

What Are FSGs

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[00:00:03.26] Thank you, Holli. I appreciate that. I want to welcome everyone to today's webinar on this hot summery day. The first one we have had down here in North Carolina, the days when the temperature and humidity both exceed 90 make it a good day for sitting in and listening to an informative session like Kevin's going to present to us today. Kevin Ogles has been the grazing specialist here at the East National Technology Support Center since 2005. Before that, he kind of earned his degree there working in Michigan as a state grazing specialist along with serving as a district conservationist, soil conservationist and spent time as a soil conservationist technician. Between his education and experience, we have a great opportunity to learn from what Kevin has to say. So, with that, I want to introduce Kevin Ogles on today's presentation of what FSGs are. Go ahead, Kevin. [No Audio]

[00:00:57.05] Okay, can everybody hear me okay?

[00:00:58.57] Yes, we can.

[00:00:59.34] Yeah, so, okay. So Eddie says I can be heard. Hang on just a second, folks.

[00:01:03.40] Okay, now we're ready to go. We had several requests asking about what are FSGs. This is going to be very basic. A lot of people don't have experience with forage suitability groups and we're going to cover what they are, how they can be used. We're not going to get into the how of doing that. If there is enough requests, we may do one of those kind of webinars in the future. But today, we're going to talk about what are forage suitability groups, and this is going to be pretty east centric. My examples will be from situations, soils and pastures in the east. So, what are forage suitability groups? We're going look at three types of definitions, the tech big picture, technical definition and a definition for planners to use. Okay. Let me see here. Okay. Here's an ecological site description. There has been some confusion over ecological site descriptions and forage suitability groups. Are they the same or different, are they related to each other? This is actually a real longleaf pine/wiregrass ecological site description done by Georgia a few years ago. So ecological site descriptions, without getting into those, they talk about different states - reference community, and so forth. When the site's been very disturbed like going to crop land or pasture, then that is when forage suitability groups will come into play. So, we could have several forage suitability groups in an ecological site description. And there might be forage suitability groups that could be in several different ecological site descriptions. They could have similarities to each other but they're not the same. They're different. So, here's a technical definition. Let me just mention that in 2009, a meeting was held to tackle about forage suitability groups and what could we do to get them adopted better to help our planners. And so several people from around the country were at that meeting, and so one of the things we realized was that our current guidance on that, which is in the national range and pasture handbook, chapter 3, section 2, very great information. It's almost like a fantastic forage management 101-type of text there. But still very hard to tell what to do, like how would you do forage suitability groups. What is the process? And so there was a task force committee set up. I was on that committee and we looked at redoing some of that chapter - editing it, changing it, but

we did stick with this technical definition, which is pretty much like the current chapter 3, section 2. So, it is a group of soils that have similar agronomic properties, and so the soils in that group will support the same forage species, the adapted forage species, the same yields of the species and similar treatment of management of those forages. So, it's going to be uniform. Like I said, have the same adapted forage plants under the same management. Similar conservation treatments will produce the same results on those forages that are adapted to those soils, and those forages will have very similar potential productivity. Now, from a planner's perspective, they go out to a site to do planning and so they need to know if the land owner wants to plant some forages for pasture or they have a hay field that is worn out - they'll start grazing it. There are a number of situations, or even on just existing pasture. They want to do some better management on it. What can they do in those situations? Well, the planner is going to have to know some things. So, if we had a map like this one and thanks to Tom A kin for letting me use this today, but if we had a map like, this the yellow dots would be the soils in one forage suitability groups and the soils without a yellow dot would be a different forage suitability group. That gets us in the mode to think about that. One of the questions I get asked a lot, typically by our experienced planners out there, district conservationists, some stay grazing specialists want to know why do I need forage suitability groups, Kevin. Do I really need them? As David shared with you in the intro, I was a state grazing specialist, and I remember Jim Cropper asking me if I was doing very much with forage suitability groups and this is my reply. Jim, why do I need forage suitability groups for anyway. So, let's take a look at that. Do we need them? Why are we emphasizing these? Well, when I was a technician, soil con, young D.C. being mentored by some older experienced D.C.s, we would get ready to do some planning on pasture land. Of course, the first thing we did was get our soil information. We would go to the soil survey and get that information. We would determine from what the survey -- told us, what are the limitations or maybe a special management we would need to do to grow forages. Was there any growth information? There -- typically was not in the soil survey, so I had to go to my land grant university and try to find that information out. For yields of those forages, usually all I had from the soil survey at that time was grass hay yield. So I would figure out what that was in tons per acre, and that was my starting point. When we got to the site, we would begin talking to the land owner, the farmer about what were their goals. And we would try to match that stuff up. And we did a pretty good job because my mentor district conservationist had been in the county for years, and so they knew about what the forages growth was and what kinds of forages grew on what kinds of soils simply from years and years of working on the same groups of soils. So, that was very fortunate for me because they told me that. And so when I became a district conservationist on my own, here I was dropped into a different county and I didn't know any of this stuff. I went to the soil survey and did these things as I mentioned here, but I was not able to get very far on being able to give some good information. I could just give some general information, some general yields for all forages. It was not soil specific. So, again, we're talking about soils and I am hoping that you know about soils, if you're one of our NRCS folks, you do. If not, soil survey is a tremendous asset to have in doing planning on land for various reasons besides just conservation. Adapted forage species. We would go out, back then, because I didn't know which were adapted in my new location. I would try to look at neighboring farms that were already in pasture if I had been contacted about a farmer that wanted to plant some pasture or start grazing. So that is what I would do. I would get the best information I could, again, from the land grant universities and observation. So, he's a growth curve or yield distribution. It's showing us what the growth might look like in a typical growing season. Now, Jim Gerrish did this work

