NATURAL RESOURCES JOURNAL

Volume 63
Issue 1 *Winter*

Winter 2023

Climate Litigation: The Future is Now

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CLIMATE LITIGATION: THE FUTURE IS NOW[1]

INTRODUCTION

About a year ago, I received an email from New Mexico Supreme Court Justice Michael Vigil: The National Judicial College was seeking applicants from all fifty states to select one judge from each state for its Judicial Leaders in Climate Science program.[2] This is a program funded and organized by the National Environmental Institute headquartered in Washington, D.C. The Institute does a lot of policy work, but it also looks to train individuals in the area of environmental law. It observed that there are no judiciaries in the country that have a specialized climate change court, and due to the urgency of climate change, decided to establish this program. It is a year-long curriculum which provides judges not only with leadership skills, but also with the opportunity to hear from some of the best climate scientists in the country.

The other judges and I graduated from the program last month. Originally out of 50 states, only 26 states sent applicants that were screened and accepted. Of these 26 judges, only 22 graduated from the course. Fortunately, I was one of them, but it's not over yet. They have asked us to do an action plan to evaluate the program and its effectiveness. As part of my personal action plan, I decided to speak with law students. I want to educate law students about climate change, water law, and about some of the challenges that we face here in New Mexico.

I was originally attracted to the area of water law because I grew up on the farms in Southern New Mexico. We did a lot of watering when I worked on the farms, and so it felt like a natural step for me to go into water law. Climate science is an adaptation that I apply to my work as a water law judge.

What really made me become interested in climate science is my daughter. She's about your age—you know, young. One day she was talking to me a couple of years ago and she said "Daddy, you know, it's your fault. You baby boomers—you screwed it up for all of us. You took all the resources and look at what we've got left." She made me feel guilty. About a year after that was when I received the email about the Judicial Leaders in Climate Science Program and, recalling that conversation with my daughter, I decided to apply for it.

As part of this course, we attended classes at locations around the country. Some of our classes were in Falmouth, Massachusetts, at the Woods Hole

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1. This essay is drawn from remarks delivered at the University of New Mexico Law School on October 26, 2022. In keeping with the essay format, footnotes have been minimized.

2. *Judicial Leaders in Climate* Science, NAT'L JUD. COLL., https://perma.cc/KR7Z-NE73 (last visited Dec. 14, 2022).

Oceanographic Institute. If you think of the Titanic—Alvin the submarine—that's where it came from, and those are those scientists. They are doing a lot of work on the ocean because the ocean is really being affected at this point. We not only spoke with the scientists, but we also got to go into their labs and see what they're doing. They're doing a lot of great work, including using computer models to predict how climate change will affect the oceans.

The reason I'm looking at you young students is because you're the ones that are going to be taking care of these issues next year, and the year after that, and so on and so forth. I'm probably going to be looking at retirement in five or six years, so I'm not going to be doing that work. A lot of my peers are in the same boat—so we're looking at you as our hope. In fact, that's what one of the climate scientists said after his lecture. Somebody raised his hand, one of the judges, and said, "do we have any hope at all? Do you have any hope?" and the scientist said, "Well, yeah, I do. It's our youth. I think our youth are really invested in this and they've got some skin in the game and I look forward to working with them. We've got a great deal of youth here in Woods Hole." He showed us a photo montage of about 94 scientists there and I think probably about 70% of them were under the age of 40. You folks are our hope. And that's why I'm here primarily: to teach you about these things. I want to teach about water law and climate science with the hope that you take this knowledge with you and go out there and do good work.

I have three caveats with this presentation. The first is that I am not a climate change scientist—I'm a water science judge. Number two, I'm not going to give any advisory opinions. As a judge, I'm ethically forbidden from doing so. If there's a pending case you can't say to me, "Judge, there's this case I know of in Albuquerque. What do you think?" I'll say that I can't talk about that case. That said, I will comment on what I know about the facts that are in the pleadings.

The third thing is that I'm going to talk about climate change, but I'm not going to be talking about "Climate Change": big C, big C. That is, "Climate Change" is a political football that gets kicked around. I'm not going to talk about attribution; I'm not going to discuss what caused "Climate Change" or who or what was responsible. When I say climate change, I'm talking small c, small c. This is the climate changes that you folks read about in the news. It's verified and documented, and there's no disagreement that it's happening: hurricanes are getting stronger, we're in a 22-year mega drought in New Mexico, et cetera.

So, welcome to *Judge Arrieta's Debbie Downer Climate Change Lecture*, better known as "Climate Litigation: The Future is Now."

I. THE CHALLENGES

We have a lot of challenges in front of us in New Mexico. It's not just challenges with respect to the changing climate itself, but also challenges with how we rise to meet this issue. These challenges take several forms including problems we may have with the text of existing water law and problems we may have with the existing approach to water law.

