Winter Management of Livestock Grazing Operations

[Please stand by for realtime captions.]
Good afternoon. Welcome to today's webinar entitled winter management of livestock grazing operations. I am a natural resource specialist for the natural resources conservation services national technology support Center and I will be your host.

I want to remind participants that the it's for information purposes only. Mention of a trade name does not constitute a guarantee of the product that the U.S. Department of agriculture or does it imply endorsement by the department or the natural resources conservation service over comparable products that are not named. With that we will now begin. I am pleased to announce the webinar over to Kevin Ogles. Kevin has been with NRCS for more than 30 years but has been in the farming community all of his life. Kevin's interest in farming again when he was growing up in the family farm and helping with the operations. After high school Kevin attended Huntington University where he received his bachelor of science. After graduating from college Kevin began his career with the NRCS is that a technician than a thistle conservationist and then as a district conservationist and then the Michigan NRCS grace specialist before joining in 2005 as a regional grazing specialist. Kevin, you may now begin.

Thank you. I appreciate that. We are going to have a great time of information and timely topic at this time of year NRCS does a lot of plans on grazing operations and naturally we concentrate on doing a good job of helping producers with doing the grazing plans during the growing season. But today you're going to hear about options for the wintertime during the on grazing season or non-growing season at least. What are some things that can be done and we also have to help producers know what to do during that wintertime management which could undo a lot of the games made during the growing season. To start us off to learn about these things were going to start with Victor Shelton. Victor is a state agronomist and state specialist on the technology staff here in Indiana NRCS and starting his 34th year with the agency. He grew up on a farm that was crops, hey, and livestock. He is still raising livestock today and he has sheep and some beef cows and some grass fed beef so he is able to live out a lot of the things he teaches. Some of you may also be subscribers to his monthly magazine online newsletter I probably should say, grazing bites which a lot of people find very very helpful. We are really glad that he can join us today about this topic so Victor, I will let you start.

Thank you, Kevin. I will start up by saying you know, winter happens. Depending on where you're located and what kind of winter or conditions you are you end up with it is somewhere between good and bad and we cannot control the weather and we probably need to learn to work more around it or with it and that's especially true where you live. I think the first question that comes to mind as we approach the winter is would be enough feed or forage for all the livestock until the spring. I think every producer thinks about that and it's certainly a good idea to evaluate all these feed options and our livestock we have available and the fee that we have and livestock of course has to be grazing something or the fed something. I think one of the best ways to reduce winter feeding issues is to decrease that amount of winter feed that needs to be fed and is almost always cheaper to graze something that it is to feed something until people and I tell people all the time the wheels turning in your spending money. So the more animals are concentrated and especially when feed is fed in one spot the more resource concerns we are going to have. I don't know why that thing just moved forward on me. Let's go back. Seasonal feeding areas like this in the picture need to be managed and minimized to reduce the environmental impact and for the health and well-being of the heart. Cold weather and modest certainly increases livestock congressional tried requirements for intake and the cost so I think the first to try and reduce the timeframe of what feeding areas are really needed for now the time and to give you talk about grazing options but I'm not going to do that today but we certainly want to take advantage of opportunities of grazing as much as possible and why is this important for winter management? Again, for days and start grazing in the last days we carry feed to them and that costs for that amount feet. The longer we can graze animals and have those animals out grazing and the longer the pastor's are able to rest and stockpile or stockpile we have the more pasture we have the longer we can graze them through the winter. All of this reduces the amount of time needed and winter feeding areas. Making hay and feeding hay is the most expensive part of being in the cow business as far as I'm concerned and it cost us about two dollars per cow per day to feed hay and that is not counting waste. This maybe start thinking several years ago he said there was more money to be made in the cow calf business by managing cattle during the winter not just during the growing season. That got me thinking. There is also is pointed out is no matter people were people live they tend to feed similar amounts of hay and that makes sense. With more hay that you make the

