



AMERICAN WOODCOCK (*Scolopax minor*)

Fish and Wildlife Habitat Management Guide Sheet

Natural Resources Conservation Service (NRCS) - Minnesota



GENERAL INFORMATION

The American woodcock (also known as the "timber-doodle") is an upland game bird that inhabits forested areas of Minnesota (fig. 1) during its breeding season. The literal interpretation of the woodcock's scientific name, *Scolopax minor*, is "little lover of the swamps or bogs". A member of the shorebird family, it long ago abandoned the marshes and moved into the uplands. Most woodcock activity, including feeding, takes place in the dim light of dawn and dusk.

Woodcock are closely associated with young, second growth hardwoods but need a diversity of forested, shrubby, and open fields to satisfy their life requirements.

The woodcock's mottled, brown coloration blends in with the leaf pattern of the forest floor. Its specialized bill is extremely long (almost 3 inches) with a flexible tip allowing it to seize worms and insect larvae while probing in the soil. Short rounded wings permit flight in dense cover. Its large eyes, set far back on the head, enable the bird to see in all directions, including directly behind. Females weigh about 7 oz. while males average 5.3 oz.

ANNUAL LIFE CYCLE

Spring Migration and Courtship

Migration begins in late January in the southern part of the wintering range. Woodcock begin arriving in Minnesota in mid-March to early April. They often return to the same breeding grounds year after year.

Soon after arrival, the male woodcock begins performing courtship flights over openings called "singing grounds" that it defends from other males. The singing ground may range from less than 1 acre to over 100 acres and is usually an abandoned agricultural field, forest opening near dense shrubs or young forest stands which provide nesting and brood-rearing habitat.



Fig.1 Woodcock Breeding Range

Male courtship activities last for 30 to 60 minutes at dusk and dawn and through out the night when the moon is full. The male begins by giving a series of nasal sounds called "peents". The peent call is given approximately every 20 seconds. This display may last 5 minutes or more. After peenting ceases, the male flies upward in a spiral pattern to heights of 100-500 feet. During the ascent there is a constant twittering sound made by the wings. After reaching the peak of his flight, the male descends, emitting a series of chirps until he glides to the ground. Individual flights

last from 40-60 seconds after which the male remains on the ground for a short while. The peent is repeated, and then another aerial display ensues. Males repeat this display a dozen times or more to attract females for mating. During most years, breeding activity ends by early June.

The daytime habitat of the male woodcock is usually close to the singing ground. Daytime sites generally have moist, rich soils with plenty of earthworms and dense overhead cover of alder, hazel, dogwood, birch, or young aspen. Here they feed and rest until the light level signals the time to begin their courtship performance.

Nesting

Woodcock begin to nest in April. Nests often are within 300-500 feet of a male's occupied singing ground. Young, open second growth woodlands are the most desirable kind of nesting cover. For a nest, the hen simply creates a small, cup-shaped depression in dead leaves that cover the ground. Clutch size is generally 4 light brown and gray mottled eggs. The hen lays 1 egg per day until the clutch is completed. Eggs generally hatch in May, after an incubation period of 20-22 days.

Brood Size

Brood rearing cover is similar to nesting cover except that areas with bare ground or dense ground cover are avoided during the first few weeks. When the chicks hatch, they are ready to leave the nest. Young woodcock rely on the hen to help them find insects, which make up most of their diet.

The chicks grow quickly and can fly short distances at 2 weeks, and are almost fully grown by 4-6 weeks. By late June most woodcock can fly well and are no longer dependent on the female. Most young remain in the general vicinity of where they hatched until the fall migration.

Roosting

By mid-summer woodcock begin to use roosting fields at night in the vicinity of their daytime covers; many of these roosting fields also served as courtship sites in the spring. Many times, dozens of woodcock may be found in a roosting field at night.

Food

The woodcock feeds on invertebrates by probing in the soil with its long flexible bill. The woodcock is an opportunist and consumes a variety of invertebrates. Earthworms make up 50-90 percent of the woodcock's diet. Alders and second growth forest located on fertile, moist soil are favorite feeding sites. Other animal foods, such as beetles and fly larvae, are also eaten.

Fall Migration

Fall migration begins in early October and peaks by mid-month when the first heavy frosts freeze the ground or enough snow makes feeding on earthworms difficult. During this time, birds may literally be here today and gone tomorrow. How long woodcock remain in Minnesota during the fall migration depends on the weather. Most have left the state by early November.

