WILDLIFE REFLECTOR PROGRAM

Overview

The Ministry has been installing wildlife reflectors since the late 1980's as part of its continued effort to reduce wildlife-related accidents. Wildlife reflectors are prisms mounted on posts and installed along the sides of the highway as a means of deterring animals from entering the highway when vehicles are present. At night, as the headlights of an approaching vehicle strike the reflectors they reflect beams of light at ninety-degree angles to the roadway. The concept behind reflectors is that the reflected light catches the attention of animals and distracts them long enough to delay their movement onto the road until the vehicle has passed. Reflectors cost approximately $5,000 to $10,000/km to install along both sides of a highway. To date, reflectors have been installed on either one side or both sides of approximately 160 kilometres of highway. Reflectors have been extensively used along highways prone to high numbers of deer-related accidents.

The success of wildlife reflectors for reducing wildlife accidents has been the object of much discussion. Research by MoT and other transportation agencies continues to provide inconsistent evaluations of the devices.

Based upon the WARS data collected, it is apparent not all wildlife reflector installations have been successful. Most installations are less than 2 kilometres long, with 17% being 0.5 kilometres or less in length. Short installations make evaluation difficult because it is easier for animals to travel to the ends of the reflector installations and cross the highway. Given the relatively short distances of the majority of the reflector installations, the relatively low number of wildlife accidents recorded before and after the reflectors were installed, and the lack of measurable controls, determining if the reflectors produce statistically significant reductions in the numbers of deer-related motor vehicle accidents is very difficult.

Wildlife Warning Reflector Installation Case Studies

Highway 3, located near the Canada/US border in British Columbia, north of the U.S. states of Washington, Idaho, and Montana, has one of the worst records for ungulate related motor vehicle accidents in British Columbia. In an attempt to reduce the number of deer related motor vehicle accidents, MoT installed wildlife warning reflectors on a 9.37 km section of Highway 3, east of Grand Forks, and on a 7.45 km section of Highway 3, east of Creston. The installations were completed in March 1995. These are the longest continuous reflector installations in British Columbia.

a) Highway 3 (Segment 1325)

When comparing the deer accident rates before and after the reflector installation, it appears the number of deer accidents recorded increased after the installation (Figure 1). When comparing the deer accident rate for the 9.37 km reflectorized section of the highway with the deer accident rate for an immediately adjacent 9.37 km non-reflectorized section of the highway, it appears the installation of reflectors did not alter the overall local accident trends.

b) Highway 3 (Segment 1375)

When comparing the deer accident rates before and after the reflector installation, it appears the number of deer accidents recorded increased after the installation (Figure 2). When comparing the deer accident rate for the 7.45 km reflectorized section of the highway with the deer accident rate for immediately adjacent 7.45 km non-reflectorized sections of the highway, it appears the installation of reflectors did not alter the overall local accident trends.

Further Study

Although these trends were not observed as part of a controlled scientific experiment, they raise questions about the effectiveness of wildlife warning reflectors. When comparing the deer accident rates before and after a reflector installation, there appears, at least in these two cases, to be no consistent accident rate drop after the reflector installation that can be specifically attributed to the reflectors.

A more thorough analysis of WARS data is required to determine the long-term effectiveness of wildlife warning reflectors on provincial highways. There may be many reasons why dramatic fluctuations in the number of accidents occur, including climate, traffic speed and volume, time of day, and wildlife movement.

In 1999, the Insurance Corporation of British Columbia (ICBC) provided MoT worth $19,000 to initiate a controlled study to determine the effectiveness of wildlife warning reflectors on a 3.4 km stretch of Highway 5 between Clearwater and Vavenby, in central British Columbia. It is anticipated data will be collected for at least 2 to 3 years before any conclusive results can be expected.

