Dan Seed:

Welcome to Big Ideas, a podcast from Texas State University in San Marcos, Texas. I'm your host, Dan Seed and I'm a lecturer in the school of journalism and mass communication. Today, we have a fascinating discussion at the intersection between the drug trade, the war on drugs and our environment, particularly the environment in Central America's most vulnerable ecosystems. We welcome to the program, Dr. Jennifer Devine, an assistant professor of geography here at Texas State and Dr. Nate Currit, an associate professor of geography and the Director of the Texas Center for Geographic Information Science. Thank you both for being here today.

Dr. Jennifer Devine:

Thank you for having us.

Dan Seed:

So this research, as I said, really, really fascinating stuff, this intersection between the drug trade and the environment, the destruction of sensitive environment. What drew you to this work? I mean, this is just really, really interesting.

Dr. Jennifer Devine:

Well, I didn't set out to study the environmental impacts of drug trafficking. This research found me. And I was working in Northern Guatemala, studying sustainable development and sustainable conservation initiatives in the Maya Biosphere Reserve, which is the largest protected area in the country, 8,000 square miles. And I was working with community foresters who are managing forest lands and making a living off of sustainably harvesting timber and non timber forest products. The leadership of that organization, the Association of Peten's Forest Communities, these community foresters, the leadership explained to me that narco ranching was one of the primary threats to their social and environmental justice movement. And I asked them, what is a narco rancher? And that was the beginning of now about five years of research, which has taken me to study the environmental impacts of drug trafficking

Dan Seed:

And this research, so once you got into this, let's walk our audience through how you conducted this. I mean, it's really fascinating how you're getting in there and going down to Central America and watching all this happen and observing it. But talk about how you're conducting this research.

Dr. Nate Currit:

Well, I'd say there are a couple aspects to it. There certainly is a field work component and there's also plenty that we do here in the lab. And my background is in satellite remote sensing, that is earth observation through images taken by satellite, and so I tend to watch deforestation from a bird's eye view. And we're combining these two efforts, the on the ground effort and the satellite view effort.

Dr. Jennifer Devine:

Yeah, I am an ethnographer by training, I spent over two years living in the Maya Biosphere Reserve with the community foresters learning about their forest management practices, and I began interviewing people and other ethnographic methods like participant observation to witness the environmental impacts of cattle ranching taking place in protected areas. And it's a little bit hard to understand the links between drug trafficking and cattle ranching in protected areas. But the long and short of it is that drug trafficking organizations are deforesting national parks so that they can claim drug smuggling territory and also launder money in mass through cattle ranching.

Dr. Jennifer Devine:

So I started talking to people about this phenomenon and then I started my job at Texas State in 2015 and quickly partnered up with Dr. Currit who has been working on deforestation and land use change in Central America and Mexico for a really long time. And I said, "Why don't we partner up and combine the on the ground ethnography and interviews with your expertise in remote sensing, and let's try to quantify the environmental impact of drug trafficking?" So that's what started now this three-year research collaboration.

Dan Seed:

So we'll get into that in a second here in terms of what you've seen and what you found, but walk us through the problem. You mentioned this term narco ranchers, and you discussed that a little bit and this idea of these narcotics traffickers going to this land and laundering money, why are they doing that? What forced them to go there and do this?

Dr. Jennifer Devine:

Well, it's important to understand that the war on drugs in Latin America has created a cat and mouse game of drug traffickers trying to avoid seizure and interdiction, which constantly pushes them into ever remote, ever isolated places. At the same time, that drug trafficking seizure efforts and interdiction raises the cost of the product and the transaction, so it's a double whammy. Cocaine becomes very lucrative, very expensive. This is a reflection of how difficult it is to smuggle, the cost of smuggling, and these military efforts have failed to stop drug trafficking, but I've only pushed drug trafficking routes into isolated remote areas, which happened to be protected areas where no one is supposed to live or work. So it is a reflection of the failed war on drugs. And so it's critical to understand that we're not blaming Central American people or places or trying to criminalize those people and places, but we understand this is a product of US foreign policy.

Dan Seed:

In terms of what the research has shown, this move toward these areas, the push of the war on drugs, forcing these drug dealers to these areas has caused more than $214 million in natural and cultural resource loss in the protected rainforest. What does your research show, I guess maybe from the satellite perspective, and then on the ground?

