OPERATION GRASSLAND COMMUNITY

PARKLAND STEWARDSHIP PROGRAM

Interested landowners are encouraged to contact:

OPERATION GRASSLAND COMMUNITY
or
PARKLAND STEWARDSHIP PROGRAM

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THE LANDOWNER'S TOOLKIT SERIES

Not All Grasshoppers Are Pests

How to Identify the Good and the Bad

When we talk about Grasshoppers we are often thinking only of their potential as devastating insect pests. ***But, not all kinds of grasshoppers are pests,*** and even the pest species of grasshoppers may be economically harmless in between their occasional increases in numbers. Grasshoppers also have significant ecological value within grassland habitats, serving as an important food for many birds and other animals, helping to ensure prairie wildlife biodiversity is maintained.

The key to management is recognition of which kinds of grasshoppers may cause damage. This factsheet will help to clear up some of the confusion about grasshoppers, specifically how to identify pest and non-pest species.

DISTINGUISHING BETWEEN PESTS AND NON-PESTS EARLY IN THE YEAR:

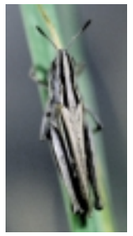
One easy way to distinguish between pests and non-pests is to learn what species occur at what time of year.

None of the larger grasshoppers you see early in the spring have ever caused economic damage, so they should not be controlled or used as indicators of later season grasshopper problems.

This means that grasshoppers found on grass in Canada in April, and even as early as February when warm weather can bring them out, are no cause for concern. Until mid-May they are the only grasshoppers found. From late May on into June they share the grassland with potential pest species, BUT, because these pests are just emerging, they will be noticeably smaller that the earlier non-pest species.

The most common grasshoppers found early in the year (i.e., NON-PEST SPECIES) are:

VELVET-STRIPED GRASSHOPPER



This grasshopper is sleek and soft in appearance, usually silver grey with two black stripes on the back. Some females are bright green, except for the dark stripes on the back. To find this species, look in March to June on south-facing slopes of well-grazed pastures or rangeland where blue grama is common. It can be found on roadsides in much of the Paliser Triangle. The tip of head of this grasshopper is pointed. Early in the spring it will be found with developing wingbuds, and by early May it has wings as long as its abdomen.

BROWN-SPOTTED RANGE GRASSHOPPER

The Brown-spotted range grasshopper has been shown to be an important food item for the survival of the nestlings of grassland songbirds. More than 80% of the food that grassland songbirds feed to their nestlings are grasshoppers, and in May and June this species is often the main item on the menu, easy to catch and neither too large nor too small to feed to nestling songbirds.

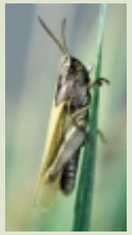
The brown-spotted range grasshopper is mainly grey with strong black contrasts, although it can be green and grey, or even tan and grey. Two rectangular, ridged structures lie just ahead of and between the eyes, and the tip of the head is more rounded and not pointed like the Velvet-striped grasshopper.

SPECKLED RANGE-LAND GRASSHOPPER

This grasshopper is common on native short grass (for example, blue grama, needle-and-thread and June grass), especially where sand ridges, dunes, bare ground and small blowouts occur. It is usually charcoal-coloured with tiny flecks of grey or even white.

They become adults early, usually in May, and are mostly gone before the end of the summer. In May and June, these are the grasshoppers that crack loudly as they fly, and have obvious red wings.

NORTHERN GREEN-STRIPED GRASSHOPPER



The northern green-striped grasshopper is robust, bright green (female) or grey (male), and has a prominent ridge on the top of its back. The only other grasshoppers with a prominent ridge like this are not found in April to June, as this one is.

This grasshopper tends to be found in moister parts of the grassland, probably because of diet preferences, so you will have better luck looking for it in river valleys or in areas with taller grasses.

RED-SHANKED GRASSHOPPER

This species is our largest grasshopper, and almost looks as big as a small sparrow while flying. It overwinters as a fat, bumpy immature hopper that looks a little like a tiny toad. In April on the Canadian Prairies it sometimes eats Sandburg's bluegrass, one of the earliest growing grasses.

The red-shanked hopper matures quickly in the spring, and can be found sunning itself on the sides of small hills or even cow dung. The adults are also bumpy, and have either an orange wing or a yellow wing.

