USDA NRCS Natural Resources Conservation Service
Wildlife Habitat Management Institute

WILDLIFE HABITAT COUNCIL℠

Eastern Cottontail

(Sylvilagus floridanus)

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Hal S. Korber

General Information

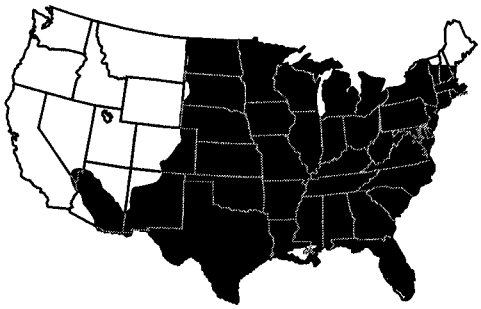
The eastern cottontail has long been a common inhabitant of backyards and open farmlands throughout the eastern and mid-western United States. This rabbit's elusive nature and palatability have made it a popular small game mammal as well. The presence of cottontails in rural settings has come to symbolize healthy plant and wildlife communities throughout its range. The cottontail's genus name, *Sylvilagus*, combines the Latin word *silva*, meaning "forest," and the Greek word *lagos*, meaning "hare," as the rabbit historically inhabited swamps and hardwood and boreal forests. However, because the eastern cottontail has the ability to reproduce prolifically, it has adapted over time to inhabit the open, grassy habitat where it is most commonly found today. A non-social animal, the cottontail is mostly nocturnal but can commonly be seen foraging alone in the periods between sunset and dark and in the early morning before sunrise. Cottontails frequently emerge after summer rain showers to feed on lush vegetation.

Although abundant in some locations, the eastern cottontail is sensitive to change in habitat composition. This has caused significant rabbit population declines in parts of its range. The clearing of fence rows, hedgerows, and grassy buffers along woodland edges and field borders, as well as habitat loss to urban development, has had a significant effect on eastern cottontail populations. The cottontail's presence and success in an area is largely dependent upon the availability of dense cover and old field habitat.

This pamphlet is designed to serve as an introduction to the habitat requirements of the eastern cottontail and to assist land managers in the development of a comprehensive cottontail management plan. The success of any individual species management plan depends on targeting the specific needs of the desired species and analyzing the designated habitat area as a whole to ensure that all required habitat elements are present. This leaflet also provides monitoring guidelines to document success and to identify additional management actions needed over time.

Range

The range of the eastern cottontail spans from southern Canada south to Central America. Within the United States, the cottontail is an eastern, central, and southwestern species—primarily found in the eastern two-thirds of the United States with the exception of Maine, a majority of New Hampshire and Vermont, and northeastern New York. The rabbit is absent from parts of Louisiana's coastal marsh as well. The cottontail's western limits reach as far as the Rocky Mountains in the Great Plains region, New Mexico, and Arizona.



United States Distribution

Habitat Requirements

General

The eastern cottontail prefers dense vegetation growing as edge between woody vegetation and open grasslands. Dense grasses and forbs growing along open fields, meadows, orchards, farmlands, fence rows, stands of deciduous trees, low-growing brush, shrubs, vines, windbreaks, and hedgerow thickets are preferred cottontail habitats. Open grasslands provide the rabbit with areas to forage, nest, and sun while nearby habitats of piled brush, shrubs, vines, and tangled thickets provide essential escape and resting cover, offering refuges from predators and adverse weather. Thickets are widely used for feeding and nesting as well. Cottontails will inhabit lawns and frequent vegetable gardens that contain adequate nesting and foraging cover nearby and lack the threat of predation. Adequate cover is crucial for an area to support a rabbit population, and the continued loss of nesting, escape, and resting cover remains the largest threat to the cottontail's future. Preserving brushy cover and properly managing open areas can assist landowners in boosting local eastern cottontail populations, as well as populations of other species that rely on similar habitat.

