



Season 3 Episode 10 – Watershed Planning for Irrigation

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Announcer:

The Alabama Crops Report Podcast, your trusted information source for Alabama agriculture.

Scott Graham:

Hey, everybody. Welcome into another episode of the Alabama Crops Report podcast, Scott Graham and Adam Rabinowitz behind the mics today. Adam, how's it going?

Adam Rabinowitz:

I'm doing really well, Scott. Happy to be here today.

Scott Graham:

Me, too. So we're excited today. We've got some first-time guests on the podcast, folks from the Water Resources Program-- Did I say that right?

Eve Brantley:

Auburn University Water Resources Center. You're very close.

Scott Graham:

Center.

Eve Brantley:

Almost there.

Scott Graham:

Yeah, that was close. All right. So, there you hear Dr. Brantley talking. We've also got Adam Newby with this. So, let's take a second and just let you all introduce yourselves.

Eve Brantley:

Sure. Well, I'll start. (I am) Eve Brantley. I'm the director of the Auburn University Water Resources Center and also am privileged to serve as our state water resources specialist. I'm housed in the Department of Crop Social and Environmental Sciences as a professor here at Auburn University. Dr. Newby?

Adam Newby:

And I'm Adam Newby, and I'm a water resources research associate in the crop school and Environmental Sciences Department. And so I mostly work on the program that we're going to talk about today with the Water Resources Center.

Scott Graham:

All right. So sometimes when we have new guests, we ask for things like fun facts or something. But I'm going to shoot all something I saw on Twitter this morning and let you respond. Y'all are weather people. Rain and stuff is important for water resources, obviously. Are you familiar with Chat GPT?

Eve Brantley:

Yes.

Adam Newby:

Yes, I saw it. Big fan.

Scott Graham:

Big fan. Okay, we'll see about that. I saw a tweet this morning where they asked Chad GPT, I think I'm saying that right to rank each state's weather from most interesting to least interesting. 1 being most, which was Hawaii, Alabama being last at 50.

Eve Brantley:

What?

Scott Graham:

Thoughts?

Eve Brantley:

How could we be last? Interesting.

Adam Newby:

I wonder what the parameters for “interesting” are.

Eve Brantley:

Yeah.

Adam Rabinowitz:

That’s exactly it, we need to define “interesting” here.

Scott Graham:

So I sent that text to some buddies, one of which is a farmer and I just said, at 8:00 in the morning it's 45 degrees. And at noon it’s 82. How is that not interesting?

Eve Brantley:

Exactly.

Scott Graham:

And then one of the farmers said it can be 85 and March, have 14 tornadoes overnight, and be 29 the next day. Interesting!

Adam Newby:

Yeah. They're certainly not boring here.

Scott Graham:

It’s not the most “least” interesting. So I don't know, I was in Hawaii recently doing some stuff with the university over there. It's just beautiful every day. It rains depending on where you are. But other than that it's 80 every day.

Eve Brantley:

That’s just consistent.

Scott Graham:

Yeah, it's boring. Beautiful but boring.

Adam Newby:

They have a lot of variation depending on where in Hawaii you are, depending on the topography. But like you said, we have variation from the morning to the evening, so.

Scott Graham:

Yeah, yeah, from the morning to lunchtime it's different.

Adam Newby:

You start out in your heavy coat, and you know you're down in your T-shirt by lunch.

Scott Graham:

Yeah, exactly.

Adam Rabinowitz:

But we are kind of missing that snow. Right? And so, you know, I am from New England and so that is something that I do miss down here.

Eve Brantley:

I don't miss that. I'm fine.

Scott Graham:

We get snow every fall in cotton fields. Alabama Snow.

Adam Rabinowitz:

And that's exactly it, I guess. That's right.

Scott Graham:

We're getting off topic here, but there's a t shirt in the Mississippi Delta, it says "Ski Mississippi." I don't know if you've seen it before, but it's this guy elevated up, dressed up, skiing in a cotton field. So that's where we can make some "ski Alabama" shirts.

Adam Rabinowitz:

I don't know if my kids would go for that, though.

Scott Graham:

Hey, let's get into the topic here. So, yeah, I've got a new project coming out, right? You're starting watershed planning for irrigation. So tell us a little bit about the program. How did y'all come up with this?

