

Great Lakes Restoration Initiative Activities in Illinois to Reduce Canada Goose Impacts on Lake Michigan

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ABSTRACT: The Great Lakes Restoration Initiative (GLRI), led by the Environmental Protection Agency, was created in 2010 to address threats to the Great Lakes region. A convenient year-round water source and abundant food source of managed turf grass has resulted in an overabundance of Canada Geese (*Branta canadensis*) in Chicago City Parks within the watershed of Lake Michigan. The anthropogenic mediated benefit to goose populations and their associated damages qualifies Canada geese in Chicago as native invaders-where a native species is human induced to behave similar to invasive species. The objective of this project is to provide a long-term strategy to protect vegetation and reduce non-point source contamination from entering the nearshore waters of Lake Michigan, and as a by-product improve human enjoyment of the parks. To accomplish this goal, the U.S. Department of Agriculture's Wildlife Services (WS) program in cooperation with the Chicago Park District (CPD) continued, for the sixth year, to manage overabundant Canada goose populations in CPD parks with funding provided by GLRI. Between 2011 and 2016, we applied food grade corn oil to all Canada goose nests found within 24 sensitive lakefront parks in Chicago and successfully reduced hatching success and subsequent fledging. The number of nests found and treated during 2012 through 2016 has consistently been less than during the initial year of egg oiling in 2011. In March 2016, we treated a total of 115 nests containing 676 eggs with corn oil to prevent hatching; compared to 159 nests and 892 eggs in 2011.

We applied a chemical application of the Anthraquinone-based foraging repellent, FlightControl® PLUS (FCP) to the grass every 3 weeks in 6 parks in an attempt to discourage geese from foraging and loafing in locations that directly drain into the nearshore water of Lake Michigan. To gauge the effectiveness of the FCP applications, we performed goose presence/behavior surveys in the 6 treated parks. The surveys helped to obtain a better understanding of how many geese were utilizing the untreated and treated areas and how many of those geese were consuming grass on the FCP treated areas. The surveys demonstrated that more geese used untreated areas compared to treated areas of the parks. A total of 5,511 geese were observed (3,221 in the untreated areas and 2,290 in the treated areas) during the survey period. While geese may be present in the treated areas, only 40% of all geese consumed grass in treated areas. Alternatively, 58% of all geese present in the untreated areas consumed grass. The surveys also showed that FCP treatments became less effective each week post spraying. The mean number of geese present and feeding in the treated areas showed a diminishing effectiveness from the FCP spraying on the treated areas across weeks. The statistical results confirmed this strong week-post-spray by treatment interaction.

The disparity in numbers of geese actually consuming grass within the treated versus untreated areas reflects that the FCP treatments were effective at deterring geese from consuming grass in FCP treated areas, but did not necessarily result in the birds dispersing away from FCP treated vegetation. Future applications of FCP are recommended where high concentrations of geese congregate on sensitive habitats or in areas of high public use along the lakefront. Continued population management through egg oiling is recommended to help prevent further environmental contamination and soil erosion in this sensitive Lake Michigan environment.

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