

MOVEMENT OF KARNER BLUE BUTTERFLIES INTO AND BETWEEN PRAIRIE RESTORATIONS: IMPLICATIONS FOR ESTABLISHING A VIABLE METAPOPOPULATION

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Abstract: The federally endangered Karner blue butterfly (*Lycaeides melissa samuelis*) has its greatest population in central Wisconsin. Plans have been formulated to conserve habitat for this wild lupine (*Lupinus perennis*) dependent species here. Since 1990 we have been involved in a series of prairie restorations, including planting wild lupine, in the central sand plains of Wisconsin. Karner blue butterflies had moved from adjacent established sites to the 1990 restoration by 1995. Subsequent to 1995 seven prairie restorations of two to sixty acres have been undertaken within a two mile radius of the 1990 restoration. All restorations include lupine and all have been colonized by Karner blue butterflies. The prairie restorations occupy a variety of habitat from xeric to wet prairie and include two rivers and six wetlands.

We document the Karner blue colonization of these plantings with population surveys from 1995 to 2007. This is illustrated by mapping techniques which show distances traveled by the butterflies as well as the terrain over which they travel and the general structure of the prairie restorations. It may be important for long term reproductive success that Karner blue butterflies have access to habitat that varies in composition and structure. In dryer years they may need more mesic and in wet years more xeric habitats, and the restorations together comprise these habitats. It is known that Karner blue butterflies are able to migrate over two miles and their ability to populate these restoration sites indicates an adaptability which may secure a viable metapopulation.