How to Identify and Manage Fields for Spotlighting American Woodcock (*Scolopax Minor*): Examples from Eastern North America

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I. American woodcock general roosting biology and what to look for

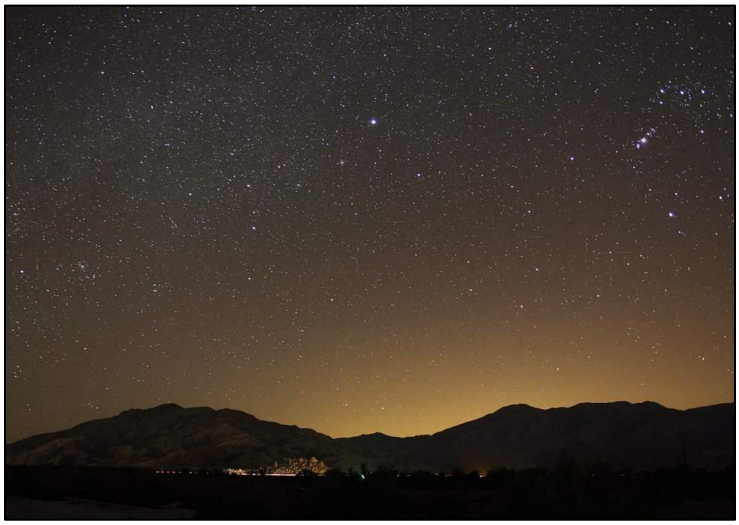
1. American woodcock are usually associated with young or early successional hardwood forests. However, woodcock use fallow fields or open areas in the spring when displaying or year-round to roost at night.

2. While some woodcock can be found roosting in open areas any night of the year, they are most likely to use open areas during wet, rainy weather or new moon phases (no or limited moon light).

    a. Rain late in the day is good, but rain continuing throughout the night is best. It is believed that after rain, woodcock cannot hear predators approaching in the forest (wet leaf litter is noiseless) so woodcock are more likely to roost in fallow fields. While in fields they still have difficulty hearing, but they have an increased ability to see predator coming.

    b. The less light the better. Avoid full-moonlight as birds can generally see you approaching and will most likely to run and flush far out of capture range. Large amounts of ambient light can also be troublesome. When woodcock

flush, they use ambient light to navigate and abandon the roost field. Cloud cover can help to block the moon and low cloud cover can suppress ambient light from nearby towns or structures.



Light pollution on the horizon acts as a compass, and when woodcock flush in a roost field, they will use the horizon to navigate, gain altitude, and are significantly less likely to land in the field again.

c. Do woodcock feed in roost fields? – Yes. Woodcock are primarily heading to fields to roost, but will increasing forage throughout the night in the late fall and throughout winter. It is not uncommon to see probe marks in fields, which can be a good indicator as to what portions of the field woodcock are consistently using.

Woodcock probe marks found at the James W. Webb Wildlife Center and Management Area in South Carolina.

Whitewash (woodcock poop) can be another good indicator of specific areas woodcock are using in roost fields. Whitewash can mark the most recently used areas, but will only persist until the next precipitation event.

3. When trying to locate roosting fields, think like a woodcock. Spatially, where is the nearest diurnal cover? Generally speaking, woodcock are going to travel as little distance as possible between their diurnal and nocturnal covers. While some

woodcock have been documented to fly ~5km to a nocturnal roost area, most often they make shorter duration fights around a few hundred meters.

Think about the landscape. Areas with limited roosting options will concentrate birds better than landscapes dominated by many fallow fields.

There is only one large field in the center of the picture, the remaining area is forested. Woodcock have few field roosting options and will concentrate activity in the fields in the center of the image.

In this example, there is are too many roosting options, resulting in woodcock being dispersed and much more difficult to locate.

4. We recommend fallow fields managed for early successional vegetation communities (e.g., goldenrod). Woodcock have been successful spotlighting in pastures, regenerating clear-cuts, young pine plantations (tree farm/nursery), native warm season grasses, or even open pine woodlands of the south (see South Carolina example). But, reverting croplands, fallow fields, and hay pastures are some of the most commonly used spotlight fields.

