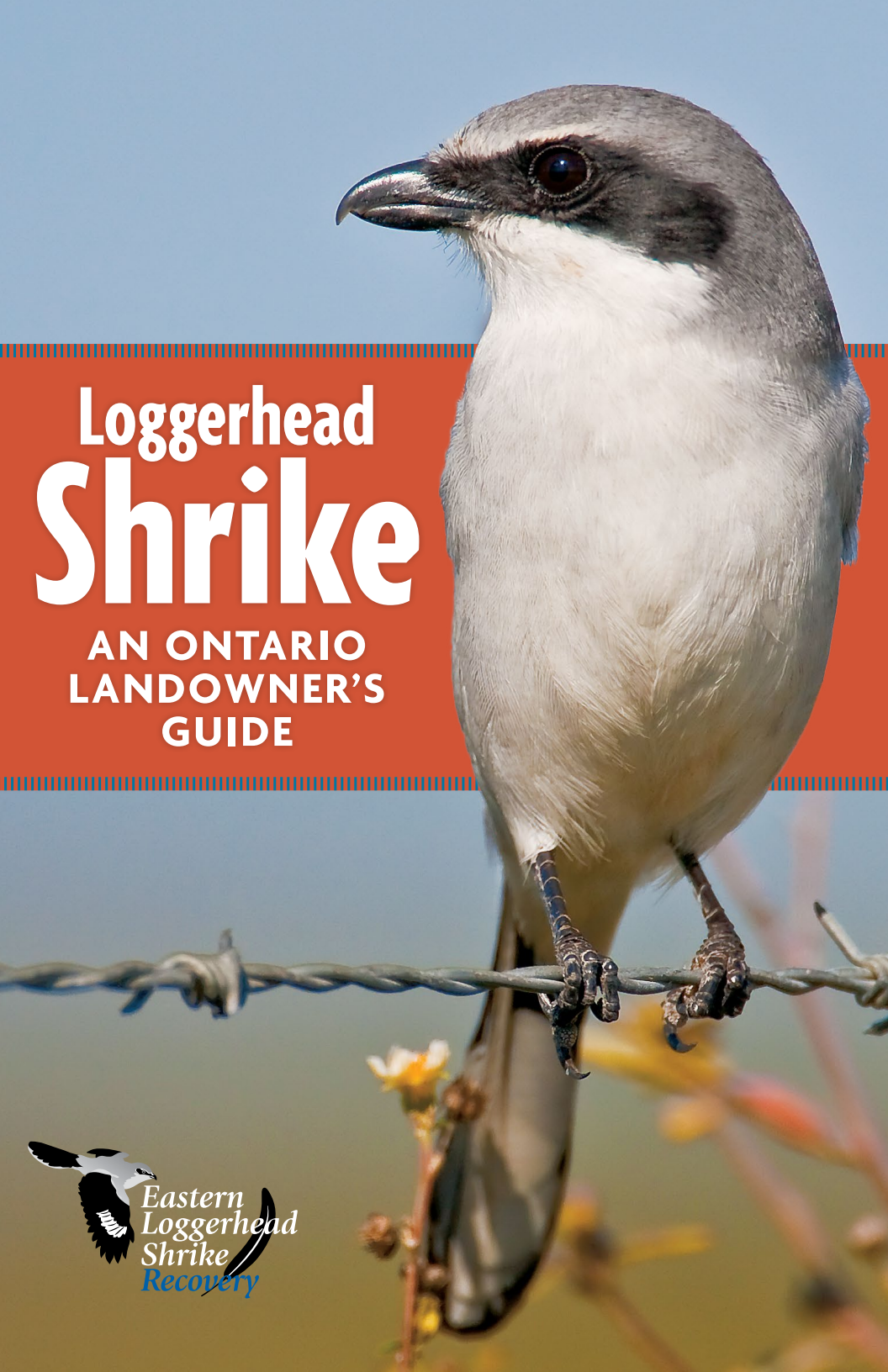
Loggerhead Shrike

AN ONTARIO LANDOWNER'S GUIDE



Eastern Loggerhead Shrike Recovery

Contents

Project partners

African Lion Safari

Bird Studies Canada

Canadian Wildlife Service – Environment Canada

The Couchiching Conservancy

French Rabbit

Liquor Control Board of Ontario

Little Ray's Reptile Zoo and Nature Centre

Mounstberg Raptor Centre – Conservation Halton

The Nature Conservancy of Canada

Ontario Ministry of Natural Resources and Forestry

Ontario Parks

Queen's University

Smithsonian Conservation Biology Institute – National Zoo

Toronto Zoo

Wildlife Preservation Canada

York University

Copy: Cadmium Red Communications · Illustrations: Nick Craine
Cover Photos: Larry Kirtley · Design: LINDdesign

PHOTO: LARRY KIRTLEY

Introduction

In 2014 only 16 nesting pairs of Loggerhead Shrike were spotted in Ontario.