more hay you tend to feed and I find that true for myself. And we feed less and raise more so how short can I get that feeding timeframe bound to if you're feeding let's say a five month out of the year right now can you reduce that to four mother three months for less? If you are short on forages during the growing season and you don't change or improve that animals forage balance then you will be spending a lot more time and money feeding especially during the winter. So you graze longer and reduce winter feeding and and you first need to balance your forage base with a number of animals that you have. Generally I would say this is a huge it depends. It depends on where you're located and your forages and your soil but you need at least 2.5 acres to supply the requirements. Now that's 1000 live with so that would have acres also include being fairly efficient in grazing and also for that 1000 pound animal. Just increasing the amount of fed feed to balance out the need increases the amount of time and winter feeding area and the cost. It is always good idea to evaluate and balance the livestock with the available feed and I talk about this a lot in my articles and is always better to know earlier than later if you want to find out halfway through the winter that you don't have enough feed and let's do some quick math or an estimate let's first apply the average weight of the herd animals times the number that are present in many do that you have a total live weight and you multiply that by 3% and you can get an average daily intake and I use 3% because it is a little bit more than maintenance and this gives me a little bit more room to move so in this example we have 20 cows averaging a weight of 1100 pounds so that is 22,000 pounds of live weight and you apply that times 3% and you're basically feeding 660 pounds of dry matter per day at least that's what they need. So now are you going to feed those animals. You know how much hay you have on hand and you should have an idea how many bales and what they why and how many each you have so in this case you have 50, 1500 bales of hay and for moisture but said there's 1300 pounds of feed and you essentially have 65,000 pounds of dry matter available in the efficiency of this hay is also dependent on how you feed it of course and in addition to how it is stored. 85% are used here is really good efficiency and if it is stored poorly and fed poorly the efficiency can drop to 50% or less. In this case those 50 bales will feed that cowherd about for 84 days. So those estimates all of the feed available including her stockpile and crop revenues and and will and most likely a combination of these to get a good handle on what feed is going to be available for this winter. If you don't have enough bakers then work to increase forage yield on those acres. You always have to reduce the number of live stocks and you're not going to turn this overnight and you need to find ways to increase production and efficiency on what you have and if you can download a production on what you have you just doubled your acreage. And you also need to be able to be as efficient as possible allocating the forage and getting as much production. You can increase reduction through infertility good soil health and good management. So during the growing season I tell people you need to either speed up or slow down the rotation and basically to prevent grass from reaching maturity and going to seed and we will keep it as possible for as long as possible so we have the best quality and production and for cool season forages they really do so much better if you don't graze them closer than four inches. I call this the stop grazing. You see my diagram here when I say stop grazing that is the shortest forage presents and if you truly have four inches of residual land is going to look more like the picture on the right than on the left. The one on the left if it's not forages it is more like one inch do you have left. You see the line I have dropped on their and we are not maintaining a good height and were not maintaining a good summer night for sure so you will usually have more than four inches to have four inches. That height is maintained and allows for a lot more growth to be left behind and to maintain that solar panel and roots. We have to manage the solar panels it takes grass to grow grass. That is nothing new. This residual is also important in the winter to reduce runoff and increase infiltration to help balance the livestock animal next spring when forages get washy as I call them and has less fiber. It's good to leave some behind for that timeframe to. If you can manage to not raise the stockpile forages until after they go dormant which is generally at least three nights in a row at 25 degrees or less you will have less negative impact on next year's growth and this is also help production. Most forages do best if they're not raised too hard either and once they go dormant they don't pull much energy from the root reserve and grazing especially close grazing holes from those reserves and we can [Indiscernible] regrowth allowing plans to recover completely prior to being raised post-dormancy also allows Bruce to fully express themselves and in other words if you're grazing as long as you can in the fall back to grazing animals or cornstalks during this period the easiest way to achieve this and extend that growth period in timeframe. Snow is usually not an issue until it's about the I in the grazing and can be an exception and they will often be down is still grace and I felt sorry and took them hay in back to grazing. I guess so much for my hay quality but it all depends on which of the highest quality especially in a small room like that. Eyes especially if it's fake can shut that grazing as long as it is there in winter can certainly in early spring can be challenging at times and we get them really interesting conditions sometimes but ideally you want either dry or frozen conditions to graze so we don't always get that. The more forage growth is present when we do grazing the less negative soil impact that will be in most cases. This is especially true if animals are not allowed to linger or remain in the same spot for

