Good afternoon. Let's get started. Welcome to today's webinar, titled “Conservation Innovation Grants: Environmental Markets and Conservation Finance. My name is Jen Ryan, and I am a Natural Resources Specialist with the Natural Resources Conservation Service at the East National Technology Support Center.

I am pleased to turn the webinar over to Caroline Sharone, one of three managers overseeing the conservation innovation grants program for NRCS. She came to NRCS after 20 years in government grants management and agricultural research. Caroline, you may now begin.

Thank you. First of all, welcome and thank you for taking time to tune in to the NRCS innovation webinar series. Today will highlight projects in the national environmental markets, and conservation finance priority area. For those of you unfamiliar with the conservation innovation grants program, the purpose is to stimulate the development and adoption of innovative conservation approaches and technologies for U.S. producers on farms, ranches and forest land. CIG projects lead to the transfer of conservation technologies, management systems, and innovative approaches to agriculture producers and the private sector. In addition, the projects often help NRCS with updating or changing manuals and guides, and modernizing conservation standards. In general, the program will fund pilot projects, demonstrations and research. You will see that with the projects that are viewed today.

More recently, the USDA has started an agricultural innovation agenda. What's interesting is that the second goal for this agenda is to integrate the latest conservation technologies and practices into USDA program. We look forward to this program, significantly helping NRCS in achieving this goal. As I mentioned today, we will talk about the environmental markets and conservation finance priority area. For the program. The CIG program has been around since 2004 and in that time, about 17% of projects have dealt with economic, finance, or markets and about 19% of funding and always had 132 projects cover economic, finance or market topic areas. Today, we are going to be spending time with the two of these projects, which were successful, and to introduce these projects is our discipline lead, in environmental markets, Adam Chambers. I give you the floor.

Thank you, Caroline, and thank you everyone for joining today's webinar. We have spent quite a bit of time working to provide something to you all that gives insight into how the number of projects and the environmental markets and conservation finance can help accomplish the mission of getting more conservation on the ground. Sometimes it takes a little bit of thinking outside the box to think about how we can use leverage and conservation partnerships in order to get conservation mission and NRCS has deployed over so many acres in the country. We can do that through partnerships. The conservation innovation grants program gives us the opportunity thanks to the farm bill and support of that program, and the great staff that will have projects like this. We will hear from two projects. Billy Gascoigne from Ducks Unlimited is the associate director of conservation strategies, and he will give us a presentation on the project he has completed. Mace Vaughn is the co-director of agricultural biodiversity program and Mace will give us insight into the projects that may still be underway and ongoing as well. Without further ado, what I'd like to do is turn it over to the program lead and I have asked them to give an overview. Each of you will have 20 minutes. As it has been expressed, we will then turn it over to questions. Let's start with Billy. Tell us about your wetland sustainability analysis under the CIG program, and what you learned to the project.

Thank you, Adam, and the rest of the CIG team and everybody listening today. My name is Billy Gascoigne, associate director of conservation strategy for Ducks Unlimited. I spent my time investigating environmental market opportunities and how we might leverage certain mechanisms to further private lands conservation. I was here to talk about some of the work under a recent CIG that we were awarded, 2015 application that we wrapped up recently. Focused on embedded freshwater seasonal wetlands within crops systems. These wetlands play a very important role ecologically about diversity and certainly from other ecosystem services like this. They play an important role within that system. They are challenged economically. We went down this path to see if Carbon finance was a potential need -- means of filling that gap. We ventured out on a feasibility analysis. I will talk about why we structured it the way we did. The impetus for this grant goes back to CIG, that predated this. In 2010 or 2011, we were awarded an earlier conservation innovation grant. When the team and a lot of partners at the table were trying to address the economic shortfalls, for some of the public goods provided by private lands. Carbon markets were at the

forefront. We were given a CIG to focus in on grasslands. Some of the below-ground carbon that was being preserved by working grasslands and avoiding an alternative scenario by which native prairie was being plowed up and below-ground reserve was being emitted. There was a lot of success in that early grant. We were cast with offering the first ever grassland protocol in the world which we achieved with partners. We developed a validated grassland credit in the world, developing 40,000 of them, which is not a small volume for a pilot effort. We transacted them to Chevrolet in a landmark deal. We were able to be host of beer -- headquarters. We received a great press release that started to promote markets and what they could do for working landowners trying to face certain decisions. Certainly we are glad to see the remarks that Senator Michigan Senator Debbie Stabenow gave about what these markets mean and her perspective from the Senate ag committee.

Writing a wave of success, we had a lot of lessons to learn through that endeavor. One of those lessons learned was that small percent gains matter or small things matter. Within Carbon protocols. What I mean is, at the per acre per year level, Carbon within these access systems is not a lot relatively speaking. What makes a significant from a Carbon balanced import is the amount of agricultural lands we have in production across the country. They are somewhat tight margins. If we have a protocols that inevitably write in smaller discounts on certainty or you will hear terms like leakage or anything to deal with eligibility, and you take that smaller percentage and I have someone trying to put these together for working landowners. If we start to get knocks against those outcomes, it can really take the energy out of a project and completely prohibit a program from scaling. Small things matter, that's what I mean. Within the grassland protocol that we author, wetland acres were seen as something that were fairly dynamic, and relatively unknown. They didn't want to stop the movement of a grassland because we were going to get hung up on the dynamics and complexities of the wetland acres. I will show you pictures that the system I'm working in, a glaciated landscape known as the Tahoe reason -- region. I was forced to remove every wetland acre within our project and not count for any greenhouse gases. I was talking to a Carbon specialist at the University soon after we did the Chevrolet sale, and he mentioned that it's unfortunate because those wetland acres and soils could have 4 to 5 to 10 times sequestration rate than surrounding upland soils. That started a head scratching moment for me. Not knowing all that went into this Carbon stuff. I put together a team of partners to formalize a proposal to the CIG to further investigate the potential for inclusion of what the wetland acres. The other impetus was the scale rate of loss and ancillary implications of these embedded freshwater wetlands. Here is a graphic that shows you the scale which we are talking about. These represent semipermanent seasonal and temporary wetlands. These flashy wetlands that are often found within crop yields and often susceptible to drainage and things like tile or surfers drainage. Yet they play a lot of role environmentally and ecologically.