North American grassland bird numbers are shrinking fast. One of the most striking examples is the Loggerhead Shrike (*Lanius ludovicianus*). These birds were once a common sight in pastures and grassland across southern Ontario, but shrike numbers have dropped steadily since the 1960s and they are now considered critically endangered. In 2014 only 16 nesting pairs were spotted in the province.

Scientists haven't pinpointed the reasons for this dramatic decline, but we know that loss of habitat is part of the puzzle.

Shrikes depend on open areas of short grass to hunt their prey. As settlers began farming Ontario's original prairies, shrikes turned to rough pastureland to meet their needs. Unfortunately, those cattle pastures are now being abandoned or converted to other uses such as crops or development, leaving shrikes with less habitat.

Over the years, many partners have come together to take action. They are monitoring the wild population, running a captive breeding and release program, improving and expanding habitat, raising awareness about shrikes and conducting research to address knowledge gaps—including the research that has contributed to this booklet.

However, this species can't be saved without your help. Because so many shrikes nest on private property, landowners like you are key to shrike recovery.

When you help shrikes, you also help all the other grassland birds that depend on the same habitat: birds like the Eastern Meadowlark, Upland Sandpiper and Short-eared Owl. And if you're a farmer, creating good shrike habitat can also improve your cattle pasture.

Together, we can make sure shrikes survive—and thrive—in Ontario.

Short-eared Owl and Upland Sandpiper: two of the other grasslands birds that depend on the same habitat as the Loggerhead Shrike.

PHOTOS: SHUTTERSTOCK

PHOTOS – LEFT: KURT HENNIGE · RIGHT: LARRY KIRTLEY

Meet the "butcher bird"

The Loggerhead Shrike is a songbird, but it acts like a bird of prey. While it mainly eats large insects such as grasshoppers, crickets, dragonflies and beetles, it can easily tackle small snakes, mice, voles and smaller birds. However, unlike a true bird of prey, the shrike doesn't have strong legs and talons to hold its dinner. Instead, it impales its catch on large thorns or barbed wire, earning it the nickname "butcher bird."

If you spot a shrike, let us know! Email admin@wildlifepreservation.ca or call 1-800-956-6608.

What they look like

The Loggerhead Shrike is slightly smaller than a robin, but it has a relatively large head—the reason behind its "loggerhead" name.

To identify a shrike, look for these features:

- a racoon-like black mask covering the eyes
- a grey-white breast
- a bluish grey cap and back
- a black tail with white outer feathers
- black wings with white patches that stand out when the bird flies
- a short, sharply hooked beak

Where you'll find them

Shrikes prefer large, open grasslands. While shrikes used to be common across Ontario, today you're most likely to see them in pastureland within the limestone plains of Carden, Napanee, Smiths Falls, Manitoulin Island and the Bruce Peninsula. Here, they are often associated with alvar ecosystems, which are naturally open and flat habitats with little to no soil cover. These globally rare alvars are home to specialized communities of plants and animals, many of them also species at risk.

The breeding season

In April and early May, as soon as the snow begins to melt, Loggerhead Shrikes return to Canada from their wintering grounds. Males usually arrive first and establish a territory. The females then choose a mate based on the quality of the territory. The same areas tend to be occupied year after year, though not necessarily by the same birds.

Shrikes build their nests in densely branched trees or shrubs located in open fields or hedgerows. The female lays an average of five or six spotted, tan-coloured eggs. The male feeds her while she incubates the eggs, which hatch after about 17 days.

The young leave the nest after about 18 days, but they continue to depend on their parents for another three to five weeks as they learn to fly and hunt on their own.

Shrikes begin migrating south to their wintering grounds in late August.

