Painted Bunting (Eastern)

Passerina ciris ciris


Photo by Wayne Irvin

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DESCRIPTION

Taxonomy and Basic Description

Buntings are small, New World finches with conical bills. The Painted Bunting is a small finch, typically 12 to 13 cm (4.7 to 5.1 in.) long and 13 to 19 g (0.46 to 0.67 oz.) (Lowther et al. 1999). The male Painted Bunting is among the most colorful birds in North America but is often hard to see as it usually stays close to thickets and dense cover. Males have a blue head and nape with bronze-green back, red rump and underparts, and dark wings and tail (Lowther et al. 1999). Even when in full view, male Painted Buntings may appear dark unless seen close and in good light. Females and immatures of both sexes are almost entirely dull green and are even more rarely seen except when at feeders (Lowther et al. 1999).

Painted Buntings breeding in South Carolina belong to the Eastern subspecies, *Passerina ciris ciris* (Thompson 1991; AOU 1998). During the breeding season, this subspecies is restricted to four states along the Atlantic Coast: North Carolina, South Carolina, Georgia and Florida. They winter exclusively in south Florida and the West Indies (mostly Bahamas and Cuba) (Lowther et al. 1999). Eastern Painted Buntings breed relatively late in the season (Duncan 1999; Springborn 1999).

Status

Formerly, Breeding Bird Survey (BBS) and Christmas Bird Count (CBC) data suggested steep long-term declines in Painted Bunting populations (Cox 1996). Although trend estimation within smaller geographies can be confounded by small sample sizes, more recent BBS analyses suggest the Eastern subspecies may not be declining as steeply as once thought. BBS trends from 1966-2010 for South Carolina are deemed to be moderately precise, and estimate a decline of 0.8% per year (Sauer et al 2011). While not particularly "steep" relative to other declining species, if accurate, this trend still equates to a loss of 55% of present populations in 100 years. The Painted Bunting is identified as a Watch List species by Partners in Flight (Rich et al. 2004), and is also identified by the US Fish and Wildlife Service as a Bird of Conservation Concern throughout the Southeast (USFWS 2008). Considering also that South Carolina supports one-third to one-half of the total breeding population of the Eastern subspecies, and that breeding habitats are disappearing or under increasing threat, it is clear that pro-active efforts will be required to ensure the future conservation of this popular species in the State and throughout its eastern range.

POPULATION SIZE AND DISTRIBUTION

Eastern Painted Buntings occur in highest densities around the sea islands of Georgia and South Carolina, occurring commonly but in lower densities in the adjacent mainland that is roughly parallel to U.S. Highway 17 and eastward. Their range extends north into coastal North Carolina and south into northeastern coastal Florida. These Buntings become uncommon, occurring sporadically farther inland along some river systems, most notably the Savannah River. More recently, Breeding Bird Atlas work in South Carolina and Georgia has documented Eastern Painted Buntings as more numerous than previously thought in fallow fields, woodland edges, and hedgerow habitat of the Upper Coastal Plain when looking north and east to the Santee River and on both sides of the Savannah River (Cely 2003). Although densities are lower in suitable habitats inland, these areas by far support the largest number of birds overall by virtue of their much larger geographic extent.

The vast majority of wintering Eastern Painted Buntings are concentrated in south Florida, Cuba, and the Bahamas (Lowther et al. 1999). However, there does not seem to be any one reliable place where large numbers of Eastern Painted Buntings can be located during winter, at least in recent years, which may be cause for serious concern. Sykes and Holzman (2005a,b) provide a detailed state-by-state and site-by-site account of the breeding and non-breeding distributions of the Eastern Painted Bunting.

The total population size for Eastern Painted Bunting was estimated previously at well below 500,000 breeding adults (Sauer et al. 1997). Later, Partners in Flight (Rich et al. 2004) provided populations estimates at the continental level using BBS, and estimates at smaller geographic scales could be developed through application of similar methodologies (Rosenberg and Blancher 2005). Hence, South Carolina's population could be estimated at 50,354 ($\pm$ 18,704) breeding adults using the Rosenberg and Blancher (2005) approach. According to this estimate, South Carolina supported 54% of the total Eastern population of breeding adults. Most recently, a "range-wide" survey effort for the Eastern population, competed in 2009, yielded data for a more robust assessment of the status of the Eastern population at ~1.2 million (C. Watson, pers. comm.). There are several caveats that need to be considered with this estimate. First, sea and barrier islands, where the largest populations now occur, are not well represented in the BBS data and additional survey work may raise our estimate of total breeding adults. Second, if we decrease the statistical rigor of the estimate, then the maximum population estimate may be as large as 165,112 breeding-aged birds. Third, the ability to detect all individual Buntings (or at least all singing males) and make adjustments for estimating all breeding adults needs to be evaluated. If coastal sea and barrier islands were fully incorporated, then it is presumed that Georgia, with a larger quantity of quality coastal habitat, would have a higher proportion of the total population than South Carolina. However, it is clear by any of these estimates that both South Carolina and Georgia habitats are extremely important for the majority of breeding Eastern Painted Buntings (Meyers 2004). As of 2013, the PIF estimate for the species in South Carolina is 137,238, far more than Georgia (69,814), North Carolina (7,871), and Florida (5,316) (D. Demarest, email dated August 8, 2013).