at the University of Missouri and sometimes that is some of the only information we got on some issues in grazing from the work he did there. So can you see where, you know, a lot of growth takes place early and drops off as we get into the hot, dry time of summer and then it kicks back in the fall when things cool off again and, perhaps, we get more rain. So, those growth curves we would just assume that is about how forages grew in my county for cool season grasses and legumes, so I used that information. That is kind of showing you some of the basic parts of forage suitability groups and we're going to get into some other things here. David, did any questions come in yet?

[00:11:35.78] Yeah, I had a couple of questions come in here, Kevin. Maybe take a second. Can you have one particular forage species be utilized in more than one forage suitability groups?

[00:11:48.71] Yes, it certainly can. And we'll find that quite a bit with some of the forage species that are widely adapted from very well-drained and very poorly drained. An example of that, because of invasive reasons, we usually don't recommend as far as planting, but Reed Canary grass is an example of a forage with a wide range and can grow on some dry soil surprisingly.

[00:12:21.08] And then I guess a follow-up to that, how does that affect yield, you know, seems like you're talking about growth. The growth curves which means production. Are there differences in potential yield between the different suitability groups?

[00:12:39.27] Yeah, there will be. Some plants will be naturally deeper rooted, some more shallow rooted. The deeper rooted ones, if we're in a group of soil that has a restricted layer, and we'll talk about that in a little bit, maybe certain plants can take some moderate drainage, but they can't take poorly drained and so they will either not be there or if they were, their yield will be greatly affected by it.

[00:13:11.10] Okay, that all the questions we have for now, Kevin.

[00:13:15.12] Okay. Great. Thanks, David. Okay, now I want to talk about, and I am not -- I am sure there will be people listening from some of these states. I am not going to list the state names with examples and I'm not picking on anybody here. This first example is from the state where I was a district conservationist for 10 years, and so I want to point out some things, you know, states are doing a great job at planting with the information they've got. So that is fantastic. And so, here's a state where they have broken the state into zones and so this happens to be one from the north zone. Gives you both yields and growth curves so that can help a planner know about what to expect for the various forages listed there and when the growth is going to take place, when it's going to be low, when it's going to grow quite a bit and that is a big help in planning. Again, I use that number no matter what kind of soil I was on. Clay loam, silt loam, loamy sand, everything. As a new D.C., I didn't know. What are they going to yield on my various soils. I would just use the number, and so sometimes I was way low and sometimes I was way high when I was making some suggestions for land owners that I was working with doing conservation planning -- conservation planning on pasture. This is another example. This is not unusual, this happens quite a bit in the east region and actually in a lot of states where there is one growth curve for the whole state. So, this is a statewide growth curve for the forages listed here. They have another table like it for yields, so they have one yield no matter where they are in

