

Several of you have expressed an interest in the meeting notes from the National Soil Program Managers meeting in Reno, particularly as related to the soil quality issue. Here are my notes:

General:

soil quality standards need to be linked to land management practices and soil function. we rely on indicators.
exact wording of NFMA: 219.27, (a), (1) -- "All management prescriptions shall conserve soil and water resources and not allow significant or permanent impairment of the productivity of the land." Notice the term "or" between significant and permanent. The term significant would seem to fit our definition of detrimental.
a National work group has been established to continue to look at the issue of soil quality standards.
Wayne Robbie (R3) is looking at the possibility of doing monitoring with permanent monitoring teams.
The publication "Interpreting Indicators of Rangeland Health" may be a good starting point for developing better rangeland soil quality standards. If you don't have this publication, contact the NRCs or BLM

Notes from Bob Powers, PSW Research Station:

the 15% standard for increases in bulk density originated as the point at which we could reliably measure significant changes, considering natural variability in bulk density. it may or may not mean that a 15% increase in BD is detrimental. that may depend on the soil and ecosystem in which it is found.
applying the 15% areal limit for detrimental damage is not correct in Bob's view. that was never the intent of the 15% limit (see previous note) and NFMA does not say that we can create up to 15% detrimental conditions, it says basically that we cannot create significant or permanent impairment, period. how that works out in terms of practicality is the problem.
it may be more appropriate to look at the overall effect of an impact on an area. for example, displacement of several small patches of ground may not be significant to overall productivity on a site whereas displacement of one or two large areas may be significant.
a study by Powers and Miles showed no detrimental effects from skid trails on a site even though they occupied a significant area on the site. the logging was done when the soil was dry.
Bob feels that keeping machinery off of moist or wet soils is key to

preventing damage

in general, most people tend to overestimate the amount of detrimental damage on a site

Bob feels that aeration porosity may give the best estimate of overall compaction effects but it is difficult to measure. it is also very difficult statistically to get good BD measurements.

the use of growth limiting bulk densities may be a better way to go but this area needs study. it gives a simple yes/no call.

Jeff Bruggink (R4) pointed out correctly that measuring compaction against

the mean of natural BD is not correct due to natural variability. it is

difficult to measure BD changes, there are too many factors that affect it.

Powers feels that the qualitative evaluation method developed by Weyerhaeuser and R6 is very good.

to date, LTSP studies show that competition is the most important factor

affecting vegetation growth, more so than compaction or anything else.

we need to be careful about claiming 100% benefits from mitigation (subsoiling, etc.). claiming more than 50% is probably unwarranted unless

you have studies to back you up.

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