Eve Brantley:

First, it's not a new program. Actually, Adam, I were talking about this earlier this is a program that started with my predecessor, Dr. Jim Hairston, and partners at the University of Alabama in Huntsville. Dr. Richard McKnight. Our Dr. Christi, John Christi, the state climatologist. About 20 years ago, they began really in earnest talking about what are some of the ag water needs for Alabama, knowing that we've got abundant rainfall, we've got a lot of water resources, and we also have a lot of crop land. So what about irrigation? And so this conversation started and it really started with the opportunity to look at remote sensing, the specialty University of Alabama in Huntsville and also the state climate office, and then Auburn being the land grant. And our connections to agriculture and to farmers in that research base trying to understand what we could do to help. So planning has been going on for many years. And now this program, about five or six years ago, some funding became available. And that's what we are really here to talk about today, is that funding mechanism in the planning that we're continuing to do with that implementation in mind. So it's like the new generation of watershed planning for irrigation with this water resources center and still Dr. John Christy in Huntsville and Dr. Lee Ellenberg up there, too.

Adam Rabinowitz:

That's great. And so, you know, you say that the funding came available five years ago. And so this has been a project that's been ongoing, but it's got this new name, "Watershed Planning for Irrigation."

Eve Brantley:

Right.

Adam Rabinowitz:

What was the previous name, just to kind of put in perspective?

Eve Brantley:

Well, I think it's always been oh, you know, it was the Alabama Irrigation Initiative, in that I mean, it was folks from Auburn, UAH, other groups going to Washington, D.C., and just telling the story of Alabama AG and why we needed some investments in water resources as it relates to getting water on farms. And I know Adam can speak more to some of those needs when we talk to farmers around the state. The watershed planning part comes into how the money, how we're receiving that money. So it's a federal money that comes through the state and then is much like other Inner-City US programs, a cost share program. So yeah, it's the Peel five 66 program that that we are working with now. And that program comes through USDA Natural Resource Conservation Service. And our state agency, the Alabama Solar Water Conservation Committee, is now sponsoring local organization. They're the folks that rank the farms for again, very similar to in our cities programs. There's a ranking process and then when you're selected those farms, then get some cost share dollars to implement on farm irrigation. And you know, it's a big partnership. And I know that in extension BAU, we like to talk about our partners. And so while Adam and I are here today, this is, I mean, almost just this huge group around the state of not just Auburn and UAH, but of course and Archaea, Soil and water. Our friends at Alpha, the local county extension offices, I mean, there's just so many people that have been working towards

this, understanding why we've been talking about irrigation. And we talked about you can get so much rain in this state you know, it's a fascinating story to share.

Adam Rabinowitz:

That's great. I mean, it's, you know, you've got all the partners involved. And certainly as we talk about irrigation, this is something that is very different for Alabama. When I was in Georgia, you know, there is a lot of irrigated acres there and we don't really have that here in Alabama. And so framework's a little bit different. So it's interesting to hear about some of the planning for irrigation and what that may lead to.

Scott Graham:

So, Adam, can you tell us a little bit you know, for folks who maybe aren't as involved in production agriculture, why it's so important to help farmers get irrigation? Because like you mentioned, we get a lot of rain in Alabama. Especially depending on where you are.

Adam Newby:

Yeah. So we get, you know, most of the state, you get somewhere on average 50 to 60 inches of rain a year. And if you're down close to the coast, you're getting more than 60 inches of rain most years. And so, you know, most people who are as close to AG may think, well, that's a lot of rain. And, you know, I look around, I see a lot of water. Why would we need irrigation to grow crops? Well, you know, and, and the short one of the short answers might be what we do get droughts and anyone who's been around long enough knows we have some years they get droughts. And anyone who has been a farmer for the past 20 to 30 years can look back and they'll remember those years you know, 2000 was a pretty bad drought. 2007 was a heck of a bad drought. If you were the industry then. More recently 2012 was you know, a fairly bad drought. We had a little bit of a drought in 2017 and some pockets of Alabama. So you know, you do have years where you get droughts, but more than that we also get what we call flash droughts. So flash droughts are essentially periods of time where the soil dries out very quickly due to high temperatures, maybe a lot of wind and you know you have a few weeks without any rain where the soil just dries very, very quickly and they're called flash droughts, they are usually short lived, but even though they're short lived, they can have a huge impact on farmers, on their ability to produce a quality yield. And so just as an example, we use is corn. Corn is a great example. We can walk through the process and I can, you know, basically show you how important it is to have supplemental irrigation when needed. So corn tassels in Alabama, usually around the last of June to early July. And so that's the production of the pollen at the top of the stock. And when it starts to tassel, it really needs a lot of water at that time. And so if the corn does not have adequate moisture, soil moisture at that time and just that two week period, it dramatically affects the yield at the end of the season. So if you have a flash drought just for two to three weeks into June to early July, even if the whole year on average, if you got 60 inches of rain, if there's not adequate moisture, just during that two weeks, it could drop your yield by half or more, just depending on how dry it was during that tassel. And so you can imagine then, man, wouldn't it be great if that happened, if the farmer had a way to just keep that soil moisture up to minimum. So when we talk about this program and the importance of having irrigation, we're not talking about, you know, like you see out west, just we completely rely on the irrigation for every drop of water that that crop needs. But it's just in order to supplement the wealth of, you