Some people ask, "what climate change?" and I show pictures I've taken to help illustrate this. I put up a picture of a snowstorm in March next to a photo of water flowing in the lateral canal off the Rio Grande in June. The lateral canal is a big canal: it's about twenty yards wide and it's packed with water heading South. It

feeds some of the pecan trees alongside it, but eventually a lot of that water goes to Texas pursuant to our New Mexico-Texas Compact.[3]

So, we're down in Southern New Mexico, and people look at these photos and say, "what climate change? We've got all the water and moisture we need." A month after I took that picture of the snowstorm, in April, is when the wildfires started over in the Mora and San Miguel area because it was so dry. In August of this year, a few months after the picture of the lateral was taken, the Rio Grande in Albuquerque was down to a trickle.[4] It was the lowest flow in 40 years. The Western United States has been experiencing a mega drought since 2000.[5]

Climate Change isn't all drought, or all hurricanes, or whatever. It's quite often a mixture of conditions and it affects the states in different ways at different times. It was interesting when I went to this climate science program because we had judges from all over the country and we all learned as much from each other as we did from the curriculum. During the classes we got to talk to each other and say "hey, what's going on in your state?" Basically, all the Western judges—myself included—had one main issue stemming from climate change: water.

Fortunately [in New Mexico], we don't have hurricanes. We don't have floods (although we have flash floods). We don't have tornadoes—we don't have a lot of the other things that you read about. This is all well and good, but we do have something that is notably exacerbated by climate change: drought. However, New Mexico and some other Western states have been dealing with drought since pioneer days. The New Mexico Water Code was enacted in 1907, when were still just a territory.[6] This means we have over a hundred years of experience with drought in our Water Code.

In New Mexico we have a challenge and an opportunity. What do I mean by that? Our agriculture uses close to 80% of the water throughout the state.[7] However, irrigated agriculture only contributes 20% to the state's economy.[8] This opens up an opportunity where we can go to a single entity—agriculture—and look for ways to conserve. That 80 percent therefore represents both a challenge and an opportunity to be addressed.

One such element of this is flood irrigation. I like to show a photo of a pecan orchard using flood irrigation. The orchard is surrounded by berms and connected to an irrigation canal: you open up the gates and just let the water go. The farmers believe that it's more cost-effective to use flood irrigation than drip irrigation, which is why we still use flood irrigation today. This is one example of an area we need to

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3. 1938 Rio Grande Compact, Pub. L. 76-96, ch. 155, 53 Stat. 389 (1938).

4. *Rio Grande Runs Dry, Then* Wet, NASA EARTH OBSERVATORY (Aug. 23, 2022), https://perma.cc/VFX9-ZJW7.

5. Anna Novoselov, *Megadrought in Southwestern North America is Region's Driest in at Least 1,200 Years*, UCLA (Feb. 14, 2022), https://perma.cc/9TRQ-B8NG.

6. *See* State ex rel. Davis, 1957-NMSC-102, 63 N.M. 322, 319 P.2d 207; An Act to Conserve and Regulate the Use and Distribution of the Waters of New Mexico; To create then Office of Territorial Engineer; To Create a Board of Water Commissioners, and for other Purposes, Laws of New Mexico, 1907, Chapter 49.

7. N.M. OFF. STATE ENG'R, TECHNICAL REP. NO. 55, NEW MEXICO WATER USE BY CATEGORIES *2015* i–ii (2019) [hereinafter N.M. WATER USE].

8. N.M. INTERSTATE STREAM COMM'N, NEW MEXICO STATE WATER PLAN PART II: TECHNICAL REPORT 30 (2018).

examine. It's a policy issue and it's not something that I or anyone as a judge can change, because it requires action by the legislature and the State Engineer.

Outside of this 80 percent, 8.7 percent of the total water use is for municipal and related purpose.[9] If you took an extra-long hot shower this morning, don't worry about it. Don't feel so guilty. It's only 8.7 percent of our water use. The remaining 12.3 percent is for manufacturing, mining, and commercial purposes.[10]

The New Mexico Constitution article XVI, section 2 states that unappropriated water—whether its perennial or torrential—within the state is declared to belong to the public.[11] It's our water. Except that it's subject to appropriation for beneficial use in accordance with the laws of the state and priority of appropriation shall be the better right.[12] What does that mean?