Dr. Nate Currit:

We certainly see lots of changes, especially in some of the national parks which are within the protected area. We see large amounts of deforestation, really quite astounding amounts of deforestation in some of the areas.

Dr. Nate Currit:

One thing I do want to note, and I hope I'm not going back too much, but Guatemala, where we've been working, is not a location of drug production. It's mostly a transportation hub. So it's a stopping point on the drug trade route from perhaps further South to the United States, so that's what we are seeing there. We're not seeing great amount of drug production. Instead, we're seeing ... Well, some of the things that we see are clandestine airfields and we're certainly seeing lots of cattle ranching, which is an effort by these drug trafficking organizations to launder money. They're trying to take their ill-gotten drug proceeds and make it look legitimate by putting it into cattle ranches. And then when they sell the cattle, they have a valid receipt and it appears that they have obtained those funds legally.

Dan Seed:

When you talk about the loss of forest and that it is astounding, put it in perspective if you can for us in terms of what it is that we're seeing that makes this so astounding. Maybe land size or just what your satellite view is showing us.

Dr. Nate Currit:

Well, so with our satellite images, we look at multiple time periods. Some of our imagery goes back to the year 2000 and we have imagery that we're looking at currently. We see forest in the year 2000 and we see much less now. What we do, and I don't know if this is exactly what you want to hear, but we classify these images using some pattern recognition techniques, some machine learning techniques, and we look for pixels in our images that have certain signatures or characteristics that identify them as forest. And over time, as we classify the images, we see less and less forest.

Dan Seed:

Dr. Devine, on the ground, what do you notice? What have you observed in terms of what Dr. Currit's talking about?

Dr. Jennifer Devine:

Well, what you see is that in protected areas and in national parks, that should be the best conserved, instead of seeing primary rainforests and habitat of endangered species, you see cattle ranches as far as the eye can see. What was once a wetland is now a cattle watering hole. And these cattle ranchers, through violence and corruption, operate with impunity. And it's important to understand that what we see from satellite imagery enables us to argue that 65% of the deforestation that we've seen in the national parks and in the Maya Biosphere Reserve, and especially in the Western half of the Maya Biosphere Reserve, 65% of deforestation is due to illegal cattle ranching. And our interviews on the ground confirm that drug trafficking organizations are funding the majority of those ranches. And so when you're on the ground, what you see is ecological devastation, you see mass forest fires and you also the impacts on the ground in terms of the communities who live in the reserve and are also experiencing violence and the threat of these organizations operating in protected areas.

Dan Seed:

You talked about the execution of the war on drugs and the impact that it has in this area. I think for a lot of us, the war on drugs is very abstract, could you explain what you're seeing and what's happening in these countries in terms of the prosecution of the war on drugs, how it's conducted and what's happening?

Dr. Jennifer Devine:

Yes. I talk about this quite a bit in my class, and a way that helps people understand the war on drugs is to understand that it has two fronts; it has a domestic front and then it has a foreign front. Domestically, the war on drugs has translated into mass incarceration of nonviolent drug possession offenders. And abroad, the war on drugs has entailed military operations to stop the flow of drugs into this country. So here in the United States, consumption has been criminalized. And abroad, trafficking has been targeted.

Dr. Jennifer Devine:

Unfortunately, for every $3 spent trying to keep drugs out of this country, only $1 is spent trying to rehabilitate drug addicts. And so this has led to an ever escalating military encounter between armed forces who are funded by the United States and collaborations between the United States and Guatemalan authorities or Mexican authorities. And the approach has been to try to take out the kingpin or the leader of these cartels. But instead of undermining the cartel, this only creates fragmentation, splintering, territorial warfare between cartels as hierarchies are disrupted. At the same time, drugs have been criminalized in the US, military action has been taken abroad to stop the flow into the United States, and this has had a backlash and unexpected impact, which has been violence. 200,000 people have died in Mexico alone in what I call the drug wars. The drug wars are the impacts of this approach in Latin America.

Dan Seed:

And despite this approach and despite this activity to stop it, curve it, however you want to put it, the United Nations released their most recent report on drug trade and said that cocaine production is at an all time high across the globe and the United States is one of the top consumers of this drug. So when we look at the environment, and getting back to that now, when we see this damage that's occurring, what does this mean for these areas, specifically we can start there, and then just globally when we're losing these acres of precious rainforests that do so much for our environment?