The big picture: creating critical mass

The chances that shrikes are attracted to an area increase significantly when shrike habitat makes up at least 15 per cent of the landscape. For this reason, successful shrike recovery depends on a community approach and thinking big.

One way to do that is to focus on "patches" of shrike habitat. Patch is the term ecologists use to describe areas in the landscape that have the same set of characteristics. So the shrike habitat on your property may be part of a patch that extends to your neighbour's property and beyond. Your property may also contain different types of habitat patches like forest or wetland.

What makes one patch of shrike habitat better than another?

- Proximity to the nearest neighbouring patch
- Size
- Shape

Proximity

Shrikes are more likely to return to areas where there are other breeding shrikes. However, they also need enough room to raise their own young. A landscape with several individual patches close to each other is ideal.

Most adults will breed within five kilometres of their last nest site. Young birds breeding for the first time usually nest within 15 kilometres of the site where they hatched.

Visualize the area within five kilometres of your property on all sides. The more patches of shrike habitat available within this area, the better the chance that shrikes will settle here and be able to find mates.

Patch size

When it comes to patches, bigger is better! Shrikes tend to use larger habitat patches for more years. The bigger a patch is, the further shrikes can stay from forest, where predators often live.

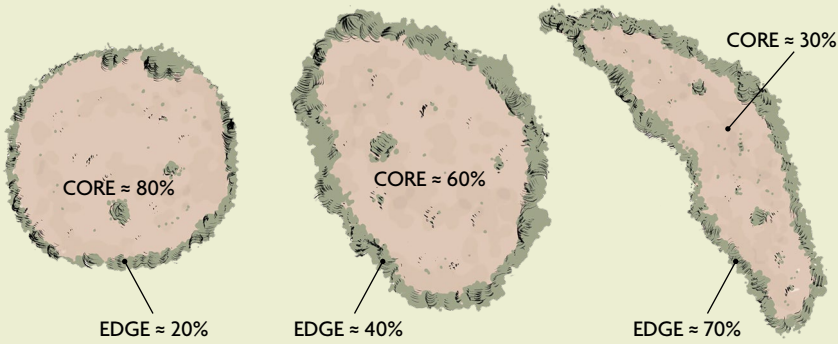
The amount of area a breeding pair of shrikes needs depends on the quality of the habitat and the amount of prey available. A pair with fledged young will use up to 50 hectares.

Large patches of shrike habitat can span several properties. By working together with neighbours on stewardship and restoration projects, you can increase the size of your patch or link it to nearby patches to create even larger areas of suitable habitat.

Patch size matters

	CARDEN	NAPANEE
Average size of unused patches	**38–42 ha**	**28–30 ha**
Average size of patches used by shrikes	**55–75 ha**	**29–41 ha**
Average size of patches used by shrikes for at least 5 years	**95–141 ha**	**75–131 ha**

Circular patches have more core habitat and less edge abutting unfriendly environments



Patch shape

Patches of shrike habitat are surrounded by other types of environments, such as forests, wetlands, agricultural crops or even human development. While these may provide excellent habitat for other species, they aren't good for shrikes. In fact, forests may provide a home for predators of both shrike and their young.

That's why the shape of a patch is important. The closer to round the patch is, the less of its edge touches this unfriendly habitat.

Recommendations for creating critical mass

- Establish stewardship "communities" of rural landowners within 5 km of nest sites that shrikes have used within the last 10 years.
- Encourage farming or other practices that create and maintain grassland patches.
- Aim for a landscape that contains at least 15–25 per cent suitable shrike habitat.
- Make individual patches as large as possible.
- Work on creating relatively round, smooth-edged patches.

PHOTO: AIDAN ROMINGER

Young shrike are a sure sign of well-managed land

If you have shrikes on your property

If shrikes have decided to breed on your property, they clearly like how you're managing your land! Whatever you have been doing is working well, so keep right on doing it.

Just keep a few points in mind:

- Stay away from the nests between April and August to avoid disturbing the birds or attracting predators. Shrikes are most sensitive to disturbance in the zone within 200 to 400 metres of their nest tree. Shrikes will often make calls of alarm if you are getting too close.
- Like all species at risk, shrikes are protected by both federal and provincial laws. That means you are not allowed to destroy shrike habitat: the trees where they have nested or the pasture around them.