You have to remember that our Water Code was created in 1907. What occurred five years later? In 1912, New Mexico was established as a state. In 1912 Henry Ford had just started to mass produce Model T's. So, in 1907 we can bet there's a lot of farmers in New Mexico that were still plowing their fields with horses and steel plows. This means that when the New Mexico Constitution was created in 1907 there was a lot of focus on agriculture. At that time, throughout the western United States and in many parts of the country we still subscribed to "first in time, first in right." The farmer who came and used the water would have priority rights, and so anybody who came after that farmer was a junior rights holder. Back then—subject to drought—the senior rights holder could make a call to the territorial State Engineer and say "I'm calling this. Shut off the junior users and let me use water to my full extent." That's a priority right. This system is embedded in the New Mexico Water Code.

If you look at section 72-1-1 of the New Mexico Water Code, it provides that all natural waters flowing in the streams within the limits of the state belong to the public and are subject to appropriation for beneficial use.[13] This same principle is captured in the New Mexico Constitution.[14] The New Mexico Water Code 72-3-2 states "[t]he state engineer shall upon the written application of a majority of the water users of any district in this state, appoint a water master."[15] What does that mean? Whenever you call for a special master, there is a problem in the district with water. That's why they call in a special master—they administer, allocate and figure out what to do with this water. The water rights of prior appropriators are protected. Not only can they apply for a water master, but they can petition to get rid of a water master if they disagree with them. All this to say that there is a lot within the Water Code that gives preference to senior appropriation rights holders.

Section 72-5-18, water allowance, states that "[i]mproved irrigation methods or changes in agriculture practices resulting in conservation of water shall not diminish beneficial use or otherwise affect an owner's water rights.[16] What does

9. *See* N.M. WATER USE, *supra* note 7.
10. N.M. INTERSTATE STREAM COMM'N, *supra* note 8.
11. N.M. CONST. art. XVI, § 2.
12. *Id.*
13. N.M. STAT. ANN. § 72-1-1 (West 1941).
14. N.M. CONST. art. XVI, *supra* note 11.
15. N.M. STAT. ANN. § 72-3-2 (West 2007).
16. N.M. STAT. ANN. § 72-5-18(B) (West 2007).

that mean? It means that, for example, if a farmer is using twenty acre-feet of water a year and he switches over to drought resistant plants and subsequently only uses fifteen acre-feet of water, he doesn't lose rights to that other five acre-feet of water. It doesn't go back to us in the public; he basically keeps it in his back pocket. You can use it for other reasons. He can even sell it so long as it's put to beneficial use. That is what's considered conservation of water at this time.

The City of Los Lunas down the road relies heavily on the Rio Grande to meet their municipal water needs. Let's say—this is a hypothetical—the annual snowpack is diminished and not getting to the Rio Grande: say for three years, it's a trickle. The city decides to get a permit from the Office of the State Engineer under 72-12-1.1[17] and drill a well eight inches in circumference and get municipal water out of it: 12,000 acre-feet per year. In this hypothetical, farmers will hear about it and say "Wait a minute, you can't do that. We've got prior appropriation rights: first in time, first in rights." They'll protest and file a lawsuit asking for an injunction. Let me ask you this: in this hypothetical, is this a water law case or is this a climate change case?

That's the problem we have in New Mexico: we haven't recognized climate change. How are we going to deal with climate change if we're dealing with a water code from 1907? Fortunately, within our Water Code, there's some discretion to the Office of the State Engineer. The State Engineer has thought this through and has quietly used this discretion to try and figure out what to do with this scarce resource.

Bounds v. State ex rel D'Antonio is a case where farmer Bounds was working on his farm in the narrow Mimbres valley.[18] It's by Silver City, where they grow apples and other crops. It contains a narrow alluvial aquifer that's shallow: not a lot of water. The narrow Mimbres river runs through it, but it's only ankle deep. Farmer Bounds is out there doing his thing using his water and he starts noticing that there's a lot of houses that are now being built on the outside in the foothills. And all these houses are drilling domestic wells. Domestic wells can be 2-to-4-inch wells and they're drilling right into the aquifer. And all those homeowners, all they need is a permit under 72-1-1.1. and they get the water they want.[19] So the farmer is thinking *this can't be right.*

He brought the lawsuit, along with other farmers there, claiming prior appropriation rights and that 72-1-1.1 is facially unconstitutional. He wanted the court to stop the State Engineer from issuing those permits. The Supreme Court in that case said that section 72-12-1.1 doesn't violate the doctrine of prior appropriation set forth in the New Mexico Constitution and that it is facially constitutional.[20] It held that that because the legislature passed this provision—they're in favor of domestic wells without having to consider the right of appropriation.[21] Therefore, it's facially constitutional.

Take this case law and apply it to my Los Lunas hypothetical. The problem is that we don't have a water code that encompasses or incorporates climate change.

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17. N.M. STAT. ANN. § 72-12-1.1 (West 2003).
18. Bounds v. State ex rel. D'Antonio, 2013-NMSC-037, 149 N.M. 484, 306 P.3d 457 (2013).
19. N.M. STAT. ANN. § 72-12-1.1 (West 2003).
20. *Bounds*, 306 P.3d at 465–66.
21. *Id.* at 466–69.