know, rain we already get. But to just supplement it in times, that's needed to keep those crop damages, those crop losses from happening and those crop losses can you know, they happen more than we think.

Adam Rabinowitz:

Yeah. So, it's almost like an insurance policy, really.

Adam Newby:

Exactly.

Adam Rabinowitz:

As a risk management strategy to, you know, to think about, how can I minimize the potential losses from a flash drought? You know, I come back to kind of what we were just talking about a moment ago in terms of the acreage. Why do we not have the acreage of irrigation here in Alabama like we do in neighboring states?

Adam Newby:

Yeah. So like you've seen your experience in Georgia, you saw especially in southwest Georgia, you just everywhere you drive, you see pivot irrigation as large pivot irrigation systems. And a lot of the reason, and I'll just give a little context, you know, where how do we compare to Georgia? How do we compare it to Mississippi or Florida? So I'm going to throw some numbers at you guys. Okay. So, Georgia, they have about 1.3 according to the last census, the 2017 USDA Census. Georgia has about 1.3 million acres of irrigated ag land. All right and that's about 35% of all of their harvested crop land, is under irrigation. So, 1.3 million acres. If we move over to the other side of Alabama, we look at Mississippi, they've got 1.8 million acres under irrigation and that's about 43% of their crop land here in Alabama. You know, if you took a guess and I asked this on a lot of talks, where do you think we're okay? We got 1.8 million, 1.3 million that neighbor and state some people might say, well, probably half of that or maybe a quarter. Now we've got about 133,000 acres at the last census a little bit more now thanks to this program but you know last census only 133,000 acres and that's only 6% of our cropland is irrigated. So yeah, it's a lot less than you see in neighboring states. And I think that's mostly due to access. When you look at groundwater access across Alabama, our groundwater is much deeper than those areas in Georgia, and those areas of Mississippi where you see a lot of that irrigation, it's relatively cheap there because they might be able to go just a hundred feet or so to get water. So southwest Georgia, they're part of what's called the Floridian Aquifer, a very shallow aquifer in Mississippi. Most of the irrigation is close to the Mississippi River, Mississippi Delta. So again, it's very shallow groundwater. When you go through Alabama, wells are usually 300 feet, if not more. And that's just expensive. It's really expensive to get to that water. We have a lot of surface water, too. But, you know, you just have to be lucky enough to be on a large river or lake or something to access that. And I think I'm sure there are other economic factors historical factors that play a role, too. But I think a big issue is just the access to that water.

Scott Graham:

If you think about in that Delta region, the majority of that is furrow irrigated, too. So you don't have to buy a pivot, you don't have to buy lateral irrigation. It just you just pop some hole in poly pipe and let it go. So that's a

lot cheaper there. Paying to roll it out, don't know if y'all have ever dealt with poly pipe or not. It's not fun. And it busts pretty easily.

Adam Newby:

But I just want to say, yeah, if you look at digging, well, if you're going 300 feet or more, you're talking about several tens of thousands of dollars, you know, and that's tough for a farmer to, to put that much expense upfront.

Scott Graham:

And especially a lot of our farms to or not owned land or rented land.

Eve Brantley:

That's what I also say. Irregular shaped and yeah, farm ownership.

