

HABITAT MANAGEMENT FOR AMERICAN WOODCOCK IN PENNSYLVANIA





American woodcock are currently recognized as a priority species in numerous management plans including the Pennsylvania (PA) Wildlife Action Plan and the U.S. Shorebird Conservation Plan. Additionally, the Nature Conservancy and the National Audubon Society have identified woodcock as a crucial species of management concern because it is an important species to the public. Hunters enjoy pursuing them with dogs and non-hunters are awed each spring by the courtship displays of males. They are a cryptic bird, preferring young forests and other early successional habitats for cover. This preferred habitat is also shared by other important animal species, and, subsequently, managing habitat for woodcock benefits a plethora of birds, mammals, reptiles and amphibians. It should be clear that woodcock are extremely dependent on appropriate habitats; however there are a wide range of habitats in PA that more than meet their habitat requirements. This document will serve to provide land managers with information to indentify often-overlooked habitats and implement appropriate strategies for improvement and maintenance of these sites.



Silky dogwood stands often offer both feeding and daytime cover for woodcock.

Even though woodcock do occasionally utilize similar habitats with ruffed grouse, their similarities typically end there. While grouse tend to walk between daily habitat components, woodcock are a bit more mobile. They regularly fly from daytime covers to nighttime feeding and roosting covers and then back. What's more, these locations can occur as far as one mile from each other! Another difference is that woodcock will begin utilizing new habitat at the onset. For instance, a recently treated exotic invasive shrubland mowed in the winter will most likely be

used as a singing ground by male woodcock that following spring given suitable nesting habitat is nearby.

As with any species undergoing a population decline, the true way to halt the decline and reverse it is to implement landscape scale habitat creation or improvement. Early successional

habitat is in short supply across PA and most historical woodcock habitat has either naturally succeeded to forest or been invaded by exotic invasive vegetation. The good news is that PA hasn't lost forest land, but rather the habitats used by woodcock have reached an age deterring their use. With this in mind, simply cutting the old forest may not produce woodcock habitat. There are several factors to consider that can make a site more attractive to woodcock.



This former dogwood shrubland stand is now dominated by exotic invasive vegetation and in need of restoration.

Topography

Land managers should first look at the topography when determining if areas are suitable for woodcock habitat. Soils and vegetation are typically very different on slopes than on flatter terrain and subsequently woodcock are rarely found on slopes greater than 15%. Gradual, gradient slopes less than 15% adjacent to watercourses make excellent sites for improving or creating woodcock because several habitat components are present.

Soils

If the topography of the potential site is relatively flat, the next factor to look at is the soil. Woodcock and moist soils are rather synonymous however sites with non-hydric soils can still



Singing grounds with silky and grey dogwood scattered throughout them are highly utilized by displaying males.

be highly utilized by woodcock. These drier soils typically have pockets of compaction that hold water, providing probing areas and this subject will be covered in more detail later in this document. When looking at soils, managers do not need to conduct a soil test, but rather look at the vegetation growing on the site. If forbs like goldenrod and shrubs like dogwood or viburnum or small trees like black locust or aspen are present, the area has promise.



Hawthorn shrublands with a goldenrod understory offer ideal woodcock feeding, diurnal, nesting and brooding cover.

Vegetation

Native vegetation can make identifying potential woodcock habitat fairly easy. Several shrubs like silky dogwood, gray dogwood, southern arrowwood and other viburnums are very attractive to woodcock because of their growth structure. If these shrubs are identified during the site assessment, woodcock habitat is probably already present. However, due to natural succession, these shrubs can be replaced over time with hardwood species like white ash or black cherry so it is important to look for these indicative shrubs persisting in the understory.



Grey dogwood is easily identified by its white berries and is a great indicator of good woodcock feeding cover.

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Black locust, hornbeam (aka blue beech or musclewood) hawthorn, blackhaw, crabapple and aspen are native trees that are highly utilized by woodcock, especially when a forb component like goldenrod is present. These tree complexes provide optimal structure and are very good indicators of woodcock habitat.

