** Land Use Changes and Temporal Variation in Juvenile Sex Ratios of Three North American Mid-Continent Dabbling Duck Populations

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Sex ratios are often an overlooked, yet influential component of population structure. Over time, changes in sex ratios can inform potential environmental factors that affect sex-specific survival through different life stages. Long-term analyses of sex ratio and land-use changes are rare in the avian community. However, recent analyses estimate the sex ratio of adult North American mid-continent mallards as approaching three males per one female in the fall. Adult sex ratios can be driven by sex ratios at hatch, and sex-specific survival during development. We analyzed long term (1974-2024) data on three species of dabbling ducks in the North American mid-continent to estimate juvenile sex ratios and the effects of acres of crop and the number of ponds on the landscape. All three species indicated an increasing trend in the proportion of the juvenile population that is female at time of banding. We observed evidence for a positive effect of acres of crops, and number of ponds in all three species, where the proportion female increased with increased crop acreage and pond counts. Juvenile sex ratios are not extreme enough to explain the recent marked increase in adult ratios, and we posit that differences in sex specific survival in adults could be driving the observed adult sex ratio skews.