the state. So we know from some of Jim Gerrish's work and other land grant universities, we have different growth between tall season grasses, between cool season legumes, native warm season grasses or introduced warm season grasses where they grow. So, very different growth curves. So, it really matters what that growth curve is and what that yield is. It's about how much forages are available for the livestock for that farmer. Here's another state example again, nothing wrong with this. A lot of states have all kinds of technical documents and information for their planners to use that they are going to have so many grazing events in a typical growing season. And so based on the density of their forages there, then they would say okay, usually they have a grazing stick or a method to determine the density for their planners to use. And so then they would just know well, okay, if they started grazing at this height, they would have this much pounds of dry matter when we use prescribed grazing. Some states are really emphasizing more of a paper system. And so there may not be specific charts other than a table saying well, if it's this height, for this forage, to get to their forage animal balance they would technically be planning for so many grazing events in a season with so many days recommended rest to keep good ground cover and there is nothing wrong with any of those methods. That is great that planners are doing that with clients that we work with. Now going back to those that say why do we need these, here's a picture from North Carolina, a very experienced North Carolina conservationist working with a land owner on grazing lands, on pasture. But I have had some D.C.s say well, Kevin, you know, the average age farmer is 57 years old, I mean they're going to know what stuff grows where and what kind of how much to expect. They have been making hay on this ground for years so they about know the drying matter and we're not going to be able to help them much just because we have forage suitability groups. That would be true in those cases, but I looked at some national statistics data and every state has gained new farmers. Not necessarily a gain in land in pasture, but they gained new livestock producers and so maybe a bigger livestock producer in acreage retired and the land got split up into two more owners. So we have more and more people with no agricultural background whatsoever that want to know how to manage their land. They're not going to be able to know how much dry matter they going to get per acre or what kind of soil, so they're going to need our help. If you put that in combination with a planner who got to a new location for NRCS, and they got a statewide yield or a north zone yield and may not have done anything with forage species, it's hard for them to know how to help that producer, so you have the planner and producer just kind of winging it out there and so we can do better than. We know that they're (FSGs) going to help planners and producers and they're going to be better for conservation. Maybe we should know about them. How are they organized? By major land resource area? It is required by policy to do the forage suitability groups by MLRAs. Now can you break it down further into land resource units, and I will show you an example in a bit. First we have the great big broad land regions that our agency uses. They have, as you can see there, related climate, water, and land use, and that is how they grouped them. If you will notice where my mouse pointer is, kind of pay attention to the southwest Ohio area. I think this is called the Central Allegheny land resource region. And here is another look at it. Again, kind of pay attention to southwest Ohio area now they break it down into their MLRA 124. It's in part of Ohio and goes into Pennsylvania into Kentucky. One of the things I urge people to use is a plant hardiness zone. That will help us know if there are differences in plant hardiness zones, if we're going have it different in plants adapted to an area just by climate. It's not only by soils but also by climate that we're able to do grouping in forage suitability groups. So, notice the blue area here. I think the blue is plant hardiness zone 5 and the green is plant hardiness zone 6. Remember that was kind of in the middle of our MLRA 124. So

here is another map. This, those of you that worked on RUSLE 2 graze module data base, that was done pretty extensively just two, three years ago. Notice the Southwest Ohio area is covered in the green, the upper mid- south. The reason I want to get into that, if we get into the 'how' of doing forage suitability groups on a webinar, in the upper mid-South, all of those states involved in the upper mid-South came together and got some agreement on what forages had what yield to what growth curves in that upper mid-south zone. This is based mainly on climate. That is fantastic that is a step closer to getting better information and that is going to be able to help a planner do some planning on the pasture farms specific. So it's not enough to know that soils are different. That is why we got a soil survey. When we talk about the forage suitability groups, we need to understand what characteristics in the soil affect forage growth. We know slope does. Drainage class does big time. Going back to the question that David had for me, we got everything from very poorly drained to excessively drained there and there is only a couple of forages that will grow through all of those well. Available water capacity, looking at how much water that soil holds. How fast water passes through it. Those are big important factors for us to group soils together. A pH below the plow layer. We can change pH in the plow layer by applying lime, of course, but how do we change it below the plow layer? Pretty hard to do. We're stuck with the inherent qualities of the characteristics of the soils below the plow layer. If they're acidic, they're going to stay acidic. Frost heave potential, a real concern in the northern half of the east region for certain forages. So if a group of soils tends to frost heave, that is going to determine what kind of management recommendations we have and forages recommended. Surface rock fragments. We have that in the east. No doubt about it. We have some Boulders and we have even smaller fragments that can definitely affect what kind of management we do on that soils and the percent surface cover is going to affect yields. CEC and organic matter are getting at the fertility of the soil. It's the ability to provide nutrients to the forages. Those are important factors. Depth to restrictive layers, kind of mentioned that in answering one of David's questions that he got. And so, that is important. Where are those restrictive layers. Shrink-swell, really important. Important to know if that is going to be a factor or not, affecting forages in any particular soils. We have climate and landscape things affecting our forages. So, flooding. If we have flooding occurring and especially if it lasts a long time, that is definitely going to affect which forages can grow there. We know Timothy can take flooding up to 45 days, there is literature supporting that, not having to worry about Timothy being flooded, but we know that there is lots of other forages and what popped in my head was on cropland which has been apparent with all of the rain we got this year compared to having nothing last year. Like soybeans, that is cropland use, I realize, and they don't do well when they flooded for very long. Aspect, not a big factor as out West, but it becomes a factor, actually, at the higher elevations at the shorter growing seasons, if we have a south-facing slope. We'll actually see different forages growing on that slope versus a northern slope. It can be a factor in certain situations for most of the east pasture land, not as big factor as out west. Growing season length. That is a big factor. Take Tall Fescue, we talk about the fescue belt, and people up north are really fortunate, and I was able to work in the state where it was not a big factor. It was not taking over everywhere and so it could be controlled. So, climate and growing season length really has an impact on where those forages, where they are going to grow. Just going to show you an example. I will thank Steve Baker and Bob Hendershot, both retired and both of those people and Jeff Glanville, too, we worked on forage suitability groups from Ohio. This is from a group in draft stage. This is a series adapted to this suitability group. There is the number of it there. So, a forage suitability groups description is going to help us do some planning because we want to know what is the