very long and this is especially true when grazing animals and cropland and a good reason not to feed supplements or hay on cropland. We don't want to call and undo compaction or have any long-term negative effects. We have abundance of roots and soil life and the freezing and thawing action over the winter generally is the most compaction issues if given a chance. Wants forages become dormant I like to see this essentially standing hay and you don't turn the cows into the barn and expect them to not waste anything. You feed hay in such a manner to not waste much any need to do the same thing with our stockpile forages. This is a great time to utilize temporary fence and allocate smaller allotments to really increase the efficiency of the feeding and it also helps to develop a nutritional plan for the animals and in the soil. So one way to do this is to use temporary fence for these allocations and I think it's one of the best tools we can use at any time of the year. If you look at this example we have either a long narrow allocation on the left side are we have more square allocations on the diagram on the right and either one of these works really well other dryer frozen conditions and it's getting wet and muddy and then locks indicated on the right-hand side you to work better because you have less travel along that temporary fence line. You get less damage. So you get this right here it has 3200 pounds of stockpile on it and the one on the right is that same field after grazing and under fairly wet winter conditions in this is exactly what you should see. It looks like we have left a fair amount behind but we have also done a little bit of damage on this. My wife is really good about making sure that the animals -- if they're both gone allocate out two or three days worth at a time. For at least a timeframe that were going to be gone. If for some reason we get four inches of rain during that timeframe we are going to have a problem because we lift those animals in a little bit smaller space than we should have. This picture on the left appears like the graze area early enough or hard enough when in fact this site was heavily disturbed to prior season under what conditions. Too much disturbance reads opportunities for opportunist weed and there is a lot of grazing still present but it sure is not very pretty and it's allocated out the cattle specially they can thrive very well in this wild looking vegetation and lay down a lot of the species that they don't need and build soil and resilience at the same time. The point here is to minimize disturbances when you can watch soil conditions when grazing and you don't ever want to see the background if you can help. In closing I want to talk a bit about what I call contingency plan using a I think it would be nice if a was just a primary part of that contingency plan or your insurance policy that is just not practical for a lot of people but I think we should use it to meet shortfalls in production. Don't be afraid to feed hay during the summer time to the ceiling especially if it's going to help production later. It will reduce winter feeding timeframe later so we can graze if we can feed some a sometimes in August when it's really hot and dry and the forages are really slowing down by resting that timeframe and feeding a little Hayden the booster for production so you feed less during the winter months. Reduce it possible to decrease the resource concerns and certainly to reduce the input cost. It never hurts to keep animals numbers flexible to. I think that is all I got, Kevin. Thank you.

Thank you, Victor. Next up you will be able to by the way to see the presentations with questions and answers at the end and you can type your questions in now. We will now go to Steve. Steve is a graduate of NC State University and he has been a soil conservation District conservationist and users is North Carolina NRCS grazing specialist and he has been as the NRCS agronomist since 2009. Steve, go ahead.

Thank you, Kevin. Hopefully everybody can hear me okay and I want to piggyback a little bit on some of the things that Victor said but talk about winter feeding and grazing a little bit and before I forget I want to mention in the handouts section there's a link to a video and you can get on YouTube that was done about seven or eight years ago winter grazing a better way to feed and done out of South Carolina I really well done and many of you may have ready see that video but I think you will enjoy it and it talks about of course winter feeding mostly in the parts of the country in the east where you get the colder winters. What are some things we need to think about? This winter feeding is tough and it's tough for NRCS people to the proper planning because it is not much other practices and it involves a lot of things it can involve prescribed grazing and it involved may involve structures in some cases but we want to figure out what are some things we can do to not have to do those and have those particular structures in as a first line of defense but sometimes there are no further alternatives but there's a lot of things to consider when thinking about winter feeding. This slide I know it looks pretty sad when you see these poor little cows out there. This believe it or not was a feeding structure with a heavy user that was developed and built and you see these cows out there now we certainly can think about animal health as an issue and that is legitimate but that is not a traditional or a no specific resource concern that we really deal with in our agency. What about some of the other resource concerns. Whether this was actually constructed as a constructed feeding site or not, is there water quality issues? Well, I don't know maybe, maybe not but it does look like this site is upslope for many courses and perhaps not. We do know about infiltrating into the ground but it might not be so soil health and soil erosion maybe maybe not it is a smaller area so there are a lot of unanswered questions there so when we put in the sights what are they really item cells what are they really doing for us are going to look at this next