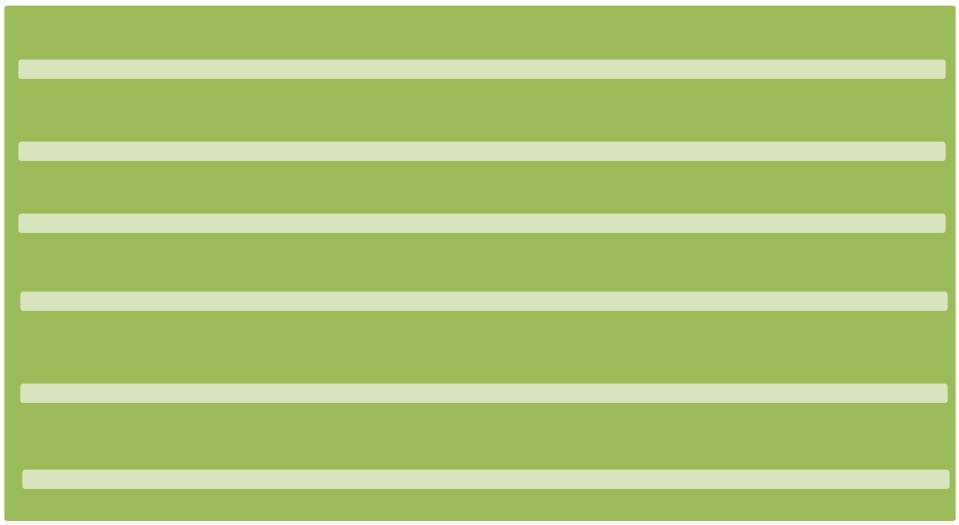
5. Ground cover either makes or breaks a field. Think of "goldy locks and the three bears" – the grass can be too high, too short, too thick, and or too thin. Depending on the month and latitude you anticipate spotlighting, will dictate when and how you prepare roost fields pre-capture. In most instances, mowing strips in a pre-existing fallow field will be sufficient to create a capture field. However, most fields will need to be brush hogged or have prescribed fire applied every few years to prevent woody stems establishment.

Grass should be mown at least 1 month prior to trapping. Grass/vegetation should be ~3-5 inches tall, and patchy allowing woodcock to move unhindered. Ultimately, the woodcock needs enough vegetation so when it 'lays low' in the strip the woodcock feels protected, but too much and it cannot walk around.

Mico-habitat features, such as depressions, small hills, or hydric soils, can act as magnets for birds. 'Ruts' from mowers or ATVs can also be beneficial, making it easier for woodcock to traverse the vegetation and increasing camouflage/concealment.

Native grasses and bunchgrass can provide great ‘patchy’ cover post mow.

6. When mowing strips in fields there are a few general recommendations.
    a. Strip width: 6-10 foot wide is best
    b. Configuration: longer continuous strips is preferred over short strips.
    c. Woodcock will usually be in centrally located strips and will avoid ‘edges’. However there is a lot of variation depending on the site and local vegetation conditions.



7. What about the wind? - In all honesty, we believe rain and ambient light are a much larger factor. We have found large numbers of woodcock on calm rainy nights and windy rainy nights. Wind can either mask your footsteps or make the birds 'spooky'… it seems to be somewhat variable and likely depends on presence or absence of rain.

II. Please see Examples below for local management activities that can lead to great woodcock roost fields. We hope that these will provide a general framework when attempting to create roost fields in your work area.

1. Maine (Woodcock Demonstration Area – Fallow Fields)

i. **Location:** Moosehorn National Wildlife Refuge, Calais, ME

ii. **Field Type:** At Moosehorn, the majority of spotlighting occurs on 2-4 large open fallow fields. The fields are brush hogged every few years to remove woody vegetation and to maintain early successional vegetation. Woodcock in the past have been spotlighted on horse pastures, but most pastures have currently reverted to fallow fields.

Aerial photograph of Moosehorn National Wildlife Refuge. Note mix of clear-cuts and forest openings (blueberry and fallow fields).

iii. **Preparations:** Strips ~2-3 meters wide are mown in fields ~15-20 meters apart. Strips are typically mown in early august, providing 4-5 weeks prior to capturing birds September-October.

iv. **Other notes:** Moosehorn has been managed as a woodcock demonstration area, and has numerous regenerating clear-cuts of various ages. In the fall, woodcock have also been captured using mist nets on blueberry fields, which can also act as nocturnal roost fields.