- If you want to make a major land use change, such as converting a pasture to cropland, a quarry, a subdivision or a solar farm, you will need specific approvals from the Ministry of Natural Resources and Forestry.
- If you sell your land, you should let potential buyers know that shrikes have nested on it.

You don't have to let government staff, biologists or birdwatchers on your land unless you choose to. However it's important for recovery efforts to get an accurate count of how many shrikes are in the province each year, so if you do have shrikes nesting on your property, you may want to consider contacting the **Ministry of Natural Resources and Forests** or **Wildlife Preservation Canada**. You'll find contact information in the Resources section at the back of this guide.

If these experts confirm that you have breeding shrikes, you will be eligible for a tax rebate under the **Conservation Land Tax Incentive Program**. You may also be eligible for funding to do things like install fencing, clear brush or install watering systems for livestock to help maintain the pasture habitat that shrikes need. (See the Resources section, page xx, for details.)

If you have questions about how endangered species laws affect your property, contact your local Ministry of Natural Resources and Forestry office.

Farming and shrikes go hand in hand

According to the Ministry of Natural Resources and Forestry, the following activities will generally not disturb shrike:

- cattle grazing
- existing agricultural practices and planned management activities such as annual hay harvest, mowing or brush hogging, when they are conducted outside of the nesting season (April – July)
- thinning dense thickets or shrubs outside of the nesting season

In fact, these activities can help to maintain ideal shrike habitat.

If you had shrikes in the past but don't now, it doesn't necessarily mean that you're doing anything wrong! If a nest fails, shrikes may not return to the site the following year, but there's still a good chance the site will be used in the future. Maintaining the habitat so that it's ready when birds do return is key. However, there may still be room for improvement, so read on to see where you might want to make a change.

If you don't have shrike on your property, the rest of this guide provides some useful information for creating shrike-friendly habitat. You should also consider "the big picture" (page 7): getting neighbours to follow your lead can increase your chances of success.

General recommendations for creating shrike-friendly habitat

- Maintain and expand existing pastureland.
- Graze or mow pastures to keep grass short (<30 cm) to help shrike spot and capture prey.
- Provide perching and nesting sites by maintaining existing shrubs or planting a few scattered trees and shrubs.
- Don't let shrubs take over.
- Avoid using pesticides whenever possible, because they can affect the prey that shrikes depend on. Let shrikes control pests for you!

Typical shrike habitat

Creating shrike-friendly habitat

Whether or not you currently have shrike on your property, there are several things you can do to attract these birds.

To thrive, shrikes need land that includes a few key features:

- a nesting site—usually a dense, protective shrub or small tree
- perches—natural or man-made sites for hunting, watching for predators, defending territory and attracting mates
- hunting areas—generally open areas of short grass with some bare ground or rock
- impaling sites, such as thorns or barbed wire

We discuss these in more detail in the following sections.

SHUTTERSTOCK

A densely branched tree or shrub protects nests from predators.

Nest sites

Shrikes look for well-protected nest sites: typically densely branched trees or shrubs. The type of tree or shrub they choose varies across Ontario.

In most of the province, shrikes nest in hawthorn (*Crataegus* sp.). In Napanee, they use red cedar (*Juniperus virginiana*), likely because the prevalence of cedar-apple rust (*Gymnosporangium juniper-virginianae*) has wiped out hawthorn in this area. However, shrikes have occasionally been found to nest in white cedar, apple, buckthorn and other species.

Shrikes prefer to nest in single, isolated trees (or an isolated cluster of trees) with few low branches. If these are not available, shrikes will nest in hedgerows. However, nests in these kinds of linear habitats are more likely to be found by predators.

The perfect nesting site

Hawthorn

- Close to round shape, at least 3 m x 3 m

Structure

- 4–5 main branches, but no more and a highly branched sub-structure.
- Lowest branch at least 30 cm above ground

