WILDLIFE AND FESCUE
INFORMATION YOU NEED TO KNOW

Photo Arkansas Game and Fish Commission

Tall fescue was introduced into the United States from Europe in the early 1800's and the Kentucky 31 variety is a perennial cool-season grass that was developed in 1931 and had widespread released in1943. Today fescue covers 40 million acres (4 million acres in Arkansas) and two other species, common Bermuda and Bahia grass cover another 15 million acres. Many do not know that these grasses are invasive and have replaced native vegetation with habitat that is of little to no value for wildlife.

In addition to the structural characteristics of these grasses not being good wildlife habitat, much of the "old" fescue are infected with an internal fungus (endophyte – endo = inside + phyte = plant) which improves the survival of the plants and discourages herbivore consumption. Fescue produces chemicals making it toxic and alkaloids are found throughout the plant, but are especially concentrated in the seeds and leaves. Although this fungus and alkaloids are good for the fescue and protects the grass from insects, nematodes and discourages grazing herbivores, it has adverse impacts on livestock, wildlife, and insects. At least 41 species of insects are affected by the presence of endophytes in grasses and the list will grow with additional investigation.

The fescue endophyte leads to "fescue toxicosis" in grazing animals including, insects, birds, and mammals such rabbits and livestock and a low palatability to ungulates like deer, and elk. This toxicity leads to reduced palatability, poor weight gain and reproduction, elevated body temperatures and respiration rates, defecation wallows, decreases forage and feed intake, decreases in growth and milk production, causes the pregnancy rates to drop, weaning weights to drop, retention of winter coats, it creates

prolonged gestation in brood mares, foaling difficulty, thickened placenta, and foals may be born weak or dead and mares may die in foaling. Fescue foot tends to develop in late fall and winter and the extremities – tail, ears, and rear feet undergo necrosis (death) which some know as "dry gangrene". Infected fescue cost beef producers over $1 Billion per year in lost production and income. Indirectly, fescue has indirect effects on vertebrate and invertebrate species composition and the food chain.

Scientific studies in birds show that captive zebra finches fed infected tall fescue seeds had increased body temperatures and at higher ambient temperatures, it caused an increase in bird mortality. Japanese quail fed infected tall fescue seeds had a 10% reduction in productivity. Recent research on bluebirds eating insects that fed on infected fescue produces eggs with lower egg volume. The implications of lower egg volume are obvious. Even research on seed harvesting ants in Arizona showed that ants harvested less fescue infected seeds than they did non-infected seeds.

With today's designer genetics, researchers are designing grass and fungus combinations that repel insects to make lawns insect free and give grass eating birds (such as Canada geese), an illness researchers call "post-ingestion malaise" which makes the birds sick so they will not want to return to an area.

Forty years of Breeding Bird Survey data indicate a decline in all but three grassland birds. All other grassland related bird species including the Northern bobwhite are declining. The causes of these declines may be complex. However, one would be remiss and myopic not to think that the conversion of 55 million acres of native grasslands with grass species of little value for wildlife would contribute to these declines and will continue to do so. Living organisms are made up of the same or similar molecular structure and it can safely assumed that the impacts from infected fescue and the loss of habitat would also impact others species whether they have specific research or not.

With this in mind, persons interested in birds and other wildlife need to ponder some of these implications. The declining populations of grassland birds could be reversed if many of these 55 million acres are converted back into native warm season grasses. Some beef producers are not aware of the negative impacts of fescue and the toxicity of endophytes, and others are willing to live with the loss of one billion dollars per year in production. Even facing this reality, there are millions of acres of fescue, Bermuda, and Bahia grass pastures that are not stocked with livestock and will never be used for beef production. For those wanting to replace fescue, States have programs to help landowners eliminate fescue and replace it with native warm season grasses that are not toxic to wildlife and provide wildlife habitat.

Habitat loss is a critical impact, but infected fescue pastures make livestock and wildlife, including birds, sensitive to heat and contribute to lost production and reproduction. Signs of this may be observed with livestock suffering from elevated temperatures using ponds and streams trying to reduce body temperatures. With the increase of ambient temperatures, further declines in populations, production, reproduction, survival and nesting success are to be expected.

In addition to pastures and roadsides, millions of acres of lawns contain fescue infected with endophytes. These infected lawns produce fewer to no insects and can support toxic seeds. Some homeowners want lawns supporting bird habitat, but are not aware of the fescue problem. When they purchase fescue grass seeds there are no warning labels that say it is not good for birds and other wildlife.

Before the problems of lost wildlife habitat, declining birds, toxicity to livestock and wildlife, and reduced production, reproduction and heat intolerance are to be solved, persons must realize that a problem exists.

Many of us could be compared to a person diving off Hermits Roost into the Grand Canyon and the Colorado River a mile below. Every 50 feet the words can be heard - "everything is still OK, everything is still OK," everything is still OK. It is that sudden realization and impact at the bottom that will get our attention and then it is too late.

As biologists and some beef producers would say, “Don’t Do Fescue”. If you did do fescue, for the sake of habitat, wildlife, and bird recovery, you should make a commitment to correct the problem. Contact your local State lands biologist.

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