Food

The eastern cottontail's diet consists of a wide variety of green vegetation and woody plants. Spring, summer, and autumn foods consist primarily of native and introduced grasses such as orchard grass, timothy, redtop, bluegrasses, wheatgrasses, Indian ricegrass, cheatgrass brome, squirreltail, common chess, Korean lespedeza, small and common crabgrass, and common lawn grasses. White clover, wild strawberry, dandelion, sedges, and various fruits are eaten in these seasons as well. Given the opportunity, rabbits will feed on garden vegetables such as green beans, peas, lettuce, cabbage, and others. Winter food sources include woody plant items such as buds, branch tips, and bark of blackberry, raspberry, sumac, witch-hazel, apple, black cherry, oak, dogwood, maple, birch, willow, and sagebrush. Oats, winter wheat, clover, and other green foods are eaten in winter months when available. Rabbits inhabiting farmland and agricultural areas feed on rye grasses, vetch, chufa, oats, alfalfa, corn, soybeans, and various other crops and available waste grains.

Important eastern cottontail food items. The following species are known to be important food items in the diet of eastern cottontails. Those species in bold print are of particular value for their usefulness as a winter food source.

Grasses and forbs:

orchard grass	timothy	redtop	bluegrasses	wheatgrasses	Indian ricegrass
cheatgrass	brome	squirreltail	lawn grasses	sedges	**clover**
wild strawberry	dandelion	globemallow	fruits		

Woody vegetation:

tree buds **branch tips**

Bark of :

blackberry	**raspberry**	**sumac**	**witch-hazel**	**apple**	**dogwood**	**oak**
birch	**black cherry**	**maple**	**willow**	**sagebrush**		

Cultivated food items:

rye grasses	vetch	chufa	**oats**	alfalfa	corn	soybeans
winter wheat	other crops	and waste grains				

Where appropriate, these species may be used to enhance vegetation that already exists in and around open field areas and brushy cover. Adding the appropriate above species to those currently existing will enhance food availability for eastern cottontails.

Cover – Nesting

The eastern cottontail is a ground-nesting mammal, raising its young in a shallow grass and fur-lined depression, or form. Forms are dug under the cover of felled trees, shrubs, woodpiles, briar thickets, hedgerows, brush piles, and in overgrown fence rows. Tall grass and weedy patches are used as nesting habitat, as is low cover growing along field edges and ditch banks. Ideal nesting cover lies adjacent to dense grassy cover. To reduce predation, females rest and feed in nearby grass habitat during daylight hours and return to the nest at dawn and dusk to nurse the young. Nesting cover is vital to the young for protection until they are weaned and permanently leave the nest at approximately 16 to 21 days after birth. In areas lacking dense vegetation, allowing natural vegetation to grow into thickets along fence rows, ditch banks, windbreaks, and field edges can help increase nesting cover for cottontail rabbits.

Cover – Winter

Winter habitat requirements for eastern cottontails differ very little from nesting and summer cover types, as the cottontail is active year-round throughout its range. Dense grasses and other vegetation growing as edge habitat, fields, meadows, orchards, farmlands, wind breaks, and hedgerows, as well as thickets of low-growing brush, shrubs, vines, and deciduous trees provide required winter cover elements for eastern cottontails. Due to the varying temperatures between the cooler northern and eastern reaches and the warmer southern and western reaches of the cottontail's range availability of common food sources may differ, but cover requirements remain constant.

Water

Daily foraging activities and the types of foods eaten by the eastern cottontail generally provide it with an adequate amount of water.