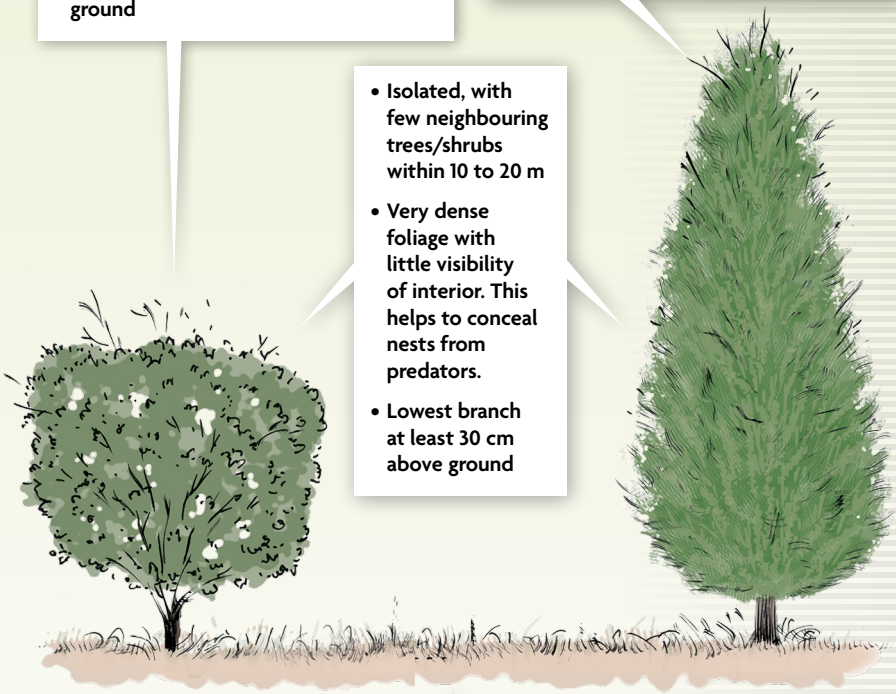
Red cedar

- Close to rectangle shape, at least 5 m tall and 3 m wide

Structure

- 2 or more main branches and a highly branched sub-structure.

- Isolated, with few neighbouring trees/shrubs within 10 to 20 m
- Very dense foliage with little visibility of interior. This helps to conceal nests from predators.
- Lowest branch at least 30 cm above ground



Surrounding ground cover

- Mix of vegetation (largely grasses with some forbs, e.g. mullein)
- no taller than 30 cm; preferably 10-20 cm or less
- some bare ground (<5%) and little or no woody vegetation

PHOTO: LARRY KIRTLEY

Recommendations for improving nesting opportunities

- Maintain suitable nest trees and shrubs in pastures or hedgerows.
- In areas that have been heavily cleared, planting a few nest sites may be helpful.
- Graze the land to keep the vegetation low around shrubs and trees. If needed, brush hog pastures at the end of each summer to prevent the site from becoming too shrubby.
- If potential nest trees or shrubs are growing too close together, thin them. This is especially important in sites with red cedar, which can be invasive. Plan before you thin—mark the trees or shrubs most likely to make suitable nest sites and clear areas around them. If you have had shrike nesting on your property, be sure to contact the Ministry of Natural Resources and Forests for advice before clearing any trees to ensure you do not inadvertently destroy a nest tree.

Perches

Perches serve several important needs. Shrikes typically use lower perches to scan the field for prey. On high perches they keep watch for predators, sing to attract mates and defend their territory from other shrikes.

Hunting perches

Shrikes prefer to hunt from lower perches (typically less than four metres high). This increases their chances of successfully capturing prey, and it reduces the amount of energy they have to spend moving between perches and impaling sites.

Hunting perches come in a variety of shapes and sizes, and many also serve other functions.

- Trees and shrubs—live or dead—provide excellent hunting perches. The specific variety shrikes use will depend on what is available. Many nest trees can also double as hunting perches. Foliated trees are important because they provide a handy hiding place if shrikes are threatened by larger birds of prey.

Most properties also contain other, even lower hunting perches. They can include:

- stumps
- mullein stalks
- boulders or rock piles

These provide perches in areas without trees and shrubs and serve as rest stops in large areas of grassland.

Perches can take many forms

Man-made perches include:

- low-voltage utility wires
- hydro poles
- fence posts
- barbed wire and other fencing wire

Natural perches include:

- living trees and shrubs
- stumps
- fallen trees
- dead shrubs
- dead trees ("snags")
- brush piles
- robust forbs such as mullein (*Verbascum thapsus*)
- rocks or rock piles

PHOTO: LARRY KIRTLEY

Man-made perches like barbed wire fencing are important elements of shrike habitat.

Lookout perches

Shrikes use high, exposed lookout perches to watch for predators, defend their territory and attract mates.

