

Light disking enhances early successional habitat with negligible erosion

Disking is widely accepted as an important tool in creating early successional habitat for bobwhite quail and other grassland birds.

That is because the disturbance and bare soil it creates allows annual plants to grow and attract the insects that young chicks need. Typically open at ground level with little litter accumulation, the disked areas are easy for young bobwhites to feed in, and the broad-leaved forb canopy provides protection from predators.

Conservation Reserve Program (CRP) fields, including dense cool- or warm-season grass plantings, broomsedge, abandoned pastures, and old fields succeeding to brush, are likely candidates for improvement with disking.

Conservationists, however, have concerns about soil erosion caused by disking. A study by Mississippi State University (MSU) concluded erosion is negligible if the proper techniques are used.

“Rotational strip disking is a cost-effective way to enhance habitat for bobwhite quail, and it can be done with minimal erosion,” says Dr. Wes Burger, Associate Professor of Wildlife Ecology at MSU.

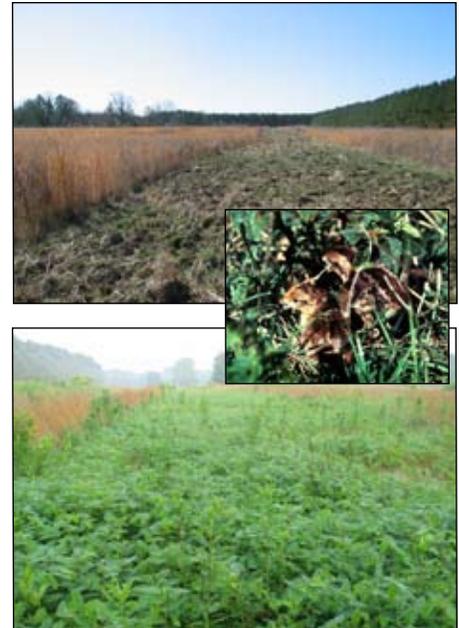
Burger’s research with U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) biologist Pat Graham in Missouri and Mississippi showed that light disking (1–2 passes 3–5 inches deep) can effectively stimulate germination of annual plants. Strip disking on the contour created minimal erosion (0.01–0.17 ton/acre) with erosion rates well below T-levels. Burger cautions that specific guidelines for strip disking on highly erodible land or CRP land must be formulated by the NRCS.

In Mississippi, the guidelines for disking these lands are:

- Strips must be disked light enough to provide for a minimum of 30 percent residue on the soil surface after disking operations are complete.
- Disking should be done in strips no wider than 30 feet on the least erosive parts of fields, along field contours as near as practical.
- Disked strips should be separated by undisked strips twice the width of the disked area.
- Strips may be disked from late October through late March. Strips disked in late fall may be seeded to a winter cover crop suited for wildlife.
- Fall disking tends to stimulate germination of ragweed and legumes; spring disking encourages annual grasses such as foxtail.
- Light disking should be done on a 2- to 3-year cycle. Rotate and/or alternate the location of the lightly disked strips each year. Continue this rotation, disking strips every 2nd to 3rd year.
- Depending on the erosion index of a field, 14 percent to 33 percent of the field may be disked in any year. Widths between strips varies from 60 feet to 180 feet.

Incorporating the disked strips as firebreaks into a prescribed fire program can lead to even more diversity of desirable annual plants, according to Ed Hackett, a biologist with the NRCS Agricultural Wildlife Conservation Center (AWCC).

The study was aided by a grant from the AWCC. The AWCC, located in Madison, Mississippi, is a fish and wildlife technology development center.



Photos by Wes Burger, MSU

Enhanced habitat quality by strip disking (top); Vegetation response to disking (bottom); Northern bobwhite chick (inset)

Summary of:

Agricultural Wildlife Conservation Center
Project # 68-7482-8-375

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