Atlantic Flyway Multi-Stock Adaptive Harvest Management Background

Since 2000, the Atlantic Flyway has relied on an adaptive harvest management (AHM) strategy for eastern mallards as the basis for setting the season lengths and total bag limits for duck hunting in the Atlantic Flyway. A drawback of this strategy is that it relies on the status of one species to determine the overall regulatory package for all duck species. Several years ago, biologists realized that eastern mallards are not a good representative species of Atlantic Flyway ducks as they are not biologically representative of any of the other species and constitute less than 25% of overall harvest in the flyway. Testament to that is the fact that mallard numbers have declined 25% in the eastern North America (figure 1) and 36% in the Atlantic Flyway Breeding Waterfowl Survey (AFBWS) since 1998. Over the same timeframe, all other species in eastern North America for which we have robust population estimates are stable or increasing.

Consequently, the Atlantic Flyway Council and the U.S. Fish and Wildlife Service (USFWS) have been working together since 2011 to develop a new decision framework for determining annual duck hunting regulations in the Atlantic Flyway that is based on the collective status of four representative duck species: wood duck, American green-winged teal, ring-necked duck, and common goldeneye. Referred to as multi-stock adaptive harvest management (multi-stock), these species are used to represent the suite of waterfowl populations and habitats that governmental agencies and conservation partners are trying to conserve and protect, and together they comprise about 60% of the ducks harvested annually in the Atlantic Flyway.

Advances in population monitoring have enabled the Atlantic Flyway to consider an annual decision for duck harvest management built on the population status of four representative species rather than just one species. Duck species vary greatly throughout the annual cycle in their habitat requirements, productivity (i.e. number of young they produce), and food requirements. Using a single species, even a generalist species like the Mallard, may not capture the diverse needs of all ducks in the Atlantic Flyway. Since 1998, we have had a reliable, operational, population survey for many of the species that we consider to be representative of the Atlantic Flyway - those that represent our diverse habitats, hunters, and birdwatchers. Along with this population survey is a banding program and harvest survey

program that inform us on the vital population parameters (e.g., harvest rates, survival rates, etc.) needed to guide responsible harvest management.

In 2018, the Atlantic Flyway and the USFWS officially adopted a multi-stock protocol that recognizes four populations of eastern waterfowl. The season length and bag limit for the Atlantic Flyway will depend exclusively on the status of these waterfowl populations. For the purposes of the Atlantic Flyway multi-stock framework, eastern waterfowl stocks are defined as those breeding in eastern Canada and Maine and the Atlantic Flyway states. Breeding population size estimates for wood ducks in the Atlantic Flyway (Maine south to Florida) are estimated by surveys conducted from Virginia to Maine and the Breeding Bird Survey (BBS; figure 2). Insufficient counts of wood ducks from the USFWS and CWS surveys in Maine and Canada preclude incorporating those survey results into breeding population estimates.

Similar to the methods used in western mallard AHM, we used a model that considers the allowable harvest based on productivity and the carrying capacity of the habitat in the flyway for each of the species. Each year in determining what is the most appropriate season to set, the population status of each species along with the past season's harvest rates are evaluated along with the current estimate of carrying capacity to determine the most appropriate season framework. These factors and the projection of how populations will respond to various harvest rates under all possible different season lengths and bag limits for the coming season, lead to an optimal decision that takes into account the Atlantic Flyways' desire to manage each duck species (WODU, RNDU, AGWT, COGO) at approximately 98% of maximum sustained yield. This conservative approach allows for a hedge against the uncertainty that is inherent in the annual estimates of population size and harvest rate.

Possible season and bag limit alternatives include a liberal 60-day season with a 6-duck bag limit, a moderate 45-day season with a 6-duck bag limit, and a restrictive 30-day season with a 3-duck bag limit, as well as a closed season option. For the 2019-20 duck hunting season, the Atlantic Flyway Multi-Stock AHM process indicates that the liberal alternative is the optimal choice. As many hunters have already heard, for the 2019-2020 hunting season, the bag limit for mallards will be reduced from 4 per day to 2, no more than 1 of which may be a hen. This is in response to continued declines in mallards that are produced in the Northeastern US and parts of Eastern Canada. The old eastern mallard AHM process which used these birds as the determinant for the entire Atlantic Flyway duck season, would have indicated a much different

optimal policy for 2019-20. Mallard population declines are a great concern in the Atlantic Flyway and the current reduction in the mallard bag limit is in response to this continued decline. Biologists from the USFWS and the Atlantic Flyway states will be working on a new mallard harvest strategy over the coming years. Hunter input will be solicited as part of this process so that hunter desires for mallard harvest can be explicitly included at the start of the development of the new strategy.

Figure 1. Eastern Survey Area

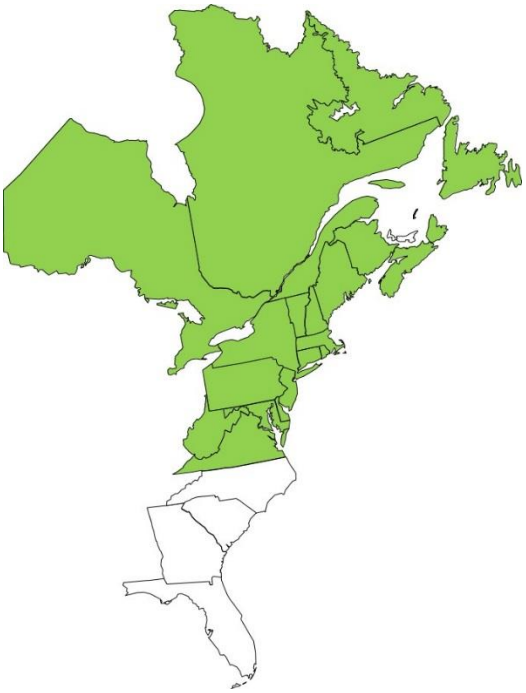

Figure 2. Atlantic Flyway Wood Duck Survey Area