Barrens Restoration at Muddy Brook Wildlife Management Area

**Location:** Hardwick  
**Overall size:** 2,498 (1,937 acres of Wildlife Management Area + 561 acres of Wildlife Conservation Easement)  
**Potential size of restoration area:** Approximately 950 acres  
**Size of area currently under restoration:** Approximately 515 acres

*Left:* Photo taken after initial tree clearing completed was completed to begin restoration at the Muddy Brook WMA in Hardwick. *Right:* That same area in November 2019, seven months after first prescribed burn.

**Summary of restoration activities:**

- The greater Muddy Brook Valley represents one of the most important opportunities in Massachusetts to restore and maintain a significant collection of fire-influenced natural communities, often collectively referred to as Barrens.

- Barrens communities support approximately 75 species on the Massachusetts Endangered Species List, along with a long list of vulnerable species identified in the MA Strategic Wildlife Action Plan.

- Barrens are disturbance-dependent communities. They require periodic disturbance events, in most cases fire, to keep them functioning at a high level.

- The Muddy Brook Valley retains a clear legacy of barrens communities which have been degraded by 75 years of fire exclusion. Restoration at this site requires a one-time timber harvest to remove generalist species and to restore the open structure of functioning barrens communities. Long-term maintenance of these communities will involve periodic prescribed fire events.

- Barrens communities are incredibly resilient and highly restorable; their associated species will recolonize a recently disturbed community quickly either through the seedbank, through previously dormant rootstock, or by animals that immigrate from other similar areas.
A few growing seasons have passed since the bulk of phase I restoration was completed at Muddy Brook and there has already been an impressive ecological response, including:

- The emergence of 23 fire-influenced plants not observed prior to the restoration event, including 2 Endangered, 2 Threatened, and 3 Watchlist species;
- The return of the eastern whip-poor-will bird to the site following a documented 30-year absence;
- A significant increase in early successional breeding birds, including the American woodcock, prairie warbler, field sparrow, and eastern towhee;
- An increase in bee species from 36 to 103 species; and
- A growing list of specialized moths and butterflies that includes several state-listed species.

The positive conservation results at Muddy Brook are being amplified across the region as other agencies, non-profit organizations, and institutions are learning from Massachusetts Wildlife’s approach to inland barrens restoration and utilizing these methods in their own habitat management efforts. Muddy Brook is now used regularly as a living laboratory to teach college students, land managers, and the general public about restoration and conservation.