Scott Graham:

So why would you want to pay all that money this year? And then now that land's worth more, so you got to pay more for it or somebody else was willing to pay more for it. So it that's complicated as well.

Adam Rabinowitz:

All right. So, it's the landowner at that point that might find an opportunity to to drill that well and charge more for the rent for that land as irrigated land. But there's also that risk that you know, you drill down 300 feet and find nothing.

Adam Newby:

Exactly. Yeah. Yeah. So that's when that's where a good planning comes from or comes into play. That really helps if you really understand the water and the hydrology of an area and you do that planning, then it can really help, you know, help farmers find that area. And also just want to, you know, really highlight the economic importance here. You know, Adam, you mentioned, you know, it's like an insurance policy. You know, but, you know, it's really like an insurance policy that pays out a lot more than most of our insurance does. If, you know, when we look at a lot of data, we do a lot of economic analysis for, you know, is it worth the cost? And it's one thing we've looked at is there was a long term study done and headlined Alabama, where one of our research stations is and they looked at 50 years of historical corn yield and headline Alabama. So over a 50 year time they looked at well how many years would a farmer have made a profit and we call that the sustainable yield threshold you know a sustainable yield that allows you to stay in business rate and make a profit. So out of that 54 year period 23 of those years we're below that sustainable yield threshold that's 43% of the time. So, 43% of the time a farmer would not have been making you know that that yield needed to make a profit. And then if we overlay that on to the precipitation during that time every year and headline, one thing we, we look at when we're talking about crops, you know, we don't just look at the precipitation. We also look at what was the demand of the crop. So, if we look at the amount of precipitation minus the evapotranspiration demand of the crop about out of those 23 years, about 70% of the time that precipitation minus of about transportation was

less than an inch. So basically meaning, you know, as we say, it was an inch that means there was one more inch of irrigation than the crop needed. And any time that that number falls below one inch, you're getting, you're getting strain on the crop and so that's highly correlated. You know, if we could knock out that 43% of the time when you know, the farmers are not making that sustainable yield, if you had that insurance policy, if you had an insurance policy that paid out, you know, 43% of the time, that's pretty good insurance policy. And so luckily most of us don't need our insurance that often. Right. But that really makes the argument for, you know, when you just have that that supplemental irrigation when needed and just to maintain that soil moisture when needed. And it makes a big difference.

Scott Graham:

One problem with rainfall averages is-- they're averages. I don't care if you get all the rain and in the winter when there's no crops out there anyway and you look at the end of the year and you say, well, we had average rainfall. Well, no, we didn't. They're very different.

Eve Brantley:

It rains, but not when we need it.

Scott Graham:

Right. And so that that's a complication. And then another thing I feel like I saw a lot last year or heard a lot about, last year, and saw some was it seemed like the same fields or the same pockets either color the rain every week or missed rain every week. And, you know, what do you do with that? That that's the kind of stuff I guess we need a meteorologist to explain that is. But like on our research farm in Headland and in Bell Manor and it was just draws of bone for six or seven weeks there. And so, in my mind, the whole Tennessee Valley is you know, dry cotton is not going to get more than two feet tall, or you go a quarter mile past a research farm and cotton looks beautiful and some of it is irrigated. But irrigation isn't a farming plan. It's a supplemental plan. Right. And so are these random pockets of where it rains and doesn't rain is another reason why irrigation is so important, because if you are in one of those dry pockets, you can much better supplement your rainfall.

Adam Rabinowitz:

So this sounds like a really great program. Tell us a little bit about how this program can benefit farmers.

Adam Newby:

Basically, this is a cost share program you know, to help farmers pay for that large expense of installing irrigation. But, you know, if we just kind of look generally, you know, why would what are the benefits of irrigating besides just, you know, maintaining that yield and making sure we have that yield where we need it. One thing I find really interesting about our funding source for this program, which comes from NACA as what's called the APL five 66 small watershed planning, is that that funding comes from the authority of a very old law from 1950 for the Watershed Planning and Flood Prevention Act of 1954. You know among some of the reasons agriculture, water management it was one of the areas that authorized USDA to spend money on projects but also watershed protection like environmental watershed protection. And traditionally this program was used