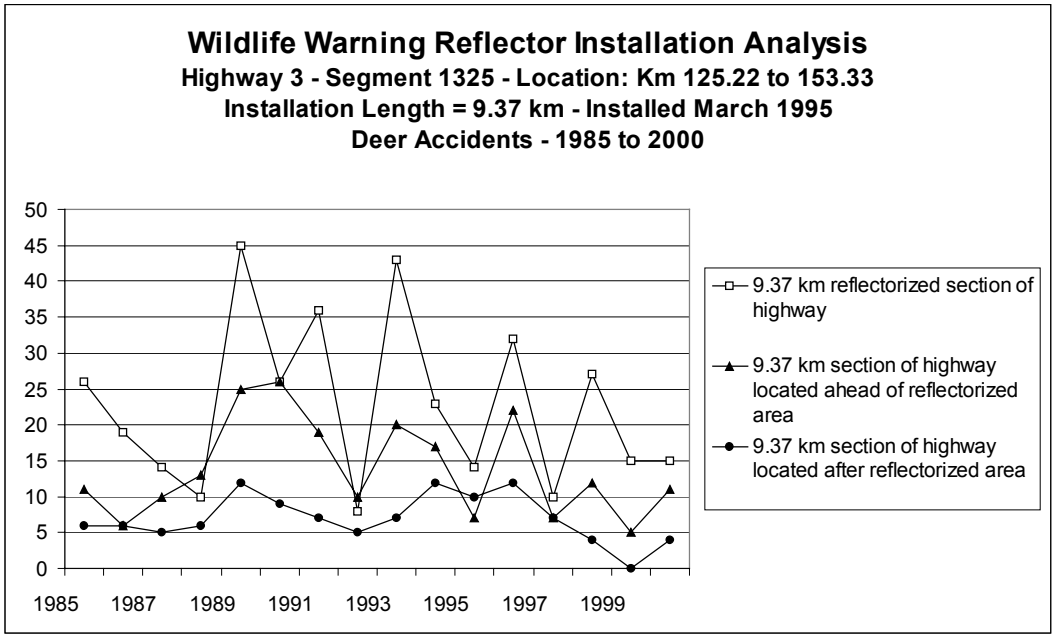

Figure 1. Wildlife Warning Reflector Installation Analysis

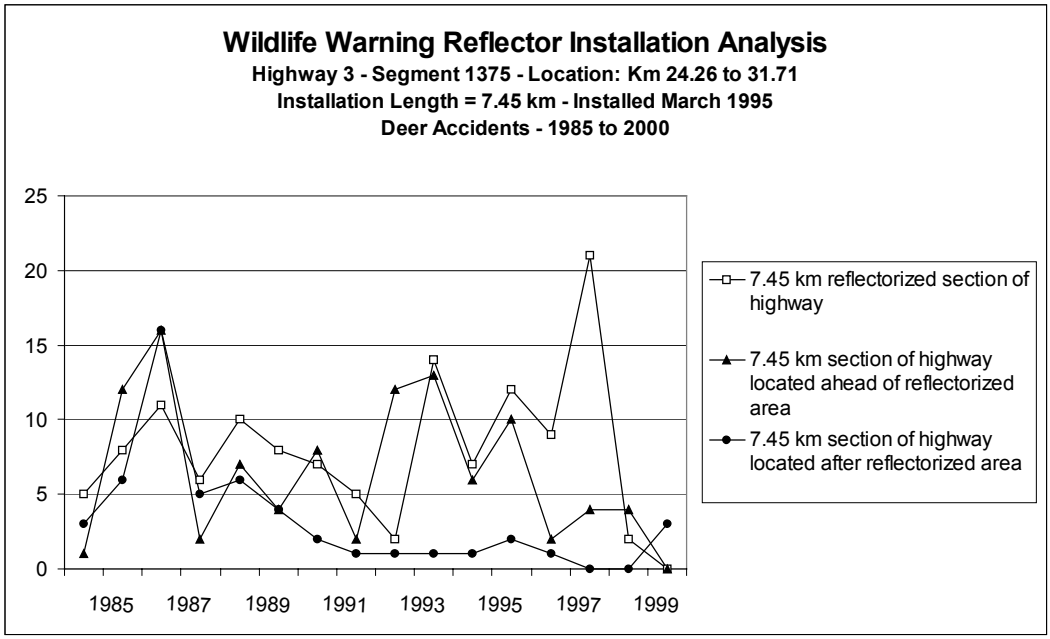

Figure 2. Wildlife Warning Reflector Installation Analysis

The Ministry continues to monitor reflector installations in order to measure their effectiveness.

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Other related topics include:

Wildlife Accident Reporting System
Wildlife Exclusion Fencing Program
Wildlife Warning Signs Program

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