Shrikes will choose different sites as lookout perches, but they all have a few things in common: they are usually isolated and exposed, tall (up to 10 metres or more) and offer a good view in all directions. Typical lookout perches include:

- small windmills
- hydro poles
- snags
- deciduous trees such as maple or ash, especially those with some dead branches

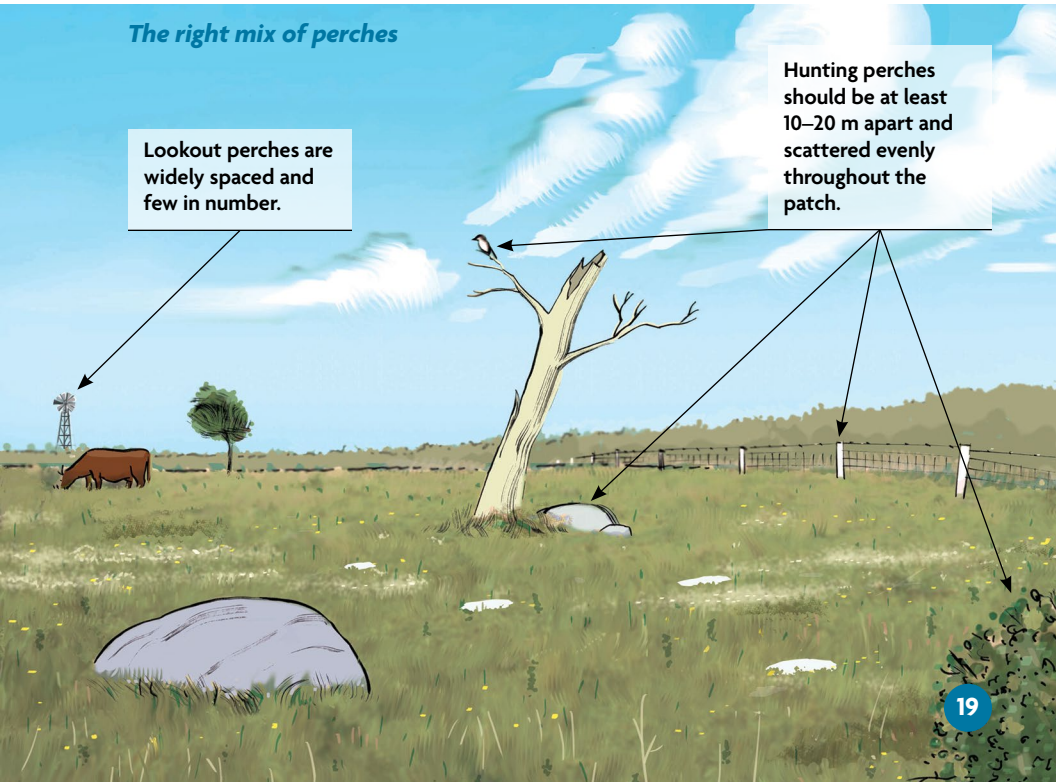
Hunting areas

Loggerhead Shrikes are "sit-and-wait" predators, perching and scanning the surrounding area for prey, such as large insects, small snakes, mice, voles and smaller birds. Once they spot dinner, they swoop down to capture it on the ground or "hawk" it out of the air and then continue on to another perch or impaling site.

Because shrikes need perches in order to hunt, their hunting area is limited by the number and height of perches available. Although shrikes can spot small prey up to 30 metres away, the size of the area they scan depends on the height of the perch.

Meanwhile, their hunting strategy and hunting success depend on the height and density of the surrounding vegetation. Small areas of bare ground or rock around perches make prey more visible.

The right mix of perches



Shrikes can capture insects just as successfully in tall grass as in short grass. However, hunting in taller grass takes more energy. If the vegetation is too high or dense, shrikes will switch to hawking insects out of the air. As a result, they will spend twice as much time hovering or chasing prey. Because it requires more energy, hunting in tall grass is much less efficient.

Adding a few perches in wide-open areas will allow shrikes to use more of that area for hunting. When perches are well distributed, shrikes can use a smaller territory and stay closer to their eggs or young, where they can better protect them. By making individual territories smaller, more perches may also increase the number of shrikes that can use a patch of habitat.