And aerial view from this landscape known as the prairie pot region. This looks like a desk Mac -- ducks perspective. That landscape begins to look like this when you approach it from an agricultural standpoint. Then we see the landscape in certain areas with the tile and surface drainages. The wetlands are completely removed from the landscape in the migratory waterfowl are coming up to this region to breed and they are left with varied degraded resources. We spent time on the grassland side but the embedded wetlands in these crop fields, while they don't provide the breeding habitat we desire within native prairie, our researchers have determined that there is significant environmental and wildlife value that they still provide even though they are within a production system. There is roughly 48 million breed pairs of waterfowl. When they did the math, it looked like as if 15 million breeding pairs are still finding some sort of value within these crop based systems, whether ancillary grants Lowndes -- grasslands, were bringing their young to be raised, or using it for low feed. Nonetheless, the wetlands are important for migratory waterfowl down the list of flood abatement and water quality. There is a need. It is often an economic division that these producers are facing when they need to implement planting crops across their acreage.

The third one, the current treatment or lack thereof for the protocols. There is a leverage point at which -- there was a grassland protocol and we tested it and it worked. We were looking for areas of improvement and the inclusion of these acres would be one of those. Lastly, the reason why we wrote this grant and the way that we did, goes back to the early years or maybe not the early early years, but 2010 and 2011 were the early years of the carpet -- Carbon investment. A lot of the work being conducted was done so on the premise of the field of dreams. If we build the protocols, the projects will come. If we build the methodologies -- use the term protocols, they are methodologies and they are a blueprint that outlines wet somebody needs to do to be able to generate a Carbon print. What steps to take and what science and how do you ensure the science and uncertainty discounts. The blueprint by which generating Carbon credits. We started to realize that that was not the case. If we built that they don't necessarily, and we needed to look at certain factors of these projects before spending a lot of time with money ready protocols. There is a lot of protocols that were developed and they sat on the shelf and never generated a single project or maybe they generated a subsidized pilot phase but failed to scale. I don't think we nor USDA want to continue down that

road. There was lessons learned on both sides and we felt this was a prudent approach moving forward into an unknown marketplace worth considering that had an upside.

The approach that we took -- the PDF got converted here. The approach we took was to start with the convenience of an expert working group and figure out what we were trying to -- what we were being faced with. Wetlands are dynamic. They had multiple greenhouse gases that are sequestered and emitted. They are very diverse. Some out of the seven years and some wet every year. We brought in a group of 12 to 15 different experts that had a wide range of expertise from biogeochemical modeling to wetland dynamics, to actual greenhouse gas data capturing, for folks in the field during the work. We brought in a person from Canada that had some background in drafting and wetland based protocol for the Alberta Carbon market. Another person that had experience drafting wetland protocol in the U.S. for coastal systems. We got everybody around the table and provided a framework by which we needed to set off from. We then also partnered with the newly formed apartment of greenhouse gas management and accounting at Colorado State. We felt this was a perfect opportunity to work with a student base where we needed to dive into the literature and do a literature review and do data analysis and do statistical work while having background in greenhouse gases and markets. This newly formed department was a perfect fit.

The first step that the student and advisor ship took was to parameterize the biogeochemical model for wetlands. I don't mean to go into the nerdy details but think of having what it would take to go out there and for every wetland, put out there greenhouse gas towers and do solar cores and measurements on every single wetland. It would be tremendously time and resource intensive. What the Carbon markets often rely on are these models by which you can parameterize them with broader data sets. They had statistical relationships with variables. I, sitting at a desk, can run the models using appropriate data, and they can kick out pretty accurate greenhouse gas estimates for those systems. They allow us to get to scale and utilize the economies of scale of these tools.

We unfortunately -- there were hurdles there and I will go into that more. We attempted to develop an empirical model based on published rates. Parameters sing the models has never been attempted and after months of statistical efforts by Colorado state, they failed to find his statistical relationship that give them confidence moving forward. There was a shift to an empirical model and they cross-examined the output with published sources. While identifying science gaps.

Fast-forward to findings. Unfortunately, the data was insufficient to parameterize that model or develop a result with reasonable degree of uncertainty. When Adam asked that I present on this, there was a hesitation there because we didn't reach the flashy conclusions like we did in the previous CIG where we have the press releases and the sale to a major Fortune 500 company. We had lessons learned and there wasn't something there. We had to grow comfortable with that. It gets back to why we organized and designed the framework of the feasibility assessment in the first place. Uncertainty is a big thing when it comes to protocols and Carbon projects. If there is uncertainty, the science is often questioned and the Carbon offsets can be questioned. If they are not handled appropriately. Sometimes the protocols will be completely void of the registries will not publish them which is not a place you want to get to after years of work. Or, they often require certain discounts being written in. If you are trying to develop a Carbon projects, and all of a sudden you have to take a 30 or 50% deduction on your credits, it can cripple any program and give you projects to scale.

