

AN ASSESSMENT OF BIRD FAUNAS UTILIZING CONVENTIONAL AND ORGANIC FARMLANDS OF NORTH-CENTRAL FLORIDA

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The combination of increasing awareness and support for research and development of sustainable agricultural practices is generating new opportunities to test management approaches favoring biodiversity conservation in concert with production goals of producers. Florida FIRST (Focusing IFAS Resources on Solutions for Tomorrow) embodies the Institute of Food and Agricultural Science's mandate to serve Florida's food, agriculture, and natural and human resource sectors and is currently maintaining this mandate through. Under the Florida FIRST Major Program Imperatives IFAS research programs will develop ways for managing a globally competitive agriculture that coexists harmoniously with natural terrestrial and marine ecosystems while maximizing crop and animal diversification, productivity, pest resistance and quality of plant and animal products. Our research program assesses the potential for integrating avian conservation with modern agricultural production in Florida. We intend to identify farmlands that can support substantive avian biomass and describe the potential ecological or functional roles of birds in agroecosystems. We can use this information to identify and learn about potential mechanisms whereby birds that use agricultural landscapes and cropped fields can interact positively with production in the Florida farmlands they frequent. We believe that enlightened management of farmlands will both allow farmers to meet the needs of agriculture and numerous wildlife species in ways that are satisfactory and mutually beneficial. To assess the potential for integration of avian conservation with modern agricultural production in Florida, our research program incorporates two central objectives. First, we endeavor to identify avenues for fostering bird conservation on agricultural lands without negatively affecting current levels of food production and, second, assess potential prospects for positive interactions of avian species with production such as using insectivory by native bird species to augment biological pest control in agroecosystems. Related to the first of these objectives there is a need to characterize agricultural production practices and cropping systems that affect the distribution and abundance of avian species across scales (regional to within-field scales). Rodenhouse et al. (1993) analyzed Breeding Bird Survey data from regions dominated by different major crop types in the U.S. and found that bird populations have responded dramatically to the distributions of cropped and non-cropped landscape elements. At more local scales, the distribution, relative cover classes, and juxtaposition of agricultural landscape elements (cropped fields, pastures, and uncropped areas) can determine avian community structure in agroecosystems (Freemark et al. 1993). Moreover, crop production practices and on-farm management activities can also influence bird use of specific agricultural habitats (Rodenhouse et al. 1995). Therefore, our research program addresses bird population densities and species composition differences among habitat elements (microscale), farm structure (mesoscale), surrounding matrix (landscape scale), and related management and cropping practices.