slide I know this is an extreme case that we have seen this before this has gotten passed around it's an extreme case anything about the previous slide and they're not on the same far but we think about the previous slide in this one a lot of times you can see them on the same field. Your feeding in this one site and they have access the whole pasture so now when we look at this while we still have this particular issues we have a forage inbound forage feeding and balance soil erosion the fully soil health issues and plant productivity and a lot of those come into play so even though we are feeding them on the side we still have inner pastures some of these concerns we have not really dealt with. How did we get there? This is out of the grazing program that is used here in North Carolina where I'm located and I think it's a pretty standard scenario that you might see a lot of places I don't know, 30 payers that might be a little large we took the average over the states at about 30 and no real rotations there. There are not moved around a whole lot. Maybe once in a while and the yield the Ford shield is pretty low, not the lowest I've ever seen but fairly low and anyway, it is kind of typical of what you might see and if you look at the grass you can see the top line is how much forage is needed for that heard any look at the lower graphics how much is actually produced and what sticks out is that those two never meet. So what does that tell me? It tells me that there is going to be a lot of a feeding going on in your forages on the ground there really get a chance to catch up. That is a pretty stark representation and I think it is fairly common that you can never get a head of it. Your having to feed a lot during the year. Here is one and what I did is I did up the acreage 15 acres and sometimes you have a producer that's the only land base he has that sometimes there is availability to add some cropland acres into the scenario sometimes it's a lot easier to bring more land in the ask a producer to reduce the cow herd herd but I did that I did 15 acres and the cropland field and I added some annuals in there. I went to a steady rotation a weekly move and I opt the yield up to about 3.5 tons which is not an overwhelming yield but it is a pretty decent yield for that and you get that by increasing the fertility either through inorganic sources or you're doing better rotation so you're getting more and or and urine rotated through the animals themselves so that's the reason I cut up this deal and you can see in the graph that you can see what is required and produced follow a little bit better align their all along so they're closer together which tells you you can do a pretty good job for this rotational grazing system but if you look at the far right in November, December, January, and February those are the winter months there is not enough to be produced to meet the demand. Of course you have excess produced in April and May it's possible you can take a cutting and feedback during those winter months as well but what are you going to do? This is a pretty good rotation it is could be a critic pretty good prescribed grazing plans we will have to feed some hay. Here is a slide I have used before another common thing you see is hay being fed and in the U.S. it might be another few places where it's with a flat and a lot of times that is down by the water so what you have here is the nutrients being deposited downstream and we have an automatic water quality problem in this scenario it's the same 30 cows over about four months and you have a potential of 400 pounds and nitrogen being deposited and you see how the easy access that has to the stream. So we need to get that those nutrients back on the pasture to be able to get those yields and not become a problem so getting away from a feeding down there and even water systems done in that shaded area is a must for winter grazing management. Here is where we move that feeding side on that grazing plan up on top of the hill and that may look bad around that tree right there but in essence I have taken about five acres of that 60 acres and they have decided this is the area where I'm going to feed for the winter. There is probably more being fed around that to and may be necessary but overall that 5 acres is not that bad in shape. There may need to be receding right around that to in the spring but if you think about it if you have 60 acres and 55 audit is really doing about keeping all those kinds of things this is not a bad thing to do and you will need a good grazing plan and this is a pastor that's up and away from any of the water sources so it's an alternative to be able to meet the grazing strategy for the winter. So another one here is on the top part picture is where they're actually moving the winter feeding sites around and it may be that you leave the been there a few days and move them to another site so this strategy is not all about leaving them in one [Indiscernible] for the whole four months. When you do this you can see the foreground of that up ensure has gotten a little wet over those two days they were in there and it muddied up a little bit but in the bottom picture those are the same sites just taken from a different angle and you see by the next spring how good that looks and no receding was needed for that particular site because they are moved frequently enough and they're not doing enough damage and this is a good way to move nutrients around throughout your farm and again, you want to stay away from any more environmentally sensitive areas but it is a good way to move around in different sites and get nutrients and maybe in those deficient areas of the farm because there's a lot of nutrients in the fees that you are giving. I guess said most of what goes in the livestock comes out the back end so we need to treat them like manure spreaders and spread out around the different places and we want this to really work for us and we talk about in soil health about nutrient cycling well if it has really good nutrient cycling you have to have the nutrients to getting that manure out in the field even in the winter time if possible is better so here I touched a little bit on what