The vegetation around hunting perches should:

- contain mostly herbaceous cover
- include a mix of tall and short grass (short grass makes it easier for shrikes to spot and capture prey, while longer grass provides habitat for prey)
- have some small areas of bare ground (either exposed rock or dirt)
- contain little tree or shrub cover

Recommendations for improving hunting areas

- Provide a mix of perches and surrounding vegetation. Ideal shrike habitat has both taller and shorter vegetation, some small areas of bare ground and a variety of insects and small mammals that shrikes can hunt.
- In areas with taller vegetation, grazing will create a mix of short and tall vegetation heights, as well as areas of bare ground around trees.
- Maintain a few areas of tall grass to provide shelter for small mammals and insects.

PHOTO: LARRY KIRTLEY

Impaled prey are a good indication that shrike are nearby.

Impaling sites

Shrikes cannot hold large prey in their feet the way true birds of prey do. Instead, if their prey is too large to swallow whole, they need to secure it on something sharp or wedge it in a crotch of a tree. After their meal has been securely anchored, shrikes can tear off bite-sized pieces with their beak.

Impaling prey may also serve other purposes:

- It creates a food cache, providing a buffer against future food shortages.
- It acts as a display of the male's hunting ability, helping to attract a mate.
- It marks the boundaries of a shrike's territory.
- It allows time for poisonous prey—such as certain grasshoppers and moths—to detoxify.

Shrikes can use many things for impaling prey, including:

- thorny plants such as hawthorn and wild plum
- barbed wire
- the sharp ends of broken branches

Resources

Ministry of Natural Resources and Forestry

www.ontario.ca/environment-and-energy/species-risk

General inquiries

Natural Resources Information Centre
1-800-667-1940
mnr.nric.mnr@ontario.ca

District offices

Bancroft: 613-332-3940
Kemptville: 613-258-8204
Midhurst: 705-725-7500
Peterborough: 705-755-2001
Sudbury: 705-564-7823
Kingston Field Office: 613-531-5700

Wildlife Preservation Canada

www.wildlifepreservation.ca
1-800-956-6608
admin@wildlifepreservation.ca

The Nature Conservancy of Canada

www.natureconservancy.ca
Todd Farrell – Coordinator, Conservation Biology
705-749-1806
todd.farrell@natureconservancy.ca

The Couchiching Conservancy

www.couchichingconserv.ca
Ron Reid – Carden Program Coordinator
705-326-1620
ronreid@couchconservancy.ca

Symbol legend

- $ funding available
- ? information/advice on shrike, their habitat, and how it relates to your property

Kawartha Farm Stewardship Collaborative

www.kawarthafarmstewardship.org
705-746-7671
info@farmsatwork.ca

Ontario Species at Risk Stewardship Fund

www.ontario.ca/environment-and-energy/grants-protecting-species-risk
Kim Jaxa-Debicki – Stewardship Incentive Policy Advisor
705-755-5506
SAR.stewardship@ontario.ca

Species at Risk Farm Incentive Program (SARFIP)

Ontario Soil and Crop Improvement Association
www.ontariosoilcrop.org/en/programs/species_at_risk.htm
Hayley Paquette – Programs Assistant
519-826-3035
hpaquette@ontariosoilcrop.org

Grassland Habitat Farm Incentive Program (GHFIP)

Ontario Soil and Crop Improvement Association
www.ontariosoilcrop.org/en/programs/grassland_habitat.htm
Brad Carberry – Application Outreach Specialist
226-979-2495
bcarberry@ontariosoilcrop.org

To be added to this list in future editions, please contact Wildlife Preservation Canada.

Help save an endangered bird!

If you have Eastern Loggerhead Shrikes on your property — or if you'd like to attract them — this guide is for you. Inside, you'll find:

- How to recognize the "butcher bird"
- How to provide the habitat shrikes need: nesting sites, perches and hunting areas
- How to work with your neighbours to create a critical mass of shrike habitat
- Where to find funding and further information

Landowners like you are key to saving shrikes. Help preserve one of Ontario's most unique birds by creating the habitat they need. Together, we can make sure shrikes survive — and thrive!

Wildlife Preservation Canada

RECOVERY ▪ CONSERVATION ▪ KNOWLEDGE

NATIONAL CONSERVATION PLAN

PLAN DE CONSERVATION NATIONAL

Canada

This project was undertaken with the financial support of the Government of Canada.
Ce projet a été réalisé avec l'appui financier du gouvernement du Canada.

Ontario

Assistance for this project was provided by the Government of Ontario.