NATIVE ELM BARK BEETLE, *(Hylurgopinus rufipes)*

**BACKGROUND**

The native elm bark beetle is common throughout the range of all North American elm species. Initially, this insect was not considered to be pest of healthy elms, as it attacks trees that are stressed and declining. However, with the introduction of Dutch elm disease (DED) to North America, this insect became an important vector in spreading the disease.

**DISTRIBUTION**

The native elm bark beetle is distributed throughout the eastern United States and west into the Great Plains. In Canada, it occurs in Nova Scotia, Prince Edward Island, New Brunswick, Quebec, Ontario, Manitoba and Saskatchewan.

**DESCRIPTION OF LIFE STAGES**

Adults are dark brown to black bark beetles that are about 2 mm to 3.5 mm in length. The body has a covering of short yellow hairs. The eggs are round and white in colour. Larvae are C-shaped, legless grubs. They are white with a brown head and 3 mm to 5 mm long when mature. Pupae are white and similar in size to mature larvae.

*Image: Saskatchewan Ministry of Environment*  
*Image: city of Winnipeg*
HOST SPECIES

All species of North American elms are hosts of the native elm bark beetle. In Saskatchewan, American elm and, occasionally, the introduced Siberian elm are hosts.

LIFE CYCLE

Adult beetles spend the winter in bark crevices or tunnels made in the bark near the base of healthy elm trees. They emerge in spring and may feed for a short period in the upper crown of healthy elm trees. If these adults emerged from DED-infected wood the previous summer, they can carry fungal spores that will inoculate and infect the healthy trees they feed upon. Following the feeding period, adults burrow into the bark of declining/dead elms or recently cut elm logs and excavate their egg galleries. After mating, females lay eggs in the galleries. Larvae hatch, feed in the phloem and xylem for a number of weeks and pupate. Following the pupal stage, adults emerge in July and August and fly to healthy elms to feed on the bark of branches. Similar to the spring-emerging adults, if these adults emerged from DED-infected wood, they can infect healthy trees when feeding. By late September, adults will move to the base of healthy elms to spend the winter. There is usually one generation per year. However, when beetle populations are high and brood material is abundant, summer-emerging adults may breed, producing a partial second generation that overwinters as larvae.

SIGNS, SYMPTOMS AND DAMAGE

Adult entrance or exit holes can be found on the bark surface of trees that have been attacked by native elm bark beetles. Red sawdust will be present near these holes. Underneath the bark, egg galleries constructed by adult females are horizontal or slightly V-shaped across the grain of the wood, in contrast to the smaller European elm bark beetle Scolytus multistriatus galleries which are constructed parallel to the grain of the wood. They are about 5 cm to 7 cm long. The galleries excavated by feeding larvae are perpendicular to the egg gallery. Native elm bark beetles attack and breed in dead or dying elms and are therefore, not the primary cause of tree death. As well, adult feeding and overwintering has little or no impact on healthy trees. However, its importance as a pest is its role in spreading DED. DED is an introduced disease that all species of North American elms are highly susceptible to. It is a vascular wilt disease that damages the tree’s water and nutrient conducting system, causing the tree to die. DED has devastated elm populations.

S. multistriatus larval galleries (with the grain)

Image: Bugwood.org

H. rufipes larval galleries (across the grain)

Image: Saskatchewan Ministry of Environment
throughout North America, which has had a major impact on the species composition of both natural and urban forests.

**MANAGEMENT PRESCRIPTIONS**

Management practices for the native elm bark beetle are an integral part of DED management. The objective is to reduce beetle populations and consequently, reduce the spread of the disease. A variety of methods can be employed to reduce beetle populations, which includes sanitation to reduce beetle brood material and the direct killing of beetles. Reducing brood material can be achieved by the expeditious removal and disposal of dead elms, dying elms and elm wood. Elm material can be disposed of by burning or burying. Chipping elm wood into small pieces will render it unsuitable for bark beetles. Debarking or removal of stumps will also help reduce brood material. Elm wood should not be transported or stored without removing the bark, as wood with bark intact is suitable brood material. Chemical control of beetle populations should be used in conjunction with an effective sanitation program. When adult beetles migrate to their overwintering sites in the autumn, an insecticide application should be made to the base of elm tree trunks (up to one metre above ground) and above ground root flares. This treatment will be effective in controlling beetles prior to penetrating the bark and when emerging the following spring.

**WHAT THE PUBLIC CAN DO**

There are two major ways in which the public can participate in banded elm bark beetle management.

- Do not store or transport elm wood with bark intact.
- Report dead and dying elm trees to local forestry agencies.

**REFERENCES FOR ADDITIONAL INFORMATION**

How To Identify and Manage Dutch Elm Disease  
NA-PR-07-98  
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Dutch Elm Disease  
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Native Elm Bark Beetle Control  
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