Executive Summary

Already imperiled by escalating pesticide use and other human activities, the monarch butterfly's epic annual migration across North America now faces a dangerous new threat.

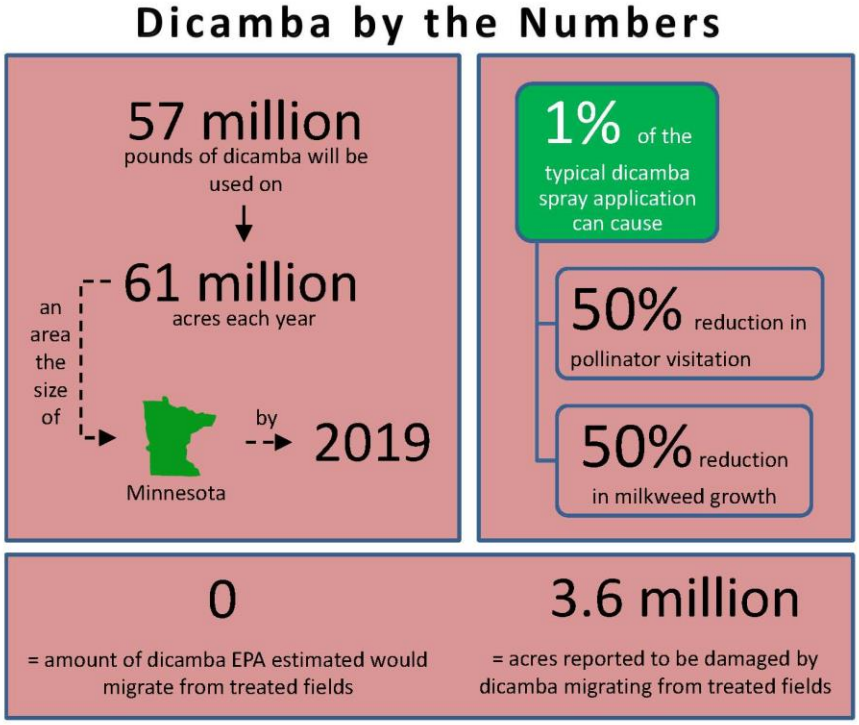
For this analysis we examined monarch habitat and projected usage rates for dicamba, a drift-prone, weed-killing pesticide applied to genetically engineered cotton and soybeans that's extremely harmful to native plants and milkweed, the only plant that feeds monarch offspring. We were particularly concerned with examining the effects of increased use of dicamba in the coming years, which is projected to reach about 57 million pounds annually.

Our key finding: By 2019 more than 60 million acres of the monarch's migratory habitat across the heart of the United States will be doused with dicamba. The projected increase in dicamba use across an area larger than the state of Minnesota poses a quickly escalating new threat to monarch populations that have already fallen by 80 percent in the past two decades.

Other key findings include:

- **Accelerating harm:** Using reported drift damage from dicamba in 2017, we project that an additional 9 million acres of monarch habitat could be threatened by drift of the pesticide.
- **Deadly timing:** The timing and geographical distribution of dicamba use coincides precisely with the presence of monarch eggs and caterpillars on milkweed.
- **Double trouble:** Dicamba degrades monarch habitat both by harming flowering plants that provide nectar for adults as they travel south for the winter and by harming milkweed that, as the only food source of the monarch caterpillar, provides an essential resource for reproduction.
- **Greater menace to milkweed:** Research has shown that just 1 percent of the minimum dicamba application rate is sufficient to reduce the size of milkweed by 50 percent, indicating it may have a greater impact on milkweed growth than glyphosate.

The decline in monarchs in recent decades has coincided with the surge in crops genetically altered to tolerate glyphosate. The overuse of glyphosate triggered the decline of milkweed and the proliferation of glyphosate-resistant weeds across millions of acres in the Midwest.



In response, farmers have turned to dicamba to combat glyphosate-resistant weeds, compounding the danger and damage to monarch habitat.

The Environmental Protection Agency in 2016 approved new dicamba products for use on genetically engineered cotton and soybeans. In 2017 there were reports of at least 3.6 million acres of off-target, herbicide-induced damage to agricultural crops and an unknown amount of damage to native plants and habitats, including forests. More troubling still, the EPA's 2016 approval for expanded use of dicamba, including nearly 500 pages of ecological

analyses, glaringly omitted any mention or examination of the threat to monarchs.

Recommendations: At the permissible levels approved by the EPA, dicamba will have serious and far-reaching consequences for monarch butterflies, their habitat and the ecological health of vast areas of the country. **The EPA registration of dicamba on genetically engineered cotton and soybeans expires in late 2018, and the agency should not renew its approval.**

Read the Full Report Here

View the Interactive Map Here