliskey: My background is very interdisciplinary and here at University of Idaho, the mix between College of Natural Resources and College of Art and Architecture is kind of a nice balance. On the one hand, you know, strong focus on science in CNR and then, Art and Architecture, people coming from a design perspective and the ability to think outside the box. And to be able to marry design thinking and then solid, robust science is, I think, really valuable. And that is an important part of what we try and do in the Center for Resilient Communities.

Cooper: Now, according to the website for the Center for Resilient Communities, your team tackles social, economic and environmental issues that affect community resilience in Idaho and the Western U.S. Now, before we go any further, what do you mean by community resilience?

Kliskey: I mean we use the term resilient communities to refer to the way in which a group of people — could be a town, a city, a smaller Idaho locality — are able to continue to thrive under significant change. And that could be economic change. It could be climate change. It could be important legislative changes. The important part is not so much what it looks like physically or structurally but thriving and continuing to function — people continue to be happy, continue to have an identity. It might be that there are key elements of industry that change. You know at one point focused on forestry, and, you know, moving to ag or moving to tourism, but the fundamental function and identity of the community remains intact.

Cooper: So, basically, the ability to bounce back from whatever gets tossed your way. Now, you have a project currently going on in the Magic Valley, called the INFEWS project. Or to expand that acronym, Innovations at the Nexus of Food, Energy and Water Systems. Is that an example of an Idaho community figuring out how to be resilient in the face of climate change?

Kliskey: Right, you know our work in the Magic Valley for our INFEWS project is really focused on the dairy industry and the food crop industry that supports the dairy industry. And there, you know, we're looking at the upper Snake River Basin, including the eastern Snake River aquifer that underlies that river basin. And the aquifer is massive. It's the volume of water that is in Lake Erie, approximately. And so changing precipitation regimes or changing climate regimes, that affects when it rains, how much it rains. That affects drought cycles. Those are important to the livelihood of industry there, in particular, agriculture, the dairy industry. So, being able to look at those patterns both historically and then make some sensible projections forward, using what we call understanding alternative futures or scenarios, allows us to work with communities and develop ideas that they have to position themselves to those sorts of climate changes, those sorts of hydrologic changes.

Cooper: Now, from what you have told me about this project, part of the process of planning for the future has to be directed by the community itself. How do you blend the science that says, "Here's what's likely going to happen in the future," with what the community actually wants their future to look like?

Kliskey: The way the science is done, the way it is integrated and tied with stakeholders is really important. So, we use what's called a stakeholder driven approach about co-production of knowledge. So that means that the insights, the outputs, the knowledge that comes from what we do is in partnership with stakeholders. And, as an example, our work in The Magic Valley. That's with dairy industry, Idaho Dairymen's Association, some of the canal companies down there, some individual dairy farmers, crop feed folks, bunch of other stakeholders. And so getting them around the table, in what we call a stakeholder advisory group, and having their ideas, their perspectives, partly drive what we do and come into play particularly in these future scenarios, that is actually the core of the process. So if a community stakeholder advisory group says, "Well, we have major concerns about drought regimes," we can bring into play the climate models and look at what the robust climate science is telling us about future projections, visualize it and represent it in a way that makes sense to community members.

Cooper: Have you been surprised by any of the types of questions or concerns that people have brought up so far? Issues that you were like, "Oh, yeah, we probably need to include that in our community plan?"

Kliskey: Sure. From our work in the Magic Valley, one really important issue came up as labor supply and migrant workers and immigration policy. And those were things we hadn't initially thought of. And that's really important in terms of the food, the energy and the water nexus that we're looking at down there, particularly with respect to the dairy industry. It's easy to focus on technological solutions and physical processes, but there are important social elements that come into play in a community. Where people came from, how long they've been there, what they think, their perspectives. And those can be as important as the physical science, as the technological solutions that we're trying to identify and develop.

Cooper: So, you really do focus on working hand-in-hand with local stakeholders. Do you think that that community-driven mentality is the best way to succeed at these sorts of large projects where people are trying to prepare for a changing future?

Kliskey: It's not straightforward, and it doesn't always go as you planned. And you have to be adaptable. In the past, a lot of science has been primarily driven by scientists and by researchers, and there's nothing wrong with that. That process works and produces good science. But I do think it's really important that we also have science that's stakeholder driven, that's co-production of knowledge, and that we develop good models and good processes for doing that. And the work in the Magic Valley is kind of, at the moment, our flagship for demonstrating how that plays out. And we're at a stage now where, hopefully, we'll have some very strong and useful outcomes for community and science alike.

Cooper: Andy, thank you so much for coming in today. I really do appreciate you taking the time to talk with me.

Kliskey: Thank you so much for the opportunity. I'm really excited about the research and the stakeholder opportunities here in Idaho.

Cooper: After talking with Andy about how communities are preparing for a future with greater climate variability, I really wanted to discuss how we divvy up natural resources, so I reached out to…

Dylan Hedden-Nicely: Dylan Hedden-Nicely. I'm an associate professor at the University of Idaho College of Law.

