

NONGAME BIRD, GAME BIRD, AND DEER USE OF CONSERVATION RESERVE PRO- GRAM FIELDS IN EASTERN SOUTH DAKOTA

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ABSTRACT

Wildlife use and production in Conservation Reserve Program (CRP) fields were evaluated in 1989 and 1990 to determine the post-year effects of two haying practices (strips vs. blocks). A cable-chain device was used to find wildlife in 27 CRP fields in five eastern South Dakota counties. During the two years 596 adult ring-necked pheasants (*Phasianus cholchicus*), 63 white-tailed deer (*Odocoileus virginianus*), and 19 nests of six avian species other than ducks were found in CRP fields during searches. Our findings demonstrate that a variety of vertebrate wildlife used strip and block patches of vegetative cover in Conservation Reserve Program fields in eastern South Dakota.

INTRODUCTION

Congress passed the Food Security Act of 1985 (Public Law 99-198) which included authorization of the Conservation Reserve Program (CRP) administered by the U.S. Department of Agriculture. The program encourages farmers, through ten-year contracts and annual payments, to reduce erosion on highly erodible cropland by planting a protective cover of grass and trees. The nationwide goal was to remove 18,211,500 hectares (45 million acres) from crop production. By March 1990 nearly 14 million hectares, (34 million acres) had been enrolled in CRP through nine nationwide sign-ups. An estimated 843,233 hectares (2,083,602 acres) have been contracted in South Dakota, of which 501,341 hectares (1,238,798 acres) occur east of the Missouri River in the state's main waterfowl production area.

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In 1988 South Dakota and much of the Great Plains suffered from an extreme drought resulting in a shortage of livestock forage. To compensate, landowners were given the option of haying CRP fields with the provision that at least 10% of each field be left in idled strips. In 1989 the drought continued and CRP was again released for emergency haying with the provision that at least 25% of each field be left in idled blocks.

In 1989 and 1990, we evaluated wildlife use of Conservation Reserve Program (CRP) fields in eastern South Dakota. An objective was to determine the relative use of a sample of CRP fields by select species of wildlife during the first year following each of two haying practices (strips vs. blocks).

STUDY AREA AND METHODS

This study was conducted in eastern South Dakota on private lands enrolled in the CRP. All CRP study sites occurred in the Coteau des Prairies physiographic area (Flint 1955) of the Prairie Pothole Region. The area is generally covered with glacial deposits and has abundant natural wetland basins with a poorly developed natural drainage system (Westin et al. 1967). Temperature extremes range from -40°C to 43°C with a mean annual temperature of 10°C (Spuhler et al. 1971). Mean annual precipitation is 51.2 cm (NOAA 1986). The area is dominated by agriculture grain cropping of corn, soybeans, and small grains, intermixed with pasturelands and state and federal waterfowl and game production areas.

Each CRP field was selected as a study site using the following criteria: (1) must have been established in 1986 or 1987, (2) contained or had a seasonal or semi-permanent wetland (Stewart and Kantrud 1971) within 400 m of the field perimeter, (3) was larger than 9 ha, and (4) the landowner allowed access to the field.

CRP fields were planted to Soil Conservation Service (SCS) Conservation Practices (CP's), CP-1 (establishment of permanent introduced grasses and legumes) or CP-2 (establishment of permanent native grasses). Planted grass species in CP-1 fields included smooth brome (*Bromus inermis*), intermediate wheatgrass (*Agropyron intermedium*), tall wheatgrass (*A. elongatum*), and western wheatgrass (*A. smithii*). Planted legumes included alfalfa (*Medicago sativa*) and sweet clover (*Melilotus alba*, *M. officinalis*). Two CP-2 fields were planted to switchgrass (*Panicum virgatum*). Some fields were infested by perennial Canada thistle (*Cirsium arvense*) and quack grass (*Agropyron repens*).

In 1989 access was granted to 18 fields meeting selection criteria. Fields were distributed in Brookings County (5), Day County (12), and

Kingsbury County (1). Fifteen of the 18 fields were released for emergency haying because of the severe drought in 1988 and were designated as having 10% in idled strip treatments and 90% in hayed strip treatments. Three fields selected but not hayed in 1988 were left completely idle.

Continued drought during 1989 caused county SCS officials to again release some counties' CRP fields for emergency haying with the provision that 25% be left in idled block treatments and 75% in hayed block treatments. Loss of some 1989 study fields required us to expand the overall study area in 1990 to include eight additional fields for a total of 21, including 13 of 18 fields studied in 1989. Additional study fields were in Brookings (1), Kingsbury (1), Lake (2), and Marshall (4) counties.

Field Search Procedures

Field searches followed procedures described by Klett et al. (1986). The number and sex of white-tailed deer (*Odocoileus virginianus*) and ring-necked pheasants (*Phasianus colchicus*) that flushed were recorded during field searches. We conducted two searches per field in 1989 and three searches per field in 1990 from late April to mid July. We searched each field at approximately 3-week intervals. Searches were conducted between 0700 and 1500 hours by pulling a 53-meter cable-chain device (Higgins et al. 1969, 1977) between two 4-wheel drive pick-ups.

Each site from which a female bird flushed was investigated and considered a nest if one or more eggs were present in a scrape or bowl. Birds flushed from nests were identified to species by observation or from down and breast feather evidence in the nest bowl (Klett et al. 1986). Because pheasant hens usually run for some distance before flushing, making nest location difficult, with few exceptions we only documented hen-flushes and not nests for this species.

Nests in which at least one hatchling left the nest bowl were considered successful; the others were considered unsuccessful unless abandonment or loss was due to investigators.

RESULTS

Nesting Activity

Nineteen nests of six avian species other than ducks were found during the two-year study. In 1989, two upland sandpiper (*Bartramia longicauda*) nests were found in hayed strips, and one nest each of American bittern (*Botaurus lentiginosus*), mourning dove (*Zenaida macroura*), and northern harrier (*Circus cyaneus*) were found in idled strips. One northern harrier nest was also found in an idled field. The