If we're not careful, we're going to have a water law judge in Southern New Mexico, say "Yeah, it's prior appropriation. Farmers get the absolute right. You're going to have to figure out a way to get water." Then, we may have another judge with the same facts in Northern New Mexico who says, "now this is climate change, you know, forget about prior appropriation." We're going to have two inconsistent decisions. We need to incorporate climate change within our water court to prevent this from happening.

State v. Lewis is another one of these cases.[22] This happened back in 2006. The 22-year mega drought started in 2000, but by 2006 it was already in full swing. Texas has a compact with New Mexico regarding the Pecos River,[23] and Texas threatened to sue because New Mexico was not delivering enough water. New Mexico thinks about this and sees that Texas has a good case. It's been dry. So New Mexico comes up with a plan: the State Engineer is going to lease some of the farmland around Pecos Valley and instead of irrigating crops they're going to build pipes and augment the water in the Pecos River. In other words, they pipe water directly out of the basin into the river, bringing up the water flow. Texas gets what it wants. It's happy, but the farmers aren't. So, the farmers sued for injunctive relief, and said, "Wait a minute prior appropriation applies here, you can't do that. We get it first."

The Court of Appeals in this case held that prior appropriation does not require the resolution of existing and future water shortages; issues should be resolved exclusively through priority calls. What are "future water shortages" *but* climate change? The Court of Appeals said that future water shortages can't be resolved by prior appropriation as long as the Office of State Engineer provides water that is adjudicated to be reasonable and acceptably managed. In other words, there is some discretion within our Water Code for the State Engineer to say, "I'm not applying this, I'm going to consider climate change." One of the great things in going through all of this is that the Supreme Court, the Office of State Engineer and the Court of Appeals have done a great job in piecing this together in a way that it is flexible and there is discretion involved. In this way, we have the ability to incorporate climate change into the Water Code. It can be done quickly, and although we'll have to change a few things, it can be done. In this way, they've done a great job with our body of water law.

22. State ex rel. Off. of State Eng'r v. Lewis, 2007-NMCA-008, 141 N.M. 1, 150 P.3d 375.

23. Pecos River Compact, N.M. STAT. ANN. § 72-15-19 (West 1949).

II. THE CURRENT STATE OF OUR STATE

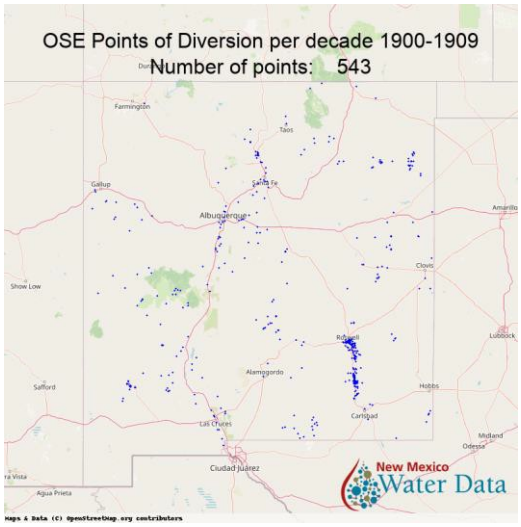

Figure 1 - OSE Diversion Points 1900–1909[24]

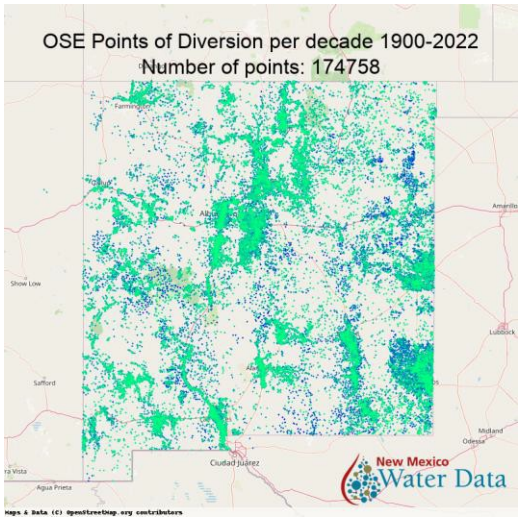

Figure 2 - OSE Diversion Points 1900–2022[25]

Let's take a look around the state. Let's take a micro level look at what's happening in your neighborhoods: deep well extractions. Basically, these are deep wells that are more than 500 feet deep and six to 8 inches wide. Think of the farm

24. *OSE Points of Diversion Per Decade*, N.M. WATER DATA, https://perma.cc/MYZ6-JGV2 (last visited Jan. 4, 2023).

