Featured Species Habitat Management Guidance for
<u>Mitchell's Satyr</u>

Latin Name: *Neonympha mitchellii*   **Scope**: Southern Lower Peninsula (SLP)

Rationale *- why we value the species and the problem for the species:*
   The Mitchell's satyr (MS) is federally and state endangered (Michigan DNR 2015), and populations are declining. It is currently known to occupy only 16 sites in southern Michigan and 1 site in northern Indiana (Hyde et al. 2009). Wetland draining, invasive species and conversion to shrub or forested cover types are the probable causes of decline. Dispersal among populations, colonization of new sites, and re-colonization of extirpated sites has become increasingly unlikely (United States Fish and Wildlife Service 1998).

Habitat Need *- the cause & effect relationship between habitat and species and its primary limiting habitat need:*
   The MS is restricted to wetland cover types most often classified as prairie fen. MS appear to occupy the parts of fens where herbaceous plants are in close proximity to woody vegetation (Shuey 1997; Hyde et al. 2009), usually within about 9 feet or 3 meters (Barton and Bach 2005). Occupied habitat is characterized by peat soil with carbonate-rich groundwater seeps and is most often dominated by C*arex stricta*. Most sites occur in valleys with distinct slopes (McKinnon and Albert 1996). The food plants used by larvae include tussock sedge (*Carex stricta*), Bristly-stalked sedge (*C. leptalea*), fowl bluegrass (*Poa palustris*), and *Panicum* sp. (Tolson and Ellsworth 2008). MS oviposit on the underside of very short broad-leaved plants in close proximity to sedges.

Habitat Objectives *- the treatment or management to address the primary limiting habitat need:*
   Habitat management details are outlined in the Mitchell's Satyr Recovery Plan (United States Fish and Wildlife Service 1998) and the Fen Conservation Plan for Michigan and Indiana (Michigan DNR 2011):
   1) Reduce glossy buckthorn, reed canary grass and other invasive species;
   2) Maintain the quality and quantity of groundwater; and
   3) If permitted, use prescribed fire to maintain short-statured forbs for butterfly oviposition. Site Conservation Plans have been created for 12 satyr sites (Hyde et al. 2004) and TNC has created management plans for 3 occupied sites that they manage.

Priority Geographic Areas *- the specific geographic areas where we should focus management for the species:*
   The currently occupied sites in Berrien, Van Buren, Cass, St. Joseph, Kalamazoo, Barry, Branch, Jackson and Washtenaw counties; and previously occupied sites in Lenawee and Kent counties.

Priority Landscapes *- the landscape, setting, or cover-type where we should focus management within the areas above:*
   Prairie fens, their surface watershed, and the source areas for their groundwater.

Population Goal *- the goal for the species, its habitat, or a stakeholder's actions:*
   12 to 25 geographically distinct populations/meta-populations in Michigan with more than 25 consistently counted butterflies per site.

Evaluation Method *- the monitoring method to measure progress towards the goal above:*
   Annually assess the vegetation response and MS response to management. Conduct timed-meander transects through potential habitat in mid to late June. Report findings to the local wildlife biologist and Michigan Natural Features Inventory.

Incidental Species *- other species which may benefit from management for this species:*
   American bittern; mallard; massasauga rattlesnake; and ring-necked pheasant.

References *- citation for documents referenced in this guidance:*

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