HABITAT AND NATURAL COMMUNITY REQUIREMENTS

Eastern Painted Buntings are associated with maritime shrub-scrub and grassy habitats mixed in a woodland setting. The species is mostly absent from forests with no understory development and from large patches of scrub-shrub habitat separated from large woodland patches. Nearby grassy fields are also important for post-breeding foraging adults and fledglings (Lowther et al. 1999). High quality habitat is defined as largely forested areas with substantial edge and grassy forest openings and stands exhibiting structural diversity and large amounts of fleshy fruit (Lowther et al. 1999).

Research on annual survival and other demographic characteristics will lead to a more definitive understanding of the habitat requirements of the Painted Bunting. Current research indicates the defended territory of Buntings as ranging from 0.81 to 4.0 ha (2 to 10 ac.) with isolated males holding larger territories from one year to the next; there is also about a 95% breeding ground site fidelity for males. Annual survival estimates have yet to be calculated. Adults use grassy areas for seeds and marshes for arthropod foraging near nest sites in scrub habitat.

Additional research has shown that Buntings will use Spanish moss as nest building material, especially in nests found higher in the canopy. Nests found 3 m (10 ft.) or higher in the canopy had higher productivity than nests found lower (Garcia 1994). In general, researches also observed that a greater number of nests were located in medium category trees/shrubs. Additionally, successful nests were located in taller plants with greater distances from the trunk of the tree, greater canopy cover, and fewer small limbs. Cely and Glover (unpublished SCDNR data) concluded that early-successional habitat associated with fields and field-edges seem to consistently support Eastern Painted Buntings. However, while this research reported a high abundance of Eastern Painted Buntings in these habitats, the potential for nest predation and parasites also increases in such environments, and effects on Bunting reproductive output has not been studied.

Finally, additional research by Duncan (1999) and Springborn (1999) was conducted on Sapelo Island Wildlife Management Area in Georgia from 1996 to 2000. These studies further described habitats found past the primary dune line where shrubs appear (maritime shrub habitat) as optimal for Painted Buntings. Pinelands with open canopy had Bunting densities at about 50% of those in optimum shrub-scrub habitat. Buntings preferred open freshwater wetlands to salt marsh. Data on telemetry of Buntings on Sapelo Island indicate home ranges of 2.8 to 7.3 ha (7 to 18 ac.). Males had larger home ranges compared to females, and Buntings had significantly smaller home ranges in shrub-scrub habitat with high grass cover when compared to open pine forest habitat. With these data, it is estimated that areas between 486 and 1,012 ha (1,200 and 2,500 ac.) are required to support 100 to 200 breeding pairs of Eastern Painted Buntings.

CHALLENGES

Because the Eastern Painted Bunting is a true edge species, populations may be particularly vulnerable to increased nest parasitism by Brown-headed Cowbirds (*Molothrus ater*) and increased nest depredation. Although actual causes for Eastern Painted Bunting declines remain unclear, continued changes in landscape in inland areas are correlated with documented

population declines (Hunter et al. 1993). During the BBS of inland sites in Georgia and South Carolina, landscape changes have included a doubling in developed land from 4 to 9%, an increase in pine plantation from 25 to 35%, while agriculture has declined from 18 to 9% (Meyers 2004). During this same time period, no change in emergent wetlands has been documented. Assuming that we have a correct understanding of Eastern Painted Bunting habitat characteristics, 35 to 45% of the variation in Eastern Painted Bunting population change is accounted for through changes in landscapes (Meyers 2004).

There appears to be a delicate balance between a landscape with enough fields to support larger populations of Eastern Painted Buntings, but with enough forest to keep predators and cowbirds at a low enough level to maintain high reproductive success. However, the landscape context of the Inner Coastal Plain of South Carolina is changing to the point where conditions are becoming less suitable overall for supporting Eastern Painted Bunting populations. Converting agriculture areas to hard edges, residential areas or pine plantations results in less suitable habitat for Eastern Painted Buntings. Overall landscape conditions may become less favorable for Eastern Painted Buntings with continued land conversion outside of public lands like Santee National Wildlife Refuge in the Inner Coastal Plain (Hunter pers. obs.).