Victor was saying on stockpile but I took that same 60 acres and about 30 of those I delayed and did not graze in the late summer early fall and delayed that and raised in the winter so what did I do for us? You can still see that he got outlined here that mimics pretty good the produced versus what is required and the upper line the first part in April and May you have in excess of forage being produced and you can move that line by doing good grazing management you can use that through the spring and through the summer and that little bit of area in September October where there is a deficit you can probably get through that with just grazing but the worst-case scenario you cut a little bit in that April and May and you feed in September and October when in most years it's a little drier and you can feed that but probably you would not have to and you see in December January and February it is great how that mimics what is needed and what is produced because you have that left over stockpile that works very well. This is another example of that in this almost high-density grazing because what you're doing is you're giving the last just a little bit like a trough you moving that over that you giving a little bit to graze all along and works pretty well and over time you get lots of rain and it seems to do very well because you have the thicker deeper root systems and you have moral soil aggregation likely that to talk about so you when you get rain you're constantly moving and you're not really causing a big mess out there during those winter months we can really work in your favor. So just a couple more things and then I will wrap up. One if you arbor to feed hey think about spreading it around we talk about that being so important and find ways to get that over across different pastures and that can be part of the strategy and putting hay at the top of the field in the fall when it's dry and then rolling it down during the winter is another option and that gives nutrients on some of those steep hills is ever got good fertility just be careful and make sure their cut and roll it in the letter the payroll down and tear of your friends which I've seen that happen before and some quickies to finish up some don'ts in conclusion. Don't plan feeding sites near drains and near wet areas like here don't plan them near shade don't plan them near water systems or lanes for feeding systems like you said in your shaded water or riparian areas and you can see off to the right is a stream and the structures are very popular but you have to think that in some cases your more centralizing livestock because it's an expensive structure out there and now expensive structure and now you're bringing more livestock in and you can see the pastors not look that great run that structure is probably as it gets that happens in another example this is not a great picture but off to the right there is a waste and you can see what it looks like around that in the stream here so those are things that NRCS is put on putting instructions but we have to think what it's doing is first the other resources of the other impacts and with that will give a shout out to the guy on the right, Dr. Jim Green is on the slides for his and I learned a lot from him as well but that's it. I wanted to get that in under 15 minutes and I will pass it back to you.

Thank you, Steve. I appreciate that. That's really good. We are going to keep moving and we want to make sure that Adam has some great things to share with us Adam is a technician in West Virginia and a grassland technician with NRCS but today is a Kentucky NRCS state grazing specialist and he has been a grazing specialist for five years so again, remember you will be able to ask questions after we get some with Adams presentation so Adam, why don't you go ahead and start