The other finding was that methane is a driver of emissions in these freshwater wetlands. It largely negated Carbon sequestration we discovered. There were extensive sequestration rates for Carbon. Methane is another house gas that occurs in freshwater systems. It is negated in saline systems but nonetheless, it is present in the freshwater wetlands. From a greenhouse gas standpoint, individual greenhouse gases have different global warming potential, or the influence on a warming scenario. There are guidelines by which you have to use a multiplier for certain greenhouse gases and methane is one that is documented to be 25 to 28 times more potent than Carbon dioxide. You can imagine having a wetland that has these soils and vegetation communities that are sequestering a large amount of Carbon in a small amount of methane being omitted. You having a multiply that factor of 25 to 28 times that negated the gains.

There is tremendous debate that has occurred and is still ongoing within the scientific community on whether or not those multiplier factors are accurate. Methane is a short-lived climate pollutant and only in the atmosphere on average about 10 to 15 years. Whereas, CO2 is in the atmosphere for 100 years plus. There is accounting taking place and I think the Carbon markets within -- focused on wetlands have felt the brunt of that continued debate. It is still ongoing but unfortunately, during a current scenario, methane seemed to overwhelm the Carbon that was recognized.

Lastly, significant grants gas research is needed for seasonal wetlands at risk and its conversion. There was not a lot of data to draw from. It was very specific with landscapes and crop size. There is a need for broader data research. Practices like buffer strips, nitrous oxide, coming out from the fields, that is admitted to wetlands and it is determined on what happens in the surrounding wetlands. That has a multiply factor of 310. Maybe you can overcome some of the methane with the ability to capture some of the nitrous oxide benefits of wetlands and upward practices like buffer strips. That gets into a data need and there isn't the data out there to tease out those relationships at this point. Lastly, proper methane accounting.

To wrap up the conclusions and lessons learned, ultimately Willard Carbon market protocol for preservation, indoor restoration, is not just to buy us time. It's unfortunate but we designed it and we knew going into this effort that there was significant uncertainty regarding wetlands and whether or not there could be a fit for Carbon markets and Carbon credit development. Unfortunately, everything we did through due diligence brought us to the reality that they aren't right for a full protocol. And project development. This approach works effectively, though. A limited investment with a smaller CIG add and we have partners bring resources to the table. Ultimately we felt it was a wise use of resources on both sides to come to a conclusion that was worthwhile investigating.

Lastly, wetlands have long been Carbon sinks. We've known that for a long time. We need to better understand the role in negating this Carbon imbalance. Certainly ecologically, as market conditions force producers to look at every acre, we need to think holistically and think innovatively which is at the root of the CIG program on how we might be able to leverage these levers if you will to further incentivize preservation and or reservation -- restoration. Back to you, Adam. Thank you again.

Thank you, so much. I appreciate you giving an honest presentation. You had a CIG in 2014 and 2015 that delivered this very robust success. I would encourage you to look at your current CIG you just completed as a robust success as well, because the inhalation of CO2 by the systems is maybe offset by the escalation of their CH four and methane emissions. It doesn't mean they're not important conservation systems. Maybe Carbon markets are the right mechanism or as he said, you could explore down the nitrous oxide pathway a little bit more. I commend you on a successful project, learning a lot throughout the way. And advancing things. That is what CIG represents. A little bit of high risk capital invested in conservation solutions. Thank you and I appreciate you staying within your time.

The one thing I took away his small things matter. I heard you loud and clear. I think that is a perfect segue over to Mason. Mason von is the codirector of the agricultural biodiversity program at Xerxes and will talk about the be better certified project. Without further ado, I will hand the screen and controls over to you and let's get started with learning about Bee Better Certified.

Thank you for joining today. Let's dive right in. For those of you who don't know the Xerxes society for whom I work, we are conservation nonprofit based in Portland, Oregon. I have stuff that I manage across the U.S. We are reworked to protect wildlife to the conservation of invertebrates and their habitat. The biggest program is pollinator and biodiversity conservation program which I manage direct with my partner in crime. We have another other programs like butterflies and aquatic conservation. And other things. Today we are focused on pollinator and ag biodiversity work.

A big element frankly has been a long-term collaboration with NRCS. In the context of the CIG work we are talking about today, this is facilitated a focus on our farming and food industry collaborations and trying to leverage partnerships with the whole range of companies and a range of farms. To really try to incentivize the adoption of conservation practices and biodiversity conservation practices on farms across the U.S. The formatting when the conversion to PDF -- through a few titles off.

To give you a picture of the type of habitats. We are focused on these across the U.S. Field borders, conservation cover, small wildfire oh Meadows, hedgerows of different shapes, sizes, and designs, some of which I will show later, have gotten to be quite big. In the context of Bee Better Certified. Cover cropping with a focus on not just soil help but how these cover crops can be designed to benefit biodiversity and insect biodiversity that plays a role in things like crop pollination or pest management. It is a nice segue into white we should focus on insect conservation. This still feels like a focus on insects and invertebrates and thinking about their needs in traditional wildlife and biodiversity conservation, it is a field -- I guess I'm proud to say it is still growing and gaining more interest and traction. It's fundamentally because insects and ecosystems and agricultural ecosystems are engineers. They are doing pollination, pest management, helping with soil production and Carbon sequestration, helping with nutrients and decomposition. They are the most abundant and diverse animals on earth which means they play an important role even if they are small and often go unnoticed.