These large grasshoppers are common early season food for wildlife, including burrowing owls, loggerhead shrikes, and falcons. The bright red-orange hind leg can be found on the ground where these birds feed. In May and June, the red-shanked grasshopper is a common constituent of coyote scats.

CLUB-HORNED GRASSHOPPER

This small grasshopper is one of the most common insects found on some pastures in the spring. In May and June, it may confuse pest managers who are checking for hatching grasshoppers. They are grey, black and tan, but can be partly green, and are named for swollen club-shaped tips of the antennae, especially noticeable on the male.

This species is an important item in the diet of grassland songbirds. With practice you can sometimes identify the club-horned grasshopper using binoculars, as parent horned larks or longspurs carry it back to feed nestlings.

THE LANDOWNER'S TOOLKIT SERIES

SIGNIFICANT PEST SPECIES:

In Alberta and Saskatchewan, there are around 90 species of grasshoppers. Of these, only four are considered the main cereal pest species, with an additional four or five causing occasional damage to cereal crops, pastures and rangeland grazing potential. Three of the four main pests belong to a group called the spur-throated grasshoppers, the fourth is an unusual band-winged grasshopper with a clear wing.

Each type has distinguishing characteristics that make them relatively easy to identify.

1. Spur-throated grasshoppers (3 of the 4 most economically important species).

These grasshoppers are identified by the presence of a tubercle or knob between their front legs. The three pest species are: Migratory grasshopper, packard grasshopper and two-striped grasshopper.

MIGRATORY GRASSHOPPER

The adults of this species are brownish to yellowish, and their hind legs are marked with a series of black bands. The Young have black bands on the top of their thorax. In addition, look for the tubercle or knob between their front legs.

Females lays their eggs mainly in stubble fields, but also in drift soil, weedy pastures, brome and alfalfa pastures as well as roadside ditches. Summerfallow fields kept free of weeds are generally free of eggs even though the fields may have a substantial covering of trash. This grasshopper is a mixed feeder, and it thrives in weedy grain fields, cultivated pastures, hay fields and rangeland. Large numbers may be found in crops adjacent to stubble fields, especially if these fields are summerfallowed in late spring and trap strips have not been used.

PACKARD GRASSHOPPER

The Packard grasshopper typically prefers loose sandy soils. The adults are grey to dark yellow. Two light-coloured stripes extend from just behind the eyes to the end of the thorax. The forewings are grey. The last two segments of the hind legs are blue-green. The young are pale green to yellow-brown and are speckled with numerous small dark spots. You will find the Packard grasshopper in light textured soils with a scanty grass cover. Its habits are similar in other respects to the migratory grasshopper.

TWO-STRIPED GRASSHOPPER

The adults of this species are brownish or greenish with black or brown markings. They have two pale stripes extending back from the eyes to the tips of the forewings. A solid longitudinal black stripe is evident on the hind legs. The young are green to yellowish brown.

This species is very common in the heavier-textured soil zones. It is found along roadsides, in dried-out marshes and in fields with crops. The two-striped grasshopper prefers lush foliage found associated with marshes and roadside ditches. It is often a pest of alfalfa and other crops. Occasionally, it may feed extensively on some of the trees commonly used as shelterbelts.

2. Band-winged grasshoppers (1 of the 4 most economically important species).

The main characteristic of band-winged grasshoppers is that the hind wings are usually brightly coloured. In flight, these grasshoppers may produce a cracking sound with their wings. The most economically important species is the ***clear-winged grasshopper.*** Note that other species of Band-winged grasshoppers are NOT of concern (see "Non-pest species")

CLEAR-WINGED GRASSHOPPER

The clear-winged grasshopper can be found throughout Alberta; however, this grasshopper exhibits extreme fluctuations in abundance from year to year. The adults are yellowish to brownish. Their wings are clear but mottled with dark patches, and they have two stripes beginning at the thorax and converging at the tip of the forewings. The young are black with a distinctive white mark on the thorax.

The clear-winged grasshopper prefers to lay its eggs in sod on road allowances, overgrazed pastures and dried out marshy areas. Congregation of the adults during egg laying may result in as many as 10,000 or more eggs per square metre. The clear-winged grasshopper is primarily a grass feeder that prefers cereal grains and some of the more succulent cultivated grasses. It seldom feeds on broad-leaved plants. Large pastures of native grasses are usually only infested around their margins where cultivated fields are close by.

Information and pictures for this factsheet were generously provided by Dr. Dan Johnson.

Alberta Conservation Association

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