

Conserving a Locally Endangered Species



Male and Female KBB

The Karner blue butterfly (KBB) is a federally endangered species that has declined on the Huron-Manistee National Forests (Forests) over the past century as the oak/pine savannas/barrens habitats on which it depends have been replaced by mature forests due to extensive reforestation and fire control efforts, and the process of natural succession. To meet the recovery goals for viable KBB populations, the Huron-Manistee National Forest's Plan calls for the restoration and maintenance of 20,300 acres of savannas/barrens within designated KBB population management areas and essential KBB habitat. Currently, the recovery effort is focused on developing four viable metapopulation areas within the Manistee National Forest.

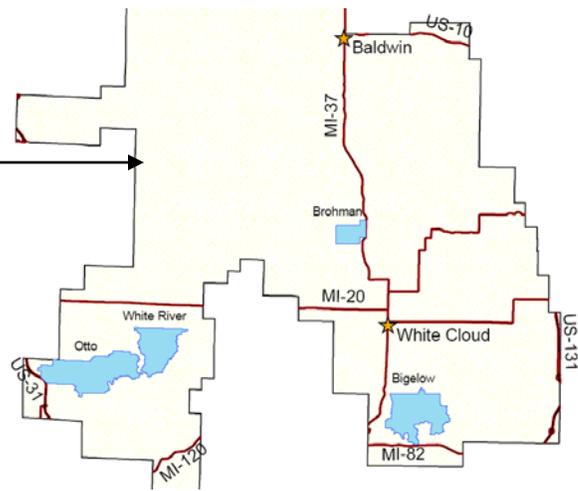
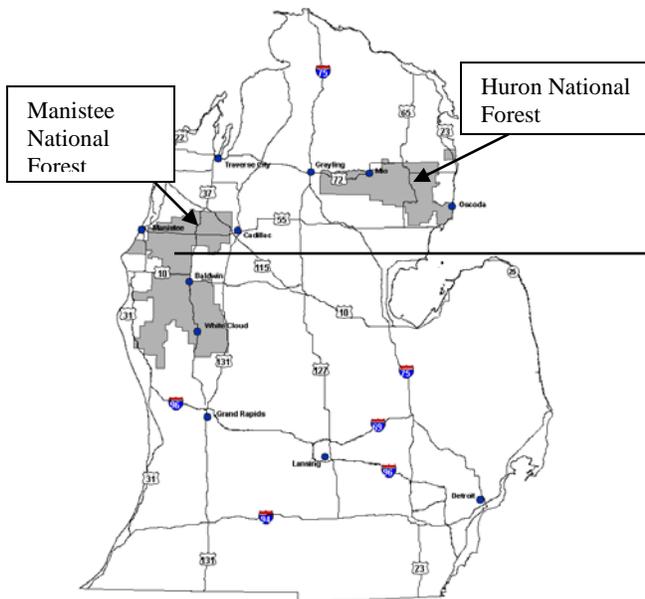


Oak Savanna



Pine Barren

To prevent the extirpation of this endangered species from our local landscape, the Forests conduct management activities to restore savannas/barrens habitats and annually monitor the status of the KBB to evaluate the effectiveness of restoration efforts.



KBB Metapopulation Areas within the Manistee National Forest

Since 1992, hand cutting, prescribed burns, mechanical removal of vegetation (i.e., mowing, sheer cutting, masticating, bulldozing), scarification, seeding/planting, and road closures have been used to manage 886 acres of occupied and 902 acres of unoccupied KBB habitat within the four metapopulation management areas.



Reducing Woody Cover via Hand Cutting



Reducing Woody Cover using a Bulldozer



Prescribed Burn



Road Closure Protecting Occupied KBB Habitat

The objective of these treatments is to reduce tree density and the encroachment of trees and shrubs, and promote the growth of native grasses and KBB nectar plant species, especially wild lupine - the sole food source for the KBB caterpillar.



Wild Lupine

Given that persistent KBB populations require abundant nectar sources and wild lupine, seeding/planting activities are essential for restoring suitable KBB habitat. Over the next two decades, the Forests plan to disperse seed and plant plugs to establish 5-15% cover of wild lupine and 5-15% cover of other important nectar plants within all sites occupied by the KBB. The success of the Forests' management activities depends on the support of its partners and volunteers. For example, in 2009, partners donated seed and volunteers provided a total of 22 volunteer days (~\$2,400 in contributed volunteer time) allowing the Forests to seed 4 acres with nectar plants and plant 2.5 acres with wild lupine plugs.



Planting Wild Lupine Plugs using Hand Tools



Seeding Nectar Plants using a Bulldozer

The Forests also conduct annual monitoring activities to determine how far KBB populations are from meeting recovery goals, and to evaluate the effectiveness of different management strategies for restoring KBB habitat. Between 2006 and 2009, the number of acres the Forests monitored for the KBB increased dramatically (298 acres in 2006, 843 acres in 2007, 812 acres in 2008, 1,078 acres in 2009) due to volunteer participation in the survey effort.



2008 KBB Survey Team

Volunteer participation in 2007, 2008, and 2009 was incredible! Individuals from numerous private and public partner organizations provided a total of 533 volunteer days (~\$65,000 in contributed volunteer time). To those who supported our survey effort, thank you for being so generous with your time! With your support, the Forests not only met, but surpassed its monitoring goals.



KBB Nectaring on Butterfly Weed

With the help of volunteers, the Forests inventoried 821 acres; locating 34 new KBB subpopulations. In addition, the Forests estimated KBB abundance and assessed habitat conditions within 78 subpopulations covering 580 acres, and examined the influence of weather on KBB over wintering survivorship by collecting hourly temperature and weekly snow depth data within 20 selected subpopulations. The Forests also conducted habitat surveys on an additional 152 acres to evaluate the effectiveness of different mechanical treatments at restoring KBB habitat.



Reducing Woody Cover using a Sheer Cutter

Those participating in the 2007 and 2008 survey effort made an invaluable contribution to conserving the KBB by helping us dramatically improve our understanding of the KBB's status within the Forests, and how to restore suitable KBB habitat. Without good information, our efforts to recover the KBB will fail!



KBB Nectaring on Horsemint

There is still much to do if we are to prevent this endangered species from disappearing from our local landscape. In 2010, the Forests will continue to conduct management activities to restore savannas/barrens habitats and monitor the status of the KBB to evaluate the effectiveness of restoration efforts. The continued support of partners and volunteers is vital to meeting our recovery goals! If you or someone you know is interested in learning more about how to help conserve this locally endangered species, please contact Dr. Heather Keough, District Wildlife Biologist, at (231) 745-4631 x 3111 (office) or hkeough@fs.fed.us.



KBB Mating