

Module 7B continues the discussion of reference sheet development.

Now, what we're going to do is to take you through an example that we have of a sandy ecological site and we have a couple of photographs of this particular ecological site which occurred in the Southern New Mexico area and what you can see from these photographs is that we have two distinct kinds of plant communities that can occur within this particular ecosystem. We're going to look at this in a little more detail, we'll kind of bounce back and forth to this set of photographs and just fill in the other information that we would normally have as we would develop this kind of a reference sheet for this particular ecological site. Typically, in a classroom kind of situation, we would then go into this discussion associated with the ecological site, we know that there are a number of you out there right now, who have actually worked on this particular ecological site, so, we're now going to lead you through a small group discussion on how you would develop a reference sheet and joining me on the panel here are Pat Shaver and Jeff Herrick, so, Pat and Jeff, welcome, I'm glad that you're here to be able to help us out and go through this and we'll see whether we can develop a little bit of interchange here and demonstrate to these folks how we would develop a reference sheet and move ahead with some of the information and demonstrate some of the information that we might use in doing that. So, I think what I want to do right now is to open it up to those of you in the audience, who has actually worked on this particular kind of ecological site. Well, actually, in this case, we don't need to just restrict it to the people that are working on this ecological site,

but, we can actually open it up to all of you at this point, who have the push to talk capability, this would be a good time for you to break in here and the question that I'd like to ask you is that what information would you use in making sure that you have that information available to you when you pull together a group of experts to develop a reference sheet? So, what information do we need to have in preparing that reference sheet and feel free to just push the talk button and let me know what information you've used in some of those situations that you've looked at. What kind of data do you normally have available when you've develop a reference sheet?

We mentioned some of those types of data earlier, but, I know that there are a number of others and in fact, I'm not sure if there is anybody from the Las Cruces field office.

In Oregon, we like to look at soil indicators if you have soil information ecological site inventory, that's what we'd use.

That's good, yes, soil and site information associated with that area of the soil survey is a good piece of information that we often use in the ecological site description.

Okay, Pat, there is actually quite a list of items that we've tried to compile and put together. Can you briefly go over the information that we have on page 20 of the

technical reference in that table that falls on page 20 and try and explain to folks what would actually fall in that category and the information that they've actually put together as they try and pull together one of these teams?

Yes, let's look at that and we'll go to the overhead projector and take a look at that. On page 20 is just an example of some of the information that might be available and/or needed and where that information might be available. Aerial photographs are listed there. Both aerial photographs and digital ortho-photography are always a good resource when we're looking at things like this, topographic maps, USGS maps, digital raster graphic maps and all of that kind of information. Soil surveys and associated maps with the soil survey, those are available many places now. Those soil surveys are available digitally on-line at this web-site, you can read it in your own copy of the manual there, good resource to use to get the sort of information, vegetation information data, the person that pushed the talk a little while ago talked about the ESI data, all of those kinds of information that's available, any kind of general maps, land status maps, vegetation inventory maps, any of that kind of information, species lists, the species lists are available in all kinds of data locations and there are some examples listed there. Ecological site description is a good resource to use; they're available at the web-site that's listed on that page. They are also listed at the web-site that just came up on your screen. That's a location where most of the site descriptions currently are, at the location that's on your screen now, it's the NRCS State Office web-site, you can go to that address that's listed there,

pick a state and then pick a county it gives you on the left side of the screen, a choice of section one, two, three, four and five of the electronic field office technical guide. Section two of that list will open up a menu to get you to the ecological site description for plants information. It will list the ecological site descriptions that are available online from the state office. The other resource that's listed in the technical reference is the Web address of the Ecological Site Information System and eventually, all of the ecological site descriptions will be housed in that Ecological Site Information System network. We go back to the overhead, well, I think that's probably about everything, the site description geologic maps are always a good resource to have and to look at and then information on invasive species, the plants data base, the plants.usda.gov, just a quick list of some of the information that's available to you as you pull together the kinds of things you need to start developing your reference sheet.

Great, thanks Pat.

Jeff, you got something to add too?

