



Fact Sheet #2—Elm Bark Beetle Life Cycle

How is Dutch elm disease spread?

The primary vector of Dutch elm disease (DED) in Saskatchewan is the **native elm bark beetle** (*Hylurgopinus rufipes*). This tiny beetle is only 2 to 3.5 mm long, about the size of a pin head.

The sticky spores of the DED fungus attach themselves to the beetle during its feeding, breeding, and over-wintering activities. As the beetle moves around it spreads the spores from infected elms to healthy elms. Strong prairie winds also contribute to the beetles spread in the province.

What is the life cycle of the native elm bark beetle?

The new adult beetle first emerges from its brood chamber in late July or early August at which time it feeds on healthy elm branches. Anytime from late August to the end of September (depending on the weather) the beetle bores its way into the base of a healthy elm, where it over-winters.

The beetle does not emerge again until spring (April-May) at which time it moves to the upper branches of healthy elms to feed (see reverse). In June to July adult beetles breed in dead or dying elm wood (including firewood) laying eggs in brood chambers created in the sapwood.

The greatest number of DED infections occur during the May and June summer feeding at which time the tree's vessels are most susceptible, although infections can also occur when new adults start feeding late summer or during over-wintering.

How does the life cycle relate to management of the disease?

Knowing the life cycle of the native elm bark beetle helps in the management of DED. Over-wintering and emergence dates, for example, help determine when one can use chemical control to reduce beetle populations. For example, an insecticide approved for this purpose can be applied to the base of elms in late August or early September to reduce beetle numbers for up to two years. The sticky bands used for cankerworm control can also capture beetles if applied before September 1st.

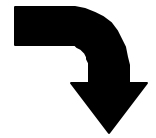
To prevent the spread of DED, provincial legislation in the form of *The Dutch Elm Disease Regulations* make it **illegal to store or transport elm wood of any kind**. All elm wood, including infected trees, must be disposed of promptly by burning or burial in a designated disposal site. This limits the spread of the disease outside of infected areas, as well as



The native elm bark beetle (Hylurgopinus rufipes) that spreads DED in Saskatchewan.

restricting brood material. Fresh pruning cuts also lure the beetle to a tree, and for this reason there is an annual elm tree pruning ban in effect from April 1 to August 1. Once the ban is over, elm owners are required under DED regulations to prune all dead and dying wood from their

Adults fly to firewood or elms that are dead or dying of Dutch elm disease to lay eggs (June—July)

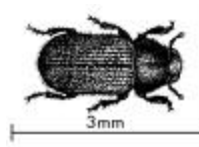


New adults emerge and move to healthy elms to feed and DED spores are transferred to the trees (July—Aug)

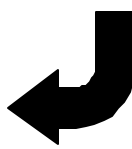


Adults emerge and move to crown of healthy trees to feed (April—May)

Life Cycle of the Native Elm Bark Beetle



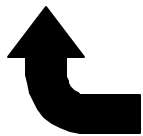
Trees die over summer and provide habitat as brood trees the following year



Adults move to base of healthy elms to over-winter, possibly infecting the trees (Aug—Sept)



Adults over-winter at base of healthy elms (Sept—April)



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