Exotic invasive vegetation, on the other hand, can make the determination of potential woodcock habitat more difficult. Exotic invasive vegetation like bush honeysuckle, multiflora rose, autumn and Russian olive and privet grow under various conditions ranging from slopes to riparian areas to forest understory. When stands of these invasives are encountered, land managers should look to topography and soils to determine whether such a site has potential to become woodcock habitat.

Habitat Components

Woodcock use different habitats at different times of the day and throughout the year. For instance, males use small fields and forest openings at dawn and dusk for singing grounds. Old fields with goldenrod and shrubs are used for nesting, and larger open areas such as hayfields are used for ground roosting at night. Should one of these pieces be removed, the likelihood of woodcock use decreases substantially. Additionally, some often overlooked habitats are easily maintained to contain multiple components and it is important to be able to recognize them.



Goldenrod is an important component of quality woodcock habitat.

Nesting / Brooding

Nests are less successful and young more prone to predation without quality nesting and brooding cover. Nesting and brood rearing typically occurs on drier, upland sites compared to the typical wet areas often associated with woodcock. Recent research found that soil moisture at nest sites was around 2.8 on a scale of 1(driest) to 10 (saturated). Reverting farm fields and reclaimed strip mines provide this kind of cover. One vegetative component that was ever-present was goldenrod. Goldenrod provides excellent upright



Woodcock tend to nest in cover that is more open and has a lower density of invasive shrubs.





Forbs like goldenrod are attractive to woodcock because it provides dense stems for protective cover yet allows for ease of movement.

structure, even after winter snows. Along with goldenrod, black locust provides exceptional nesting/brooding cover. Goldenrod is often found growing within locust stands, a perfect combination. Reverting farm fields with scattered shrubs also provide excellent habitat for woodcock hens and chicks. The only way to increase woodcock populations is to increase the number of successful nests and surviving chicks. The only way to do that is through active habitat management!

Feeding

The best way to determine the presence of a feeding site on your land is to look for the moist soil shrubs and trees as described in the assessment process. These species tend to grow in a manner that provides dense overhead cover yet an open understory that provides for easy walking. To paint a better picture, imagine looking through a dogwood stand at ground level. If you can see 10-15 feet, then the right structure is present. With short legs positioned near the back of their body, woodcock aren't particularly mobile on the ground. However, they will make regular flights from roosting habitat to reach good feeding cover. Woodcock leave droppings on the ground which is often described as "chalk". The droppings are white and wet when fresh but soon dry and become chalk-like, hence the term. Chalk in a shrubland is a great indicator that proper habitat is in place.



The presence of silky and grey dogwood is a great indicator that woodcock feeding habitat is readily available.

ground and then improve the habitat around it. Some of the most productive singing grounds are simply small open patches with scattered low shrubs and vegetation. Some highly active singing grounds are only a small 20 ft x 20 ft clearing with goldenrod and a few shrubs. The key was that the little patch had perfect structure and optimal nesting habitat around it.



Scattered vegetation provides structure on singing ground yet still allows for ample room for males to display for females.

Roosting

The last habitat component that woodcock utilize is roosting cover. As the summer winds down and chicks are flying strongly between cover, groups of woodcock will begin spending the night on roost fields. Roost fields are fields with low vegetation that affords good visibility to spot approaching danger. Roosting fields can take the form of large cattle pastures, mowed hay fields, or young, reverting fields. Sometimes they even use a simple mowed strip through a shrub cover.



Recently harvested crop fields or low, fallow fields make excellent roost fields.

Habitat Management

Woodcock habitat management isn't overly complicated. Reverting fields with patchy shrubs and bottomland shrublands are key. Over time, these habitats will tend toward forest as tall-growing trees like maple, ash, poplar, and oak become established and grow. This doesn't happen all at once. Rather a few scattered trees start showing up, and over time begin shading the shrubs and dropping more tree seed. The simplest way to perpetuate a shrubland is to cut the invading



Trees that are overtopping shrubs like dogwood should be treated to maintain the important structure provided by the shrubs.