Pollination is at the heart of this Bee Better Certified. They need an animal to move that pollen around. If we think about the wildlife connection. The fruits and sees that come as a result of pollination our food eating animals -- whether aquatic systems or terrestrial systems, food for all sorts of wildlife including 90% of birds. When we think about pollinator habitat in managing at, we are designing habitat with a focus on biodiversity. Plant died of a city desk biodiversity. There are a sweet of different pollinators involved with the service but we focus on the bees because they are transporting pollen and learning how to work with flowers and learning how to work a particular flower which makes them efficient. Crop pollination, they learn to work in algal bloom or blue Bari -- blueberry. They will do the work we need them to do. When we manage landscape properly, we are creating a landscape full of sites as a key element of the Bee Better Certified . The bees stay around and we have nests and we will have bees visiting the flowers. To work with farmers to create that environment with food and shelter. We are doing a lot there. To improve the pollination service in the landscape.

There is also I think a growing recognition of concern around pollinators which has been putting -- has had them in the spotlight, particularly since 2006. Beekeepers all of a sudden were losing 30% to 50% of their hives every year. That started in 2006 with a big jump in annual hive losses which has garnered attention. At the same time, we were documenting with at least well studied species like bumblebees and monarch butterflies that 25% above will be species are at risk and 90% decline in the monarch butterfly population in the U.S. Even these common species are in decline, leading to the need to develop more tools in the toolbox. In the last three years, there is a growing body of literature that showing that insect biomass worldwide has seen significant declines. At 70 for six -- 76% job at nature preserves in Germany, and other parts of the globe showing where this is occurring. At a time when we see a lot of global change, we are seeing a lot of concern within our field. It is not just witnessing rare species like the compadre butterfly here, but common species like the patch bumblebee and the monarch butterfly, a decline in commerce -- common species. In my mind, this is an issue of great concern, but I also think an interesting opportunity where we think about agriculture and we think about Agro ecosystems and the fact that if we are focusing on or seeing declines and what were commonly common species and why it spreads to abundant species, I think this offers up an opportunity and a real need to work within our working landscape to try to create additional incentives and structures to support conservation of pollinators in this case. Part of the context for this and in my mind, how this is such -- or is a good fit for the conservation innovation grant program, is we are trying to develop and offer more tools in the toolbox for addressing in this case pollinator or biodiversity conservation on working lands. This has been a real successful model which I will go through here.

Just before as we kick off this section, digging now into what is this be better certification, I have to acknowledge the three partners that have been instrumental in this work with Xerces, the third-party certifier we have worked with, taking on the brunt of making sure there is an independent review of these farms. Plus, NRCS to the conservation innovation grant program, as well as the interest of state offices across the country in having another tool in the toolbox for working with their clients and producers to send fundamental partners in the program since it starts going back five or six years.

Fundamentally, Bee Better Certified is about supporting and incentivizing habitat on the farm, protecting those nest sites that are so important for bees, and I would lump in, wintering habitat for bees and even indirectly, host plants and other important shelter needs for other animals besides bees. Bees will form the heart of this. Protection from pesticides is another element and I will show as a wrap up this short slide set, it's interesting how this has become an interesting incentive for the adoption of the 5 x 5 conservation practice. I will hit on that at the end. Fundamentally, and I can't say this enough, for a program like this, I think to maintain credibility and to have credibility in the consumer marketplace and especially in the consumer market. It needed this third-party certification and third-party verification. Tilth has been a fundamental partner in that. In thinking about these fundamental elements, I want to walk through how we develop the standard that led to -- that developed the foundation for this certification.

It started with a review of where we reviewed the research literature for protecting bees. Looking back at our work in agriculture and NRCS, supporting producers and adopting pollinator conservation. This goes back to 2003 and 2004, collaborations starting with early CIG grants focused on habitat establishment in California, both state and national, that kicked off this work. 16 years of collaboration with the farm and agricultural industry. We had a lot of time on the ground implementing these practices. The key to this standard development was a collaboration with the diverse advisory team with researchers, focused on biodiversity and pollinators and agricultural landscapes with farmers and food extremely -- industry experts. We wanted something meaningful, flexible, manageable, and verifiable. To tie this together was a challenge. In fact, would not have been possible without bending to the CIG program. It is the CIG program that allowed us to take the time to convene these people and put the time in developing a meaningful standard.

The heart of the details are habitat. 5% of a farm that is certified has to be in some sort of pollinator habitat. At that 5%, at least 1% has to be permanent which means that four of the 5% could be a temporary habitat like the repeated planting of a cover crop allowed to go to bloom. Out what I like it to be 5% or 20%? Sure. But we wanted something achievable and consistently and across a wide range of crops and farm systems from California to blueberries.

Another element of the habitat is there has to be floral diversity. Aiming for at least three different species of flower blooming during each of the major growing seasons across the country. And having nesting habitat as part of that, whether until the ground for STB's, or snags, or pithy stent plants, allowing tunnel nesting bees to find a nest. Or overgrown areas where you could have small cavities forms -- formed by rodents that bumblebee might winter inside up to maintain bumblebees in these landscapes. Thinking about nesting habitat was fundamental.