further out west where there wasn't as much water resources to make sure the agriculture out west had the water resources that they needed for agriculture and to protect areas from flooding and whatnot. Well, this is the first time that funding is being used to basically give directly to farmers for farmers individually to install irrigation. And that's because we know that there are so many benefits to the watershed environment, to the overall watershed health of our ecosystems and our environment, and to the farm ecosystem of properly applying and managing irrigation. And so some of those are you know, if you look at irrigated crop land versus dry land, dry and on irrigated crop land, we get less sediment runoff off of properly managed irrigated crop land than we do off of rain fed crop land. We get less nutrient runoff. And so, you know, when you have a minimum soil moisture that you're maintaining, your plants can utilize those nutrients way more efficiently. And so now you don't have as much excess nutrients, you know, getting runoff. When we do get those big rains into the local stream or local river and affecting the ecosystems of those areas, you know, you get less crop damage, you get more crop growths, you get higher crop density that helps on a higher crop density, less weeds at the base, you know, shading out those weeds, getting more organic matter back into the soil at the end of the season. So these all kind of add up, you know, to an overall. We look at the big picture to an overall place for not just the farm and the farmer and his soil and the health of his soil, but also the health of the ecosystem environment as a whole, we get better outcomes.

Adam Rabinowitz:

As you mentioned, this is a cost share program. What are some of the parameters?

Adam Newby:

Let me kind of yeah. Get to the kind of planning and how we go about. So just the way the funding from from this program works is it has to be done on a watershed basis. So watershed by watershed. And just quickly, you know, you can kind of Google or look up any map and see a map of the watersheds in Alabama.

And, you know, they're at different sizes. And we work at the what's called the Huck eight size the hydrological unit code eight. But basically these are identified as areas of land whereby rain water eventually makes its way to some major river or water body. And so the very beginning five years ago, when Dr. Brantley and others started this program, they kind of identified five pilot watersheds across Alabama to start with, based on, you know, a lot of input from constituents from farmers, from other groups that work with farmers on where the need was, where economic need was, where were the water resources available. And so we have just are just finishing up our third watershed in the state. So, all that just to say we identify a watershed. And then there's a lot of planning has to go into that watershed. The last one we did was what's known as the Middle Alabama River Basin. Basically, we identify a watershed and the first thing we have to do is what's called just a preliminary investigation and a feasibility report for the USDA. Just to it's kind of a report for USDA just to convince them like, look, we've investigated this area. It's feasible to implement the project in this area. And a lot of information about the area, all the agriculture statistics, Socio-Economic Statistics. Is there enough water for irrigation, things like that? And so once USDA is convinced that, yes, this is feasible to go ahead in this area, then we have to create for the USDA what's called a watershed plan, an environmental assessment. And this is what it takes us a long time. All of this requires basically a lot of data collection. One of the most important things we do actually in the preliminary investigation portion is we set up meetings with farmers in the area. We want to

