

Indicator number 12 is functional structural groups of plants and this has been an interesting one for those of us working in Rangeland Health to develop and work with. We're all familiar and comfortable in working with species composition, but, the functional structural group idea is, is that we some times have plants that in fact fill the same function on the landscape such as a C3 or a C4 photosynthetic pathway and when we see plants for whatever reason, fire, grazing, off highway vehicle use, we see plants that may shift in species, we see sites that may shift in species composition, but, they're simply shifting from one C3 to another C3 or again, a plant that is very similar in how it grows and how it functions and how it is structured on the landscape, deep fibrous root versus the shallow fibrous root, or a taproot. If we see those kind of changes going on, we're not quite as concerned. So, the functional structural group assessment is one that allows us to look to see the work that plants are doing on the landscape and how they are structured, physically structured on the landscape to do that work and again, the slide says that we're interested in photosynthetic pathway, C3, C4 and Cam photosynthesis, we're looking at plant size and structure, the structure being that they are bunch grasses versus sod forming grasses, they are tall grass versus the short grass, we're interested in the rooting depth and structure, depth being obviously the depth that a plant will root to, to get it's water and nutrient, the structures to whether or not it's a fibrous rooted system, whether it's a woody tap rooted system, whether it's a plant that primarily has a deep taproot, or whether it's a plant that sends out root to the side, lateral root. Those are all very, very important characteristics of a plant and one plant may have the same as another

or they may be very different and another character is nitrogen-fixing, we're interested in lagoons on the land to basically fix nitrogen, maintain the nutrient content of our rangeland, we're interested in life cycle such as whether it's an annual or a perennial and where relevant, we include biological crust as a functional structural group because they play a unique and important role on the landscape. So, when we evaluate this characteristic, we are looking at the reference, so, we basically put together what we've believed to be the structure, the functional and structural plant groups that we would expect to find on an ecological site and then when we do an evaluation, we compare to see whether or not the area that we're studying, the Rangeland Health evaluation area has those same characteristic functional structural groups or not, we're not looking again at species composition, we might have a site that had deep rooted bunch grasses, native bunch grasses and we have substituted introduced bunch grasses. They might not be totally equivalent, but, that would not rate as much of a departure as going from the deep rooted bunch grasses to perennial bunch grasses to an annual introduced grass such as cheatgrass. So, you're looking at these groups of plants that have similar function and similar structure on the landscape and when you see that then you know that you've got plants that are maintaining the system in a similar fashion and it is not a departure from reference. If you have a big change in the kinds of plants and what they do and how they're structured, then, you know you've got a significant departure from your reference. So, that's our structural functional groups and this one relates only to the biotic integrity.