The other big piece was this risk mitigation. Probably frankly the hardest piece to try to think of how we develop something that is meaningful but also manageable for buyer produces across the country.
The heart of this is a holistic approach to pest management, getting into the heart of what true integrated pest management is. Thinking about pest prevention and avoidance using non-pesticides. Pesticides -- those are able to be used but we have a mandate that those farms certified clearly justifying when those needs are met. If we have high risk uses a pesticide, that those are eliminated. We are trying to find solutions that are addressing pest risk, and eliminating those that are going to kill bees and other pollinators.
Also with the requirement for pesticide spatial buffers, there is that evidence demonstrating that when you have space between application area and areas of habitat, you can dramatically reduce the risk. There are restrictions on aerial applications and 40 foot buffers within the applicants property, 40 foot buffers required around ground-based applications and 60 feet or separate air blasts sprayers. And for high risk insects of the guides like that nitric wanted Dean neo nicotine nodes. One of the big challenges with how to we meaningfully protect habitat from use on neighboring properties, this requirement has shifted over the years as we have worked with growers and worked through the CIG program to pilot test and bring farms on or develop a farm plan to bring farms onto the program. In this case we have aligned with what is seen and used in a lot of organic farm certifications. Where there is a minimum 30 foot buffer between any application area and habitat in this case, organic farm. There could be consistency with other certification programs for the farms certification programs. This has allowed us between the road and buffer around the road, we have been able to effectively enroll farms of the program by having this 30 foot buffer.
Finally, the quick asides. There are restrictions on manage bees or the release of non-native species. I want go into that but it's another element as part of the certification that applies only in a handful of cases.
The goal for this with the standards with the setup requirement, we are flexible. We can take conventional and organic farms from California to Minnesota, all the way to Maine, and have this be a program that was adoptable across the U.S. That has been successful so far.
I did want to quickly walk through what is this process. What is that the growers we work with have to do in order to certify their farms as Bee better. The heart of the program is implementing a Bee better certification. The same way organic farms have to have a network organic plan, Bee better farms have to. They fill out an application and share their plan. That is reviewed. Then Oregon tilth gives feedback and shows how the plan has been implemented. Going to inspection findings, they can offer if there are issues where there is noncompliance, they can suggest corrective actions. As soon as those are made, at that point, tilth can manage certification and the use of the Bee better certification logo. This plan is updated annually and there is a full renewal and recertification every three years to make sure that those certified farms are maintaining the plant or implementation of the plan.
A couple of things I wanted to point on. In terms of how we see this program being perpetuating itself or managing itself in the future. When companies like Heloise incorporate be better certified products into their products, and then get access to and are able to use this, they pay Xerces half a cent per dollar of gross sales up to 200,000 a year for company into that be better program. There is a run -- royalty. At the same time, a major concern for me throughout the development and this process of Bee Better Certified is what is in it for growers. What we see when we have food companies that are buying into this program and wanting to incorporate Bee Better Certified , crops into their products, we see that additional premiums are being paid to farmers to support their work, maintaining the standard. We are seeing premiums now going to farms who are taking on the work of adopting Bee Better Certified.
If farms are direct selling like giant blueberry here marketing directly to consumers, a couple of studies have come out showing that consumers are up to five times more willing to pay for products that have some sort of a label like a pollinator label, specifically a pollinator label, compared to similar products. There is an

interest on the part of consumers. And work was done on Bee friendly cranberries and consumers are willing to pay 14% more for those. My hope is that if you are a grower who is certified selling direct to consumers, that is going to increase your market share and increase interest and put your product above others, and allow you to charge a premium which my hope is that goes back into conservation on the farm.

If you look now, we have Haagen Dazs, rainier fruit, California John, homegrown organic, and various ones . Farms covering crops like almonds, grain, berries, tree fruit, and more, are out from cost to Walmart to trader Jones and progress. For me, that's great at that is the heart of this is that this product is getting out and there is recognition, but then a little me -- but fundamentally, what does it mean for conservation on the ground. I want to hit on specific achievements we have seen since rolling out Bee Better Certified. We just rolled it out in 2017. It is really still a fledgling program.

So far we have 18 certified farm companies with 28 farms. This is over 20,000 acres of certified land manage to be better for bees. Working on more than 49 different crops. We have a number of new farms on track the certification. In fact, I was talking with my codirector about this. On Friday, and yesterday, Oregon tilth has been out over the last week working on certifications for another 10,000 acres of farm that is currently in the works right now. That we should hear about in the next few days or weeks.

If we look at what it means in terms of habitat on the ground, of this farms, we have 197 acres of permanent habitat that are protected. We have 45 miles of hedgerows planted. 52 new acres of new habitat that is permanent habitat that has been planted. And over 400 acres of temporary habitat that's been put on the ground so far as part of the program. If we want to translate that into this, that is 45 miles of the hedgerow practice and 52 acres of 327 44 20, the new wildlife habitat planting practice. And 400 acres at 340 cover crop. This is 20,000 acres of 595 on the ground. 20,000 acres of farms that are being managed to be reduced risk to pollinators on the ground. That are really demonstrating that they are adopting practices meant to take a hedgerow like this one, winding through this farm in California, and making sure it's protected from pesticide use on either side of the habitat winding to this farm.