olive, and bush honeysuckle have become rather common in PA and are a serious threat because they out-compete native shrubs like dogwood and viburnum. Invasive shrubs also tend to spread rapidly due to seed dispersal by animals. Early leaf out of invasive shrubs further hampers native plant growth. Recent research found that woodcock nesting success decreased in areas dominated by invasive shrubs; however they will tolerate scattered invasives if native plants are also present. Keeping the scale tipped in favor of native vegetation is all that is needed. Often times, spot treating invasive shrubs will do the trick. In more extreme cases, a shrubland dominated by “old growth” invasives will need to be mechanically mowed, then sprayed with herbicide. This is often necessary to also halt an invasive of stilt-grass. We have been pleasantly surprised many times by the native shrub response following these treatments.

trees early on as they reach 4-6 feet tall (overtopping the shrubs). A somewhat longer term solution that prevents re-sprouting is to apply herbicide after cutting the stump (i.e., cut stump treatment) or using a basal herbicide application without cutting.

Without question, exotic invasive plants present a problem when attempting woodcock habitat work. Multi-flora rose, autumn



When invasive shrubs are the dominant vegetation, mechanical mowing with a follow up herbicide application is the best prescription.

Special Considerations

In addition to typical shrubland management, other opportunities exist to provide excellent habitat for woodcock.



Strip mines are highly used by woodcock because vegetation used to reclaim them like black locust and goldenrod provides outstanding structure.



Strip Mines. Strip mines are not really thought of as prime woodcock habitat however reclamation efforts often use black locust due it's ability to grow on many different site conditions. More over, the alleopathic properties of locust creates ideal woodcock structure by deterring many non-desirable vegetation species and allowing beneficial species like goldenrod to thrive. Other important tree species like aspen are commonly found on strip mines.



Through the reclamation process, areas of compacted soil often hold soil moisture and provide woodcock with foraging areas. With this in mind, the habitat structure on strip mines provides excellent diurnal, nesting / brood-rearing and roosting cover and woodcock can travel significant distances daily to foraging areas. Maintaining the structure necessary when managing strip mines. Most will be in an arrested state so minimal maintenance of invasive vegetation is all that is required.

Orchards. Hawthorn was previously mentioned as quality woodcock habitat and maintenance is to control the presence of invasive vegetation. The same holds true for other fruit-bearing orchards. Much has been theorized as to why orchards attract woodcock since these birds are unable to feed on the fruit. The most likely explanation could be that the decaying fruit on the ground attracts earthworms. The reason is not necessarily



Apple orchards with a forb understory, are highly attractive to woodcock.



Hornbeam is also called musclewood due to the formation of the bark.

as important as is proper

maintenance. The goal for maintaining orchards is in a state that allows forbs and other vegetation to grow in the understory. As with other stands, goldenrod is common in these covers and should be promoted.

Hornbeam. American hornbeam, in itself isn't vital to woodcock, however where it prefers to grow is. Blue beech or musclewood as it is also known grows on moist sites often adjacent to streams. Hornbeam stands often contain a layer of goldenrod in the understory however this tree species grows slow, is capable of growing to taller heights and can grow out of the age preferred by woodcock. Much like other covers, hornbeam



Left, This hornbeam stand that is slowly growing out of a stage preferred by woodcock. Right, The stand on the left following a regeneration cut.

provides excellent structure that offers quality diurnal, feeding, nesting and brood-rearing cover. Maintenance of hornbeam stands requires the removal of invasive shrubs, promotion of a goldenrod understory and periodic regeneration. Hornbeam will root sucker to a lesser extent than aspen but it does well after a regeneration cut.

Summary

Habitat Management for American woodcock should give special consideration to the numerous different habitat types used by woodcock. Because each habitat provides a separate niche of the daily necessities of woodcock, it is important to manage all them equally. Moist shrublands that provide feeding cover are just as important as strip mine locust and aspen stands that offer day time resting, nesting and brood rearing cover. Maintaining the proper structure of shrubs and trees with a goldenrod understory while deterring the growth of invasive vegetation should be the goal. The most difficult aspect of managing woodcock habitat is recognizing when to take a minimal management approach. Often times, simply maintaining the current structure and treating individual invasive shrubs or over topping trees is all that may be necessary. When unsure, err on the side of caution. However when a once high-quality shrubland has been overtaken by invasive shrubs, a complete stand treatment may be necessary. Woodcock habitat is not always easy due to the presence of invasive vegetation, but by following through with your treatments, the woodcock will let you know how you're doing.



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