information that is going to affect our management. For instance, if we had shallow to bedrock in a group of soils. That is going to affect it big time. We're not going to put a post three feet in the ground if the bedrock is a couple of feet down. Here are their adapted forages, we talked about that in Ohio and there is some forages listed there. Actually, I'm the one that miscopied information here in MLRA 124, the smooth brome grass and trefoil mixed in with the grass, don't grow that well in Southwest Ohio because of the long growing season length -- starting to get too hot for them. He's an example of the growth curves, they use the plant codes to list the grasses. Those are codes for orchard grass, tall fescue and probably smooth brome is what the other code is, and this is some yields with good management. Those who read chapter 3, section 2 will say well, we thought we had to include low, average yield and high management yield. Can you still do that? Yes, you can still do that. When our task force committee got to doing a revision of chapter 3, section 2, we came up with the minimum and at a minimum, we want people to put one yield with good management. Good management, that is not excellent management like the land grant university forage plots, where they have all kinds of grad student free labor to keep that in top condition. It would be with good management. I talked with several producers, as many of you that have done planning on pastures, that really don't soil test their pastures. They rarely put any nutrients into them. Some people used to do some nitrogen until that got expensive and that dropped off quite a bit with producers. So, good management. I talked to some producers that will lime their soils, they have acidic soils, once every three or four years. They certainly don't do that every year, and they will kind of rotate among the different pastures or paddocks. That is what we mean by good management. So, when we talk about using those in the MLRA then we're given an example of right away, this blue area, probably something we should have considered, are we going to get a good yield or have some different species grow in that area of the MLRA and which forage suitability groups does that affect and so again, these are in draft stage and I wanted to share what they had so far. So, he's some information about that forage suitability groups. They're wet due to either high water table or brief flooding. They're very poorly drained, poorly drained or somewhat poorly drained. You're not going to use plants that like well-drained soil in this group. Medium to fine surface textures. AWC is moderate to high. Not very much slope. Average growing season length is 180 days. Average rainfall, 42 inches. Temperature ranges, the mean temperature average, 46 to 56 degrees Fahrenheit. So, that gives you some background of the forage suitability group we're talking about here. Now, we have everything, all of the main parts of a forage suitability group. We have the adapted species, their yields, we have growth curve information. And then the big thing we want to not forget is the management implications. Again, those examples I gave if there is some restrictive layer, is there. Is it a steep slope that is going to make it impossible to put equipment on, to do any type of fertility work or herbicide control or anything like that. And so, we want to put those kinds of things in the management implications. So, forage suitability group management implications are important for soil amendment and fertility, for planning recommendations, for siting fence and laneways. We want to make sure we get the post corners without running into something like bedrock and watering facility and pipeline have recommendations as well. We want to make sure we're not putting the things in the situation where we make them worse by concentrating the livestock around the watering facility. And so, now we have all of this information when the person goes to this farm in one place and all in hand to give some good recommendations, based on a lot of good work from a lot of good people to be able to help this livestock producer know what to plant or how to manage the existing forage they've got for grazing. Okay, David, did we have other questions come in?