As we look ahead, the other thing the CIG and that this project has allowed us to do is put this idea of the Bee Better Certified out in front of other audiences. We are leveraging this work with a strong interest on the part of the electric power research Institute to take the current Bee better certification standards and turn them into something that the energy industry can use. Weather plantings under winter vines or power lines or gas lines right of ways, this industry is interested -- solar farms, another one. There has been a ton of interest in companies saying we are doing great things for pollinators, but there is that need for a third-party certification an independent set of standards, and otherwise, the fox is guarding the hen house. And not be able to demonstrate clearly in an audible way, that you are implementing habitat on the ground. Another area where I am interested in seeing be better expand beyond just the current work in food systems with food companies and with farms, is looking at its role as a tool for certifying other -- should've put in here.my diversity conservation market. Having a clear set of standards developed independently that are meant to be meaningful and flexible and having that third party to be able to verify things like for those interested in biodiversity markets, which seems like an area that I feel like has been challenged for folks over the years, be better does have the potential to be that independent third party verifiable tool for documenting. Not only are we saying were going to put high-quality pollinator habitat on the ground, but here is a tool that can be used to verify that, so customers and consumers -- the board members interested in seeing our company shift in one direction towards biodiversity conservation, they have a tool to verify that is the case.

With that, I will leave it there. One thing I will put into the chat box for folks, is a link that I should've had to the Bee Better Certified website. If folks want to learn more about Bee better and the documents that include handouts for growers and the standards, brochures and things like that. That's available on that website that I put into the chat box. With that, I will hand it back to you.

Great, Mace. Thank you for highlighting the chat box at the end. We want to encourage folks to please put questions in their and we will open it up for dialogue here. A couple of things that I'm taking away from both presentations, Mason and Billy, these are working solutions. To conservation team practitioners out there, we have seen working lens opportunity to get more conservation on the ground, while working with some of these big brands and utilizing the NRCS practices to show the way. But then work with CIG and explore how we can take the working lands and maybe make them conservation working lands as well. The other thing that's interesting that is a commonality here is the need for protocols. I am in a cooking analogy here. We have to have a recipe, whether a protocol for pollinator habitat, or for Carbon. We have to have a methodology for doing the quantification and clear rules of the game in my rules of engagement. Then we heard both Billy and Mace talk about third-party verification. As much as we feel like we work with a very trustworthy group of folks, there needs to be a third-party verification process to say yes, these practices are being implemented in a manner that can carry that Bee better label or carry that Carbon credit -- Carbon

offset credit in going forward and going to the market. One thing that we have a little bit differently here is Billy talked more about generating a Carbon offset and then that would be its own standalone ecosystem service credit or widget. And Mace talked eloquently about how to be better label can be attached to different products and carry forward in the value from that product purchase. We are seeing the world environmental market and conservation finance do a lot of exploring on both of those fronts. One is a value add to a product and when is an independent widget to be used for an offset for an airline flight or something. With that, we have time for questions. I would like to thank our presenters again. I will turn it back to Caroline. Have you received any questions that I gave you? Have you received any questions?

I do have one question in the chat box. That I have a couple of others from you. I will go through those. The first question, are you also promoting native Bee population?

Yes, in fact the heart of that Bee better certification is only focused on native bees. We look at -- if one wants to incorporate plants for example, forage good for honeybees, by all means, that's fine. But the heart of the standard is thinking about plant diversity and nest sites that are geared towards native solitary bees on the ground or solitary bees that nest in the woods or native bumblebees. We built around that. Not to mention the corollary benefits for butterflies or other pollinators that use the same kind of bio diverse habitat. Fundamentally it is a need to be certification that happens to have some good benefits for the beekeeping industry. In fact, one of the incentives I hope it generates is that a beekeeper, if they are working with a Bee better certified farm, that they would feel more comfortable that pest management practices on the farm were protected of bees and there is more forage resources outside of crop Bloom on the same firms. One thing I have talked with several people about is the idea of my beekeepers offer some sort of a rebate on their high rental cost for that farm for example. Maybe like 5% on your honey bee hive rental. If you have got to the work of creating the landscape that's going to help that beekeeper leave that farm with honeybees that are healthy.

That person followed up with another question. Are you also promoting beneficial insect population?

That's great. Yes. We are in a couple of ways. Fundamentally that diversity in the landscape, that plant and bloom diversity, it's going to play an important role in helping other beneficial insects, but also a discussion topic and part of what's considered in developing that reduced risk pest management plan. As we help or they produce think about how to manage pets on the farm, making sure they are incorporating were thinking about other beneficial insects, will be fundamental. All of that said, the focus of the program just because it is cleaner and clearer messaging, is really on the bees and the pollinator element. But, we definitely bring in other beneficial insects and by default they will be additional benefits. We will see more of those.

I think this is feeding a bunch of other questions. Although the focus is on native pollinators, what is the benefit to other beneficial insects and -- in the adjacent areas? The expected benefit.

I had on that a little bit. If we've got both permanent habitat, albeit -- we have both permanent habitat on that landscape, that is protected from insecticide exposure, that will lead to increases in other beneficial insects. The idea of consistent cover crops ideally designed to not just support pollinators but other beneficial insects, I think that over time can help lead to increases in those populations. Ideally and this is an area where in developing the plan and hopefully these farms are thinking about this or maybe we are helping them where we had capacity or funding, we would be thinking about what is your past -- what are the key pests you have on site and what are the key beneficial insects that would potentially attack those pests and could we incorporate some of that habitat needs of those beneficial insects into the farm plan. All of that is manageable and doable underneath the Bee better certification. So long as you are meeting the fundamental standards.

Mace, could you talk more about the demand for products produced on Bee better certified lands? Are they participating because they see an economic incentive like higher products prices or do they already have a strong conservation ethic?