Dr. Nate Currit:

What do we see on the ground? I don't know if this is exactly what you're asking for, but in Laguna del Tigre, which is where a number of large wetlands are, we see the ecosystem changed, the dynamics have changed. It is not that now a natural ecosystem as it once was. And it will very likely have a hard time returning to that, especially if the current dynamics continue. It will not. So there certainly is that aspect. This area, the Maya Biosphere Reserve, is a reserve very much so for its ecological attributes for the Laguna, the wetland areas there, for the tropical forest, for the wildlife that are in the area, and so there are biodiversity impacts in the region. It certainly plays into climate change, such a loss of forest.

Dr. Jennifer Devine:

Yeah, and I would add to that, and going back to Dr. Currit's point about Central America being a drug transit zone, the environmental impacts of drug trafficking are different in drug production zones. So what this means in Colombia, where coca production is it an all time high, and of course the unrest unfolding in Bolivia right now, not to mention other parts of the Andes is impacting coca production because cartels take advantage of political crises to advance their industry. And so we are seeing a coca boom, unfortunately, but what this gets at is that despite all of the military efforts to curb this trade, the solutions that we're implementing haven't been successful.

Dr. Jennifer Devine:

So, what happens on the ground when coca production skyrockets? Well, this means that to avoid interdiction, to avoid seizure, coca producers are often seeking out protected areas, they're deforesting to plant coca plants and there's also been controversial use of a herbicide called glyphosate, used in eradication efforts, which is a chemical that's dumped on coca fields from a crop plane 10,000 feet in the, maybe not that high in the air, but a thousand feet in the air, hundreds of feet in the air, and the idea ... 10,000 is satellite imagery. But the idea is that this glyphosate is dumped from crop planes and it gets into the water system, it gets into the soil, it gets into crop production. And so environmental impacts in drug production, coca production areas, are quite different than drug transit zones.

Dr. Jennifer Devine:

But what this means in Central America is that drug traffickers are seeking ever remote areas to claim for their smuggling operations. And they're not just contributing to deforestation, we are starting to use a term that we call narco degradation to capture the diversity of environmental impacts that go far beyond just deforestation. So going back to ground zero of narco cattle ranching in the Maya Biosphere Reserve, Laguna de Tigre national park. Forest fires that were funded by narco cattle ranchers devastated parts of the last remaining nesting sites of the Scarlet Macaw in Central America. These are also archeological sites, so archeological ruins are being burned and destroyed.

Dr. Jennifer Devine:

Drug trafficking also enables other illicit markets to thrive. Flora and fauna poaching are on the rise. Timber poaching is on the rise. These illegal activities and illegal actors dip their hands in many illicit trades and so what you see is just an erosion of governance and the rule of law that allows for multiple illegal markets to proliferate. And they all have impacts on the environment.

Dr. Jennifer Devine:

In Costa Rica and other projects, we have seen drug traffickers that are laundering money through gold mining. And of course that has an environmental impacts on water systems and river systems in Costa Rica. So there's a lot happening and we are just beginning to scratch the surface in terms of understanding the links between this illicit trade and the environment.

Dr. Nate Currit:

One of the things I might say here is that I think we've presented it as fairly clear cut, narco ranchers somehow cut down trees and they move into a bunch of cows and they sell the cows, and I don't think it's really quite that clean. We talk about elicit land use, there's no documentation on this is a narco cattle rancher and these are narco cows. There's nothing like that. They're trying to do this in the dark.

Dr. Nate Currit:

So one of the dynamics is that it's usually not El Chapo out there that is cutting down trees, instead he's funding local people that are living in the community already to cut down the trees. And often cattle don't run in right away or they don't run the cattle in right away. Perhaps for a period of years, that person or a community that has cut down the trees is able to use that land for their own agriculture, a small scale agricultural plot. And not until after a few years, after the soil has lost its fertility for their corn and beans, do they perhaps move on to another spot and then the cattle move in. And so it's often very hard to point just one finger at the culprit. There are a variety of things going on.

Dan Seed:

Both of you bring up good points about the people that live there, the locals. How does this beyond what you just discussed, how is this affecting the people that live there in terms of their daily lives, their culture, their safety? How is this impacting all of that? I would imagine it's immense.