You have listened to the speakers talking about grazing management and what we can do of the problems so the question I present to you all is what do we do when that grazing plan comes a winter feeding plan. We know that we always have that contingency section and Victor talked about that and Victor made a great comment that hey is your insurance policy but there's a lot of factors that go into that and when you look at that last forage balance growth that Stephen showed us what are we seeing those growth curves in November through March and at the for most of us other than the deep South we don't have a lot of growth. There's an issue and Victor talked about how much precipitation falls and in what form does it fall in and that latitude is a dramatic impact on the challenges we face so what we end up with stored for just become the option for most farmers. And then as conservation planners and implementers are there any revelatory issues that need to be aware of. We want our grazing plans to look like this the land owner bought into the system to have the proper infrastructure and they are happy and this system will work with adversity and the weather cycles but we know that some things happen that we did not expect or either life things happen. This land owner believes that bringing all his life start to one centralized form because that's where his hay is stored will be the best solution and if you look in the background of that photograph you see the housing development and impart certain his neighbors do not feel that this was the best option for his winter feeding situation and NRCS was contacted until not until they were problems so for us what do we do and where does reactions begin and this is a common question we run into is what makes her grazing systems that you think you laid out well and everything is going smoothly and it becomes an animal feeding operation. Animals have been fed for a total of 45 days in a 12 month period and crops and vegetation forage growth post harvest residues are not sustained and normal growing seasons or any portion of the lot or facility and this becomes a real concern for us as an agency and for the land owner that could face damages and EPA has updated their interpretation of this and if the animals are confined for more than 45 days but not year-round and vegetation

emerges in the spring when animals are removed the presence of vegetation does not prevent that feed block from being defined as a AFOs because the vegetation is growing when animals are not present. We have to be really careful in what we plan and how we communicate with our landowners whether it is a contingency plan or a grazing plan and how we carry these out. We want to talk about is how we move forward with this and how we can be an asset to the landowners and have as they get into the situation of needing to winter feed and you can look at these examples what do you see this class vegetation and forages I'm sure most of your livestock will turn their nose up at these sites from the agency standpoint you can go to our website and look at what the agency's viewpoint is and looking at voluntary actions to minimize the impact to air and water and a lot of the states right now are using technical service providers to write some of these plans so it is a good opportunity to discuss with our landowners what are you going to do if the weather turns bad or if we get more rain than we expect in the winter time and it's a good time to talk to the land owner honesty about some tools that we have in the toolbox to assist them in the odd chance that they may have some winter feeding issues. Some of them are commonly plan practices and some of them are outside of the box thinking but you have things such as animal trail walkway and access roads in this particular farm is used as animal trail walkway and yes if you're looking that is a zigzagging and through this animal trail walkway in the grazing system you can access six different paddocks. Through the winter feeding system we reduce the risk of compaction because we are using an armored lane to move those cattle in between these paddocks and you can feed and short duration like Steve mentioned to minimize the damage to the grazing area and still be able to feed when necessary the livestock and move hey with the tractor up and down these access roads. We all know about heavy use areas and I think probably for the most commonly practice plan practices in Kentucky it gives us an opportunity to minimize some of that damage to the pasture that Steve showed in the photographs that can also turn into a big mud doughnut if we're not careful and have open conversations about the land owner and what they're going to do in those bad situations in the case of inclement weather. We have talked about confining these livestock and one that's gaining a lot of steam right now is a composting facility and livestock are brought in and confined for maybe the month of November, December, January, February and March and hopefully less if they can do some winter grazing but they can bring those livestock in and they spend the winters on soil dust depositing urine in the manure and capture those nutrients that Steve mentioned that pack that area is killed more often on a daily basis and those nutrients are composted and instead of having a liquid storage system or a dry stack facility that that manure that needs to be spread you have a dry fluffy material that is carbon-based that gains its nitrogen from the urine and the manure and at times I work with producers that are going on two years and they do have to add more soil dust but they have not emptied the structure in two years so if you have a confined facility that has a lagoon how big of a lagoon will you need for two years of storage or how big of a stack or would you need for two years of storage. It is an opportunity that might solve a resource concern for a landowner and again, it may not but it is a tool that we can at least mention to them if that meets her management needs. Steve showed a photo of an animal waste facility. This is probably the traditional method for winter feeding when we no longer have growing forages to raise raise graze and from a financial standpoint they are expensive but you can bring a livestock in and confined them if you have a sacrificed want lots and feed them in the winter in one particular location and the grazing plan increases dramatically in complexity and may become a comprehensive nutrient management plan was to get into the application of those nutrients but to protect those pastures especially in a small acreage far more high-value real estate this may be a better option for the landowners to move on with the facility like this to protect those pastures so they will have them when they need them. The University of Kentucky is doing a lot of research right now on sale grazing bale grazing . If you're a smaller operator and maybe you don't have as much equipment as you would like, you can bale your hay and set it out after you bail it and oftentimes some these producers put it out in October when the ground has not become too wet yet so you're limiting compaction from tractor traffic and if you use an electric fence to the limit access to just a bale or two depending on the number of livestock you have feeding at that time and through the winter you can see the little doughnuts in the field on the right and ensure as they move the fence around. Livestock have access to only one or two bales and you get an efficient nutrient distribution throughout the field and do your best for the landowners to limit that compaction and the damages to the forage base so the photo that Victor showed with a lot of weeds in it by limiting that area for weeds to grow we can cut down the chances of turning the nice pastor field into a wheeled a weed lot. You get into some of those circumstances where you need a little bit of feeding to get you through some events and there was a photo that Steve showed after three inches of rain there doing some research in Kentucky on the fence line feeders that you would put near a farm lane somewhere that you can drive a tractor to and open up your friends to a segment and put a gate in it that some sort of whether it's a round bale feeder or you build some survey crib or a structure to speed for short durations that you don't have the tractor traffic and compaction in your field and your livestock still has an error they can come to to get that hey and feeding