Cooper: Dylan is also the director of the Native American law program and has done a lot of work with water rights. Dylan, most of the time when I'm discussing climate change, I'm talking with scientists. You've intertwined science and the law in your career.

Hedden-Nicely: Well, my first love is science. My undergraduate was in physical geography and geology. And then I also did a master's degree in science and engineering. Really, where the rubber meets the road is the intersection between the law and science and also the policy. Science informs, at least theoretically informs, policymakers on how we can make wise policy decisions regarding environmental, legal issues — climate change, being one of those things.

Cooper: Dylan, obviously, the U.S. has some policies in place that will overlap with climate change such as the Clean Air Act. But is our body of policies and laws sufficient to handle the types of issues that will occur under climate change?

Hedden-Nicely: My personal opinion is absolutely not. We have a whole body of law that has been based upon an underlying assumption, which is the world will continue to look like it has for the last hundred plus years. And I think that that assumption is becoming increasingly dubious, and so we're going to have to change certain policies, actually a lot of policies, moving forward. You know we have lawyers and policymakers that are forward thinking and that are

aware of these problems. And then we have others that are trying their hardest to ignore it and continue to go with business as usual.

Cooper: Can you give me an example of a law or area of law that does need a spit shine?

Hedden-Nicely: In Idaho where water rights are probably the most critical is in the Snake River plain. That's where a lot of our irrigation, a lot of our water use, is located. And those water rights are issued based upon a couple of assumptions. One is that a given crop will only need so much water. It's what's known as a crop water requirement. And, so, for example, if a person comes in and they want to get a water right for alfalfa, the Department of Water Resources has a general idea within some bounds of how much water in southern Idaho is necessary to irrigate alfalfa. And I think moving forward, that's going to change. And as a result, water right users are not going to have sufficient water supplies moving into the future.

Cooper: So how do you solve that?

Hedden-Nicely: I don't know how you deal with that. The comeback is, well, you know, they can always get a second water right. But what that assumes is, is that there's going to continue to be enough water for them to get a second water right. We have this situation where a stream might already be over appropriated. It might be getting worse because water supplies as a general matter might be decreasing. And then on top of that irrigators might find themselves in a situation where they have not appropriated enough water to continue to irrigate all of the crops that they'd like to irrigate. And, so, the result is, they're going to have to start shrinking the amount of acreage that they're irrigating. Which if you have a really big farm, you might the resilience that you can deal with that. If you are a family farmer, that might be a huge problem for you.

Cooper: Now, you're touching on another question that I wanted to ask you. Climate change doesn't affect everyone equally. Are there other examples of these types of social justice issues coming up around climate change in Idaho or the Northwest?

Hedden-Nicely: Usually it's the industries and the people that are using resources to a greater degree, they're the ones that are contributing more, usually, to climate change than people that have less economic resources. I also think, you know it's a social issue, but it's also a racial issue. I think climate change disparately impacts minority groups within the state of Idaho, and the one that I work most closely with are Native American groups. Indigenous people contribute very little to climate change for a variety of reasons, both philosophical and economic. But they also are the ones that feel that impact, often most greatly.

Cooper: Do you have any specific examples?

Hedden-Nicely: The Coeur d'Alene Indian Reservation has been dry land farmed since forever. Since agriculture has been taking place in that region, it's been a dry land farming region. And the economic, you know, the tribe's economic development is all predicated on continuing to be able to dry land farm that region. Well, with climate change they're right on the margin. So, with climate change, will they have to start irrigating and how much is that going to cost?

Cooper: So, how do lawyers, especially young lawyers, start to prepare themselves to deal with the challenges that climate change will add to our legal system?

Hedden-Nicely: I think that they need to understand the science that underlies these policies and these legal issues. Traditionally, lawyers have had this attitude that anything having to do with science, that's not my job. I'm going to leave it to the experts. My experience has been that that is a very ineffective way to advocate for your clients. Having at least a baseline understanding of how climate change affects the natural world, how geology works, those sorts of things, makes you a much more effective advocate. So as a young lawyer, I strongly encourage people that are interested in natural resources to not just learn the law underlying natural resources but also to understand the science, engineering and also policy underlying those things.

Cooper: What about lawyers out there practicing now?

Hedden-Nicely: You can take advantage of what little existing law does exist. You can make the arguments that in coming to their decisions, the federal government should be considering how their federal decisions are impacting or might impact climate change. We just saw a case out of Wyoming where that was the issue. And the federal district court down there agreed that the Bureau of Land Management did not adequately consider how climate change was going to be impacted by their decision to approve a bunch of fracking leases. We have another lawsuit that came out of the Northwest. A group of children got together and sued the federal government saying that the federal government's policy decisions regarding climate change was having an adverse effect on them personally. That lawsuit is ongoing. What we're seeing right now is creative lawyers are doing creative things with the existing laws to effect positive change regarding climate change.

Cooper: Dylan, thank you so much for coming in today. I really so appreciate it.

Hedden-Nicely: So, I'm a member of the Cherokee Nation. And in Cherokee, we say, donadagohvi, which means until we meet again.

Cooper: Lastly, I wanted to discuss how entertainment like books and movies could affect how we think about climate change. To do so I reached out to…

Jennifer Ladino: Jennifer Ladino. I'm an associate professor of English here at the University of Idaho.