Preserving nesting cover, Brush pile construction. – Preservation and maintenance of nesting and escape cover is an important element of cottontail habitat management. Preserving hedgerows, dense grasslands, low-growing shrub and briar thickets, field border grasslands, and brushy cover along open field habitat is essential for an area to support a rabbit population. Disturbances such as mowing, burning, or clearing of vegetation within these habitats should be kept to a minimum. Where possible, allow vegetation to grow freely and avoid mowing, burning, and chemical application during the peak nesting season (February to September). Occasional mowing, disking, and burning are beneficial management practices as they promote regeneration of succulent grasses and other preferred forage vegetation. However, such disturbance should be conducted on a rotational basis and be implemented outside the nesting season. Brush piles can also improve an area's habitat composition by providing nesting and escape cover. Brush piles are constructed by piling brush and loose branches on top of a base frame comprised of large logs or tree trunks (see fig. 1). The **base** is constructed by stacking logs perpendicular to and on top of one another to create a sturdy crisscross log structure with a height of 12 to 20 inches. A four-foot long piece of drainage tile can be placed under the base to enable cottontails to easily enter the pile. Tile diameter should not exceed six inches to preclude foxes and other predators from entering the pile. Cinder blocks can also be used to elevate the base up to eight inches off the ground to prevent the acceleration of weather rot and enable cottontails to enter the pile. The **crown** is constructed by piling loose branches on top of the base to create a tangled pile of brush. Brush piles can be constructed of various sizes according to the habitats in which they are placed. However, piles 12 to 18 feet in diameter and three to six feet in height are best in order to enable multiple individuals and species to occupy a single pile. Well constructed brush piles can have a life span of more than 10 years, and proper placement can promote use by eastern cottontails as well as many different species of songbirds, insects, and other small mammals. **Placement**: Brush piles should be placed along hedgerows, briar thickets, windbreaks, and within dense grasslands when additional brushy cover is nearby. Properly locating brush piles within an area is important. Improper placement of a brush pile (e.g., isolated and distant from tall grass and other forms of escape cover) can potentially create a "death trap" for cottontails and other prey species due to increased access by predators. Brush piles help to establish a balance between predator and prey species within an area, but improper placement can cause a brush pile project to be counterproductive. Lands managed for timber can benefit rabbits when slash from harvested trees is left as brush piles. Tree tops and branches assembled into windrow slash piles following harvest can provide excellent cottontail cover for several years.

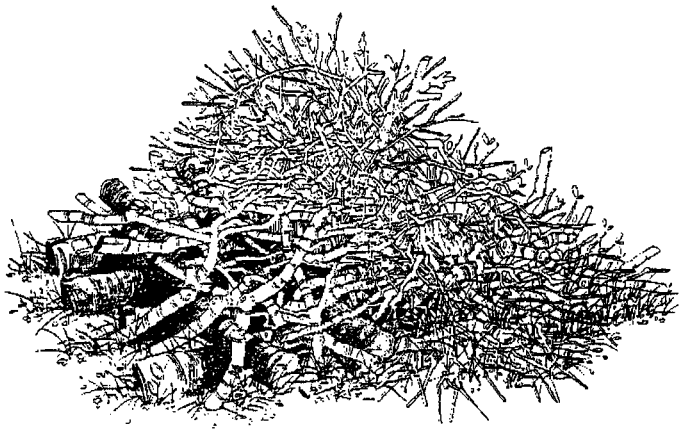
Interspersion of Habitat Components

Ideal interspersion of eastern cottontail habitat components consists of a complex of open grassy fields, meadows, orchards, and hedgerows, dense grass along field and woodland edges, briar thickets, and low-growing brushy areas. In order for successful cottontail reproduction and survival to occur, all required habitat components must be available in relative proximity to one another. Because cottontails experience high mortality each year (up to 80 percent) and therefore reproduce as many as seven times in one season, the most critical aspect of habitat interspersion, or the mix of different habitat types, is the proximity of suitable foraging habitat to nesting habitat. The highest quality nesting habitat is of little use if the nearest open foraging and resting habitat is not within close proximity. Likewise, the best foraging habitat will not support nesting cottontails if adequate brushy cover is not present.

Minimum Habitat Area

The eastern cottontail seldom travels more than a half mile in a day and usually spends its entire life on an area no larger than 10 acres in size. Although cottontails tend to display a lack of tolerance for other individuals inhabiting an immediate area, no reasonable estimate of minimum habitat size throughout its range exists. Distribution and interspersion of food and cover within an area determines whether or not the area can support a rabbit population and the number of individuals present. A small area with an abundance of edge brush and open field habitat may support a large number of cottontails, whereas a large area lacking one component or the other may have few or no rabbits. Thus, cottontails will inhabit areas of suitable habitat in numbers that individual territoriality will allow and that the area can naturally support, regardless of its size.

Figure 1 Brush pile construction



Eastern Cottontail Habitat Requirements Summary Table.

