

No. 5 (Supplemental)

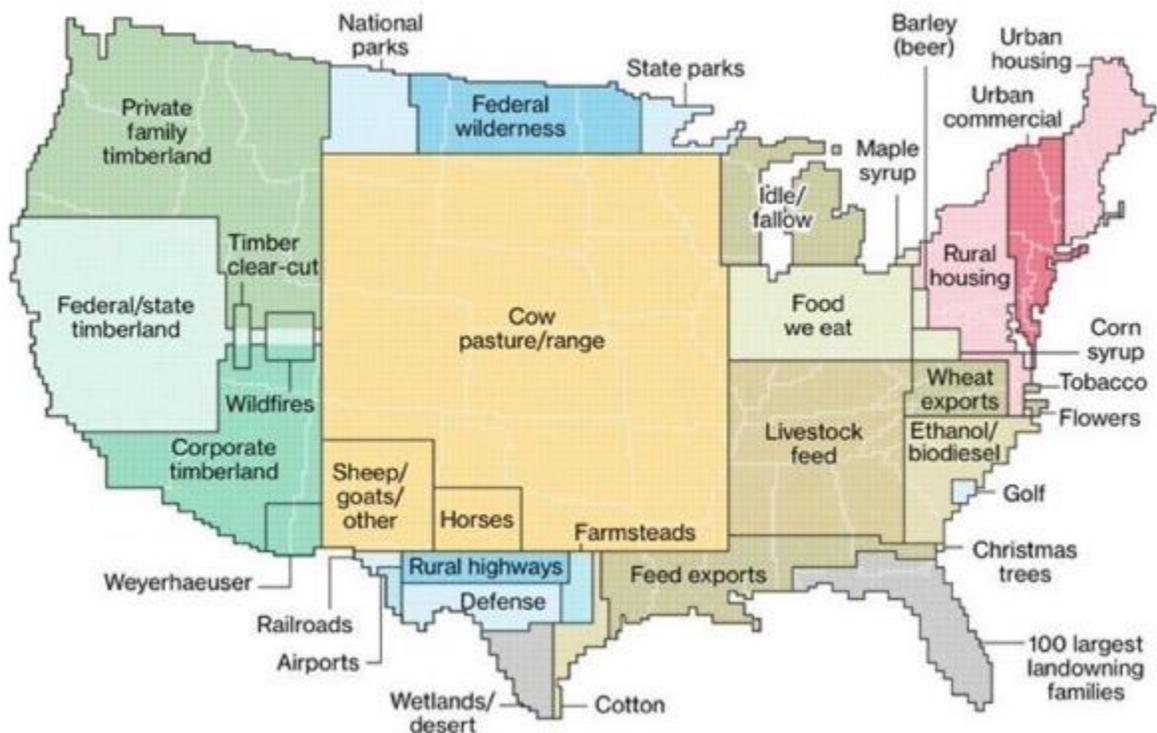
May 28, 2020

Additional Articles of Interest for this week. Thank you!



**Land Use in the United States**

Bloomberg News authors Dave Merrill and Lauren Leatherby created a unique illustration of how America uses its land. The map was developed using surveys, satellite images and categorizations from various government agencies in 2018. Cropland accounts for about one fifth of land (392 million acres) of which over 127 million acres produce livestock feed and 38 million acres produce ethanol. The authors estimate the food we consume in our diets is produced on only 77 million acres. More than one third of land (654 million acres) is rangeland or pastures used for grazing. The authors calculate over 40% of land is used in some manner for livestock when combing rangeland or pasture with cropland used to produce livestock feed. Interestingly, urban areas account for 3.6% of land (69 million acres).



## **Rain will be Scarce the Next Seven to Ten Days. What is the Fate of my Soil-Applied Herbicide?**

Many producers are planting. Producers have heard the messages from Extension, ag-retailers, and crop consultants to use soil applied herbicides since conditions are also correct for weed emergence. The question is should I apply a PRE herbicide and will PRE herbicides be stable following application, especially if rainfall is spotty the next 7 to 10 days.

Unfortunately, there will be some losses especially if herbicides remain on the surface for more than two weeks. But in general, the herbicides most frequently used today will withstand our environmental conditions since they are not volatile and are adsorbed to soil colloids following application.

Herbicide volatility (evaporation), adsorption and solubility interact with rainfall and effect the fate of soil-applied herbicides. Volatility is the change in herbicide physical state, from a liquid to a gas. Most soil-applied herbicides used by farmers have a medium or low vapor pressure meaning they generally will not volatilize during warm and dry conditions. Adsorption is the attachment of herbicides to soils. Herbicides must be bound to soils or they would easily leach away. Most herbicides are moderately or strongly bound to soils colloids and should not be impacted by our dry conditions. Water solubility is a measurement of how much of a chemical will dissolve in water, and typically is expressed in parts per million. The greater the solubility, the more of the chemical that dissolves in water. Adsorption and solubility are inversely related. Thus, as solubility increases, binding to soil decreases.

Soil type influences herbicide activation. In general, herbicides are more readily available in coarse than medium or fine textured soils. Likewise, soil moisture levels at the time of application and following application influence herbicide performance. A dry soil requires more rainfall to activate soil applied herbicides than moist soils since rainfall must first wet a dry soil surface before significant movement of the herbicide into the soil profile will occur.

To summarize, I am confident herbicide applied this week will be stable and will be activated and control weeds if at least 0.5-inch rainfall occurs in the next ten days. Activation and resultant weed control will be dependent on your soil type and water solubility of the herbicide you select.

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**This publication is supported in part by the Crop Protection and Pest Management Program [grant no. 2017-70006-27144 / accession 1013592] from the USDA National Institute of Food and Agriculture.**