

Reproductive Success and Habitat Use of Painted Buntings on Golf Courses in Coastal South Carolina

Patrick G.R. Jodice, Mark Freeman, and Jessica Gorzo
Clemson University

Chris Marsh
Low Country Institute

Objectives:

1. Locate nests of Painted Buntings on study courses and relate various metrics of reproductive success (clutch size, daily nest survival, hatching success, brood size at fledging) to characteristics of nesting habitat at the nest, patch, and territory scale .
2. Locate fledgling groups of Painted Buntings on study courses and determine home ranges and habitat use.
3. Determine use of grass, out of play areas for foraging by Painted Buntings and compare its availability among courses.
4. Compare reproductive success and nesting habitat to previously measured values in the southeastern US.

Start Date: 2008

Project Duration: three years

Total Funding: \$60,000

The eastern population of the Painted Bunting (*Passerina ciris*) breeds in a restricted range of the Atlantic Coastal Plain, from North Carolina to Florida. The Painted Bunting is considered a species at risk by various conservation organizations due in part to its restricted distribution and low population size.

Within the coastal counties of South Carolina, golf courses and golf course communities are common and becoming more prevalent. Recent research funded by the Wildlife Links Program showed that while Painted Buntings were found on numerous courses in Horry County, SC, they did not occur on courses with highly altered landscapes.

We are assessing the conservation value of golf courses in the Beaufort County area of SC for Painted Buntings. The Beaufort County region represents an area of high risk for the species due to ongoing development, but also potentially high conservation reward. If courses in this area can provide habitat that will support successful breeding populations of Painted Buntings, then a substantial portion of the breeding range can be managed in such a way as to take advantage of the extensive private land holdings in the region.

A pilot season of field research was initiated in May 2008. Searching for Painted Bunting nests is a pain-staking and tedious endeavor, and, for that reason, we chose to focus our efforts on only two golf courses. The field research team searched the Chechessee Creek Club and Old Tabby Links on Spring Island in Beaufort County, South Carolina, throughout May, June, and July 2008.



By locating individual buntings over the course of several days and carefully plotted their locations and activities, a home range map and a better understanding of the habitats being used during the nesting period was achieved.

Researchers located individual buntings during the day and over the course of several days and carefully plotted their locations and activities. This technique often resulted not only in the location of a nest, but also in a home range map and a better understanding of the habitats being used during the nesting period. Locations were plotted with a handheld GPS and developed into a GIS data layer. This data layer can be overlaid with GIS coverage of the courses to examine habitat use at the nest, patch, and territory scale.

Using the territory-mapping approach, we located 14 nests of Painted Bunting on the two study courses. Five nests were located on the Old Tabby Links on Spring Island. Three of these nests were located in wax myrtle bushes, while the other two nests were located in thickets of mixed shrubs. Nine nests were located at the Chechessee Creek Club. Four of these were located in wax myrtles, while the remaining nests were located in saplings or large trees.

We also were able to locate and

track six groups of Painted Bunting fledglings on Spring Island and eight groups on Chechessee Creek. These data will be used to develop habitat use models for fledglings and hence improve our ability to develop habitat management guidelines.

Field research will be renewed in May of 2009. We will focus our efforts on the same two courses and begin mapping territories as soon as possible during the breeding season. An early start to territory mapping will improve our ability to find nests and track fledgling groups. During the 2009 breeding season, we also will begin to investigate the value of mowed versus unmowed grass plots for Painted Bunting foraging activity.

Summary Points

- Searches for nests of Painted Buntings were conducted on the Chechessee Creek Club and Old Tabby Links in Beaufort County, South Carolina, from May - July 2008. Areas searched included roughs and shrub/scrub habitat throughout the courses.

- We located 14 nests on the two courses. Most nests were found in wax myrtles or shrub/scrub habitat, although a few nests also were located in large hardwood trees. We also located and mapped the habitat use of 14 groups of Painted Bunting fledglings. Data from both the nest locations and fledgling groups are being incorporated into a GIS data layer that will be used to assess habitat use.

- Data collection in 2009 will focus on additional nest searching and territory mapping and may use the assistance of volunteers in an effort to increase the sample size of nests and territories that can be monitored. We also will initiate research to examine the use of mowed versus unmowed grass plots as feeding areas for Painted Buntings.