

Development of Harvest Strategies for Mourning Doves

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Goals and Objectives:

- Develop statistical techniques for combining CCS and population growth rate estimates derived from banding and harvest data to produce reliable predictions of population status and trend.
 - Develop a detailed harvest management framework that continuously integrates monitoring data, population models, and harvest and population objectives into a harvest management system.
 - Develop a Banding Needs Document driven by information required for accomplishment of the above objectives.
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Introduction:

Dove harvest regulations have historically been based on informal examination of trends derived from the annual Call Count Survey (CCS). No significant changes in hunting regulations have occurred during the past several decades, with the exception of a decreased bag limit initiated in 1987 in the Western Management Unit. Based on a renewed emphasis on more informed harvest management for mourning doves, the Mourning Dove National Strategic Harvest Management Plan (National Plan) was approved in 2003 by the Flyway Councils. The foundation of this strategy is a set of population models that predict population growth and harvest as a function of survival and recruitment rates. Model performance is evaluated over time by confronting model predictions with independent measures of population status and harvest. This process provides information that can be used to increase model accuracy and precision and improve our understanding of the consequences of various harvest regulation alternatives.

In 2004, the USFWS became concerned about the need for a more formalized harvest strategy during the time period required for implementation of the National Plan, and it requested that interim harvest strategies be established for each management unit (MU). These strategies were subsequently developed by the MUs and approved by the Service Regulations Committee (SRC). The strategies varied in their reliance on CCS and HIP survey trends and on an alternative population growth rate estimator. In February 2006, the SRC asked for revised interim strategies from all MUs that would rely more heavily for the next few years on CCS trends and more rigorously derived regulation change thresholds. Subsequent discussions within the dove management and research community led to the concept of development of interim strategies that utilize CCS and BBS survey databases and the time series of population growth rates that will result from an operational banding program and continuing harvest survey. These strategies and associated statistical technique development must be constructed within the context of continuous progress toward implementation of National Plan, and thus this project is also intended to serve as a catalyst for development of a more specific stepwise plan for transition to the National Plan.

Progress:

In consultation with state and federal dove harvest management biologists, it was decided that a composite estimator of annual trend derived from application of Bayesian hierarchical modeling techniques would be used as the basic metric for making harvest regulation decisions in a new interim strategy. Population indices at the state level from the CCS (both number heard and number seen) and BBS surveys (1966 - 2005) as well as population estimates derived from harvest data (2003 - 2005), constitute input into the statistical model. Estimation of trends during several alternative time periods is currently underway using WinBugs and *R* statistical software. In addition, simulation exercises are being planned to provide dove technical committees with information on the expected statistical performance of these estimators, so they may develop informed criteria for establishing regulation change.

Future Plans:

Principal investigators and dove technical committees will continue to work together in 2007 to develop and implement a revised strategy in 2008. Additional analytical and simulation exercises will be pursued early in 2007 in order to provide guidance to cooperators on 2007 operational banding quotas.