25. *Id.*

wells, the pumps. In 1909 there were 543 deep wells in the state of New Mexico.[26] This year, 2022, there are 174,758 deep wells. [27]These images shows where all those wells are being placed or drilled. The more colorful areas are a higher concentration and help show the problems we're having in the east side of the state. This would be Hobbs, Clovis, Portales, Union, and Harding County. Estancia is having some big problems; Las Cruces, of course. But Deming, Hidalgo, and Luna County: they're having huge problems. There in one area of Luna County where the water level has dropped 100 feet. So much that now the desert in that area is creating crevices—sort of falling in. Get ready for a big sinkhole.

The most glaring supply shortfall is occurring in Eastern New Mexico, where some communities have less than five years of water supply remaining.[28] This is all modeling. There may be some sub aquifers that still have water may supply these communities for another five years, but by and large a lot of their aquifers are drying up. The cities of Clovis and Portales are bringing in water from Ute Lake through a pipe and that's how they're going to supplement their water.[29] 24,000 acre-feet a year, 12,000 goes to Clovis, 4,000 goes to Portales, and the rest goes to small communities. It's still not enough for their agricultural needs. If you've ever been down to the Roswell/Portales area, there used to be a lot of dairies, but they're no longer there. There used to be a lot of peanuts and cotton. Lately they have had pecan trees, but those draw a lot of water. This is all evidence that their water supply is all drying up. You may be able to get water into your community, your municipality, but what about the supporting tax base around it? The farmers. Some real problems that we're having in the State.

III. LEGAL ADAPTATION TO CLIMATE SCIENCE

So, what do we do about this? It's a real problem. What we need is judicial legal adaptation using climate science. There's a lot of areas that are going to have to adapt. Those areas include social, financial, technological, scientific, agricultural, medical and we can go on. Everybody is going to have to adapt in some way or another. The good thing about legal adaptation is we can, by force of an order, require entities and individuals to adapt. What am I talking about?

Findings of civil and criminal liability often spur socially adaptive behavior. Think about DWI's. How many of us on a Friday night, knowing that we have to drive somewhere, are going to reach for a beer? Same thing with seat belts. You know how many of us are going to strap in? We all do it almost without thinking. There was a case that I worked on where the Court of Appeals determined that comparative negligence applies if you're not wearing your seat belt. In other words, if you don't have your seat belt on, forget about gaining any monetary damages from somebody that rear-ended you. This kind of decision spurs socially adaptable behavior.

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26. *Id.*

27. *Id.*

28. N.M. INTERSTATE STREAM COMM'N, *supra* note 8.

29. *Id.*; *see generally Jerold Widdison et al., Eastern New Mexico Rural Water System (Ute Pipeline Project), in* WATER MATTERS! 25 (Utton Transboundary Res. Ctr., 2013).

We also have legal decisions that add to the body of scientific information. The Ford Pinto—I think there's only a few folks here that remember the Ford Pinto. In the 1970s there was a big gas crunch so all of the car manufacturers decided to make smaller cars using 4-cylinder engines. Ford made the Ford Pinto. It was a small car with a major problem—every time somebody rear-ended it, it exploded. There were a lot of lawsuits, and it was determined by the engineers in those lawsuits that the problem was that Ford placed the gas tank too far back, so that when it was rear-ended, it would explode.[30] This information caused a lot of manufacturers to move their gas tanks towards the middle of the car.

This type of situation still happens—think of Roundup.[31] Right now there are several lawsuits trying to link glyphosate and Roundup to cancers and other chronic conditions that are occurring in farm and chemical workers. It still has not been decided whether in fact it does or does not cause cancer, but the lawsuits are generating new information. Decisions like these add to medical, scientific, and engineering knowledge.

Exposure to risk or liability spurs the legislature to take action. Think about medical malpractice. That was reformed because all the doctors were leaving the state. They had unlimited liability. Think about guardianships. That was recently done. Think about whistleblowers. All of these legal adaptations occur, and they do so because we do it by court order.[32] This has a real advantage over trying to get adaptation done via the legislature. As you know, ideas go before the legislature. Some legislators are not interested, some are, some have funding issues, so on and so forth. The quickest way is to avoid this legislative quagmire and adapt through the laws. You folks are in a great position to mold the future and start creating adaptive behaviors in our society.

All right, how is this going to happen? We're already seeing a number of cases where climate science is at the forefront. We are seeing this area of law develop through climate science litigation. Specifically, we're already seeing assertions of negligence. This is probably the main one, and it applies your standard tort formula to climate change. These cases involve a failure to exercise reasonable care based on foreseeability of risk and failure to assess risk. This risk, for example, involves infrastructure and facilities damaged by hurricanes or human health issues caused by pollution. Many of these cases include natural resources issues. There are also failure to mitigate issues.

