

## M09\_EvaluationMatrix

Module 9 is a discussion of how to develop and use the evaluation Matrix to conduct rangeland health assessments.

Now that we've worked together we've developed a reference sheet, we have in fact also developed the none to slight descriptors for each of the 17 indicators. We can now incorporate them into the evaluation Matrix for an ecological site, so, we're going to go back to Pat to go through this discussion on the development of an ecological site specific evaluation Matrix. Pat.

We're going to talk about the descriptor title, what they say on the evaluation Matrix if we could have the PowerPoint, thank you, what the descriptor title say and what they mean, review the generic descriptors for our sample indicator, we'll use the reference sheet information that we've been talking about all morning for the none to slight descriptor in that evaluation Matrix, site specific descriptor for all the degree of departures and talk about the levels of departure and how different indicators on different sites might react differently. First of all those descriptor titles depict a range of departure for the site, there are five descriptors on that evaluation Matrix across the top that are used in rating each one of the indicators, it starts on the right side of the page as a none to slight title then the slight to moderate departure, moderate departure and a moderate to extreme and then finally extreme to total and as Mike told you yesterday that extreme to total is a new verbiage in that column, the generic descriptors are all in there, they're in the example in the manual, it's what we've used since the very

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beginning, the generic descriptors are still there, they're available for your use and your adaptation and we have always said that, we've always stressed that you could and should add notes to those generic descriptors so that they fit that ecological site better, now, we're talking about actually creating an ecological site specific evaluation Matrix and that's the direction that we're heading and I think coming soon we'll see a unique evaluation Matrix in each ecological site description, so, just like we are now putting the reference sheet with the site description I think we'll see the evaluation Matrix show up in the site descriptions as well. Page 83 of the technical reference shows the example evaluation Matrix, you've all seen this, I'm sure, this one is bare ground, we're going to follow this example all the way along and the way this is filled out, the generic descriptors are all in the bottom of the two rows that go across there for each one of the indicators. You'll notice on the bare, right across from the bare ground in the none to slight column, it says reference sheet and that in fact is where we put a summary of the information that's developed in the reference sheet goes in that descriptor for the none to slight box of the evaluation Matrix, so, the information that we've been talking about all morning and a good chunk of yesterday ends up being summarized and goes in that none to slight box in the evaluation Matrix, including, the range of values that account for both the spacial and temporal variability and that is then what becomes the none to slight descriptor. Now, all the indicators, all 17 indicators need to have that information off the reference sheet put into the none to slight column, but, not all indicators need to be adapted or changed any further than that, some of the indicators lend themselves

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very well to those generic descriptors that are in there and some of those indicators don't need much adjustment at all other than inclusion of the information off the reference sheet. Here's an example now on page 25 and most of these examples are going to continue on page 25 of how to go through and put that information off the reference sheet onto the evaluation Matrix and then develop the site specific information on the other one. The none to slight column that comes off the reference sheet, 20 to 30% bare ground, bare patches should be less than eight to 10 inches diameter and not connected, occasional 12 inch patches associated with shrubs, large bare patches also associated with ant mounds and small mammal disturbances, that comes right off the reference sheet, that is the none to slight departure for this ecological site when you make an evaluation. After that's put together then you write the descriptor for the extreme to total end of that range or modify the generic descriptor, whatever fits best, this is the extreme to total departure from what is described in the none to slight box in the evaluation Matrix and to carry that example further, here's what that looks like. I just read the none to slight, the extreme to total departure says greater than 75% bare ground with the entire area connected, only occasional areas where ground cover is contiguous mostly patchy and sparse, so, again, talking about spacial variability and distribution of the bare ground and what the extreme to total amount is going to be, so, it's bracketing this indicator now on both sides, here's the none to slight departure and here's the extreme to total departure. A couple of the comments that came in, in yesterday's homework talked about how nice it would be to have more information than just the none to

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slight column and just the reference information, but, to also have information on what the other range of departures might be and that's exactly where we're going with this. After the extreme to total is done then write or modify the descriptors for the slight to moderate and the moderate to extreme categories in that evaluation Matrix and the example that's in the reference or in the manual, here's the information that's put in there and you can see that in the moderate to extreme example the moderate and the slight to moderate it gets progressively, going that direction gets progressively less bare ground, progressively smaller patches, progressively less connectivity, you might say that it has a relationship or a curve that looks something like this and this curve is the curve that would be represented by the example that's in the manual and it shows that the none to slight departure is about 20 to 20, 20 to 30% bare ground, slight to moderate is about 30 to 45%, moderate 45 to 60%, the moderate to extreme is about 60 to 75%, extreme to total is 75%, that matches the information that we just put in the evaluation Matrix, but, not all sites react that way. Here's an example from the tall grass prairie and it might look something like this and have a totally different shape on this curve, the none to slight departure in the reference sheet which show a 20 to 30%, a 2 to 3 % bare ground, this is in an area that receives 40 inches plus of summertime precipitation, you're not going to have a lot of bare ground there the slight to moderate departure then is showing 15 to 20% bare ground, so, from the none to slight to the slight departure is a big jump and then the rest of them, moderate, moderate to extreme and extreme to total show quite a less percent, an absolute percent change than that first change from none to

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slight to slight to moderate. The other extreme to that might be this example from the Mojave and something that's approaching six inches of precipitation, predominantly wintertime moisture, lots of bare ground to begin with, bare ground on the none to slight category in this one might be 40 to 45% bare ground, so, we're starting off with a lot of bare ground, slight to moderate might then be 45 to 50%, moderate 50 to 55, moderate to extreme something still less than 60% and then you don't get to extreme to total until you reach something approaching 90% bare ground, so, the bare ground indicator and the degree of departure in terms of absolute numbers is very different in these three examples based on, on where in the world you are and what the conditions are, what the plant communities are, what the precipitation patterns are like, well, most of the indicators are going to react something like that , they're not going to all be a linear relationship, some of them certainly will be, some of them will not be, the important thing is that you spend the time in the discussion of the site, the ecological site of the state and transition model as you develop the reference sheets and work on these evaluation matrices to understand what that relationship is and what it is that causes these changes to occur.

Thank you Mike, I think that was all that we had developed for this.

Well good, we're at a question point now, so, all you participants out there, any questions on the development of the ecological site specific evaluation Matrix?

Nobody comes in immediately, we may go to Jim from \_\_\_\_\_ had a question and

this gets may be back a little bit to one of your previous talk on the reference sheet pad as well, but, one segment of his question was, doing this with the interpreting indicators of rangeland health, aren't we reinventing the ecological sites developed by NRCS?

I don't think reinventing them at all, I think in fact we're using them in part to where they're intended to be used, what we always, at least in the last several years, what we've always intended these site descriptions to be is a, is a data storer, a place to put all the information that we know about that ecological site, we want to put it in there and let folks know this is data that we know, it's data that was collected, it's supported by this or that kind of studies or research or monitoring efforts and this is data that we have that is anecdotal data, it's stuff that we know because we've seen it happen for the last 30 years., we need to make sure that we keep that information separate, but, reinventing the site descriptions, I don't think so at all, I think the changes that we've seen in some old range site descriptions to the ecological site descriptions, the interpreting indicators of rangeland health, the things that you've seen change in some of the monitoring protocols that have come about, I think all of those things have progressed hand and glove and not independent of one another, but, in concert and intentional.