Yes, I just wanted to know, we noted listed geologic maps there. Another good resource if you don't have a good soil map in your area and you can refer to the soil map, but you're not sure of its quality is geomorphic maps. These are basically maps of landforms and because soils are highly correlated with landform these can be quite useful. There have been a number of efforts,

USGS; in particular has done some really nice work in mapping landforms. I know in New Mexico, we've got a couple of folks in the academic world, New Mexico State University and New Mexico Tech. has done some of this work as well and those can really help out a lot. So, a lot of resources that we haven't necessarily listed here, but if you go to the local university, go to the offices, start asking around, you'll find there is quite a bit more.

Yes, we actually used some surficial geology maps down in the Mojave Desert and we didn't have the soil surveys down there and we found that as many of the surficial geology maps actually tracked quite well with many of the plant communities. So, it was an alternative, the next best thing when you don't have the soil surveys there, so, that's a good piece of information and a good source to have. The other thing is that I want to emphasize those field technical guides that are on the Web. Boy, that has really been helpful for us in working with a number of different offices and being able to very quickly get the ecological site descriptions from a number of areas, so, that's a really good piece of information to make sure that you have on hand. Well, let's get into a little more detail associated with this particular ecological site now We want to briefly go through an overview associated with the ecological site description and remember that Pat said you can pull this information down electronically for many of the areas and we in fact did that for this particular ecological site down in New Mexico and so, Pat's going to give us a brief overview of the kind of information that is available on an ecological site description.

Thanks Dave. This example that's up now is an example of the new format and many of you may have seen these and some of you may not have seen these new formats. This is an example of the new format. The sites that are available on the Ecological Site Information System web-site will all have this format. They all start out the same, what kind of site is it, a rangeland site or a forest landsite, gives the site name and a site number and those of you who are familiar with the site numbers know that they are unique and they do have a meaning, then, it talks about the major land resource area, then, it goes into physiographic features, after the physiographic features, it talks about soil, it talks about water features, goes into the plant community and then some interpretation information and included in the plant community are some things we're going to spend quite a little time with here this morning in a little while, but, that's what that format looks like and that's what available online in the Ecological Site Information System. The sites that are available on the state web-site may look slightly different than that, but, they'll basically have the same information.

Great, thank you Pat. Now, what I think we would like to do is to step into the process that we would generally go through in developing a reference sheet for a particular ecological site and one of those things is to actually look at the types of experts that you would want to try and pull together if you're going to sit down and try and develop a series of reference sheets for a series of ecological sites. So, I'd like to open this one up again to the audience and ask you what types of experts would you want to have on your team for developing a reference sheet, I

know that there are a number of you out there already, who have developed reference sheets and then have these kinds of meetings. What kind of people have you brought together other than just the people on your team? Use your push to talk or call it in.

Dave, one of the ones I've always worried about is, have you ever tried using a climatologist to provide input and if so, why?

No, I haven't really had that on any of ours, but, that would be an excellent one to have just to understand the variability associated with the climate of a particular area. We have used some of the climate models that are out there to try and understand the variability associated with an area and one of those was the prison model that we have gone and pulled that information off the Internet and looked at it.

Where do you get that?

It's actually on the Oregon Climate Data Site at Oregon State University through the Oregon Climate Data Center. When we're talking about a lot of the indicators, particularly, those that deal with soil type stability and watershed function, actually, we talk a lot about how the precipitation pattern and amount and timing influence those indicators while having a climatologist to provide that kind of input would really be helpful.

For those of you out there.

This is Johnnie in Stafford.

Yes, go ahead Johnnie.

Actually, I have some questions for you and this goes back to before the break in terms of the reference worksheet. Do we do just one worksheet for an alleged original site, you know what we usually think of as being the pristine site or do we do a reference worksheet for each box in the state and transition model?

That's an excellent question and "yes", we do a reference worksheet for just the reference state actually, so, there may be multiple communities that would fall under that reference state, but, we only have one reference worksheet that we would actually go through development for. What we want too try and do within that reference sheet is to make sure that we capture the variation that would occur throughout those different kinds of plant communities that would fall under that reference state. I think you'll get a better feel for this. As we go through the information, we'll review the state and transition model for this particular ecological site and then begin to talk about the changes in plant composition that would go on there and with those kinds of changes we want to make sure we

capture this in the narrative that is associated with each of those indicators.

