Grazing & Soil Moisture: Prepare for Potential Drought

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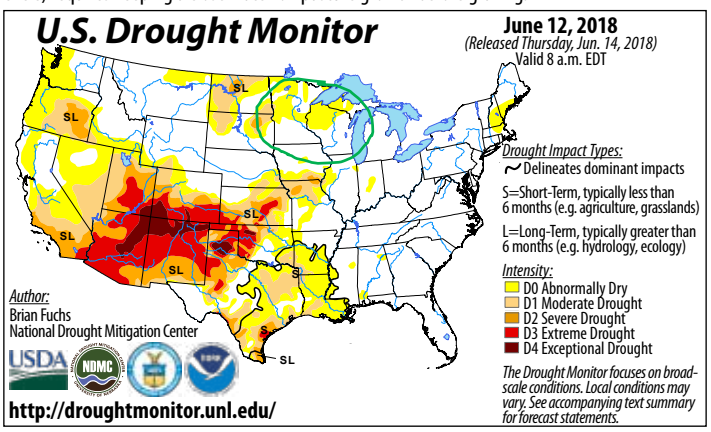
Weather conditions for the summer have been a mixed bag across Wisconsin and most of the Upper Midwest. In June, the northern half of Wisconsin and Minnesota had abnormally dry conditions interrupted by a few intense rainfall events. Weather drives the amount of surface runoff when the soil is saturated and a 'pounding rain' may not deliver the water infiltration needed. On the other hand, some southern counties had standing water. The soil moisture has been variable, and preparing to deal with these weather outcomes through grazing management will control, to some extent, how soil moisture balance will be affected and how it will affect forage supply. These grazing strategies can be used to guarantee optimal forage supply throughout the grazing season, and reduce soil damage during wet periods.

Figure 1. Abnormally dry moisture conditions at the beginning of summer for MN and WI (green circle) requires keeping a close watch on pasture growth before grazing.



Soil Moisture Deficit

Periods of soil moisture stress in most pasture areas, either short- or long-term drought, are a major determinant of forage growth and pasture yield. Two indicators of pasture soil moisture stress will be earlier seed head production (which, in addition to daylength, is a response to water deficit), and overall stunt growth. In general, but especially under soil moisture deficit, practice rotational instead of continuous stocking. Continuously stocked pastures have livestock re-grazing the same plants, leading to overgrazing.

Adjust paddock rotation under soil moisture deficit. Monitoring conditions and growth determines length of paddock rest and utilization. Manage paddocks by forage growth, not by the calendar. They may look as if they need to be grazed because of seed heads and minimal growth, but pastures with stunt growth characteristics are not ready. Delay grazing until forages have fully recovered. You can mow just the seed heads to break flowered canopy. When the pasture is ready, grazing needs to be less intense (taller stubble), but more frequent. The target is to have livestock graze only the top inch. Instead of allowing livestock to graze 5-7 days, switch to a 2-day or daily rotation. With daily rotation, pasture recovery will be quicker. What may take 3 weeks to recover during peak spring growth, might need 5 weeks in the middle of summer. Forage recovery time is further influenced by additional rainfall or temperature changes.

Soil Moisture Excess

What if you are faced with pasture areas where the soil is too wet? Walking and resting activity of grazing animals influences pasture environment. Under very wet soils, trampling has the effect of increasing runoff and erosion. Mechanical disturbance under wet soils caused by hoof action is known as 'poaching', 'pugging', or 'puddling'; soil structure damage results from exceeding soil and vegetative cover bearing strength. Animal traffic during varying conditions of soil moisture may lead to compaction. Soil and pasture treading injury may be controlled by relocating livestock.

When the paddock is moisture-deficient or too wet, use sacrifice paddocks while recovery takes place.