There is a lawsuit pending in Albuquerque that originated in Ruidoso. The McBride lawsuit.[33] That's where 132 houses in Ruidoso burned down, because it was alleged that a transformer from the electric company PNM malfunctioned and

30. *See, e.g.*, Grimshaw v. Ford Motor Co., 174 Cal. Rptr. 348 (Cal. Ct. App. 1981) (Ford Pinto).

31. *See, e.g.*, Pilliod v. Monsanto Co., 282 Cal. Rptr. 3d 679 (Cal. Ct. App. 1981) (Roundup).

32. *See, e.g.*, Baker v. Hedstrom, 2012-NMCA-073, 284 P.3d 400, 406 (N.M. Ct. App. 2012) (aff'd on other grounds) ("The specific event that triggered the Medical Malpractice Act was that there was no profit in writing medical liability insurance and that the insurers would prefer to be out of the business altogether."); *see, e.g.*, Press Release, Governor Michelle Lujan Grisham (Apr. 8, 2021) ("This bill was prompted by disturbing cases of court-appointed guardians not appropriately serving the men and women they were appointed to protect.").

33. Pyle v. PNM Res., Trees, Inc., No. D-202-CV-8478111 (D. N.M., filed Aug. 5, 2022).

created sparks. It's the same situation that occurred two or three years ago in California with PG&E. It's the same law firm suing PNM, but now it's in the Albuquerque Second Judicial District

It's a pending case so I won't talk about its merits, but I'll talk about what's in the answer and in the complaint. The complaint treats this like a simple negligence case. It alleges that PNM had faulty transformers, but also that it failed to recognize that the area was dry because of an extended drought. As such, it didn't clear the area of flammable material and therefore it's negligent. If you look at the answer—if you read the affirmative defenses—you can see how some defenses are in line with climate change: Act of God; Failure to Mitigate by the homeowners—they failed to clear the dry vegetation around their houses, those type of things.

Right now, there's kind of a little dance because the law is not developed. The plaintiffs won't want to say this was caused by climate change because there goes your claim for damages, right? It's an Act of God. Defendants, likewise, are hesitant to pull the trigger on it. You do say Act of God, but you know that once you do that, you're going to have to bring in all sorts of experts and it's going to get really expensive. Maybe they're thinking we can do this and settle it and it won't cost us that much. I don't know what their thinking is. Right now, we're sort of dancing around this issue, but it's coming to the forefront very quickly.

In addition to negligence lawsuits, we also have nuisance lawsuits. These can be private or public. Think of Greta Thunberg. She brought a lawsuit because she and other folks her age have a constitutional right to clean air.[34] There's been about twelve of those lawsuits; eleven of them have been dismissed.[35] There's one that's still active. We'll see where it goes, but these types of lawsuits are being filed as constitutional and public tort claims where there's a statutory obligation to regulate or there's a policy or administrative decision to act and a subsequent failure to act. There are also claims regarding failure to disclose or assess as required by regulations.

As a result of these lawsuits, you're going to see changes in insurance and insurance claims. There's going to be coverage issues. I've talked about it: Act of God—a lot of exemptions. I worked in the field of insurance defense for sixteen years, so I can tell you this is going to be big. Think about the state of Florida. Seventy percent of the flood policies are through FEMA. You can't get private insurers there to cover you for flood damage. And that comes down to this: there's going to be reduced coverage limits or market withdrawal. Part of what's going to happen before the insurance companies get to that, is first party claims of inadequate coverage being provided under the policy offered, or underwriting omissions. Eventually, if climate events occur frequently, that's going to cause insurance to pull back.

I talked to a judge. He's a water judge from Harding, Union County up there. Those farmers draw most of the water—all of their water really—from the Canadian River. And lately the Canadian River has been drying up. They've always been able to get loans for their vehicles and whatnot for 30-year terms. This time,

34. Brooks Hays, *Greta Thunberg, 15 Young Activists Sue Five Countries Over Climate Change*, UPI (Sept. 23, 2019), https://perma.cc/Q8YR-WFKH.

35. *See generally Sabine Ctr. Climate Change L., U.S. Climate Change Litigation*, COLUMBIA L. SCH., https://perma.cc/XV6G-DVM4 (last visited Jan. 4, 2022).

farm credit said that no, it's 15 years. When the farmer asked why only fifteen, farm credit told him it's because we estimate that's how long your water is going to last. So why are we going to give you a 30-year loan when you're only going to be in business for 15 years?

