Scott A. Reuss, Ag/Horticulture Agent
UW-Extension - Marinette County
1926 Hall Avenue, Marinette WI 54143
Phone: 715-732-7510
Email: scott.reuss@ces.uwex.edu

Brown Winters

Although most of us have probably enjoyed not having to shovel snow or wear ten layers of clothes yet this year, our plants are starting to wonder what the heck is going on. For that matter, most of our insects, mammals, and birds are in a mild quandary, as well.

There are some definite reasons to have concern for our plants' health when we have a warm, dry winter such as this. The most problematic of these actually occur because of the lack of snow, or are directly linked to this phenomenon. The two items that are most likely to cause damage are the significant temperature variation and the desiccation potential.

TEMPERATURE

Snow is nature's styrofoam. For the most part, snow is at a relatively constant temperature, just under the actual freezing point. There will be some temperature fluctuation within a few inches of the snow surface, but the fluctuation there is much less than the air temperature fluctuation. This temperature constancy is an extremely positive thing for all the living critters (plant or animal) that are found at or below the snow line.

Not having consistent snow cover causes temperature-related stress because of the excessive variability that occurs, and because the actual temperatures achieved can be significantly colder. Bare soil helped us achieve the 50+degree readings we had this past Wednesday, as soil absorbs light from the sun's rays, whereas snow reflects sunlight. The energy in the sunlight is thus captured in the soil as heat, leading to much warmer temperatures on sunny days, especially at the soil line. The converse also occurs, and this is also a problem. Without snow's insulation, the soil and perennial plants reach about the same cold temperatures overnight as the air reaches. Although our plants are hardy, they are not always designed to have their roots and/or crowns reach sub-zero temperatures, which can then cause serious injury or death.

Although it feels good to us and the non-hibernating critters, high temperatures are not good for plants. If the temperatures are high enough and/or long enough, the plants may be triggered to come out of dormancy. This would be fine if it were to stay warm, but I'll wager we are in for a few cold weeks sometime this winter. Even if you do not see growth activities on your plants, some of them may start sap flow or cellular activity on the south part of the stem. This leads to severe damage when these areas re-freeze, and is the number one reason that young trees are damaged and killed. The thinner the bark, the more likely this is to occur. The other aspect to this occurrence is that the plant wastes energy, which can lead to problems if we then have a late or stressful spring. (Especially true this year, since we had some plants coming out of dormancy once already in December.) Lastly, freeze/thaw cycles will also increase the likelihood of crown heaving in perennials.

DESICCATION

Besides the fact that we are not getting any moisture and the dryness that may cause this spring, having no snow also causes significantly drier conditions over the course of the winter. This will most problematic for evergreens, but can affect any perennial. When there is no snow, the freeze/thaw action works to dry out bare soil. The more of this that occurs, the deeper the soil will dry out. As plant roots are primarily in the top six inches, lack of snow may cause severe desiccation of crowns and roots, leading to injury and death. The same idea can apply to stems of herbaceous perennials, especially those that are not fully adapted to our environment, anyway.

WHAT TO DO?

Well, having healthy plants goes a long way to helping mediate potential damage, but there are some things you can do now if you are concerned about possible negative effects of no snow cover.

Simply put, the use of mulch is the answer to temperature and desiccation problems. If you have any perennial plantings that did not get mulched, find your rake and put leaves over them now. Watering is not the answer to desiccation, as this can cause ice sheeting if timed wrong.

Tree wraps or other such methods should be considered to help thin-barked trees not be affected by temperature fluctuation and freeze/thaw cycles.

Lastly, snow machines are NOT the answer, as they create sleet, now snow, which does not have the same insulation properties.

ÉÉÉ

2002