2. Pennsylvania (Woodcock Demonstration Area – Fallow Fields)

i. **Location:** State Game Lands 314, Erie, PA

ii. **Field Type:** SGL 314 is currently managed as a mix of hardwood forests and fallow fields. Fallow fields vary in the amount of woody vegetation they contain, ranging from goldenrod dominated to wet shrub mixes. SGL 314 has a few scattered agricultural areas, used as food plots for big game.

Aerial photograph of SGL 314, note the trails and circles maintained for singing ground in the mown area.

iii. **Preparations:** Strips were mown ~2-4 meters wide (1 pass with 10ft brush hog - just as a note), with occasional 30-40 meter diameter circles to create Woodcock Singing Grounds. Strips were mown in late July/Early August then again 1 week prior to capture (2nd mowing was Sept. 18, capture was the 24th). Second mowing was needed as the vegetation was

too tall following first mowing 12-18” total height. 6-9 meter strips were mowed through singing grounds rather than the entire singing ground to focus roosting and increase capture success. August ~4 weeks prior to spotlighting woodcock in September/October.

Example of mown strip and established singing ground in a fallow field at SGL 314. Only received a portion of the singing ground was mown to facilitate spotlighting, and to restrict searchable area and increase the likelihood of woodcock use.

Example mown strip that traverses mix of aspen and alder at SGL 314. Woodcock scat (whitewash) was observed along the trails.

iv. **Other Notes:** SGL 314 acts as one of Pennsylvania's woodcock demonstration areas. Hardwood forests have recently been removed and stands are now managed for early successional vegetation communities, 'old field habitat'. Additionally, it may be of interest to know that these sites were forested stands 8-10 years earlier. Prior to maintaining areas as fields, 8-10 years ago these stands were red maple dominated hardwood forests with little to no understory vegetation. This was a commercial timber operation where it was specified that all material was to be removed from site (chipped). Managers plan to continue disturbance regimes to maintain fields as open areas dominated by herbaceous vegetation and low shrubs.

Singing-grounds are mown in the fallow fields to provide male display areas in the spring. Woodcock were primarily found on the strips between the circular singing grounds while spotlighting in the fall, likely due to increased visual obscurity from adjacent vegetation.

3. North Carolina (Waterfowl Impoundments)

i. **Location:** Butner-Falls of Neuse Game Land, Butner, NC

ii. **Field Type:** Butner-Falls has extensive acreage managed for waterfowl, with numerous moist soil management areas/waterfowl impoundments. Impoundments are flooded throughout the waterfowl hunting season, and have standing rows corm, milo, Egyptian wheat, Japanese millet, fallow vegetation, and natural moist soil plants.

Aerial photograph of impoundments at Butner-Falls of Neuse GL.

Recreation map of Butner-Falls of the Neuse GL.

iii. **Preparations:** In September/October, non-crop strips are mown throughout the waterfowl impoundment areas, creating a similar strip pattern as to fallow fields pictured at SGL 314 in PA. During the winter most of the impoundment is flooded while the remainder has a high water table just below the ground with isolated dry hummocks. The impoundments are drawn down slowly in late February and mostly dry by late March. Woodcock were not found in standing water, although occasionally, woodcock were flushed near the water's edge.

Example of mown area in waterfowl impoundment.

Example of standing vegetation density. Woodcock were roosting in standing Egyptian wheat, likely due to the grassy open ground cover with stalks providing vertical cover.

Ground cover is continuous, clumped, and the perfect height. Woodcock could move easily, yet tuck into a clump of grass when avoiding predators or spotlight crews.

Another example of mown strips in the waterfowl impoundments at Butner-Falls of the Neuse.

The grass was mown bunchgrasses (e.g., broomsedge) and provided excellent cover.

iv. **Other Notes:** Woodcock have been flushed by area staff while waterfowl hunting and working near the impoundments during dawn and dusk. Males were observed peenting in the impoundments, but females were also roosting in the fields during precipitation events.

While capturing woodcock in the winter, males seem to be more likely to use open areas to “peent”, display, and roost most evenings. Females seem to roost in forests cover unless there are precipitation events that encourage birds to use roost fields.

4. Maryland (Standing Soybeans)

i. **Location:** Millington Wildlife Management Area, Massey, MD

ii. **Field Type:** Most capture fields were primarily standing soybeans, but we also found birds in fallow fields. Most dove fields had senesced and no longer provided enough cover for woodcock. Fields were planted following normal agricultural practices (spring planting, fall/winter harvest, etc) with sections of soybeans left standing post-harvests to provide wildlife food.

