The Minnesota Honey Producers Association (MHPA) proposes two honey bee habitat pilot projects to address the ongoing issues plaguing our state’s honey bee industry. Minnesota’s beekeepers lost 52% of their colonies in 2014. The national average for colony loss hovers around 40% annually. (At the time of this writing the 2015 numbers are not yet available). The pilot projects we propose would benefit native pollinators, and create habitat for songbirds, game birds, waterfowl, and small and large mammals alike. The purpose of these pilot projects is to determine the feasibility and management strategies needed to turn them into successful and sustainable statewide programs.

Lack of adequate nutrition is the number one factor in the decline of honey bees. Due to things such as urban sprawl, increased rural developments, drainage of wetlands, clearing of forests, and modern agricultural practices, there are simply not enough flowering plants on Minnesota’s landscape to support honey bees and other pollinators. However, when we factor in all the roadside mowing and baling that takes place before August 15, widespread blanket application of herbicides in the right of ways, and the fact that legumes have not been included in MN’s CRP seed mixes since 1995, it’s not difficult to see that we have some policies and practices that are further reducing the available acreage of flowering plants. Mid to late summer, especially the month of August, is a critical time for honey bees and most pollinators. They need adequate forage to “fatten” up bees’ reserves for winter and the rigors of migration. We believe there is enough untapped acreage available to have a sizable impact on pollinators, if we had a state wide roadside wildflower program, and another program that involves the management of alfalfa for pollinators on state owned land. Better yet, this can be achieved without taking valuable land out of production, or having to compensate for doing so. The pilot projects should take place in 5 counties spread across the state that have a moderate to heavy agricultural presence. The pilot projects should be in counties that have a high density of honey bee colonies per mile. And, they should be in counties that are representative of Minnesota’s distinct biomes. Counties such as Polk, Otter Tail, Yellow Medicine, Stearns, and Carlton, would be good candidates.

Roadside Wildflower Program Pilot Project

We have a huge missed opportunity for all wildlife in allowing our ditches to be sprayed repeatedly, and baled too early. There is no diversity and they are grassed out. When ditches are baled for hay 30-60 days earlier than the Aug 15 deadline, and spray applicators spray all broad leafed plants in the ditch despite training sessions on noxious weed identification, it becomes clear the old way of doing things is not working. Change is difficult and old habits are hard to break and passing new regulations with more teeth won’t be meaningful either. It is impossible to enforce thousands of miles of roadway. What is needed is a state mandated roadside wildflower program, similar to Texas and a dozen other states. States that have mandatory roadside wildflower programs have seen reductions of 65-85% in right of way maintenance costs, once the flowers are established. Savings come from reductions in herbicide purchases, applications, and less mowing. Native wildflowers are naturally resilient to drought, weather extremes, and are excellent at erosion control. Roadside wildflower programs also boost tourism revenue.
In center line miles, Minnesota has 914 interstate miles, 3,245 US Hwy miles, 7,697 MN Hwy miles, 30,584 county state aid road miles, and 14,326 county road miles. If we use a conservative estimate of 30 foot right of ways (15 feet for each side of road), there should be approximately 206,000 acres of road side ditches. Again, this is a conservative estimate. But, given visibility concerns, and ditches that are permanently wet, not all right of way sections will be suitable for establishing wildflowers. This is however, enough acreage to have a positive impact on pollinators. And the beauty of such a program is that the flowers will not be concentrated in just a few areas. They will be spread evenly throughout the state over time. Pilot projects should be conducted in 5 counties spread across Minnesota. They should be in counties that have a high density of honey bee colonies. Counties such as Polk, Otter Tail, Yellow Medicine, Stearns, and Carlton. These are counties that also have beekeepers that would be willing to work with researchers.