It's a mixed bag. I would say some of the larger farms that are certified are frankly just in it for the money. It's interesting the challenges that that can lead to when you have a producer who just is looking at the book and meeting the bear criteria. It also has gotten us a lot of ground to be certified and meeting the standard. I would say probably if you look at the majority of farms, not the majority of acres today, the majority of farms or folks engaged because of the conservation ethic, and because of the marketing tool, I look at for example the blueberry -- shared pictures of the giant blueberries. They are really doing that because a combination of conservation ethic on the part of that farm company, as well as the marketing potential there. It is a pretty mixed bag. We had quite a range of folks. Over time it will be interesting to see what we learn by working with those different -- with folks of different motivations here. In my mind, I always want it to pay. I want conservation to pay for these growers taking their time and putting in the effort to develop the habitat and the pest management plan.

Billy, there is a saying that what is good for the herd is good for the bird. How can position conservation installations like the one highlighted in your project provide migratory bird habitat that can generate income for a farmer or rancher? Are there migratory bird credits?

Good question. There isn't a migratory bird credit, but that old adage is something that we have long recognized and tried to implement. I would like to think we have done an even better job embracing it in the last five years to key in on -- we have long been protecting native prairie and the embedded wetlands for the first 45 years. We sent every dollar of Ducks Unlimited to the Canadian prairies. We are trying to be proactive on protection. More recently, we recognized the role of ag lands and working at a glance. And the ways in which we can develop partnerships to make the economics brighter and bring conservation into areas that might not be so conservation focused. We have generated a program that has a huge livestock integration component as a principal help to further that adage of what is good for the herd is good for the bird. We have another couple of partnerships forming now around that. It is something that we work on and unfortunately, there isn't a bird credit. There are some bird labeling similar to that Bee better certification. A bird friendly Bee certification and certified by the Audubon Society. Something to look into their.

Here is one that both of you can tackle separately. Billy, you can go first. Seeing that your projects could be consolidated into a single solution, imagine position conservation solution with pollinator habitat. To you have thoughts about this concept?

The term precision agriculture means something different to different people. As far as furthering conservation at scale under an overall umbrella, I think we recognize it is more challenging than just given the diversity of that operation, the diversity of paradigms that are present on operations, and logistically on what it would take. Yes, Adam touched on it earlier. The way of the future for us to achieve our goals collectively whether birds or ducks or producers is through partnerships. Through the CIG we recognize that. In order to do it effectively, I think we have to be adaptive and have different levers to pull. At the end of the day, we are all trying to further incentivize private lands conservation and speak to the value of these ancillary services and where possible, reward financially these producers for providing public goods that we all benefit from. I will stop there.

Your first thought was my first thought. There are a lot of ways to interpret that question. The idea of having frameworks. My opinion, the way I see it, having a framework to guide the conservation planning process and to think about both strategic and precision work on the farm, if we are looking at pollinators, or even beneficial insects in general, there is still quite a bit to learn. About how to dial this in perfectly for different farming landscapes and different crops. By offering a framework for this case, in the case of Bee Better Certified, that says here are the elements where you are striving for and benchmarks to achieve, I do think that helps guide goalsetting and strategizing around something like precision ag in the context of biodiversity conservation. I see it as a useful tool. And a tool that gets at the heart of NRCS conservation planning and at the heart of things like habitat evaluation guides used to guide wildlife or biodiversity work. I see all of these different tools as being helpful and useful.

Mace and Billy, this is Adam. I will ask a fundamental question. You all have done great job with your presentations, and in these unprecedented times that we are in, with prices being -- there is a lot of difficulty for farmers and ranchers and forest landowners. Are your phones ringing off the hook? For projects like this? Or are you still in that needing to do a lot of active recruitment to bring producers into the awareness of alternative opportunities for payments, conservation, in addition to working lands agricultural practices.

Billy, I will go first. I would say I think it could be both in this situation. I mentioned, we have dish organ tilth has a number of farms currently in the process of being certified. We seem to have a steady interest in this that peaks every time there is an article in the papers about the Bee Better Certified or highlights Bee Better Certified as a useful tool for setting that bar. I do feel like at the moment we are seeing growth. I don't know to what degree that has changed in the last three months because goodness knows, there's a lot of distractions up there and it wouldn't surprise me if we see a downturn. At the same time, where there is an economic downturn, there is a need for additional marketing and trying to call people to your brand or product. I will be curious to see once we get another three months demo line, where things are. Right now we see steady growth but it will take additional media and additional promotion on our part and on others independently to continue to promote a certification like Bee Better Certified . I can't highlight enough how important the third-party is. To this whole process, in terms of earning and maintaining trust of the consumer which is why we have seen some nice initial success. A few quick thoughts on that.

It's a good question, Adam. I would say that we have seen an increase in overall working land programs. Similar working with NRCS, sometimes going other through NRCS programs, and tweaking incentive mechanisms. There have been an increase in that demand. We are trying to respond the best way we can.