Cooper: …who teaches literature courses at U of I. Recently, she has started to incorporate fiction that is based on climate change into some of her classes. When we sat down to talk, we chatted about the place humanities should have in the discussion of climate change.

Ladino: Problems like climate change, species extinction, ocean acidification, coral bleaching and plastic pollution — and these are complicated projects that manifest on various scales right from the local to the regional to the global and — they're extremely complex. The natural sciences are essential, of course, for studying the causes and effects of these environmental

crises. But the data that scientists are providing is not enough on its own. Confronting these problems takes an all hands on-deck approach. And I think the humanities has a really special contribution to make here. We study the ethical, historical, narrative and emotional components to this, basically the human components to environmental problems. And I think it's essential if we're going to start solving these problems to draw on all sorts of knowledge.

Cooper: And you teach literature classes. So, how has climate change infiltrated the world of fiction?

Ladino: There's a new genre of literature actually called cli-fi, which is short for climate fiction. Another way to think about that is science fiction with climate change as a main factor. Many of these texts that we're reading that are starting to be published, very recently, in the last 10 or 15 years will have climate-related impacts on human culture. And, so, they'll help us think through some possible futures that might seem far-fetched, but they also might seem quite near-future, quite realistic, something that we're headed toward.

Cooper: What made you want to add this genre of books to your teaching repertoire?

Ladino: As I start thinking more about the kinds of stories and the news that we hear all the time about especially climate change and the way that that can affect us in terms of how we feel, right? It's fearful. It's dreadful. It's anxiety producing in many ways, and so I've been struggling to grapple with those emotions and help students understand, too, our emotional lives and how those are shaped by both the environments that we live in every day and that we work in every day, but also the news that we read about environmental problems.

Cooper: For myself, fiction has always been a great way to imagine myself into a different world or at least empathize with someone else's struggles. I'd think the same thing would happen if you're reading about a character facing issues associated with climate change.

Ladino: Absolutely. The personal stories that we see in fiction, or even nonfiction, but especially I'm thinking of climate change fiction, speculative fiction that imagines a future. These stories can be really impactful for students. They give faces, they give names, they give emotions to these problems that we're facing. And they allow us to think through what our own lives might look like in the future. So, there are some climate change novels that are more hopeful about what the future might look like, and others that are less hopeful. Whether it's a really fear inducing one, I think that can really wake students up to the fact that these are real problems that are going to impact them. And psychological research has shown that there are many ways that we shut down in the face of overwhelming data. And that in reality, a specific story about a single person, a single face, a single life can make us care much more than statistics. And they can spark, you know, awareness and change as easily or maybe more easily than numbers and scientific data do.

Cooper: Now, when I talk to scientists about climate change, they talk about climate models and data. You're talking about feelings. The emotion of climate change. That's not something that generally makes the news.

Ladino: Absolutely. Scientists are supposed to be objective. They're not supposed to really talk about their feelings or have feelings about what they're studying. But with climate change, what we're seeing is that, not only is the general public feeling strongly about this issue, people are becoming more and more aware, not only that climate change is happening, but that it may affect them personally in the future. There are words like climate grief, climate anxiety, a philosopher named Glenn Albrecht talks about global dread, right? He's got this whole list of emotions that are resulting from our changing environments, both our lived experience of those environments and what we read about them in the news. You know, with the humanities, we have permission to talk about feelings. We talk about stories; we talk about the way we emotionally react with stories. So, I think that is one kind of edge we have as researchers.

Cooper: I would think that within a novel, obviously you're not going to talk about climate change science the entire time. You're engaging with characters, narratives, relationships, things like that. But by combining these storytelling devices and climate change obviously the author could bring up other issues, maybe social justice issues, related to climate change, correct?

Ladino: Absolutely, and a phrase that has come up more and more is climate justice. We in the humanities and social sciences are very keenly aware of issues of social justice or injustice, right? So, we're looking, for instance, at what kinds of ideologies, what kinds of beliefs, are embedded in these texts that we teach. So, for instance, when I teach WALL-E, a very light-hearted, post-apocalyptic Disney film that many people have probably seen, we ask questions like, what about the people who couldn't afford to get on the Axiom and take off? Clearly not everybody could pay that price to go into space and live on this ship for hundreds of years. So, what about the people who are left behind? And that's very much a social justice issue that gets asked about climate change. You know, who's creating the problems? Who's feeding into the problems more and then who's bearing the brunt of those effects right now? And how can we make it a more just world going forward?

Cooper: Jennifer, thank you for coming in and talking with me. I'm now going to be flashing back to this conversation every time I watch some sort of science fiction movie.

Ladino: Thanks for having me. It was my pleasure to be here, Leigh.

Cooper: And thanks to our listeners. If you want to learn more about how climate change affects Idaho's natural landscapes, please listen to our previous podcasts. And if you want to learn more about Idaho's premiere research university, check out our website at uidaho.edu. I'm Leigh Cooper, U of I science writer, and thanks for joining me.

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Music: "Young Republicans" by Steve Combs via freemusicarchive.org (License).