



DIVISION OF FISHERIES & WILDLIFE

Barrens Restoration at Herman Covey Wildlife Management Area

Location: Belchertown, Ware

Overall Size of WMA: 1,436

Potential size of restoration area: Approximately 900 acres

Size of area currently under active restoration: Approximately 115 acres (July 2020)



LEFT: Initial tree clearing for restoration of open oak woodland conducted February 2020; **RIGHT:** Growth response after initial tree clearing on July 29, 2020.

Background and planning

The Herman Covey Wildlife Management Area (WMA) provides an important opportunity to restore and maintain a significant group of fire-influenced natural communities or habitats, including oak-hickory woodlands, and [barrens](#). These are *disturbance dependent* communities and require periodic disturbance events, in most cases fire, to keep them functioning at a high level. These communities benefit rare and uncommon plants and wildlife, as well as a variety of game species. These habitats also support approximately 75 wildlife and plant species listed under the Massachusetts Endangered Species Act (MESA), as well as a number of vulnerable species identified in the MA [State Wildlife Action Plan](#).

Restoration efforts at Herman Covey WMA were inspired by earlier inland barrens work at the Muddy Brook WMA in Hardwick, only seven miles away. Initially, MassWildlife foresters and ecologists thoroughly evaluated natural resources at Herman Covey WMA; documenting the wildlife and plant life found on the property and researching geological and soils history. The information gathered was incorporated into a comprehensive Habitat Management Site Plan which utilizes the best habitat restoration practices to fulfill the site's ecological promise. Long-term maintenance of these communities will involve periodic prescribed fire and continued ecological monitoring.

All required permits and project reviews were obtained prior to work beginning at Herman Covey and continue to be updated. Approvals include: DEP Wetlands permits; DEP Air Quality; local permits for prescribed fire; MESA approval; MA Forest Cutting Act approval; MA Historic Commission review; and Federal tribal review.

Habitat restoration in action

The first phase of habitat restoration began in 2015 with invasive plant control, mowing, and replanting of native warm season grasses. Portions of the Herman Covey WMA retained some remnants of woodland and barrens communities which have been greatly altered by decades of fire suppression. Thinning of the closed canopy oak and white pine stands began in 2019 to promote growth of resilient oak and hickory woodlands and to restore the open, sunlit structure of viable woodland and barrens communities. The largest diameter, most full-crowned oaks were retained, along with pockets of remnant pitch pine in portions of the treatment area. Multiple large diameter oak trees had been killed by the invasive gypsy moth in 2017-2019 and most of the dead trees were cut to improve safety conditions during future prescribed burning activities.

Some habitat restoration work at Herman Covey is aimed at increasing the resiliency and numbers of regenerating oak and hickory trees. Oak and hickory woodlands are some of the most important wildlife habitats because they produce highly nutritious nuts for many animals and birds. These woodlands habitats are known to support numerous rare plants.

MassWildlife monitors the results of restoration work through plant, bird, and moth surveys some of which began prior to 2015. Some notable results to date are listed below:

- A 90% decrease in the presence of invasive exotic plants across the most heavily infested areas;
- Significant increases in breeding birds which depend on shrubland and young forest habitats, including American woodcock, ruffed grouse, prairie warbler, field sparrow and eastern towhee;
- The continued presence of the MESA-listed eastern whip-poor-will bird at the site;
- Successful restoration of 15 acres of grasslands planted with native Little Bluestem grass with an additional 20 acres planned for 2020-2021.

These conservation efforts and observations will further serve to inform MassWildlife's habitat management goals and serve as a demonstration to other organizations and institutions on approaches for inland barrens restoration and oak-hickory regeneration.



Herman Covey WMA prescribed burn to promote native warm season grasses to benefit state listed species.



Native little bluestem grasslands at Herman Covey WMA after two growing seasons and one prescribed burn.