Dr. Jennifer Devine:

This is a really tragic part of doing this research. We have interviewed leaders of community-based resource projects like community forestry, indigenous people who are managing their lands that have been titled to them after decades of struggle, and these protected areas are often managed by indigenous communities that claim these forests as theirs and they have been turned into forest guardians. They are defending this land, defending the forest, which for them is not just about an economic resource. Living in the forest and having a traditional lifestyle is about the reproduction of their culture and indigeneity. And so these cattle ranchers that are invading forests, which happened to be indigenous areas, because indigenous people have been long taking care of the remaining forests and defending forests across the Americas, their lives have been threatened. And when I ask leaders in interviews about the impact that drug trafficking has in their communities, one leader told me, "Well, it's easy to tell you, it results in lives lost. They're killing us". One leader of an indigenous group in Honduras told me that the narco traffickers threatened a form of genocide on his people that everyone has had to leave the forest and abandoned their ancestral lands.

Dr. Jennifer Devine:

So it is perhaps the first concern that we should take into account, is that continued demand for drugs in the US is resulting in violence against indigenous and peasant leaders who are defending the last remaining rainforests in the Americas.

Dr. Nate Currit:

And Jennifer, it's not just that local people are saying they feel threatened and that they're worried that lives will be lost, it's documented that lives are lost.

Dr. Jennifer Devine:

Yes. One young man in particular was killed in the office of his community cooperative after denouncing drug traffickers invading their forest lands. And he reported it to the government and a hitman came into the village and killed him and he left behind three children. He died 32 years old. There have been at least four leaders of the community forestry movement in Guatemala alone who have been killed, who had been murdered. And Latin America is experiencing a peak in violence against environmentalists, including the murder of Bertha Cazares, which was international news recently a few years ago. So this is part of a broader phenomenon of violence against environmentalists.

Dan Seed:

And these countries that we're talking about here, Honduras, Guatemala, are of course countries that have been in the news as part of the migration from Central America, North. And so what impact are we seeing in terms of this on this migration crisis that we're seeing, which has essentially come down to a refugee crisis where people are losing homes and villages and land?

Dr. Jennifer Devine:

Thank you very much for catching the correction. This is indeed a refugee crisis and not a migrant crisis, people are being forcibly dispossessed of their lands and forced to migrate to the United States out of fear for their lives. Life is unsustainable in many of these places and drug trafficking is a big part of that. And the United States needs to recognize the role that it plays in growing the power and wealth of the cartels through demand through the drug trade. So for many reasons, the United States has some responsibility to humanitarianly care for these refugees.

Dr. Jennifer Devine:

I have several students right now who are working on projects, trying to quantify what we call narco refugees to make the argument that drug trafficking organizations today, much like fascist nations of yesteryear, as organized criminal entities are producing refugee flows. So part of the problem is that refugee law does not recognize people who are fleeing their homes because of violence due to organized crime. It only recognizes largely flows of people forcibly leaving their homes because a nation state is prosecuting them. But this is much like a nation state. And indeed, drug trafficking organizations have become part of the state in many of these places. So it's complicated, but drug trafficking is directly, not indirectly, contributing to the migration refugee crisis that we're seeing at the Southern border.

Dan Seed:

And to this point, we've talked about the problem at length here today with what we're seeing in these areas, but what are the solutions? Obviously doing research is not just about identifying the problems, it's about potentially finding solutions, so what solutions has your research shown or solutions that are being worked on and discussed?

Dr. Nate Currit:

One thing I'd like to point out that I think gets very much to a solution, which Jennifer can then talk about a little bit more, is that these deforestation affects and outcomes are not uniform throughout the Maya Biosphere Reserve. They're concentrated in some areas and not so much in others. For example, there are forest concessions in the Maya Biosphere Reserve where people are allowed to be there, are allowed to extract forest products, and they're allowed by the government there. It's a legal means of doing it. And we find that that's one of the areas where there is less deforestation. There's still deforestation there and elicit deforestation, but there is not as much as there is in other areas. And that I think leads to part of at least one solution.