Aerial photograph of Millington WMA. Most of the WMA is forested, with sections of agricultural fields scattered throughout.

iii. **Preparations:** Standing soybeans had not been harvested yet, and woodcock were flushed while riding through soybean fields with spotlights. Most woodcock were flushed in moderate to low densities of soybeans. Searching for 'patches' where very few soybeans germinated worked relatively well. Fields planted at high densities of soybeans resulted in soybeans so thick, woodcock could not use them.

Example of standing soybeans field spotlighted at Millington WMA. Photo credit: michigansportman.com

iv. **Other Notes:** We noticed that woodcock generally seemed to be run away from capture crews more than in other field types. Woodcock were difficult to spot on the ground prior to flushing. When woodcock landed back in the field, many landed and ran, making capture slightly more difficult than normal. However, near Millington WMA, there are relatively few fallow areas and standing soybeans represented the most available non-forested roost cover. On a rainy night, this was a great place to find and catch birds.

5. South Carolina (Prescribed Fire Upland Pine)

i. **Locations:** James W. Webb Wildlife Center and Management Area, Garnett, SC

ii. **Field Type:** Most woodcock were captured while spotlighting upland post-burn loblolly and longleaf pine stands. Woodcock were roosting in the post-burned stands, primarily near burned bunches of wiregrass and woody shrub skeletons. The post burn pine stands were a mix of riparian areas dominated by switch cane, green brier (*Smilax* spp.), and gallberry (*Ilex* spp.). Upland areas were primarily dominated by wiregrass, broomsedge, loblolly pine, and longleaf pine.

Aerial photograph of Webb Center. There are a mix of fallow fields, dove fields, and food plots, but the area is dominated by upland pine or bottomland hardwood forests.

Upland pine forests were dominated by wiregrass, longleaf pine, and loblolly pine. Upland pines are managed with prescribed fire every 2-3 years.

Upland pine following prescribed fire application. We successfully flushed woodcock within a week of prescribed fire application.

Wiregrass begins growing soon after prescribed fire application. 2-4 weeks after prescribed application increased the amount of ground cover

(regenerating wire grass) and we found more woodcock in stands 2-3 weeks post fire.

Woodcock were found in woody stem skeletons and in more open areas. Most woody stem skeletons were near drainages and consisted of mixed sweetgum, gallberry, and switchcane.

The changes in vegetation pre- and post-prescribed fire application.

We also found woodcock in the post-burn skeletons of invasive *Lespedeza bicolor*. We do not encourage fostering this invasive species, but if it is present, may as well run over it with an ATV as you search for woodcock.

A few woodcock were also mist netted on an early successional forest opening, but few females were using this area. We captured 3 males and 1 female over 4 evenings of mist netting. There were numerous areas with probe marks, so woodcock were using the area, however females less frequently than males.

In many of the fallow areas, feral hogs created micro-habitat that some woodcock were using for singing grounds. Mist netting these areas may also be an option.

Shooting lane from DNR managed deer stands provided some of the best strips for woodcock mist netting captures.

iii. **Preparations:** Upland pine stands were burned 1-4 weeks prior (dormant season burns). Post burn stands 3-4 weeks earlier, had ideal wiregrass regeneration and generally had the best cover and abundance of woodcock. Post burn stands were easy to navigate with ATVs and woodcock readily landed post-flush. Woodcock never flew above the canopy and we captured greater than 50% of all birds seen.

We successfully mist netted woodcock in deer stand shooting lanes, which were mown strips immediately adjacent deer stands. No woodcock were seen using any of the food plots planted on the game lands. Most food plots had either been disked or had been planted in winter wheat and resembled turf grass at the time of capture.

iv. **Other Notes:** Locating woodcock in the post-burn pine stands was a great find and we are hoping to expand this opportunity in other areas. The majority of woodcock found in the post burn pine stands were females. GPS data collected post release indicated that woodcock remained in the post-burned stands throughout the day. Most woodcock were likely near drainages (saturated soils and ecotones), where the most residual ground cover remained post-burn.

Quail hunters reported frequent encounters with woodcock in drainages and even in upland wiregrass dominated pine stands while hunting. Talking with local quail hunters may be a good way to gauge is woodcock are in the area.