Under that umbrella, it would include environmental opportunities. I have been on the phone more so than usual, mostly with partners that can play an intermediary role and develop projects and are interested in providing that support network to their landowner base. I will say that the other side of the coin here is that there needs to be financing to further these opportunities for landowners. Ducks Unlimited can't finance the changer practices and some schemes ourselves and NRCS can themselves either. Where CIG comes in and other programs, is that leverage model. It is done a tremendous amount of great work and I applaud those who promote these programs. And work with us daily to get them out there. It does take a combination of public dollars. And the leverage model by which we can bring it to private corporations and get them to invest in these practices. The pandemic has -- would and say slowed down the interest from the private sector. It has impacted certain sectors of the overall private sector. Think of oil and gas. They will Spohn a lot of money into Carbon offsets or conservation more broadly. And we leverage that to apply for things like RBC Pete and the Wrights program down south. Those traditional funders in the private sector have had to pump the brakes. I have seen some of it in the food space as well that would have a keen interest on soil health. Most of those companies are saying we are on pause and we haven't hit -- we are not abandoning this program but we've had hit the pause button. There is more producer demand that we have to be aware that it is a team effort to be able to leverage diverse capital to deploy these practices at scale.

A few things Billy said. One thing that reminded me. Certainly it will be better for a second. There is interesting -- there has been a growth of interest within NRCS about the be better certification as an additional tool for helping field offices communicate or incentivize adoption of biodiversity like contracting biodiversity practices on the ground which is interesting. California spans out as one state, looking at how if we have growers interested in hedgerows or putting habitat on the ground, there is a growing interest within NRCS to say this might be something that you could -- programs like this are ways to leverage. You are putting this on the ground in it looks you -- like you have good stuff. Here is another tool you may add to your marketing portfolio. That has been interesting to see, the interested that be better certification and others as tools to highlight you successfully adopted conservation practices and here's another way to tell your story.

I want to remind people. We have 15 more minutes. If you are still on, feel free to put your questions in the chat box. Here is another question for Billy MAs. Conservation partnerships are important to the NRC mission and getting more conservation on the ground. How can NRCS one for your project to help agency further advance the mission of getting more conservation on the ground? I know you covered some of this but just to expand.

It is a nice segue from the last point I was making where I feel like certifications that have a clear set of standards potentially do offer that framework that the landowner in working with NRCS conservation planner, could use to guide the work they are doing or set up a framework for that work. Or even take advantage of leverage NRCS, financial assistance programs, not to mention technical assistance, to meet end goals associated with Bee better or other third-party certification. I do see as Billy was saying, CTA, TAA, essay, going hand-in-hand going above and beyond that to work with these different programs that are out there like Bee better. I really do like the goalsetting that something like a certification with a clear set of standards helps put the landowner and even the conservation planner working with that landowner to a forward to achieve. It would go nicely hand-in-hand.

As far as thinking back on our projects here I talked about today, I think it is a culmination of years of working with NRCS and the CIG program. That notion that we need to diversify our financing to leverage partnerships and get to scale. I've heard the chief of NRCS talking about the number of acres and I was able to reach on an annual basis. There is a lot more room of growth. We want to be there at the table to help grow that. He charged us with thinking how can NRCS to deliver traditional NRCS practices, while investing strategically on how we might broaden our partnerships to reach the remainder if you will. That is what I think CG is rooted in. Our project highlights that. It was a risky endeavor that had a lot of upside and a lot of unknowns and restructured it in a way to reduce upfront risk and exposure to both sides. It was a worthwhile endeavor to compared to our grassland efforts, quite similar. We had no clue what was going on there. We now have just in our program, 40,000 working acres. We have been April to leverage finance from individual impact investors to municipalities, to literally people going to beer music festivals and then funny -- funnel that money to on ground conservation on working ranches. Hopefully there was some of that captured in my presentation. More broadly, it speaks to this that we share with NRCS that we need to think innovatively. Use capital in a wise manner. Look for upside opportunities and how to bring unique partnerships to the rest of the working lands out there.

I think we are out of questions. Let me know if anyone has any other questions. I will get people a few more seconds to put something in the chat box. There was a statement also put in the question box. Terrific project and presentation. Thank you, Billy. I can extend that to maces presentation. They were both excellent. We

really appreciate both of you taking your time this afternoon to share this with our wider audience. We had 40 participants. Almost 50 at one point. It has been a good webinar today. No more questions are coming in.
This is Adam. I will put an exclamation on that. The other thing I want to extend to Mace and Billy and all of the folks that stuck with us. Also, there is an important component of getting our conservation story out in front of people. I think we heard it loud and clear from Mace and Billy as well, that when we communicate with the public, about these great success stories, and it drives more interest in the project. It is a positive feedback cycle that can build off of the learning and successes of the CIG program. Then you build awareness for farmers and ranchers of different opportunities and they may not have been aware of that. Communications piece is a critical component of projects. Sometimes we forget about that as technical folks or in my arena, thinking about technical protocols and verifying and all of that. We lose sight of the messaging and that's important. Part of that, if you have any last minute statements. Otherwise we will wrap up.
I want to say, thank you to that CIG team for giving me this opportunity. It is a pleasure to present this to you.
Likewise. Thank you for the partnership and the opportunity. Please feel free to share contact information and look forward to staying in touch with additional questions down the road. Reach out.
Sounds great. Jennifer, I will let you close out.
Before we end the webinar, for your input on what conservation and categories you would like to contribute in the future for webinars, please email suggestions to fill. Bill.charity at USDA.gov. Bill.cherry at USDA.gov. We are looking forward to your input. Enclosed, on behalf of the USDA and natural resources conservation service, I wanted to say thank you to Caroline, Adam, Billy and Mace for taking time to provide an excellent presentation about the conservation grants, environmental markets, and conservation. Thank you for attending today. Have a great afternoon.
[Event Concluded]