Habitat Component	Habitat Requirements
Food – Young	• Milk nursed from mother until weaned at approximately 16-21 days (weaning may not occur for up to five weeks). Forage on succulent grasses and other green and woody vegetation after weaned.
Food – Adult	• Green vegetation — orchard grass, timothy, redtop, bluegrasses, common lawn grasses, wheat-grasses, Indian ricegrass, cheatgrass brome, spuirreltail, globemallow, clover, wild strawberry, dandelion, sedges, various fruits, and garden vegetables. All are eaten in spring, summer, and autumn months. • Woody plants — buds, branch tips, and bark of blackberry, raspberry, sumac, witch-hazel, apple, black cherry, oak, dogwood, maple, willow, sagebrush, and birch. All are eaten primarily in winter months. • Cultivated crops — oats, winter wheat, ryegrasses, vetch, chufa, soybeans, corn, alfalfa, and various other crops and waste grains.
Nesting and Litter-rearing Cover	• Beneath cover of felled trees, shrubs, woodpiles, briar thickets, hedgerows, overgrown fence rows, and brush piles lying adjacent to dense grassy cover. Within tall grass, and low cover growing along field edges and ditch banks.
Winter Cover	• Dense grasses and other vegetation growing as edge habitat, fields, meadows, orchards, and hedgerows. Thickets of low-growing brush, shrubs, vines, and deciduous trees.
Water	• Water requirements for cottontails are met through daily food intake.
Interspersion	• Prefer a complex of open grassy fields, meadows, orchards, hedgerows, dense grass along field and woodland edges, briar thickets, and low-growing brushy areas.
Minimum Habitat Size	• No reasonable estimate of minimum habitat size exists for eastern cottontails. A cottontail's home range is 10 acres or less, and an individual seldom travels a total of more than a half mile in a day.

Limiting Factors

For planning purposes, use the following table to inventory the site to determine the availability of each of the basic habitat components, based on the above habitat requirement descriptions. Habitat components that are absent or rated low are limiting habitat quality for eastern cottontails.

Inventory of Limiting Factors	**Availability/Quality**			
Habitat Component	**High**	**Medium**	**Low**	**Absent**
Food				
Nesting and litter-rearing cover				
Winter cover				
Interspersion of habitat components				

Management Prescriptions

Management treatments should address the habitat components that are determined to be limiting eastern cottontail habitat potential. For planning purposes, select among the possible action items listed below to raise the quality or availability of each habitat component determined to be limiting. A list of programs that may provide financial or technical assistance to carry out specific management practices is given, when applicable.

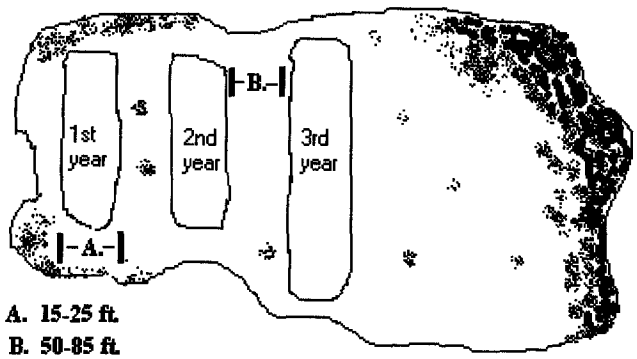
Habitat Component	**Management options for increasing habitat quality or availability**	**Assistance Programs**
Food	• Maintain grassy and open field areas by conducting rotational mowing, strip disking, and managed grazing where appropriate.	WHIP, EQIP, PFW, CRP
	• Preserve and plant, when practical, blackberry, raspberry, sumac, witch-hazel, apple, wild black cherry, oak, dogwood, maple, willow, sagebrush, and birch trees, shrubs, and vines.	N/A
	• Establish food plots such as alfalfa, wheat, corn, and other grain crops, or soybeans within 250 feet of existing rabbit resting/escape cover.	WHIP, EQIP, PFW, CRP
Nesting and young-rearing cover	• Preserve hedgerows, overgrown fencerows, dense grasslands, low-growing shrub and briar thickets, field border grasslands, and dense grass and brushy cover along open field habitat.	WHIP, EQIP, CRP
	• Construct brush piles along hedgerows, briar thickets, windbreaks, and within dense grasslands containing a brushy component.	N/A
Winter cover	• Maintain grassy and open field areas by conducting rotational mowing, strip disking, and managed grazing where appropriate.	WHIP, EQIP, PFW, CRP
	• Preserve hedgerows, grown-up fence rows, dense grasslands, low-growing shrub and briar thickets, field border grasslands, and dense grass and brushy cover along open field habitat.	WHIP, EQIP, CRP
	• Construct brush piles along hedgerows, briar thickets, windbreaks, and within dense grasslands containing a brushy component.	N/A
Interspersion of habitats	• Combine above prescriptions to increase interspersion of habitat components or amount of suitable cottontail habitat.	N/A

Landowners interested in sharing their individual efforts with the community can work with WHC and NRCS to involve school, scout, and community groups and their families in habitat projects. A cottontail management project is an easy way to provide fun, hands-on learning opportunities, especially for children. If the land is corporate owned, encourage interested employees to become involved. Involve students or scouts in building and maintaining brush piles. The educational benefits can greatly increase the value of your cottontail management project for community members and wildlife alike.