understand what kind of agriculture is going on, what kind of crops they have, what kind of issues they have, what problems do they have? Are farmers in the area interested in applying irrigation? Would they be interested in applying to this program? Just, you know, what are the farmer needs? Because we really want to cater the plan to the farmer's needs. And so then as we develop the plan, the watershed plan and the environmental assessment that's outlined the argument for the need for irrigation in the area. Are there enough resources? We work with our partners at the state climatology office at UAH, and they do all the modeling for us looking at, you know, where's the water, looking at the hydrology of the area, the topography, and, you know, where where is the water available, where it may or may not be available for certain areas. We also have to outline as best we can, any environmental consequences there may be to implementing this project. So in this case, adding more irrigation system systems to farmland. What environmental consequences might there be? How might we mitigate those consequences? And we also have to do a large focused on effects of what's called ecosystem services. So those are identifying the services that we get from certain ecosystems like streams or rivers or even ag land. What are some of those services? Things like we get water from the river, we get nutrient cycling, we get carbon sequestration. Also cultural services like the value that we put in ag land or having natural land around us how certain maybe how farming keeps communities together and the heritage coming together. USDA looks, takes into all that and it's basically a large way to look at what's the cost benefit. And so they're not looking at just is it going to, you know, help make more of a profit, but also you know, if this helps keep communities together, if this helps keep farming heritage alive in a certain area, you know, we may not be able to put a dollar value on that. But that's important, right? And so we do surveys with farmers to kind of get a feel for people in the area. What kinds of those cultural services are important to them or what kinds of other those ecosystem services are important. And that's part of the argument we make that in the plan. And so that's a lot to say. We have to do a large plan that usually takes us about a year to kind of gather all the data, put the plan together, and then give to USDA. It asks for their approval once they approve all of that, then they release the cost share funds to Alabama Soil and Water Conservation Committee. They're kind of the keepers of the program and they're the ones that work with the farmers. And so then they ask farmers to apply to the program, and then they go through a lengthy process of ranking the farmer applicants. And basically that's just they look at the practices of farmers. And so farmers with a history of conservation practices they will rank much higher. Right? And so they'll be, you know, first in line for that limited amount of funding that's available to farmers. And so they'll rank the farmers based on a lot of criteria. And then once that's done, then they'll start implementing and working with farmers to put in those irrigation systems and before the irrigation system actually goes forward. The our local, in our case office here in Alabama actually does an on site assessment just to be sure that the irrigation system on that particular farm can meet the parameters that are put in the plan. But it's also for the farmers benefit because we want to make sure that there's enough water resources there, right? We've done that in the plan and kind of a large basis where the water resources in the inner cities goes in and they look at the individual farm and we don't want farmers running out of water right at key times. You don't want a farmer, you know, to Well, we thought we had enough water here, but then in a drought year we didn't have enough water. Right? And so that's what the On-Site Assessments do is kind of just kind of ground truth you know, all of that large kind of big picture planning we did to make sure, yep, this is a good area. There is enough water. We don't want farmers competing for water. We don't want a farmer running out of water. Yeah, this is going to work. And so once that's done and the farmer kind of works with an irrigation vendor to get the system put in place, then the Soil and Water Conservation Committee cuts that check back for the cost share and reimbursing the farmer for, for some of those funds.

Scott Graham:

I assume it's probably more on a percentage than it is. We'll give you X amount of dollars. But what kind of culture are we looking at here?

Adam Newby:

Yeah. So the max payout is \$250,000. And so these large system irrigations, they can be pretty costly, you know, but the max payout is \$250,000. Farmers get at least 60% payback and reimbursement that's.

Scott Graham:

Per farm, not per a water basin.

Adam Newby:

That's right. So every per farmer applicant, if they're approved, they get 60% reimbursement at the end when it's all done. And then there are some special scenarios if they're what the USDA defines as a socially disadvantaged producer, they get a 75% costlier reimbursement. And so socially disadvantage could be minority groups of veteran farmers or new farmers and then special circumstances if they're particularly deep wells which we have a lot of in Alabama. If you have to go more than 300 feet in a well to get water, that well itself will be the cost of doing that well we'll be reimbursed at 75% then on top of this, you know, so they may get 60% for the whole thing, but the well itself will get 75% if it's deeper than 300 feet. And then the last kind of carved out specialty we have is when we were working in middle Alabama, a lot of the areas in the black belt and we found we had a lot of historically underserved farmers socially disadvantaged farmers in that area who were only doing just small acreage vegetable farming. So, you know, they're not put there, they're not going to put in these large expensive pivot irrigations. They're just going to put in very low cost drip systems. Right. For vegetables. But there was a need, even those low cost ones, a lot of these farmers, they just don't have the capital to put up front, you know, a lot of times or to invest in those kind of systems. So the USDA actually said, hey, if it's a socially disadvantaged or historically underserved farmer and they're putting in micro irrigation, will reimburse them. 90%. So that's another just small carve out. But yeah, it's you know, it's a lot of help. It's a lot of help to overcome these really expensive systems and to kind of get that insurance policy, you know, of an irrigation system in place for farmers.

Adam Rabinowitz:

I mean, those are pretty substantial cost share dollars that are available. And even though it's certainly costly to put in an irrigation system and to drill a well like that is certainly a good amount of support that's available. So where are you working on this at this point? Where in the state are you serving and how can folks get more information.

