ABSTRACTS

263 Renfrew & Ribic

The impacts of riparian grazing on grassland birds. ROSALIND B. RENFREW* and CHRISTINE A. RIBIC, *Wisconsin Coop. Res. Unit, Dept. Wildl. Ecol., Univ. Wisconsin, Madison, WI.*

Rotational grazing has been proposed as a Best Management Practice for riparian zones on farmlands in Wisconsin, but the effects of such recommendations on breeding birds have not been studied. Riparian management in the Midwest, while important for water quality, may not have the same implications for avifauna that studies in Western riparian areas have documented, where unique bird communities are associated with streams. Other factors such as pasture size and shape, adjacent land use, and landscape attributes may be more important in determining species composition, richness, and abundance near streams on Midwest farms. A pilot study was conducted in 1996 on 12 sites to assess the impacts of different riparian management options on grassland birds in southwestern Wisconsin farmlands, as part of a larger interdisciplinary program addressing management strategies for improving and protecting water quality of streams. Species richness and abundance of grassland birds and vegetation structure was compared between 20 m-wide riparian zones and adjacent uplands in rotationally grazed pasture, continuously grazed pasture, and filter strips. For all 3 management options, species richness and total abundance was higher within 10 m of streams than >10 m from streams, indicating a concentration of individuals and species near streams. There was no significant difference between management types. The 1997 and 1998 field seasons will include 75 sites to account for between-site variability, plus an assessment of the impacts of macrohabitat and landscape characteristics on bird species occurrence and abundance.

264 Kozlenko

Breeding bird survey in Cleveland Metroparks. ANNA KOZLENKO, *Cleveland Metroparks, Cleveland, OH.*

The study of nesting bird density, species diversity, species composition and guild distribution have been conducted for estimation conservation value of different reservations in the Cleveland Metroparks. Survey points were established on a 240 m grid, created as a layer over the standard base maps. The study area was included near 18000 acres. Relative abundance of each species per sampling point was analyzed for each park. Species was grouped in 4 category of guilds: breeding habitat, urban tolerance, migration type, nest site. A total of 94 nested species were observed at 774 points in 12 parks. Number of species varied from 29 to 81 for different reservation. The parks with 2000 or more acres have 3 to 4 times more nesting species and individuals per point of neotropical migrants, then smaller reservations. This characteristics of neotropical migrants population depend also on deer understory destruction and shape of the park (long and narrow parks have less neotropical migrants). Urban tolerant species visa versa has higher density and species diversity in small reservations. GIS bird distribution maps have been completed for several parks. Analysis of them show that the highest density of neotropical migrants are found in the less visited portions of the reservations. The permanent residents species and short distance migrants distributed much more evenly. The result of cluster analysis show that various groups of forest types which usually represent different successional stages have there own bird populations. The management of specific areas in early successional habitats has increased bird diversity.

265 Hussell

A simple method for measuring and testing the significance of nonlinear population trends. DAVID J. T. HUSSELL, *Ministry of Natural Resources, Peterborough, ON.*

Trends are often measured by fitting straight lines to annual population indices ($I = a + bY$, where I is the population measure and Y is the year). If population data are nonlinear, statistical assumptions are violated and results may be misleading. A nonlinear regression (e.g., $I = a + bY + cY^2 + dY^3$) may give a better fit, but interpretation of the meaning and significance of the coefficients is problematic, and they give no direct estimate of overall trend. This drawback can be overcome by a simple transformation of the variables. The regression equation becomes $I = a_1 + a_2X_1 + cX_2 + dX_3$, where X_1, X_2 and X_3 are transformed year variables (details in the poster), a_1 estimates the index in year A and a_2 estimates the difference between the indices in Years B and A. If Years A and B are the first and last of the series, then a_2 / (Year B - Year A) estimates overall rate of change, and the significance of a_2 is also the significance of the trend. Other transformations allow testing of differences between one year and a block of years, or between two blocks of years.

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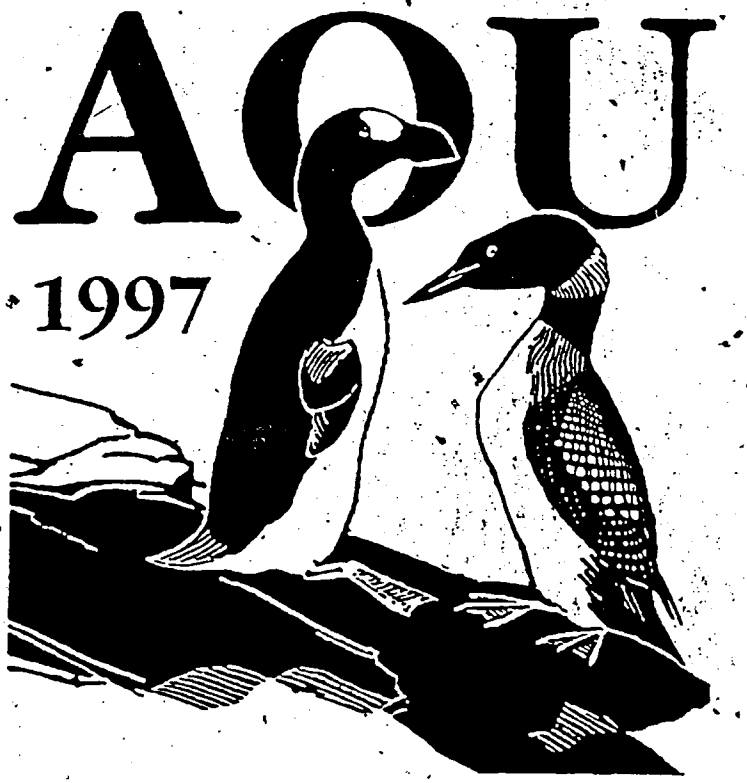

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