[00:35:25.72] Yeah, I had a couple of others. Anyone else who would like to type something in, feel free to do that right now. The question about yield determining what, how would you go about getting the accurate data. Do you have a reference or some ideas there?

[00:35:42.83] Yeah, we've -- there is, first of all, if you can get it, there is always the land grant university information. They don't have their plots on every kind of soil in the state, but if you can find what they have done some plot work on a soil that is in a forage suitability group, hopefully that will work for most of the forage suitability group. That is one way and another way is there has been some work done on trying to take maximum potential yield and subtracting based on different characteristics and management and Jim green's done some work on that at NC State, and he's still working on some of that and also Jim Cropper did some work. Jim passed on things to me and I am hoping to get those worked out together and working with Jim green to try to get at that. And it's very hard. Sometimes it's hard to get good information on those, and I know Florida's done some work with that, on that aspect as well. So, when you start doing forage suitability groups, please feel free to contact us here at the tech center and we can help you get at those yields. You kind of start out as best as you can and you adjust them as time goes by and you get better information.

[00:37:25.50] And that leads the second. When you take a typical state, how many different suitability groups would be typical in would you have 50? Would you have five? What would be a typical range and how would you start to sort through that? That is a great question. You go back to the soil survey staff that I used to be around when we had soil survey people in the office. You had lumpers and splitters. And so that can happen with forage suitability groups. What I'm seeing so far, and we have a lot of East states that started their forage suitability groups, some people have done their sort statewide and some are doing it by MLRA. It's okay to do it on a statewide basis and you have to make sure that you plug them in by MLRA. In both cases, when you multiply it out, what we see is anywhere from 20, I think, the lowest I have heard that they have come up with so far, and a lot of the states are in draft stages and some of them have as many as 35 or 40 for the whole state. And so 7 to 10 per MLRA is not unusual. Those states that have done them, that is what they're coming up with so far and that is a great question, though. How many are you going to end up with?

[00:39:08.17] That is all the questions we have for right now.

[00:39:15.01] Okay. Now, I want to show people some examples here and bear with me for a second.

[00:39:26.90] Kevin, while you're clicking around, there is a comment that came in. It's obvious that is severe limitation of yield of response for many soils. What is the ramification of missing the estimate of the yield and productivity and how critical is that to estimate a good grazing planning system?

[00:39:49.26] That is a good question. What we found is that, you know, when I showed earlier, and a lot of states have a statewide yield, or state where I came from, even if they had it in three zones. The tough thing there, especially for an inexperienced planner, when I started, okay, it says here that orchard grass is going to yield 3 1/2 ton and that is everywhere. So, I don't care

whether I am on a poorly drained soil or an excessively drained soil, all I need to do is say, well, I think you will get three ton and so even though the yields are hard to get at, it's better than nothing. That is not going to be in the same group as poorly drained soil and you can figure it out, the differences in yield on those and so we're getting closer to help the producer be able to reasonably expect on their soils, farm-specific, what they could expect and I know it's disconcerting we don't have better information, but if we can get as good as we can, that is the best we can do.

[00:41:31.15] And can everybody see? I have Ohio's forage suitability group up here. You can see the information in it and I wanted to show people what they would find in a forage suitability group. This is draft. But some of the examples of the forage suitability group, what it may look like is, until we get our revision published, this thing was several pages long and this is one that is four or five pages long. A lot of information is in the table format and that makes it easier for people to quickly get to the information they want. What soils are in this forage suitability group. And in this highlighted area, I was wanting to show you that some people further abbreviate this by using plant codes to save space, and they put it in a table format. I wanted to show you different ways this is done. Again, our group, we're looking at the minimums. People want to do more than this, that is fantastic. At a minimum, you have to break things down at the perennial grasses, warm season, and perennial grass, cool season, perennial legumes cool season and breaking into annuals and annual cool season grass, annual legumes and forbs. And that just shows you here. I am trying to scroll here. I know the feed is going to take a few seconds and again, I was trying to show some minimums here and this may not be how Ohio wants to do it, but they were nice enough to share information here, so I went ahead and did it by that, although the perennial grass cool season got broken into blue grass and timothy together, and orchard grass, tall fescue and we do think there is a benefit in describing the fields and you may have to put things together to show classes of forages together to show what their yield would be. Okay. I will give things a chance to catch up. So those curves are showing okay. So, we like this format. A couple of states suggested this and we wanted to be able to show that. We think it's going to be easier for a useful document to be able to show a landowner that instead of numbers and we do have the numbers down below, but this is a quick way to see when there is the quick growth of tall fescue or native grasses like switch grass or eastern gamma grass, when does that take place? I wanted to show you that and there is some narrative that is not real long. Where we talk about what are the limitations of the soils. They're going to affect our forage growth. What are the management implications of that and shows you how to do the documentation and I put in there in italics, that is examples only and not reality, this, as you know, they haven't correlated the stuff for Kentucky and Pennsylvania yet. And they were just getting a draft stage of these forage suitability groups and you have to have the approval process and let me see If I can -- .