Eve Brantley:

When we first started, Adam mentioned a steering committee, and so we brought together people from all over the state to help us identify where not only the data are telling us we should start, but get that best professional

judgment from local government, state agencies, federal agencies, non-government. So as a group, this big collective group identified nine pilot watersheds because there aren't enough resources like anything to go statewide so we wanted to understand where's the interest, the agriculture and current irrigation, and then where's the water that could support that. We finished our first plan in the Middle Tennessee River Valley, and I think about 30 farmers or so were part of that initial program, which is increased by 3000 plus acres of irrigation. So that's the other thing is we're not converting ag lands. This is existing ag lands that are eligible for this project. We then moved to the Tehachapi Watersheds. That was our second approved plan and that program is currently getting rolled out and working with farmers to get the agreements and it's down in the wire grass part of the state. So we had the two really big initial big areas of the state, Tennessee River Valley and the Wire Grass Region Chalk Tehachapi Rivers then moved up into the center part of the state, as Adam mentioned, into that middle Alabama River Basin. And we've now, as you know, just to keep things moving along as we've got that plan in for comments and we're responding to comments, we've moved up back up to the northwest part of the state in the Pickwick Bear Wilson area. So in each of these areas, one thing that I really want to emphasize is, you know, we wish that we would love to continue doing these plans for all of our hydrologic unit code eight in the state. I think there's 54. It would be great to be able to do that. What we are learning with each plan is how to be more efficient and how to make sure that we understand the resources in those areas throughout the entire state. As you all know, we have unparalleled freshwater biodiversity. So a big part of these plans is also understanding where we don't want to irrigate, where we want to be very mindful of sensitive species, threatened and endangered species. I like the way some of my colleagues, a geological survey of Alabama frame it, which is if we've got these threatened and endangered species and they're coexisting with ag lands, let's keep figuring out how to do that and do it better. So another great part of being at Auburn and working with our Auburn researchers is we've got Dr. Brenda Ortiz and her precision irrigation work, Dr. Audrey Gamble and Rishi Prasad, and the work that they're doing with cover crops and nutrient management. So we're able to have these additional resources that say, hey, this is great. Let's you know, when you get irrigation on your farm, it comes with at no cost to the farmer. Three years of irrigation, water management plans that include soil moisture weather station and a flow meter. So in a contract with the vendors that the farmers can understand the benefit of how much water do I need and when do I need it? So we're looking at really thinking through how can we as best as possible plan for that ag water use that takes advantage of our abundant water resources, but not at the risk to our freshwater biodiversity and cultural resources. So that's where currently we're working in the state in those areas, and we'll see where we go next. We've got to get our steering committee together. We check in with them every 18 months or so to just continue to get advice, update them on what we're doing. And truly, it is a transparent process because we want people's input, right? I mean, this is a great opportunity to plan for how we want to use water and to show that agriculture is being really forward thinking about water use and understanding what's possible given the resources that we have.

Scott Graham:

Absolutely. Well, we appreciate you all taking time to come and visit with us today on the Alabama Crops Report podcast. Before we let you go, is there anything else we need to talk about?

Eve Brantley:

If people would like to get more information, they can check in with the Alabama Soil and Water Conservation District Office in each county. There's an office, so I mentioned those areas. You could go to the Alabama Soil and Water Conservation Committee Web page to get more information. And also at our extension Web page, they can do a search for irrigation, watershed planning and find more information. So we would welcome people to learn more about it that way, too.

Scott Graham:

And I know you all put out informational Twitter. Yes. That's what's the handle for that.

Eve Brantley:

Auburn Water at Auburn Waters, our water resources. And then it's and then I occasionally tweet at Brant. If but if you just look up even lately, you'll find us.

Adam Newby:

I want to add in the old adage, if you fail to plan, you plan to fail. Think when we talk about water use you know, we've seen over the decades how important it is to plan for water use. And I think, you know, our farmers do such a good job. I think the agriculture and industry especially if we look at the last 20 years or so, has really done such a good job at learning how to use water really efficiently. And, you know, and what this does is this is helping us create a process where we can really plan ahead and plan for the future so that we use these water resources efficiently and to the benefit of all Alabamians.

Adam Rabinowitz:

This has been really informative for me, just, you know, understanding about the program, understanding why we're a little bit different from neighboring states in terms of the irrigation that we have, the importance to irrigation. And, you know, the benefits to this program And so it's you know, it's definitely exciting work to see.

Scott Graham:

Dr. Brantley, Dr. Adam Newby, we appreciate you all coming on the Alabama Crops Report podcast. As always, we appreciate our listeners out there who tune in every episode. If we have any topics or things you like to hear us discuss, please let us know. And as always, if we can do anything to help, please don't hesitate to reach out and let us know.

Announcer:

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