We have the water law claims we've discussed to some extent: appropriation rights, the conflicts in *Bounds* and *Lewis*. We also have conservation issues that we need to figure out in the Water Code. And of course, the climate science issues that we need to incorporate within the Water Code. Social justice claims—claims seeking equitable relief for the poor and unrepresented—some of those will be done through international tribunals of justice for undeveloped countries. And then we have federal jurisdiction implications. Equitable apportionment—if it's an interstate dispute, primary jurisdiction goes to the Supreme Court. Think of all these compact lawsuits; there is no right of apportionment. It's equitable apportionment by the federal courts. There's regulatory deference. Recently, EPA cases were removed to the states. The problem is, when you remand to the states, the defense can claim that there's a preemption issue with the Clean Water Act or the Clean Air Act.

Lastly, I want to talk about *State Engineer v. United States*.[36] It's also the San Juan water users. This involved an Indian treaty and a compact of the United States and the San Juan River. The Indian tribe decided that they needed more water. They called on the U.S. and the U.S. came in and tried to work with people, but that didn't work, so they filed suit to be able to apportion 10% of the river. The problem, of course is the Water Code. Right of appropriation—the Indian tribe never appropriated the water. Never declared it at all. The farmers did, and so they felt they were entitled to it. The Court of Appeals at that time had a three-member panel that looked at this case. One of the judges was Judge Black. I've known Judge Black for years. He's a great judge—retired federal judge, smart judge. He knows what he's doing, but he's got that federal perspective—I'll explain. His decision was that Indian water rights are proprietary rights and reserved water rights have a priority date as of the establishment of the reservation. So even though the water wasn't placed to beneficial use for 100 years, they still had water rights reserved and they're not dependent on the application of water to beneficial use. Judge Black could have stopped right here. That would have been good.

He went on to say "this contention, like the appellants' entire appeal, is based on the failure to understand the nature and the relationship between the Indian nations and the United States as well as the structure of federalism. It is compounded by a misconception of New Mexico water law procedure and the role of the New Mexico Engineer . . . First, water is a commodity that moves through interstate commerce as does the San Juan River, which crosses several state boundaries. Thus, it is ultimately subject to the control of the federal, not the state government." He went on to say—and this is with citations—"although the state has an interest in regulating water within its boundaries, it lacks any ownership claim in such water."[37]

We have a problem here. Federal law is based on equitable apportionment. Our law is based on right of appropriation. If it's interstate, then it's automatically

36. State ex rel. State Eng'r v. United States, 2018-NMCA-053, 425 P.3d 723 (N.M. Ct. App. 2018).

37. *Id.* at 729–30.

interstate commerce. The State Engineer was up in arms about this language. He filed a motion to reconsider focused solely on this language because otherwise it was going to undo 150 years of water law in New Mexico. The Supreme Court denied the motion for reconsideration. I think it happened for one of two reasons. First, I think you can say that this other language is dicta. This dictum isn't necessary to the disposition of the case and therefore it's not controlling. Alternatively, because it's buried in the opinion, the Supreme Court doesn't want to raise it as an issue because then it's going to have to tackle that issue with federal jurisdiction.

So, you see, we've got tension not only between climate change and the Water Code, but with the Water Code and federal jurisdiction.

IV. A SOURCE OF HOPE

What keeps the climate change scientists up at night isn't the hurricanes. It's not the droughts. It's not any of those issues. It's the killing temperature of sustained heat waves. We have always had heat waves in New Mexico, but it's generally two or three days over 100 degrees and then it goes back to high 90s or whatever. The problem is that when you have sustained heat waves it tends to kill crops. And in 2020, one of the hottest years recorded, Phoenix recorded 53 days of 110 degrees or above. 53 days, that's two-thirds of the summer. In humid places this heat is even more devastating. You feel like you can't breathe, well, neither can the plants. The advantage humans have is we can go inside. We can use air conditioning and escape the heat, but plants can't. They die.

This means that climate change will alter the agricultural landscape in America. Our breadbasket is currently in the Midwest, but estimates say it will shift North.[38] By 2070, much of the Southeast is not going to be able to grow any crops at a profitable amount.[39] From an agricultural or commercial perspective, the Midwest might be the only place where folks can break even. To be profitable, agriculture will largely have to shift North, potentially into Canada.

That leads me to the Camino de Santiago. I've been walking this road—it's a pilgrimage road—I've been doing it for five to six years now. It's one of several roads that start at the bottom of Spain and go all the way to the northwest tip. Some of these roads come from across France and some connect all the way to Ireland. The Camino Francés extends from France straight across northern Spain. 530 miles. When I walk that road, I'm right in the middle of Spain's wheat basket.

