Chapter 1. INTRODUCTION

The Breeding Bird Atlas is a relatively simple, repeatable, grid-based survey that aims to monitor and document changes in the distribution of breeding birds on a large scale (Smith 1990). The first South Dakota Breeding Bird Atlas (SDBBA) began 20 years ago (Peterson 1995). During that ambitious project, 71 volunteers collected data over six years of fieldwork and submitted more than 24,000 breeding records, representing 219 bird species. The resulting resource has been extremely valuable in describing the status and distribution of South Dakota's breeding game and nongame species. The first atlas database also represents a baseline against which future changes in breeding bird populations can be measured.

Since the first Breeding Bird Atlas commenced in 1988, South Dakota's landscape has changed (e.g., Bakker and Higgins, 1998, Higgins *et al*. 2002, Grant *et al*. 2004). In addition, land-use changes in the upcoming few years could be staggering. Increasing CRP conversion, bio-fuels production, wind farm development, and urbanization are a few landscape alterations of concern to conservation biologists (Stephens *et al.* 2008, Wright and Wimberly 2013). South Dakota's Wildlife Action Plan (SDGFP 2014) explicitly notes the link between habitat quality and quantity and the health of animal populations. Most likely, these landscape-level changes are impacting South Dakota's breeding birds. Regular monitoring of all breeding species on a large scale allows us to detect impacts of such large-scale landscape changes. Repeating the Breeding Bird Atlas approximately every 20 years not only documents bird response to habitat deterioration and loss, but also can improve our understanding of bird response to management actions designed to improve wildlife habitat quality and quantity. In addition, each Breeding Bird Atlas serves as a baseline to which future changes can be compared.

The goal of the second South Dakota Breeding Bird Atlas was to document the current distribution of every bird species that nests in South Dakota and to compare these distributions to those of the first South Dakota Breeding Bird Atlas (1988-1992). These data will support the efforts of land-use planners, conservation decision-makers, researchers, educators, students, and bird enthusiasts to maintain healthy bird populations and conserve avian diversity within the state. Specific objectives included:

1. Document current distribution of all breeding bird species
2. Assess changes in distributions of breeding birds since the first SDBBA (1988-1992)
3. Identify habitat associations and requirements for all breeding species
4. Produce a report with species distribution maps and analyses results

Scientific questions to be addressed were:

1. What is the current statewide distribution of occurrences and nesting of every breeding bird species?
2. Which species have declined or increased in distribution since 1988-1992?

3. Are non-native bird populations increasing within or throughout the state?
4. What are the habitat associations or requirements of each breeding species?

Benefits include:

1. More complete and up-to-date knowledge of breeding bird species status and distribution
2. Improved understanding of changes in breeding bird populations over the last 20 years
3. More complete knowledge of bird-habitat associations
4. Identification of species that have declined in distribution over the past 20 years and may require active management to keep from becoming a Species of Greatest Conservation Need
5. An established baseline of species distribution for future surveys and atlases
6. Contribution to a better understanding of regional breeding bird status and distribution, in conjunction with simultaneous atlases being conducted in Minnesota, Iowa, and Nebraska.
7. Provision of a resource for researchers, land managers, land-use planners, students, agency personnel, educators, and others
8. An increased interest in birds by the general public and an opportunity for knowledgeable birders to engage in citizen science