Pilot projects should take place in areas of new road construction, when the soil is already worked up. Wildflower seed mixes should be selected or “enhanced” that will produce plants that will not just grow in certain soil types, but also bloom at different times throughout the growing season. Flowers should also be selected that are visited by honey bees and native pollinators alike (e.g., purple prairie clover and New England asters are good examples). Researchers from the University of Minnesota’s honey bee and native bee programs should be consulted on the seed selections. Plant counts, insect counts, pollinator counts, and bird counts should be cataloged over time to document progress. Costs associated with the implementation and long term maintenance of the program also need to be figured out to make the program a long term success. The wheel need not be reinvented here. Several other states already have wildflower programs in place. Texas DOT and the Lady Bird Johnson Wildflower Center in Austin Texas are great starting points for information. They readily share information on their wildflower program. Their model is the template for the states that have already implemented programs.

Key agencies and collaborative partners in MN could be MNDOT, DNR, MN Dept. of Ag, Minnesota Honey Producers, University of MN honey bee and native bee programs, Monarch Watch, Xerxes Society, Pheasants Forever, MN Audubon Society, MN Soil and Water Districts, MN Farm Bureau, MN Farmer’s Union, various Ag commodity groups, Chamber of Commerce, and MN Office of Tourism.

**Pilot Project #2  Alfalfa on DNR Owned Farmland**

This second pilot projects works well in conjunction with the Roadside Wildflower Project. Honey bees need a wide diversity of pollen. The wildflowers certainly produce that. But they also need plants that secrete large amounts of nectar. Wildflowers typically don’t produce enough nectar to support a honey bee colony, much less an apiary with 24 to 48 colonies. The plants honey bees rely on the most are legumes, such as plants from the clover family. Honey bees and clover evolved over millennia together. Legumes haven’t been included in MN’s CRP seed mixes since 1995. As Minnesota’s farms have become less diversified and livestock production has diminished, the lack of clovers and alfalfa in the CRP acreage has really hurt MN’s honey production. Honey production has dropped from 21 million pounds produced annually to around 8 million pounds in the last 20 years.
Although legumes are introduced species (as are honey bees) they are still highly beneficial plants. Native bees and butterflies feed heavily on legumes. Legumes are good for all pollinators.

The Minnesota Honey Producers Association proposes a pilot project utilizing alfalfa planted on state owned DNR land that is leased out to farmers in a cooperative effort with local farmers. The pilot project should take place around the state in 5 counties with a high density of honey bee colonies with beekeepers that are willing to work with researchers close by. Again, some good representative counties would be Polk, Otter Tail, Yellow Medicine, Stearns, and Carlton.

It is our understanding, that the DNR has approximately 40,000 acres of arable land that it leases out to local farmers. As the landholder, the DNR has the final say in what crops and how much can be cultivated on their agricultural lease lands. The purpose of this pilot project is to determine the cost of implementing the program and determining the value of the hay to the farmer. Ideally a field of 10-20 acres of alfalfa should be cut at certain times or at staggered times to maximize the amount of bloom for pollinators. The quality of the hay may or may not meet the criteria of dairy farmers, but should meet the criteria for beef producers. There is a net shortage of hay for Minnesota’s dairy farmers. Hay must be trucked in from states that still have large alfalfa production. Cutting and baling times need to be figured out to find a compromise that works well for farmers and beekeepers. Alfalfa benefits all wildlife, and most pollinators. Alfalfa is easily cultivated and is not invasive. Fields will eventually grass out after a few years, and need to be reseeded if hay production is to continue. Honey bee colonies that are in close proximity to a field would benefit the most. But, honey bees that were located a few miles away would also benefit. Again, bird and pollinator counts could be done to document the alfalfa field’s usage by wildlife. To be clear, the concept of this pilot project is to provide improved forage for honey bees during the critical months of July and August. Some of our counties have more than 300 colonies of honey bees per sq. mile. (Note: it takes 2 acres of lush alfalfa per colony to make of a decent crop for each apiary/bee yard). No single beekeeper is going to get “rich” off a program like this, but they will have healthier bees to survive the upcoming winter.

Key agencies and potential stakeholders in this pilot project should include: MN DNR, MN dept. of Agriculture, MN Honey Producers Association, University of Minnesota honey bee and native bee programs, MN Deer Hunters Association, MN Wild Turkey Federation, Farm Bureau, Farmers Union, MN Beef Council, and MN Milk Producer’s Association.

Thanks for your consideration,

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