Parasites and Disease. Parasites and disease are a natural occurrence in many species of wildlife. The eastern cottontail may harbor fleas, ticks, botfly larvae, and tapeworms. However, rarely is the rabbit negatively affected by these parasites. Bacterial tularemia is recognized as occurring in cottontails more often than in any other species of wildlife. Although tularemia is transmitted primarily by tick bites, humans can become infected by contact with diseased rabbits. Lethargic rabbits should not be handled and should be avoided. Tularemia does not pose significant threat to humans when treated appropriately with antibiotics.

Grassland management – Maintaining open grassy areas is important to the nesting and foraging activities of eastern cottontails. Rotational mowing, strip disking, and controlled burning in meadows and grasslands promote new growth of important forage grasses, legumes, and forbs. Controlled burning is a highly regulated technique and should only be conducted in cooperation with fish and wildlife agencies and with assistance from licensed burners. Rotational mowing and strip disking can be conducted by landowners and maintenance contractors with beneficial results. Both practices are conducted by dividing an area into 15- to 25-foot wide strips (depending on the area's size) that are separated from one another by 50 to 85 feet (see fig. 2). A single strip is mown to a height of four to six inches, or disked to a depth of six to eight inches, twice a year. Smaller areas can be divided into three strips; mow or disk one strip in early spring (mid-March to mid-April, depending on the region) before grassland nesting birds and mammals commence nesting activities, and again in late fall after nesting activities are completed. The following year, the second strip would be mowed or disked in the same months. The third strip would be mowed or disked in year three, and the process begins again in year four. Larger areas evenly divided into six or more strips can be rotationally disked or mown in pairs, so that strip one is worked with strip three, strip two with strip four, strip three with strip six, and so forth. Managing a grassland in this manner produces vegetation growing at various ages, providing resident cottontails with nesting, foraging, and resting cover.

Figure 2 Rotational mowing and strip disking regime.



Programs that provide technical and financial assistance to develop fish and wildlife habitat on private lands.

Program	Land Eligibility	Type of Assistance	Contact
Conservation Reserve Program (CRP)	Highly erodible land, wetland, and certain other lands with cropping history. Stream-side areas in pasture land	50% cost-share for establishing permanent cover and conservation practices, and annual rental payments for land enrolled in 10- to 15-year contracts. Additional financial incentives are available for some practices	NRCS or FSA state or local office
Environmental Quality Incentives Program (EQIP)	Cropland, range, grazing land and other agricultural land in need of treatment	Up to 75% cost-share for conservation practices in accordance with 5- to 10-year contracts. Incentive payments for certain management practices	NRCS state or local office
Partners for Fish and Wildlife Program (PFW)	Most degraded fish and/or wildlife habitat	Up to 100% financial and technical assistance to restore wildlife habitat under minimum 10-year cooperative agreements	Local office of the U.S. Fish and Wildlife Service
Waterways for Wildlife	Private land	Technical and program development assistance to coalesce habitat efforts of corporations and private landowners to meet common watershed level goals	Wildlife Habitat Council (301-588-8994)
Wildlife at Work	Corporate land	Technical assistance on developing habitat projects into a program that will allow companies to involve employees and the community	Wildlife Habitat Council (301-588-8994)
Wildlife Habitat Incentives Program (WHIP)	High-priority fish and wildlife habitats	Up to 75% cost-share for conservation practices under 5- to 10-year contracts	NRCS state or local office
State fish and wildlife agencies and private groups may have assistance programs or other useful tools in your state.			State or local contacts

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NRCS
Wildlife Habitat Management Institute
100 Webster Circle, Suite 3
Madison, MS 39110
(601) 965-5886

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Silver Spring, MD 20910
(301) 588-8994

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