Anything else additional that either of you two would ask?

Okay, great question, thank you.

Anything else?

A second question.

Yes, go ahead.

In our on the ground workshop in Arizona and New Mexico, we've had discussions about the lack of good reference areas and some discussion on developing the reference worksheet as a composite of things that we think should be there rather than something that we can actually find on the ground.

Yes, and that's one of the reasons we actually went to the development of the reference worksheet. The reference sheet was put into play largely because of the fact that many of you do not have reference areas that you feel represent those sites and you certainly don't have a wide range of those reference areas and remember we were trying to capture that variation that can occur across a reference state. That's one of the real advantages of using that state and transition model.

Right.

in being able to look at the dynamics that occur on that site in the reference state and then trying to describe that in the reference sheet.

So, on a particular ecological site like this sandy ecological site that we will look at here, we have a number of particular communities that can occur within that reference state. Under version 3, you would have been really asked to go out and see if you could find reference areas for each of those communities within the reference state and to have actually evaluated each of those reference areas with those reference communities. Now under version 4, what we're asking you to do is to try and capture that variation that would occur under each of those types of reference conditions.

Dave, I'm going to put a plug in for one other type of expert in terms of participating in these groups and that is an ecologist or a soil scientist, somebody, who has a pretty good understanding of the processes that help determine what sorts of plant communities and how productive they're going to be on particular types of soil, so, if you've got a couple of experts in there, who are familiar maybe with some reference areas that no longer exist and may not even be specifically on that ecological site, but, they can tell where these occurred on the landscape and what the plant communities will like and so forth,

someone, who understands soil, climate and vegetation relationships, understands the relationship between soil texture, soil surface texture, subsurface texture, for example, a soil that has a coarse sandy surface and then about a foot down has a nice clay loam is going to hold a lot of water, that's a great grassland soil and somebody, who understands that and understands that that's a good grassland soil because you get good infiltration into that coarse sandy surface and then you'll hold that water near the surface is going to be able to help somebody else, who might have made some observations about this great piece of grassland they saw 20 years ago and why that was and those interactions between the people with the historical knowledge and the people with some of the processed knowledge would really help.

One of the real good places to find that historical modeling is with retired BLM, forest Service and NRCS employers as well as retired university employers. There are many out there and many of those people have a lot of knowledge and a lot of experience in their locale and can be a tremendous asset in helping to put this kind of information together.

I know that there were a lot of people in the New Mexico area that have actually tried to pull together a lot of these reference sheets. I'd like to open it up to those of you in New Mexico, let us know the kinds of experts that you've actually used.

Hello, this is Johnnie in Stafford and I'm going to speak for Roswell. The V. map program can sort by ecological site and so you can bring up all of your ecological sites of the kind, so the whole field office area and look at the range of variability.

Yes, that's an excellent resource, John, staying there at Roswell spend a lot of time working on that, so, those of you who aren't familiar with it it's a really good powerful resource for a lot of data.

I think the thing that we're trying to pull together here is that you have a lot of expertise in your particular offices that you need to be able to tap into and don't forget that you have multiple disciplines there. So, include your range staff, include your wildlife staff, they are going to be important because they're going to bring to the table different viewpoints on how they look at each of the communities within that reference state. They may want to protect and manage for different components of that reference state, that's okay, but, we want them to at least be able to bring their viewpoints together on that. If you have a soil scientist, you want to try and bring that soil scientist to the table and to the discussion, but, if you don't have it in your office yourself, make sure that you make that contact with your local NRCS Office and try and organize a meeting when you can actually sit down with a soil scientist that is available in your local office to be able to have them provide their input associated with those indicators that they're going to be most familiar with. Any research person, academic, who has worked in that area for a long period of time can have some good input, we

would like you to be able to consider those folks and definitely pull together those people, who have lived out on the land and have lived in those communities so that they can provide you some of that temporal variation that they have seen and lived through on many of their lands because that's going to be helpful for you as you actually develop these reference sheets as well.