

The next attribute is biotic integrity and this is the, this is, to describe it is the concept that this site can support a characteristic functional community within a normal range of variability, it has the ability to maintain a certain expected amount of vegetative cover on the soil, to protect it from erosion and runoff and wind and it has the ability to re, to, to resist disturbance and then recover from disturbance if there should be some departure from that reference. So, the biotic integrity then is the, is the attribute that helps us make the judgement as to how well the plant community in total above and below ground and all species that are in, on the site are in fact functioning and performing. These are the indicators that relate to biotic integrity. Once again, just those in yellow are used to make the assessment as to how well the plants are the plant community is performing, answering that first question about how well the ecological system is functioning. Now, as I go on, one of the things I might indicate is that, to summarize is that we're using a sliding scale for every indicator to make the determination as to whether they're at reference or there is a departure from reference and then we're using different groups of indicators with the attributes to basically make a determination as to the situation for soil and site stability, hydrologic function and biotic integrity. We do not ever collapse these three into a single rangeland health rating. What we end with when we have a, when we finish the rangeland health evaluation, is we have an idea of the condition or health of the soil and site and the stability of the soil and site, we have an idea of how the hydrologic cycle is functioning on the site and we have an idea of the integrity of the biotic community to persist and withstand perturbation and again, we use, we observe

these indicators, we do not measure most of them, so, they're qualitative measurements or qualitative observation and we use the preponderance of evidence to try to interpret what is actually going on, on the landscape. So, the product is not a single evaluation, but, an assessment of three attributes, we've talked about these before and what we end up with is an understanding of the indicators and attributes and that understanding provides us knowledge about how well ecological processes are functioning. Rangeland health is not, does not tell us if there is, if we, if we, if we determine that land is a departure from reference, a serious departure from reference, rangeland health does not tell us why, does not tell us what needs to be done to fix it, what rangeland health does is provide us an early warning that says there is something out there that deserves, demands our attention and that we should spend our time further documenting, further studying and further analyzing that situation to determine if we, if we are deteriorated, in a deteriorated state whether we can fix it, but, often times we think more importantly we need to, we need to address the risk of further deterioration and stop the problem before it gets too bad and too costly to fix and we think of rangeland health as being a tool that has a lot of value for communication with different stakeholders among our peers as well as different stakeholders and it's a tool to help us identify those sites that really do need and would really benefit from more intensive monitoring evaluation. So, this is the overview of indicators and attributes of rangeland health and hopefully this has been useful and valuable.