One day I was walking the Camino Francés and I started hearing loud clanking and it sounded like rocks hitting metal. You know, *clank, clank, clank*. I know that in this area there's a lot of rocks and I thought to myself "are those rocks hitting metal with a tractor?" I looked around to my right, and sure enough there was big old John Deere tractor pulling a harvester. It was cutting the wheat in half and harvesting it. Sure enough, that's where the clanking was coming from. Being the good old farm boy that I am, I took off my backpack. I set down my walking sticks and I climbed up onto the wheat field and started walking it. As I'm walking it, I had

38. *See* James Rising & Naresh Devineni, *Crop Switching Reduces Agricultural Losses from Climate Change in the United States by Half Under RCP 8.5*, 11 NATURE COMMC'NS (2020) (discussing how crop switching and relocation will be essential in maintaining profitable agriculture due to climate change).

39. *Id.*

to watch my feet because I'm going to trip over a rock. There were tons of rocks. At one point I stopped, I looked down, and I said, "Wow, that's beautiful." I took a picture.

Figure 3 - Wildflowers on the Camino[40]

When I took this picture originally, I loved it because it is a picture of life trying to struggle through a stony hardscrabble wheat field. These flowers—I think they are wild geraniums. It just seemed poetic to me. I've taken thousands of pictures of the Camino, but this was my favorite. As I was putting together this presentation, I started thinking about this photo. I thought, wow, this picture has a lot more significance than I thought. It really means something.

If you look at this picture, this is part of the breadbasket for Spain. Twenty percent of it maybe is wheat. The rest of it is rocks and weeds. These farmers, they don't irrigate their fields because with all of the hills, gravity would take the water every which way. Instead, they rely on Mother Nature. They're called *temporales*, which are seasonals, which means dry farming. We all used to do it here. Before 1907 we dry farmed in the Midwest. We basically waited for Mother Earth to come in and rain and we would use our seeds and would grow and sustain the country. Not only that, they [the Spanish farmers] don't use fertilizers, pesticides, GMO seeds—they wouldn't be able to afford it with the kind of yield they've got, yet, they have enough to feed all of Spain. They've got a little bit of a gap. They have to import about four to five million dollars in wheat every year, which is not a lot. It's actually an interesting situation. They import a lot of wheat, but they also export a lot of their wheat because Spain is the second largest producer of organic wheat in the European Union. If you've ever been to Spain and had their bread—it's really good. They make it daily. You're not going to go into a store and buy your bread in a plastic sleeve with a long ingredient label about flavors, preservatives and so on and so forth. We're talking organic.

When we get to this point, these farmers, they're not even going to break even. One problem with that modeling is it assumes that farmers are going to do the

40. Photo taken by the author.

same kind of thing in 2070, that they do now. GMO plants, fertilizer, they're going to irrigate with sprinklers, pesticides, etc. By the time they get to this point, they won't be able to afford to do that. They won't even be able to plant the current genetically engineered seeds we have because they won't be able to stand the heat. Farmers are going to have to go back to what used to work: the old seeds. They're going have to rely on Mother Nature. And because they are no longer irrigating, that's going to bring the cost down. Because they're no longer using glyphosate, which is Roundup, that's going to bring down the cost. They're no longer going to fertilize because they can't afford it. This will further bring the production cost down. They're no longer going to use pesticides because they can't afford it, so their breakeven point is going to be way down there.

If you've ever been to the Midwest, every inch of the Midwest is covered with wheat, corn, soy. We're great at increasing production, but we're lousy at conserving water. Once we get to 2070, how much of a yield is there going to be in this scenario? Fifty percent? Forty percent? Or twenty percent? If they have 20 percent, I think we'll still feed this country. We may not be able to export and feed other countries. Canada will have to do that. But folks, we can make it through this. It's just that we're all going to have to adapt.

V. CLOSING THOUGHTS

The best thing would be to have a constitutional amendment that recognizes climate change and climate science. We're probably not going to get there because of the politics involved in this. Therefore, the best thing we can do is go in there and establish a water code or water science structure, which is already happening as modern cases consider climate change in reviewing the Water Code. The judiciary needs to acknowledge that it needs to include climate science, and we can achieve this because the Supreme Court has superintending control. They can do it by a simple order. You know climate science courts are no different than drug court. They're no different than water court. They're no different than family court. You don't need the legislature to buy in and establish that court. We can do it by a simple order.

And it will work.

I had conversations with other judges about this in the climate science program, and some of those folks were worried because in order to establish a climate science court they said they would need to have legislative approval. But that's not true: I responded by sending everybody a copy of the 2004 Supreme Court order that established water courts in New Mexico.

We can establish climate change courts through a court order, and we can do this without amending the constitution. I think the legislature and others might look at it and be a little concerned, but we are already dealing with climate science in our water courts. In fact, we will be the first state to incorporate water law and climate science. This is a first step towards adaptation: to have a climate science water court. If we do that, then we're way ahead of all the states in the western part of the United States.

I'm really proud of the way our law has developed, and I expect something good to happen.

There is hope.