through those difficult times as Victor talked about your putting out hay for the sheep and they have some hay out what that might not be the primary source of forage but will feed them through a difficult time. And we will get into some lower complexity lower cost facilities. These winter feeding structures you bring hay in and unfortunately the manure is not covered for the subject terrain and can be washed and you could end up in nutrient making it into surface groundwater but it is an opportunity for the land owner to be able to feed and not have to take a tractor to the field maybe to have some hay storage facilities or an area that they store their hay and it is more convenient for the land owner to get things through that and maybe they only use this January, February, March and they can raise maybe 300 days per year if there really fortunate but when they do run out forages they cannot bring them in here and feed them in a certain facility for a time period are generally you will see a sacrifice area if you look to the left hand for the rough in the background they don't drift too terribly far away from the feed just far enough to get water and feed some more. Sometimes with the best laid plans we put together a grazing plan and rebuild some winter feeding structures and we just have a really abnormally wet winter and even with the infrastructure improvements you still have a big mess on your hands. This was a facility that is run by an entity and they ran into a lot of winter feeding problems so much so that right now they're putting a structure over on the left-hand photograph over that hey storage that the cattle eat their way into the stored hay and the push the panels they have there now putting a hoop structure over that. We do have an open mind when we work with our landowners because although we write this grazing plan and we can include that contingency section about what to do and winter feeding and we can use hay as an insurance policy that sometimes winter happens and the weather is unexpected and we just run into issues and have to be able to be prepared to work with our landowners so how do we correct these situations when we run into it? This is in March we had a good and extremely wet winter and although we installed conservation practices to help them get through the winter, sometimes we cannot foresee what the weather is going to do and we end up with a mess that's a very real concern going into this is what can we do, how can we be prepared to talk about them and other practices to help them get back into the grazing acres and repair the damages that was done through winter feeding. Now fire away when Jim gives you permission to ask questions.

Thank you a lot, Adam. I appreciate that. That was great. So we just want to remind people again you can download these presentations in the handout. Also I want to thank all three speakers. Hopefully have got some ideas for your landowners you work with livestock producers so many times I especially in the east we have producers that their hands are kind of tied. They have got so much land and they cannot get anymore but either they cannot get neighboring land whether it's cropland or crop aftermath or some more grazing acres or grazing neighbors hayfield after first cutting or something some of them just do not have that so hopefully you have seen everything from extending that grazing season is much as possible in a very responsible way for addressing resource concerns and then you can do they have to do some winter feeding or they're going to be concentrated and then all the way through that that Steve showed us some things to consider and then Adam showing us okay, when they have to be confined, what are some options that we can still help them. We will get to some questions. We have a few in the chat. First one here is for Victor. Victor, you had a slide about and will total total annual forage I believe many were trying to show how that would help you know how to be prepared. How much are you going to need that kind of thing. Could you expound on that a little bit?