Minnesota's resident woodcock begin to arrive on their wintering grounds in eastern Texas and southern Louisiana in late November. If temperatures are exceptionally cold, they will fly to the Gulf of Mexico or even into northern Mexico.

HABITAT REQUIREMENTS

Woodcock abundance is closely related to the availability and quality of four distinct types of habitat (fig. 2). Clearings are necessary to provide a courtship area for males. Good nesting and brood rearing cover consisting of young, second growth hardwoods must be near the clearings. Also of great importance is the need for abundant feeding covers made up of alders or dense stands of young aspen on moist, rich soils. Lastly, woodcock require large fields to roost in at night. The lack of these requirements means woodcock may be absent or greatly reduced in number.

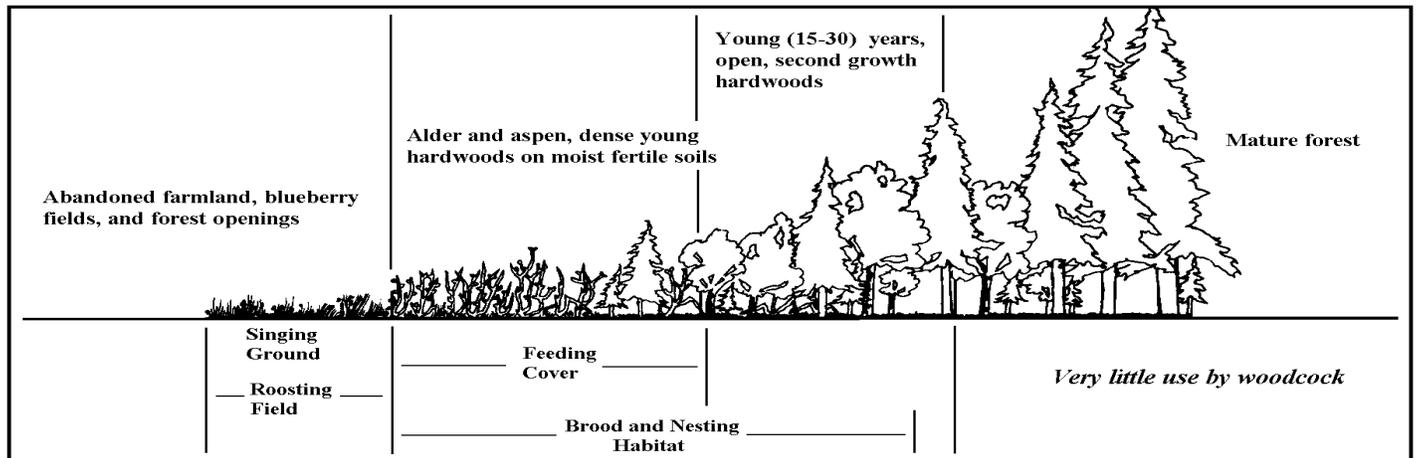


Fig. 2. The stages of forest succession used by woodcock. (from Sepik, et al, 1981).

HABITAT MANAGEMENT

Woodcock management works best on land with lots of aspen and birch mixed with a few old farm fields, several forest openings, and a few brush lowland areas. Forests dominated by maples, oaks, pines, or spruce generally do not provide high-quality woodcock habitat. Landowners might be better off managing these lands for other wildlife species. Woodcock require a mix of small, scattered, openings and dense stands of shrubs and young deciduous trees. Because these habitats are not permanent features of the landscape, good woodcock habitat doesn't last on its own for long. As a forest matures over time, fewer woodcock use the area, until finally the habitat is simply too old to attract these birds. A good rule of thumb is that when most trees in an area become larger in diameter than a silver dollar, the habitat is too mature to be of much use to woodcock.

In Minnesota, many privately owned forests contain aspen too old for woodcock. If portions of these areas were occasionally cut or burned, the mature trees could be taken over by young forest that woodcock use.

Outlined below are suggestions for managing vegetation to create daytime feeding, nesting, and rearing covers, singing grounds, and roosting areas. Specific techniques such as burning and clear-cutting are discussed. The particular management scheme you choose will depend on the kind of land, management goal, and the time and money available (fig. 3).

