

## **Evaluation of the Goose Guardian for Canada Geese**

TKO Enterprises, Inc. and USDA National Wildlife Research Center

### **Overview**

In November 2010, TKO Enterprises, Inc. and the U.S. Department of Agriculture Wildlife Services' National Wildlife Research Center (NWRC) established a Cooperative Research and Development Agreement to research, develop, and test an image-recognition, demand-performance hazing system for Canada geese called the Goose Guardian. NWRC and TKO have a mutual interest in effective animal deterrence. The mission of the NWRC is to provide scientific expertise to resolve human-wildlife conflicts. Research regarding nuisance animal deterrence fits this mission as well as other USDA objectives related to property damage and disease control. TKO is focused on the commercial development of nuisance animal deterrence through the integration of its patent-pending image-recognition sensor.

### **Study Objective**

To evaluate the effectiveness of the Goose Guardian in deterring Canada geese from entering and occupying a predetermined portion of a flight pen.

### **Results**

In trials conducted at the NWRC during August, September, and October 2011, researchers found the Goose Guardian effectively decreased occupancy of Canada geese within the hazed portion of the 0.07 ha (120 ft. × 60 ft.) flight pen during the first day of 2-day tests. Goose occupancy of one-half of the flight pen averaged 86 percent of daily video recordings during the pre-test phase when the device was deactivated. After the device was activated (test phase), goose occupancy of the same half of the flight pen decreased to an average of 42 percent per day. (See page 2 for more details on methodology)

### **Next Steps**

NWRC researchers acknowledge the image-recognition sensor of the Goose Guardian hazing device can effectively detect Canada geese and may be more effective at mitigating wildlife damage than manually-activated, periodic, and random-delivery hazing systems. Initial flight pen data appear promising; however, NWRC researchers caution that field testing of the device with integrated auditory and visual hazing stimuli is needed before definitive recommendations can be made. In particular, NWRC researchers recommend the testing of vertical and contingent visual stimuli that are vertically apparent only when the hazing device is activated.

### **For More Information**

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### Layout of Flight Pen

The study consisted of 7 replicate trials; each trial consisting of two phases. NWRC scientists used 7 pairs of Canada geese in the study. During the first phase or pre-test, two captive Canada geese were released into the flight pen which contained food, water, shelter, grass sod, a wading pool, and a bowl of whole corn. The Goose Guardian hazing device was also present, but deactivated. The birds were allowed to roam freely throughout the flight pen for two days. During the second phase or test, all items in the flight pen remained the same except the Goose Guardian was activated. Again, the geese were allowed to roam freely throughout the flight pen for two days. The amount of time the geese spent in various sections of the flight pen during the trial was recorded and compared between the two phases. Of the various hazing stimuli available, TKO representatives selected the Helo hazing device (helicopter blade with obstructed metal cards) for this evaluation of the Goose Guardian system.