[00:45:57.58] While you go to the next one there, Kevin, what role, if any, does different species or cultivars between the various species that you have, would you put one particular variety and in one group and take a blue grass and put it in another group? Is there a different species of cultivar?

[00:46:18.79] Yeah, you could, and we have had a few states ask us about that when they started doing their adaptive species to a group. Obviously, one thing comes to mind is there has been a real strong work with orchard grass. It goes well with alfalfa, there is a late maturing orchard

grass. Obviously, it's going to have a different growth curve. And quite often, it will have a different yield, too and so yes, if you want to list that cultivar work that has been done and what is available, that is certainly a good idea to do. We do think, and nothing is stopping people from listing every cultivar, if they want to of a particular forage, but keep in mind the more information sometimes gets more confusing for the land owner. You might just want to use maybe the best documented one or two cultivars of a forage and then go on. Did that address the question?

[00:47:32.21] Okay. Just quickly, I wanted to show you this is Florida's. Those are, I think this is in their field office tech guide. They're getting pretty close to being published for public viewing. So, look at this one. I think they might have six pages here of information. It's really good information. Easy to read and easy to get information quickly. See how they put their forages and yields in a table? And then I am going to let, I will stop here in a second and let the buffering catch up. So there is the growth curves. They were one of the first states to suggest we do that and suggest that for states to use so, again, the same thing we saw with the Ohio one, and I liked that. It's able to quickly get an idea of when that major growth and yield takes place. Okay. This is their section showing the physiographic features of the soil. Their climate information, their soil property information. They listed more here than Ohio, that is fine. You can do that. Here's the precipitation in temperature information. Very important to know. It's just a big factor when we're talking about minimum temperatures and maximum temperatures on what forages will grow where and how well they will grow. And then they show all of the great documentation and the work they did together, to get the information for forage suitability groups. They have a couple of appendix. The basic, the meat, of theirs is the four pages long like Ohio's was and they do a great job of having a couple of appendix of the map and the climate station where they got their climate data from. I want to thank Ohio and Florida for letting us use these today, to kind of get information on their forage suitability groups and show what they're almost looking like and what state's have done. With that, I will stop and see if there is any further questions, David?

[00:50:20.86] Again, remember if you have any questions or comments to make to Kevin, type them in the note section and I am happy to convey those. I have one come in here, Kevin and he said the forage suitability groups will help planners get in the ball park on the potential productivity and management for the site, but they're wondering if there is something in here that would help the planner to estimate the productivity under the existing management. So going from a low management to a high or some kind of a decision, to help them make a decision, whether they want to invest in that type of a thing.

[00:51:00.59] Yeah, that is a good question. What we have seen and what I have done when I have helped, I used to go out and sometimes we had a situation where we had to help a specific producer in a state and there's some things to use, and in this continuous grazing situation, they're reducing the potential yield by half. 50% loss of what they could be getting for a yield and that is one rule of thumb. Another thing is if they have the same soil, and this is not uncommon in the southeast and northeast, people will have their hay field. That is their hay field and quite often, they never graze it and a lot of times we'll see what kind of yields are you getting off of your hay and so we can use that and say okay, this is what we could get and we'll go back to saying under the situation, looking at the plants, we would say you're getting about this much and we used the rule of thumb of the 50% or continuous grazing. Sometimes it's not and

sometimes they're doing a slow rotational grazing and we do the best we can. If there is a fence row that the animals haven't gotten to it by grazing, I will try to take measurements there. Sometimes if we can get to a particular paddock before they go in to graze it, we will do measurements there and much like some of the states I showed in the first part of the presentation. So you do your best and saying, well, okay, there is about this much and so we think that would equate to this much per year based on how many grazing events you're doing with your system here now and so, again, Jim green is working on stuff and we're working on things and we're going to try to get together and so if we can come up with something that would help people. How to figure out where your yield is today and then how to get to your potential. So, . . . To summarize that one, there are things in the works to help someone understand if they change this management practice, they can improve the foraged suitability on the particular plants, x amount to be determined. That is reasonable.