How to Create and Keep Daytime Covers

Good feeding (daytime) covers are essential for high numbers of woodcock. The useful life of alder cover for feeding is short. Invading trees will begin to replace alders in less than 30 years and the cover is only at its best for about 10-15 years. Therefore, periodic rejuvenation of good covers is necessary. In covers where there are few dead stems or other kinds of trees, 60-80 foot wide strips may be clear-cut. The clear-cut strips should be separated by uncut strips 280 feet in width. The strips should be cut across any wet area or stream running through the cover. Differences in moisture result in varying densities of alder and rates of growth and provide a more constant supply of earthworms throughout the summer. Alder growth will be slow on the drier portions of the strips; thus openings for singing grounds will be retained longer. In moist areas alder growth will be faster and earthworms will be available later in the summer when the higher ground becomes too dry. New strips should be cut next to the old strips every 3 to 5 years. Thus, the entire cover will be cut and replaced about every 20 years.

In alders more than 20 years old, strips should be cut at 2-year intervals. The entire cover will then be cut over a 10-year period. The regular 20-year cutting cycle can be started during the second cutting rotation. If alders are only scattered in the understory, the entire cover should be clear-cut.

A large rotary mower pulled behind a tractor, bulldozer or hydro-axe can be used to clear areas containing trees and brush; however, this method is expensive.

Best results will be in covers located on soils where earthworms are plentiful, such as on old farms. Covers on muck soils generally have few earthworms. Work on such sites will result in little, if any, increase in woodcock numbers. Covers which are relatively dry during the spring will be used for nesting.

Slash removal is desirable, but not necessary. Slash covering the site may discourage use by singing males, but careful felling to provide slash free areas or spot clearing of slash will provide attractive courting sites. Once the alders in the strip have grown enough to provide suitable feeding cover (7-10 years) the slash will have decayed.



Young aspen can also serve as good feeding or nesting habitat as long as the stand is located on soils capable of supporting earthworms. Aspen responds to clear-cutting by sending up sprouts along its roots. Sprouting can be increased if the area is cut after leaf fall (October - March) and the slash is burned within one year. The resulting dense stands of up to 70,000 stems/acre provide good feeding habitat. As aspen stands grow older they provide excellent nesting and brood cover and also are attractive to ruffed grouse and deer.

Herbicides can be used to regenerate daytime covers. Herbicide applied as a foliage spray will top kill alder and promote new sprout growth. Two applications from a backpack or small tank sprayer at 2-week intervals are necessary for an adequate coverage of all foliage. The best time for application is shortly after the leaves have attained full size. Herbicides should be applied on still days to decrease drift. Spraying on very hot days is less effective and should be avoided. This technique is far less labor intensive than clear-cutting and has no effect on earthworm numbers. However, since the woody vegetation is left standing when using herbicides the very important but temporary singing grounds provided by clear-cutting are not available.

Contact your local forest or agricultural extension agent for current information before using any herbicide. Use herbicides only as directed on the label.

Creating Singing Grounds

Creating forest openings where few are present often increases the number of courting males. The best place to make the openings is in the feeding covers, thus providing singing grounds and at the same time improving the feeding sites. Clear-cut strips described above under "Daytime Covers" are the best way to make these openings.

Clearings in the woods should be at least 0.5 acres where surrounding trees are taller than 25 feet and in climates where snow persists into the spring. Openings with shorter surrounding vegetation can be as small as .25 acres. Where possible, these potential singing grounds should face to the south and be rectangular. Complete slash disposal is best, but the removal of branches from two to three 100 square foot areas per clearing is satisfactory. Careful felling of larger trees will also provide open areas in a clearing.

The number of singing grounds required will vary with the amount and quality of other nearby habitats. To determine the number needed, cut 1 or 2 clearings each year until there is no further increase in singing males. During this period keep all of the singing grounds free of new tree growth.

The useful life of a singing ground varies. If the clearing is cut in a hardwood stand new sprouts may soon reduce the attractiveness to woodcock. Sprout growth can be slowed if cutting is done in the summer. Sprout growth on isolated clearings is sometimes eliminated or held back by browsing deer. Treating sprouts with herbicides, fire, or by cutting for 3 or 4 years will eliminate sprout growth and decrease future maintenance. On the other hand, if a few singing grounds are created each year there is no need for annual maintenance.

Three criteria that increase the probability that clearings in hardwood areas will be used are: (1) feeding cover within 0.5 mile; (2) nearby brood and nesting cover; (3) and, of course, woodcock in the vicinity.

