

**PENNSYLVANIA GAME COMMISSION
BUREAU OF WILDLIFE MANAGEMENT
RESEARCH DIVISION
PROJECT ANNUAL JOB REPORT**

PROJECT CODE NO.: 06010

TITLE: Conservation Reserve Enhancement Program (CREP) Monitoring

JOB CODE NO.: 01004

TITLE: Impacts of the Conservation Reserve Enhancement Program on the Regional Trends in Bird Populations and Eastern Cottontail Populations.

PERIOD COVERED: 1 July 2003 to 30 June 2004

COOPERATING AGENCIES: The Pennsylvania State University, School of Forest Resources

WORK LOCATION: Southcentral and southeast Pennsylvania

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Abstract: The Pennsylvania Conservation Reserve Enhancement Program (CREP) has a goal of converting 100,000 acres cropland and marginal pasture to conservation cover for 10-15 years. The program is voluntary and its goals are to improve water quality, reduce soil erosion, increase farm income, and improve wildlife habitat in 20 southcentral and southeast Pennsylvania counties. In order to evaluate the regional landscape level impacts of CREP on birds and eastern cottontail rabbit populations using agricultural lands, we established 89 survey routes across 20 CREP participating counties. Routes were established along randomly selected township roads in the 20-county study area. Roads were biased toward agricultural areas using remote sensing imagery. Routes vary in length from 10-25 miles. Points along routes were 0.5 miles apart and observers recorded all birds seen or heard within 250 meters of each point. Each route was run once in May and once in June using the North American Breeding Bird Survey Protocol. Total rabbits observed along survey routes were used to monitor trends in relative abundance of eastern cottontail populations. Habitat data were collected within 250 meters of each survey point using Anderson Land Use Classifications. In 2004, all points along survey routes were geo-referenced using GPS units. All routes will be run annually from 2001 thru 2015. Monitoring data were entered into an Access relational database and will be analyzed using ANOVA and regression analysis. Problems associated with data entry, management, and retention have plagued this project since its inception. We hope to resolve these data management problems by contracting all future work with the Pennsylvania State University. A final report will be completed in 2015.

OBJECTIVES

1. To monitor trends in agricultural habitats in 20 southeastern Pennsylvania counties enrolled in CREP.

2. To monitor trends in breeding bird populations and eastern cottontail rabbit populations on agricultural lands in the 20 CREP counties.

3. To determine the impact of establishing undisturbed grassland habitats on the regional abundance and population trends of grassland nesting birds and eastern cottontail rabbits.

4. To provide recommendations on future habitat management programs to restore farmland wildlife populations.

INTRODUCTION

In April 2000, the Governor of Pennsylvania and US Secretary of Agriculture approved a \$210M conservation initiative for 20 counties. In Pennsylvania, CREP has a goal of converting 100,000 acres cropland and marginal pasture to conservation cover for 10-15 years. The program is voluntary and its goals are to improve water quality, reduce soil erosion, increase farm income, and improve wildlife habitat in 20 southcentral and southeast Pennsylvania counties. State partners must provide 20% of the costs. These partners are also responsible for monitoring the effectiveness of the habitat improvements on water quality and targeted wildlife populations. In order to evaluate the regional landscape level impacts of CREP on birds and eastern cottontail populations using agricultural lands, we established 89 survey routes across 20 CREP participating counties. In addition, habitat site-specific effects on bird populations are being conducted in another concurrent study.

METHODS

The study area includes 20 Pennsylvania counties enrolled in the original CREP. The study area contains 7,774,000 acres, approximately 3,136,000 acres of farmland and 2,303,000 acres of cropland. As of 2005, nearly 100,000 acres of cropland was enrolled in CREP.

Bird Populations

In June and July of 2000, we established 89 survey routes along township roads across the 20 CREP counties. Using remote sensing spot imagery from 1999, we selected township-level roads at random within predominately agricultural landscapes. We avoided interstates and US Highways to avoid traffic problems when conducting surveys. Routes selected varied in length from 10-25 miles. Routes were field checked in July and August of 2000 to insure roads still existed and construction or other activities would not preclude their use in future surveys. We established starting points for all randomly selected routes at 0.5 miles from the intersection of 2 township roads. All points were established a minimum of 0.5 miles apart along survey routes. In some cases, because of adverse road conditions, points were established greater than 0.5 miles apart. All points along routes were geo-referenced using GPS during 2004.

Using the North American Breeding Bird Survey Protocol (Sauer et al. 2004), we conducted 2 surveys along each route between 1 May and 30 June 2001 through 2003. Beginning in 2004, only 1 survey repetition was conducted on each route. Surveys began 1/2 hour before sunrise and were completed within 3 hours. All birds heard or observed within 3 minutes and within 250 meters of the point were recorded. Flyovers were recorded separately. The proportion (percent) of each habitat type, based on Anderson Land Use

Classifications (Anderson et al. 1976), was estimated for each point within a 250-meter radius.

Eastern Cottontail Populations

We used routes established to monitor trends in avian populations to monitor trends in eastern cottontail populations. We recorded number of eastern cottontail rabbits seen along each route within 50 meters of the road.

RESULTS

Bird Populations

Bird monitoring data from 2001 through 2003 have been entered into a relational database and will be analyzed and included in the 2004 annual report. Problems associated with data entry, management, and retention have plagued this project since its inception. We hope to resolve these data management problems by contracting all future work with the Pennsylvania State University.

Eastern Cottontail Populations

Data from 2001 through 2003 have been entered into a relational database and will be analyzed and included in the 2004 annual report. Data management problems have also affected this segment of the project. The Pennsylvania State University will enter and analyze future cottontail monitoring data.

LITERATURE CITED

- Anderson, J.A., E.E. Hardy, J.T. Roach, and R.E. Witmer. 1976. A land use and land cover classification system for use with remote sensor data. USGS Professional Paper 964, U.S. Geological Survey, Reston, Virginia.
- Sauer, J.R., J.E. Hines, and J. Fallown. 2004. The North American Breeding Bird Survey, Results and Analysis, 1966-2003, version 2004.1. USGS Patuxent Wildlife Research Center, Laurel, Maryland.