

Comments on the Environmental Assessment
Tonto Basin, Walnut, 7/K Grazing Allotments
August 2012

Jake Garrett, P.E.
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August 20, 2012

On July 13, 2012 I was invited to attend a range tour of the above mentioned allotments. Present at the tour were several Tonto Basin Ranger District personnel including Norm Ambos, NRCS personnel and the ranchers holding the allotments. I was specifically invited to give my opinion regarding the condition of soil in unsatisfactory and impaired pastures. Norm Ambos and I looked closely at the A horizon soil conditions in multiple locations and discussed the soil texture and structure that was encountered. Mr. Ambos showed me the platy soil structure, which he attributed to the cumulative effects of high historic grazing intensity, and the parallel root structure that was used to verify the inability of roots to penetrate through the structure. The platy soil structure was used as the major determinant in classifying pasture areas with slopes of < 10% as unsatisfactory and those with slopes between 10% and 40% as impaired.

My observations of the platy structure were that;

The structure was very fragile with soil blocks disintegrating when gently displaced. This indicates that the structure is easily penetrated by air, water and roots as was shown by the equal number of vertical roots present as compared to horizontal roots. Soil moisture conditions on this day were dry.

None of the soil observation areas possessed a platy structure of sufficient strength to inhibit the passage of air or water. By contrast, strong platy soils such as those that are found in cattle trails or two wheel dirt roads definitely inhibit the passage of air and water and would therefore be unsatisfactory or impaired.

When approximately ½ bottle of drinking water was poured onto the surface it spread out about 9"-12" before it sunk into the soil. When the remainder of the water bottle was poured in the same area it spread 2"-3" further and then disappeared into the soil.

About a week or 10 days later I happened to be passing through Tonto Basin on a day when there were NWS Flood Advisories covering these allotments. In checking with George Ewing I found that he received over ¾ inch of rain through the night and morning at his home which is near the site of the first soil observation done with Mr. Ambos on 7/13. He felt that the same amount of rain would have fallen on the test site. I conducted an observation in that location in the same fashion as was done with Mr. Ambos. My observations were as follows:

The soil was moist to a depth of about 3". A week platy structure could still be observed in the top ½ to 1" of the A Horizon, the same as was seen on 7/13.

There was no evidence of any sheeting, channeling or run off of any kind, indicating that all the rain received was absorbed in to the soil.

There was no hard, compaction skin on the surface.

Based on these observations it is my opinion that:

The cumulative effects of high historic grazing intensity are no longer present in the soils and are not a factor that should be considered when assessing the satisfactory condition of pastures.

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The platy structure noted in soil tests should be considered to be very weak platy and is not an inhibiting factor to the passage of air and water into the soil. I suspect that this soil feature has very little impact on the germination and rooting of new plants.

Conclusions drawn from the soil analysis and general translations of the specific sites to the whole of the pastures have been based on very stringent interpretations of data and have been skewed by the inclusion of the cumulative effects of high historic grazing intensity.

Weather is certainly a factor in this area but the classification of a major portion of these allotments as unsatisfactory or impaired is tremendously overstated.

I commend the Tonto Basin District Ranger and the Tonto Basin Range Management Specialist and Interdisciplinary Team Leader for committing to the Allotment Ranchers to establish test plots, with associated weather data, throughout the allotments to serve as benchmarks for future Environmental Assessments. Their commitment to working with the ranchers to develop local criteria rather than the general "Sonoran Desert" model that is presently used will be of tremendous value for future Environmental Assessments.

I am presently in the process of preparing complete comments for the Environmental Assessment for submission during the comment period.

Respectfully,

A handwritten signature in cursive script that reads "Jake Garrett". The signature is written in black ink and is positioned above the printed name.

Jake Garrett, P.E.