Places to Roost

Woodcock prefer to roost at night in fields of at least 3 acres. Fields of low bush blueberry, hay fields on poor soils, abandoned agricultural fields with shrubs invading, recently harvested woodlands, and occasionally, pastures are used most often. Ideally, 60-70 percent of the field should be covered by shrubs and young trees. Roosting sites should be within 0.5 mile of suitable feeding cover.

Hay fields with thick, lush vegetation are seldom used. Traditional agricultural practices will suffice to maintain pasture and hayfields that are attractive to woodcock. If the fields are not being farmed there is the danger that invading vegetation soon will make the field unsuitable for roosting. However, this is not a problem if there are numerous fields in the vicinity since reverting farmland provides woodcock with feeding, brood, and nesting habitat. About one field per 100 acres should be adequate.

Singing grounds and summer roosting fields can be maintained by mowing or burning half of these sites every 2-5 years to eliminate invading woody species. Mowing or burning should occur as early in the spring as possible to prevent nest destruction. Mowing during the preceding fall will increase the amount of fuel on the ground and result in a more even burn. Be sure to contact your local fire warden or fire department for permits, details about local regulations, and advice before beginning.

Burning is also effective for removing dense slash from a harvested area to enhance use by woodcock. Slash can be piled and burned or burned in place. In either case professional help is mandatory.

If no large fields are available, small fields can be enlarged or new fields can be created. Where there is a choice it is preferable to enlarge a field that is being used. It may be several years before woodcock will roost in a newly cut field, but an enlarged field usually is used immediately. The removal of slash is not necessary unless it is dense and there are few slash free areas. Sprout control using herbicides or burning is needed in any new clearing. If blueberries are present, burning will encourage their spread. When a field is enlarged or created the initial clearing should be larger than the intended field. Allow a 50 to 100 foot strip around the field to grow back. This strip will add to the brood and nesting cover.

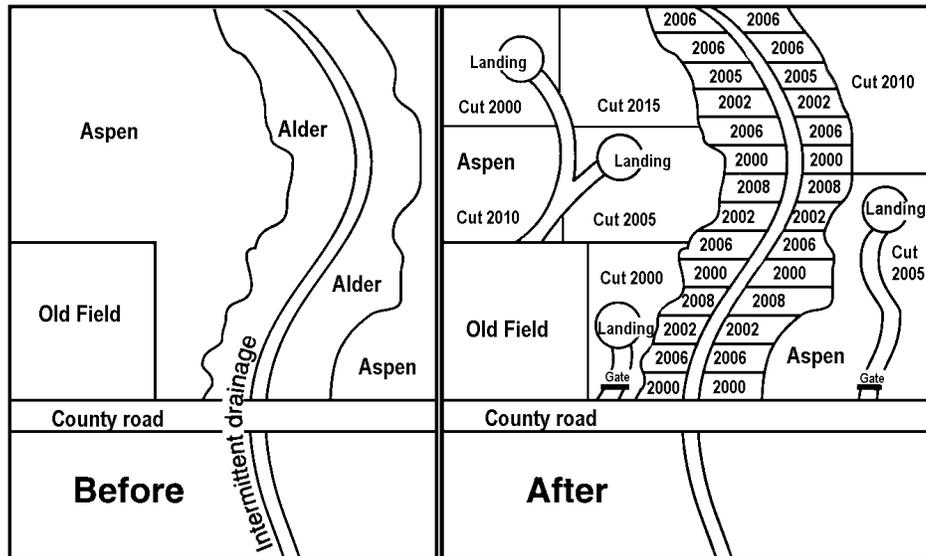


Fig. 3. Illustration of a long term habitat management plan. (from MDNR 1994).

SUMMARY OF HABITAT MANAGEMENT SUGGESTIONS FOR LANDOWNERS

1. Maintain existing aspen stands by clear cutting during the winter. Contact a forester or wildlife manager to schedule timber harvests on your property to benefit woodcock.
2. Singing grounds can be established by creating small clearings in recently cut forest stands. Create or maintain one small clearing of approximately one-quarter to one-half acre in size for every 20 to 25 acres of habitat.
3. Singing grounds can be maintained by mowing or burning every 2 to 4 years to control invading woody vegetation.
4. To provide a roosting area as well as singing grounds and nesting habitat, create or maintain by burning or mowing, one clearing of at east 3 acres for every 100 acres of habitat.
5. Allow abandoned agricultural land less than 40 acres in size to become 60 to 70 percent overgrown with dense shrubs. **Do not** plant these fields with tree seedlings.
6. Remove most large trees from old fields before they begin to shade out dense stands of shrubs.

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