Because Eastern Painted Buntings breed late in the season, these birds could be prone to global climate change (Duncan 1999; Springborn 1999).

Preliminary results from sea islands indicate few problems with nest predators or cowbirds in these protected areas; however, future coastline development may contribute to higher levels of nest parasitism and nest predation on these otherwise secure sites. On sea and barrier islands, development pressure is increasing at many privately owned sites. Development is expected to adversely affect island populations in the same manner as those on the mainland. Also, on sea and barrier islands, feral horses and hogs severely damage and destroy forests by trampling and uprooting understory shrubs, as well as overgrazing grassy habitats. Where feral horses and hogs are established, Eastern Painted Buntings are not expected to thrive.

Management of public lands through the use of prescribed burning may affect Eastern Painted Bunting populations. In many areas, prescribed fire is an essential management tool for providing and maintaining appropriate conditions for Eastern Painted Buntings. However, fire at high frequency return intervals may eliminate the shrub layer, while fire at low frequency return intervals also may eliminate the shrub layer as well as the grassy conditions over time. Present experience suggests an average return interval between 3 to 6 years in maritime habitats is adequate to maintain the mosaic of structure Eastern Painted Buntings prefer, while not allowing succession to proceed too far. Of course, once a burn occurs, there will be a temporary reduction in habitat quality (Hunter, pers. obs.).

Golf courses may provide marginal habitat for Eastern Painted Buntings under certain circumstances, especially when all native vegetation is removed and there is a high reliance on pesticide and herbicide use. However, an increasing number of golf courses are modifying their practices to accommodate native birds in general and Eastern Painted Buntings specifically in coastal South Carolina. The US Fish and Wildlife Service is working with golf course managers

in South Carolina with the objective of maintaining Eastern Painted Bunting populations in what is otherwise a rapidly developing landscape (Gordon et al. 2003).

CONSERVATION ACCOMPLISHMENTS

The Eastern Painted Bunting enjoys relative popularity as a species garnering conservation attention in the Southeast. The future security of the Eastern subspecies is particularly dependent on proactive conservation attention in South Carolina and Georgia, where a large percentage of the Eastern population breeds. Agencies and industrial landowners are incorporating the needs of this species into conservation strategies and management practices. There is increasing interest in linking the needs of Painted Buntings into other conservation efforts and initiatives where compatible objectives exist, such as with the Northern Bobwhite Conservation Initiative. The "Eastern Painted Bunting Working Group" successfully collaborated to complete a 3-year, range-wide population assessment for the Eastern taxon. Analyses have been conducted, and reports and publications are being prepared that will present results and conclusions to all appropriate conservation interests. A listserve exists to increase communication among managers and researchers. Several websites summarize information on Eastern Painted Buntings:

www.pwrc.usgs.gov/pabu/
www.pwrc.usgs.gov/point/pabu

CONSERVATION RECOMMENDATIONS

- Protect and maintain existing high-quality maritime woodland, shrub-scrub, and grassy habitats through easements/purchase.
- Determine more specific habitat objectives as research reveals a better understanding of present status for breeding populations.
- Target programs for both public land mangers and private landowners to encourage provision of adequate cover, food and habitat that presents minimal nest parasitism and depredation.
- Continue to conduct and support research on habitat selection, reproductive success and taxonomy of Eastern Painted Buntings.
- Conduct and support public outreach programs to solicit observations of Buntings and cowbirds from feeder watchers throughout the range of the species.
- Establish a network of sites for monitoring the population trends of Eastern Painted Buntings and address responses to local management and landscape conditions. Among generalized habitats used by Eastern Painted Bunting, there are 4 that merit treatment at the macro-scale, as follows:
    - Sea Islands/Barrier Islands – evaluate habitat management practices and suitability over the long term.
    - Coastal Mainland – evaluate development pressures on Buntings.
    - Agricultural Interior – evaluate farming and forestry practices on Buntings and determine how to implement conservation practices.
    - River Corridor – evaluate forestry practices and flood plain dynamics.

- Provide news releases when appropriate to announce key events or findings involving Eastern Painted Buntings that would allow opportunities to highlight general conservation goals and needs for the public.

MEASURES OF SUCCESS

Of particular importance in measuring success of conservation actions for this species is the demonstrated stability for Eastern Painted Bunting populations on sea islands. Measures of reproductive success should be used to gauge population health and habitat quality.

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