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Long-term monitoring of the impact of *Aphthona nigriscutis* on leafy spurge: The Beverly Bridge sites

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(*Article begins on following page.)

Long-term Monitoring of the Impact of *Aphthona nigriscutis* on Leafy Spurge: the Beverly Bridge Sites

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Aphthona nigriscutis Foudras (Coleoptera: Chrysomelidae) was introduced into Alberta, Canada, from Hungary in 1983 as a biological control agent for leafy spurge (*Euphorbia esula* L.). The adult beetles feed on leafy spurge leaves and the larvae feed on the roots. It has been most effective against leafy spurge on lighter soils, in spurge stands with flowering heights of less than 70 cm, and on well drained sites such as upper slopes or hill tops. In 1988 and 1989, a total of 1,350 *A. nigriscutis* were released at six sites in a heavy leafy spurge infestation in Edmonton, Alberta. These were located along a south-facing railway embankment above the North Saskatchewan River, just west of the Beverly Bridge. Initial leafy spurge densities ranged up to 272 shoots m⁻² and percent cover was 15 - 40%. Each year in August since these releases, vegetation parameters have been measured on fixed transects located at each of the original release points. Leafy spurge density, percent cover and biomass are measured, as well as percent cover and biomass of grasses, forbs and woody plants. All sites are also photographed from standard viewpoints each year in early July. *Aphthona nigriscutis* established at all the release points and increased to very high population densities 3 - 4 y after the releases, coinciding with a dramatic drop in leafy spurge populations. By 1993 leafy spurge densities had dropped to 1 - 14 shoots m⁻² and cover was below 1%, with a corresponding increase in the biomass of grasses and other vegetation. The reduced leafy spurge growth and increased grass production have been maintained since then. Over 100,000 beetles have been collected and redistributed from this site.