I will try. Not sure if I'm following the question completely but I think everybody needs to know what their land base will provide production wise and I will refer a lot of times to forage groups and tables we have where we have at least halfway decent data that shows a lot of particular soils will yield forage -wise under certain types of management and fertility so that's when one way to look at that. I think I was talking about 2.5 acres per animal unit that is based generally on about four cones of production per year and that is going to vary from site to site so if you know what your production is in you may want to do some clipping yourself one simple way to do that is it's a little part of the pasture and you have a production off of that and clip that and why it and if you have your known amount that you have clipped you can figure out how much acre that isn't you get an estimate on your prime matter yield.

Thank you. I have another question about the subsurface drainage have a role in feeding damage and butter climates such as Kentucky realizing the draining system needs to be realized correctly but is there a place for that?

The issue we run into serfs subsurface drainage is because it's a winter feeding area of the manure and urine is being deposited we create a superhighway to move those nutrients to a water body so we are far better off to avoid any subsurface drainage and have those nutrients concentrated hopefully far away from the water body and the amount of PE and the amount that can be moved to a water body and subsurface drainage would speed up the process of getting those nutrients to surface water.

We have another question Adam. How does the manure composting work? And then after you answer that how deep is the sawdust to make a composting work?

I will answer them in reverse order. We start with a clean floor and more often than not it is church and we don't have to have the expense of a concrete floor we start with about between 18 and 24 inches of sawdust, livestock are in the facility and the first use of these are dairies and when they brought them out twice today to milk one of those times to bring them out to take them to the parlor they come in and till it and usually have a feeding alley or an area where they come out and feed and they will still go in behind them and it's a cultivator or some tillage implement and you're incorporating that manure and that urine deeper into the pack and what you will see over a period of time as the balance that carbon ratio you get more biological activity bacteria really takes all and you get that composting so you lose volume of sawdust but you're building up compost nutrient rich compost so periodically maybe every three months every six months you will need to come in with another load of sawdust and the size of the barn determines how much sawdust and maybe put an additional six inches. May take measure or a yardstick or grazing stick can tell you and you like to keep it somewhere that 18 to 24 inches depth so you can add above the compost material that high carbon sawdust and then at the manure and urine deposited on top of that and the carbon Nitro ratio bacteria becomes extremely active and through the composting process they give off heat. The first time I was able to see one of these the land owner said just drive up and take a look at it and I felt terrible because I pulled up to the barn and I see all these livestock all these dairy cows laying on the side legs sticking out straight eyes close and we had some sort of a death event and I knocked on the door of the house and told the owner that you have that cows so they became extremely concerned and I was really foolish when we got up there and the cows were all rolled up and he sat there sleeping. And he said watched her eyes they are dreaming. And if they were really dreaming or not but in January the pack was about 120 degrees and the air temperature was about 38 search felt really good to get as much body and contact with that worm sawdust and worm compost and that was the common act instead of being linked typically on their legs their lower abdomen they would roll over onto the side and stretch as much body and contact with that worm compost antibacterial activity is bringing it down so I hope that answers your question and if not feel free to contact me and I will share with you all the information I have.

Thank you.

Let's put back up the names of our presenters so you can look them up and send them any questions you have that we did not get to today. I think we have gone a little over time but I think I'm going to call it good for today and we will stop your and we thank everybody for tuning in to today's webinar.

Thank you. On behalf of the USDA and the natural resources conservation service I want to say thank you to Kevin and Victor and Stephen Adam for taking time out of your schedule to provide an excellent presentation about the winter management of livestock grazing operations and thank you everyone for attending today's webinar. The recording of this webinar a few folks had some of the challenges it was recorded and will be posted to the conservation webinar portal early next week. You again.

[Event concluded]