

**APPENDIX A**  
**Additional Information**  
**to the**  
**Environmental Assessment for the**

**MANAGEMENT OF CROW DAMAGE IN THE COMMONWEALTH OF VIRGINIA**

The Wildlife Services program in Virginia has been informed of two additional non-lethal methods that may be available to alleviate crow damage. We are including these two techniques in this decision document because they may be used by Wildlife Services to reduce crow damage. The techniques are the use of lasers to disperse roosting crows and Rejex-It as a fog to disperse crows. Each method will be described.

**Lasers** are non-chemical, non-lethal, and an experimental technique recently evaluated by the National Wildlife Research Center to disperse double-crested cormorant roosts (Glahn et al. 2000). The lasers must be used after sunset and before sunrise to be effective at dispersing cormorants. Moving the laser light through the tree branches rather than touching birds with the laser light elicited an avoidance response from cormorants (Glahn et al. 2000). During pen trials with lasers the cormorants were inconsistent in their response with some birds showing no response to the laser (Glahn et al. 2000). The lack of overt response by cormorants to lasers is not clearly understood, but suggests laser light is not an highly aversive agent (Glahn et al. 2000). Blackwell et al. (in review) tested lasers on several bird species and observed varied results among species. Lasers were ineffective at dispersing starlings and cowbirds (Blackwell et al. (in review)). Lasers were initially effective at dispersing pigeons and mallard ducks but the birds habituated in approximately 5-minutes and 20-minutes, respectively (Blackwell et al. (in review)). Canada geese reacted to the laser displaying neophobic avoidance to the approaching laser beam. The use of lasers to disperse crow roosts is planned for evaluation by the NWRC this winter (B. Blackwell, NWRC, pers. commun.).

Lasers are available with a power of 5 mW (moderate power) and 68 mW (low power). The difference between the lasers is beam intensity and diameter (Glahn et al. 2000). The lasers do not appear to present any detectable ocular hazards to cormorants but do present human safety concerns (Glahn et al. 2000). Both the Desman and Dissuader laser devices which would be used by Wildlife Services to disperse birds are classified as Class-IIIB lasers (OSHA 1991). Lasers in lower ranges of Class-IIIB do not produce hazardous diffuse reflection unless someone intentionally stares at the laser closer to the diffuser (Glahn and Blackwell undated). The lasers can cause temporary flash blindness, afterimage, and glare in people (Glahn and Blackwell, undated). It is recommended that lasers not be pointed a people (Glahn et al. 2000). These lasers cost \$5,700 to \$7,500 each and this may be a disadvantage (Glahn et al. 2000). A modified Avian Dissuader™ became available in 2001 for \$850.

**Rejex-It (fogger)** is a chemical, non-lethal technique which is registered with the Environmental Protection Agency for dispersing birds. Rejex-It TP 40 has a supplemental label allowing the use of Rejex-It in thermal or mechanical fog generators. The label allows the use of Rejex-It TP 40 fog to repel birds from roosting areas and other areas. The active ingredient in Rejex-It is methyl anthranilate. Inactive ingredients in Rejex-It TP40 include limonene, a human irritant (L. Clark, NWRC, pers. commun.). Limonene is added to Rejex-It TP 40 to make it float on water (L. Clark, NWRC, pers. commun.). Fogging is not recommended for urban/suburban areas because of cloud drift and chemical sensitivity of the public (L. Clark, NWRC, pers. commun.). The public would be concerned with odor sensitivity and allergic reaction to methyl anthranilate.

Rejex-It TP 40 fogger has variable effectiveness on birds and is thought to work best on passerines and waterfowl (L. Clark, NWRC, pers. commun.). Stevens and Clark (1998) found starlings were irritated by exposure to methyl anthranilate as an aerosol and did not habituate to the aerosol. Additionally, birds may habituate to fogging (L. Clark, NWRC, pers. commun.). Belant et al. (1996) found Canada geese habituated or developed tolerance for methyl anthranilate when applied to turf. The use of a fog may repel other desirable birds and it leaves a strong

grape odor which may persist for several days. Finally, Stevens and Clark (1998) cautioned that an irritation response in the laboratory does not directly translate into an avoidance response in the field. The active ingredient methyl anthranilate is described in more detail in Appendix B of the environmental assessment.

#### **LITERATURE CITED**

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