White-winged Doves

Gender Identification of White-winged Doves

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Introduction and Objectives

White-winged doves (*Zenaida asiatica*) are migratory game birds with an expanding distribution. Reasons for the range expansion are largely unknown as are characteristics of populations in newly occupied areas. This species is avidly sought in states having large white-wing populations and where it is hunted with specific hunting seasons designed to prevent local over-harvest. Increasing distribution and apparent population size in other states may result in legalizing or liberalization of hunting regulations in those states. Prior to any liberalization, more knowledge is needed on population characteristics including population demography in both the Central Flyway and Pacific Flyway portions of the species' range. These needs should be specific by age and gender as hunting may over exploit one gender (or age class). Harvest rates may be measured through banding programs; these rates should be gender specific to examine possible rates of hunting loss on population composition, which could affect breeding population size. Harvest by gender can also be measured through use of hunter bag checks and collections use of parts collection surveys.

Gender of white-winged doves based on examination of live birds is difficult although some indicate that it can be done using plumage coloration or body mass. However, others believe the only useful method to correctly assign gender to white-winged doves is through cloacal examination. Cloacal examination takes time and, especially in warm climates, can be stressful to birds. Further, it takes experience and leaves doubt as excreta can obscure either the 2 papillae (males) or the oviductal opening (females). Further, it is ineffective in hatching year birds and in some second-year individuals. Thus, there is a need for a rapid and effective method to ascertain gender of white-winged doves in banding programs, especially those that are likely to result in capture of large numbers of individuals. Our preliminary work suggests a method is available to accurately classify captured white-winged doves by gender.

Our objective is to test use of length of 1 of the 2 central brown tail feathers of white-winged doves to learn if this method can be used to correctly assign gender to live birds that will have their gender verified using molecular techniques. Preliminary work in Arizona (800+ bandings, 50+ recaptures) during 2000-06 indicates there is a difference in tail feather length between males and females of all age classes (AHY, SY, HY) although sample sizes for SY's and HY's are small. These differences have also been verified on small samples (~ 20 birds) of gonadally checked hunter- harvested white-winged doves in Arizona. The hypothesis is that central tail feather length (mm) is correlated with gender and can be used to reliably assign gender to live or dead white-winged doves.

Progress to Date

A central brown tail feather was plucked from a sample of 200 white-winged doves captured in normal banding operations. Feathers were labeled by band number, measured (mm) fresh, and stored dry. These feathers were sent to the Rocky Mountain Center for Conservation Genetics and Systematics to identify gender using molecular methods. Once in the lab, feathers were again measured to ascertain whether shrinkage occurred due to drying. DNA was then extracted from all feathers and a PCR-based test was performed to identify gender. To date, the gender has been identified for all feather samples. Data analysis is ongoing. We will continue to analyze the data from this project. Upon completion of

the data analysis, we anticipate writing a manuscript reporting the results of the study. These results are from the first 6 months of a 1-year study funded by the Webless Migratory Game Bird Research Program (U.S. Fish and Wildlife Service).

U.S. Fish & Wildlife Service

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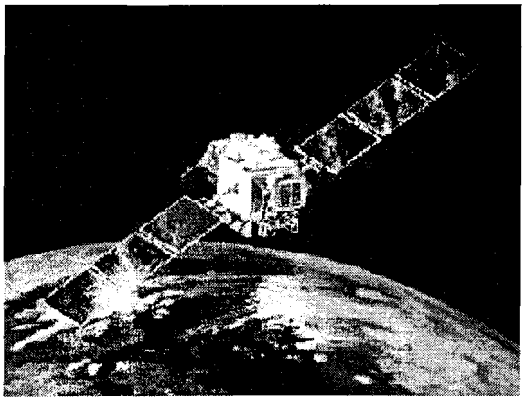

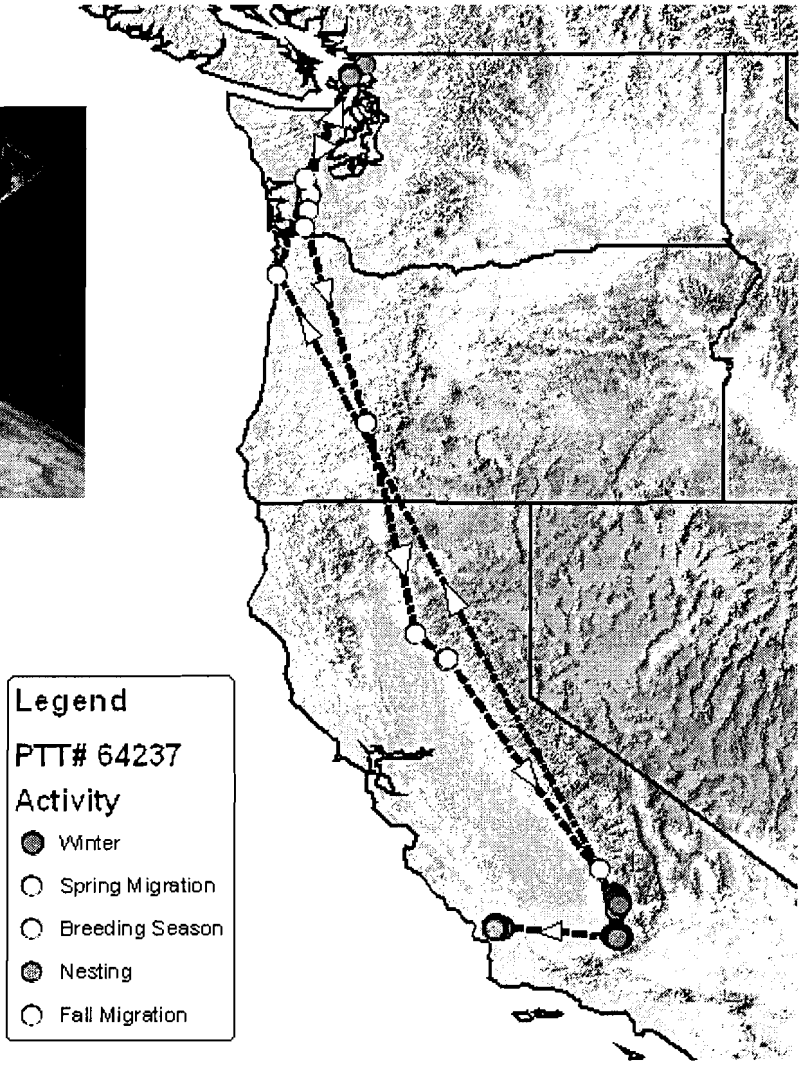

Satellite Track of a Band-tailed Pigeon by an Argos Satellite (inset)

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