

Nesting Box Usage and Success at SIWR, 2008-2011

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At Seven Islands Wildlife Refuge, planning objectives since 2001 have included restoration of native warm-season grassland habitats, and improvement of overall habitat diversity and quality through a variety of wildlife management initiatives. Beginning in 2006, nesting structures for eastern bluebirds and tree swallows were placed in early successional habitats.

SIWR volunteers and KTOS members Billie Cantwell and Colin Leonard began intensive monitoring for species usage of these structures in 2008. Continuing through the 2011 nesting season, and assisted my SIWR Wildlife Technicians Justine Cucchiara and Aaron Manzke, a total of 49 EBB/TS nest boxes and 3 Carolina chickadee boxes were monitored at 10-day intervals from mid-March through early August in 2011. This intensified effort continues to provide valuable management information regarding species usage, habitat preference, nesting season onset and duration, nest success and survival, and predator-deterrance. Since 2008, nestling banding by Mark Armstrong has broadened the scope of this project. Continuation and growth of this project will build on our knowledge to the benefit of these valuable avian species.

Forty-eight total nest starts were recorded in 2011, a rebound from 39 nest starts in 2010 to near the 50 nest start totals for both 2008 and 2009. Of the 2011 total, 65% [31 nests] successfully fledged young, a slight decrease from 2010 [76%], but in line with 66% nest success in 2009. In a new development in the monitoring program, twig nests built by male house wrens filled 3 boxes this year, without attracting nesting females. These nest starts [9.7%] account for most of the reduction in nest success from 2010 to 2011. Maybe next year female house wrens will decide to use the nest boxes at SIWR.

The high nest depredation experienced during 2008 [22, with 44% total nest success] remained low in 2011 with 3 eastern bluebird nests [6%] experiencing depredation. Modified box designs and improved predator guards installed in 2010 remained successful deterrants. The 3 nest boxes experiencing bluebird depredation will be inspected for possible modification.

During 2011, 57% [12] of eastern bluebird nests successfully fledged young, a decrease from 2010 when 73% [16 nests] fledged successfully. All six [100%] tree swallows nests fledged in 2011, an increase from 2010 [75%, 4 nests]. Nest starts by Carolina chickadees jumped from 10 [90% success] in 2010 to 16 in 2011, with 75% [12 nests] successfully fledging. The single tufted titmouse nest start successfully fledged [100%] in 2011, while the single Carolina wren nest start in 2011 was abandoned [0%].

The strongest peak for nest-building by eastern bluebirds began the second/third weeks of March in 2011, earlier than in 2010 [fourth week of March], with fledging completed by mid-May. A lesser peak for this double-brooded species occurred in late June/early July,

with fledging complete by the end of July. Tree swallow nest starts occurred from mid-April to early May with fledging taking place from late-May to mid-June. In 2011, Carolina chickadee nest starts were more variable than in 2010, extending from mid-March to early May with fledging complete by early June. In 2010, Carolina chickadees consistently began nesting activity in early to mid-April and ended the latter half of May. Nest building by the tufted titmouse took place the first week of April, with fledging in late May.

Thirteen [25%] of 52 available nest boxes were not used during 2011, a decrease from 2010 when 20 boxes [41%] were unused. Despite these unused boxes, as in 2010, both Carolina chickadees and tree swallows built nests over active eastern bluebird nests.

A decreasing trend in Eastern bluebird nest starts at SIWR [34 in 2008 to 32 in 2009 to 21 in 2010] appears to have stabilized with the 21 nest starts in 2011. Tree swallow nest starts at SIWR continue to bounce around with 6 nest starts during 2011 intermediate compared to past years, 9 nest starts in 2007, 13 in 2008, 5 in 2009 and 4 in 2010. Of note, both eastern bluebirds and tree swallows use some of the artificial martin gourds available at SIWR. In another trend, Carolina chickadee nest starts continue to rise from 3 [2008] to 9 [2009] to 10 in 2010 and 16 in 2011. Is this trend related to their earlier nesting activity noted above? Are Carolina chickadees responding to nest box competition by claiming nesting sites earlier? These trends will be interesting to watch into the future.

In 2011, average clutch size for eastern bluebirds was 4.6 [4.3 in 2010], 5.2 for tree swallows [4.7 in 2010], 5.2 for Carolina chickadees [6.1 in 2010] and 6 for tufted titmouse. For 2011 the average number of fledglings produced per successful nest were: 3.8 for eastern bluebirds [3.9 in 2010], 4.3 for tree swallows [3.7 in 2010], 4.4 for Carolina chickadee [5.8 in 2010] and 6 for tufted titmouse. Each of these values fall within expected ranges for these species, based on previous year's data.

Banding of nestling birds, begun by Mark, Billie and Colin in 2008 resulted in a rapid confirmation that some bluebird nestlings return to their natal areas. During M.A.P.S. banding surveys, several bluebirds banded as nestlings in their boxes in previous years were recaptured. Banding efforts continued in 2011 with 3 eastern bluebird nestlings and 8 tree swallow nestlings banded. A really fun project, revealing very useful management and natural history information on a variety of avian species at a very special place, Seven Islands Wildlife Refuge!