QUICK TIPS

For best results, implement a diverse combination of disking and burning to enhance butterfly communities.

Follow the USDA practice standards restricting mid-contract management activities to 1/3 or 1/4 of the buffer area in a given year.

There may be a change in the species of butterflies using the buffer after disking or burning, so management activities intervals need to be long enough to allow butterfly populations to recover.

COST-SHARE PROGRAMS

Farm bill conservation programs provide financial and technical assistance for buffer design, installation, and management, learn more at: http://www.nrcs.usda.gov/wps/portal/nrcs/main/national/programs/farmbill/

Natural Resources Conservation Service
www.nrcs.usda.gov

Mississippi State University
www.msstate.edu

Wildlife Mississippi
www.wildlifemiss.org

Mississippi Agricultural and Forestry Experiment Station
www.mafes.msstate.edu

Forest and Wildlife Research Center
www.fwrc.msstate.edu

MISSISSIPPI MAFES AGRICULTURAL & FORESTRY EXPERIMENT STATION

NRCS

Wildlife Mississippi

MISSISSIPPI STATE UNIVERSITY

College of Forest Resources
Forest and Wildlife Research Center

POLLINATOR SERIES

BUTTERFLIES
IN CONSERVATION BUFFERS

Effect of Management Activities on Butterflies in Native Grass Conservation Buffers

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Butterflies help pollinate many native grassland plants and serve as food to other insects and birds. They are important components of biodiversity in grassland ecosystems. As the intensity of agricultural production has increased across North America, native grassland habitats are disappearing in the working landscapes.

CONSERVATION BUFFERS

Conservation buffers are narrow strips of land maintained in permanent vegetation that are established at the edges of row crop fields that are designed to intercept pollutants, reduce erosion, and provide improved habitat for wildlife.

Native grasses and flowering plants are prescribed in the United States Department of Agriculture's (USDA) Conservation Reserve Program practice CP33 Habitat Buffers for Upland Birds. The recommended management activities to maintain these buffers include light disking and prescribed fire. Butterfly host and food plants are affected by these management activities.

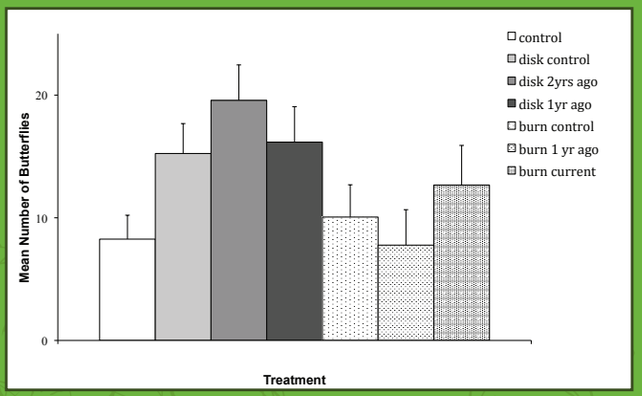
MANAGEMENT ACTIVITIES

Light disking helps to promote the grass and flowering plant communities desirable in these buffers. It disturbs the existing vegetation, incorporating at least half of it into the soil, and exposes a considerable amount of soil at the same time. Disking in the fall encourages more desirable flowering plants and discourages weeds.

Prescribed fire also maintains the desirable plant communities in buffers by increasing nutrient availability and stimulating the growth of herbaceous plants. Burning is done in the early spring to reduce winter cover for a short period of time before spring green-up. Burning during this time also reduces the amount of smoke produced compared to burning later in spring.

EFFECTS ON BUTTERFLIES

Planted native grass conservation buffers are home to many of the same butterflies as natural grasslands, so maintaining these communities at the edges of agricultural fields increases diversity across the landscape. Neither of the two recommended management methods negatively impacted the butterfly communities when a portion of the buffer was left undisturbed to protect butterfly larvae



PESCRIBED FIRE: Fire can destroy overwintering butterfly larvae, so it is important to leave a portion of the buffer unburned to maintain butterfly populations. The time it takes for butterfly populations to recover from fire varies regionally. In the first year after a burn, more of the butterflies that can tolerate the disruption in their habitat are present than usual.

DISKING: As with burning, more of the butterflies that can tolerate the disruption in their habitat are present than usual in the first year after disking. Disking is a viable alternative to prescribed fire.

USDA practice standards restrict these management activities to 1/3 or 1/4 of the buffer area in a given year; the unmanaged portion of the buffer acts as a refuge for butterfly species during disking or burning activities. This allows butterfly populations to recover throughout the buffer.