Dr. Jennifer Devine:

This brings us back to where we started off in our discussion about my original research project working on sustainable development initiatives in Central America. I set out to find development projects that were working in a place that was having a lot of challenges, and I found community forestry. It's the world's largest community managed forest and it's over 25 years in the making. And what Dr. Currit has observed through his analysis is that the remaining forest that exists in Guatemala is in the community's hands. So it's a simple solution and it's a solution that has many, many benefits. If we want to protect forest cover, if we want to protect national parks and other protected areas from narco land grabs, we need to put local communities, indigenous communities and peasant communities, in control of those forests and in control of resource management. They make money off of sustainably managing the forest, they invest that money in fire prevention and control, and vigilance and monitoring, in education and in healthcare, and all of those economic and social impacts results in forest cover that we can witness from satellite images in space.

Dr. Jennifer Devine:

And on the ground, this also means that investing in these local grass roots development initiatives, community-based resource management in protected areas, it means that these communities, and we're talking about more than 30,000 people who are part of community forestry in Guatemala, these are great jobs. And people are staying and living in Guatemala, protecting the environment, educating their children. They're building cooperatives which require human resource agencies and accountants and technicians and they have forest engineers. It has created a vibrant, sustainable economy that's good for the environment, improves regional security and deters forced migration to the United States. It is a solution to many of the problems that plague both Central America and the United States.

Dan Seed:

So, what is your larger hope with this research going forward beyond the local areas, which you just touched on, but internationally? This research has garnered quite a bit of attention overseas, quite a bit of attention here in the United States, so what is your hope that this larger research does in terms of highlighting this problem?

Dr. Nate Currit:

For one, we have plans to expand our research to the five large remaining forests in Central America. So we feel that we've tested a methodology that we've been able to draw valid conclusions and meaningful conclusions from our Guatemala test case and we're expanding our research along with a team of others, not just at Texas state but other universities, to look at similar issues and the variability of those issues amongst places throughout Central America.

Dr. Jennifer Devine:

Yeah, and Dr. Currit is working on developing a model, an AI model, that would automate our visual classification of land use change and drivers of land use change. So to date, we have been looking at individual images and determining the drivers of land use change to peg illegal cattle ranching and determine whether or not drug traffickers are behind the deforestation that we see. But his work is quite interesting, and we have successfully tested an AI model that will automate this process, and as Dr. Currit was saying, that's part of a current NSF grant that we have under review that would allow us to expand this research, not just to Guatemala as a whole, but to the entire Mesoamerican biological corridor and perhaps, beyond.

Dr. Jennifer Devine:

And I will add, if you'll let me, in terms of policy and impacts for the communities that are defending these territories, following 25 years of community forestry, the first forest contract will come up for renewal in the next year and the evaluation process has already begun. So despite the fact that this community based management program has been so successful in terms of environmental and social justice, there are many competing interests in this forest. There is oil subsoil, there are archeology sites that have been targeted for large scale development, not to mention all of the timber, the mahogany and the cedar. There are many private companies and private sector interests that would be happy to see the community forest concessions not be renewed despite their success because that money goes to the communities, rather than private companies.

Dr. Jennifer Devine:

So what's critical about our research is that we're able to do the science of environmental management and monitoring, but we're also able to produce evidence that indigenous communities can use on the ground to support their land claims. And that is what makes this research so meaningful to me particularly.

Dan Seed:

Fascinating. As I said at the start of the show, I don't know another word to really use other than that because it brings so much to the table. And honestly, we could have you both in here for an hour and keep going on this, and I'd love to have both of you back at some point to discuss what's next, what you're working on, the artificial intelligence, I mean it's just all so interesting, in policy, we could have a whole show on that as well. So Dr. Jennifer Devine, Dr. Nate Currit, thank you so much for joining us here on Big Ideas and thank you for conducting this research.

Dr. Nate Currit:

Thank you very much.

Dr. Jennifer Devine:

Thank you.

Speaker 4:

Big Ideas TXST is a presentation of Texas State University and the Division of University Advancement. Subscribe to experience more innovative thought provoking content. If you like what you hear, consider leaving us a starred review, five if possible. The views expressed during this program are those of the individual participants and do not necessarily represent those of the university. Big Ideas is hosted by Daniel Seed, produced by Jayme Blasche with technical assistance provided by Manuel Garcia. Strategic consultant is Kelly Raaz. Special thanks goes out to Dan Schumacher.