[00:54:03.02] Yeah.

[00:54:03.90] Another question that came in, this is more of a, what kind of timeframe or states under to get the suitability groups established. And follow up was don't they need to add the ESDs AND THE NASIS DATA COMPLETE BEFORE THEY DO THAT or can they do the suitability groups without this information?

[00:54:27.99] Yeah, first there is no official deadline; however, they would bring in people to the task force for forage suitability groups. We would bring in people from-CDSI and NRI. They would tell us, well, people don't have to have their forage suitability groups done, but the sooner they have them done, it's going to make a step that much quicker when they doing things in the future. It will make things much better and quicker for the planner versus not having them and having to come up with something through their own means where their own states work. Now there is no deadline, but it's going to be advantageous to have them done. You don't have to have ESDs done to do forage suitability groups. There are a lot of things helpful for both of those. The soils is going to be used as a basis for both, so, obviously, that is, if you're doing sorts for groups, then while you're in the mode working with soils and that kind of thing.

[00:56:30.90] I know this because I have states outside of the region this we talked to. They have one or another and both. And they haven't started working on the other one yet. You don't have to have one done before the other but anyway, so it's -- there is no deadline to have forage suitability groups done.

[00:56:56.61] Okay and that is -- I have one or two more questions and then we'll call it a day there, Kevin. They wanted, do you know if they're going to add the forage suitability group to the web soil survey, similar to what they did with the ecological sites and the thematic maps? Great question. Yes they not only publish them in the field office tech guide. Now, when I say they get them done, they have been approved by everyone. Supposed to be approved of, usually the state conservationist, and so they r are ready for planners to use. Not only would they be published, they can be published from there, it would be available through the web soil survey. And so, that would be a way to get the information out to the public and there is a process that you go through. North Dakota and South Dakota and Nebraska and, I think, Texas, have gone through that complete process where they have theirs available by web soil survey now. Yeah, as

people get the forage suitability groups done. We can help people with that if they consider have questions.

[00:58:40.02] Okay, we'll cut the questions off with this one and this is a question about a county that is within one MLRA but has three different climactic zones to deal with. They're wondering how can you alter the production outside of the MLRA data adjusting it to make it more applicable.

[00:59:03.95] Yeah. And we were actually working with states where they ran into that situation. So, your forage suitability groups within that MLRA, if they don't take into account the different zones, usually they will. Sometimes, you run into a situation where you need to do that LRU I talked about. The land resource unit. So, if you take them down into a smaller area, that can be done. Again, we don't want to -- our task force committee -- felt it would be wrong to breaking any MLRA down to the subareas. Back to the lumper and splitter thing. We don't want to end up with 40 or 50 forage suitability groups per MLRA. We would want to keep them generalized. Some states have actually, David, when they found a unique difference, maybe it's just one ridgetop in a small area. They have done a forage suitability group in that area and put in a special note. If you're in the ridgetop area of County so and so, or the townships, then you need to consider this kind of a thing and there are lots of ways to address that.

[01:00:33.59] And you mentioned -- highlighted the small area in Southeastern Ohio, a good example of what you're doing there. Listen, Kevin, why don't we close off the questions, we appreciate your insights and comments. Sounded like forage suitability groups will be beneficial, like anything people need to get out of it what they put into it. I think that is probably the take-home message there. With that, I am going to say thanks again and turn it back over to Holli.

[01:01:01.57] Well, thank you, David and Kevin. Kevin for a very insightful conversation about forage suitability groups. I will remind our participants to return to step 2 if they want to complete the process for CEUs and a training certificate at conservationwebinars.net and join us for our next webinar with the technology group and that is tomorrow, July 17th. And I think that about wraps things up. Thanks, everybody. We look forward to having you join our next event.

[01:01:13.30] OPERATOR: Thank you, Holli and Kevin and David. Thank you to all the participants for joining us today. This concludes our webinar and you may disconnect. [event concluded]