TALL TIMBERS
Research Station & Land Conservancy

FIREBIRD

Updates from the Stoddard Lab of Ornithology — Summer 2014

Event Calendar

To hear about these and other upcoming activities, drop an email to firebird@ttrs.org or call 850.893.4153 x223

Friday, August 22
Dog Days at Dixie - our first fundraising event for 2014

October 4-12
Red Hills Birding Bonanza
Birding events throughout the Red Hills Region

Thursday, August 28
Presentation - Weston Audubon Chapter, Pensacola, FL
(more info)

Thursday, October 16
Presentation - Orange County Audubon, Orlando, FL
(more info)

Saturday, November 1
Presentation - West Pasco Audubon, New Port Richey, FL
(more info)

Tuesday, November 11
Presentation - Santa Fe Audubon Keyston Heights, FL
(more info)

Field Trips

Saturday, October 25
Tall Timbers Research Station
8-11 AM. Limited to 20 people.

Saturday, November 18
Tall Timbers Research Station
8-11 AM. Limited to 20 people.

Saturday, December 13
Tall Timbers Research Station
8-11 AM. Limited to 20 people.

A Feathery Field of View

It's rare that we add a new species to the bird list for Tall Timbers. After all, scores of birders work here each year and Stoddard's famous tower-kill study added freakish oddballs such as Black-capped Petrel.

It's fitting to launch this inaugural issue of the *Firebird* with a new record. In late May, I spotted four Brown Pelicans gliding gracefully over the pines of Tall Timbers. The nearest coastline is more than 40 miles away, but the web-footed behemoths brought an unusual hint of coastal saltmarsh and sandy beaches to a morning otherwise devoted to pineland songbirds.

Unusual sightings of big birds sure enliven the day, but the **Stoddard Bird Lab** exists to learn more about the small songbirds and woodpeckers associated with our fire-dependent pinelands. We focus primarily on a few species that rank as conservation concerns in at least 10 southeastern states, and we strive to conserve declining populations, cultivate greater

—Feathery Field continued on back page

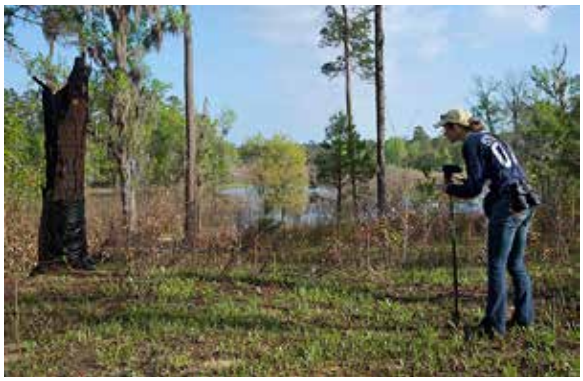
Answering Important Questions

Cooperative Breeding in Brown-headed Nuthatches

Animals are supposed to be selfish organisms. The goal in life is to produce more offspring than your neighbor, and any behavior that deviates from this is destined for the trash heap.

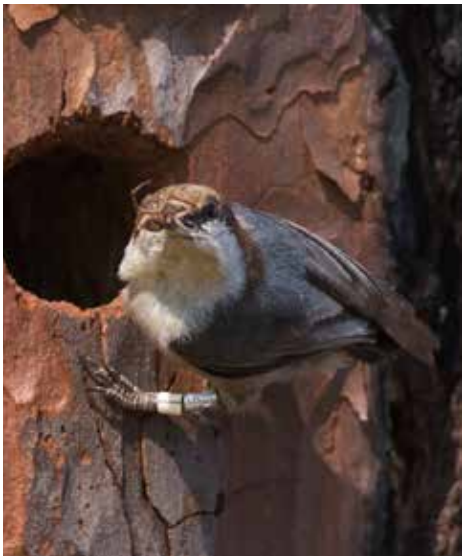
Why some birds refuse to act selfishly and instead help others raise young runs counter to theory. This behavior (known as cooperative breeding) has been studied extensively because of its contrarian nature, but few studies take an experimental approach toward assessing some of the factors that might be involved.

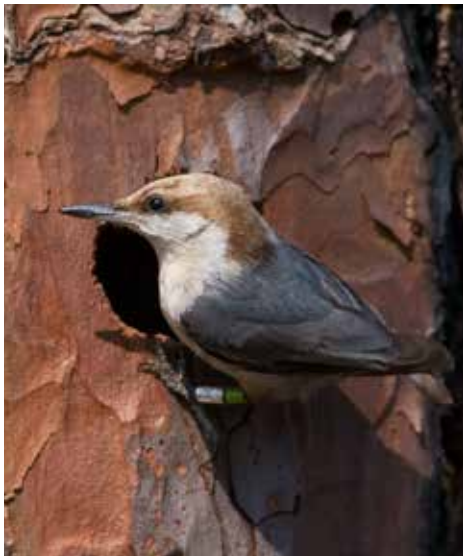
The **Stoddard Bird Lab** is working with Jessica Cusick (PhD candidate) and Dr. Emily DuVal at FSU on an intriguing experiment designed to kick (experimentally) cooperative breeding in Brown-headed Nuthatches. Nuthatch breeding groups typically consist of a male-female pair, but some groups (about 20%) contain 1-3 additional males who help the pair raise young. Helpers construct nests, feed nestlings, and defend territories, but, in theory, they seem to be wasting their time on earth because they are not producing young.



Jessica Cusick setting up video for Brown-headed Nuthatch experiment. Photo by Tara Tanaka.

—Questions continued on page 2





Jessica Cusick is studying the behavior of individually marked nuthatches. The dominant female, left two images, and dominant male, right, are shown here. Photos by Tara Tanaka

—Questions continued from front page

Previous work suggested mate shortages might help explain the behavior because female nuthatches typically do not live as long as males. Predators kill them as they incubate eggs and brood nestlings (both female-only activities), and as the population shifts toward an excess of males, chances of breeding are reduced for young males and provide an environment where cooperative behavior might emerge.

Dozens of theoretical studies consider the effects a shortage of mates may have on cooperative behavior. Our novel experiment attempts to test whether theory holds up if male-female shortages are pushed to new levels. We pluck feathers from nestlings and extract DNA to determine sex. The next day, we return and start moving young among nests based on their sex. The process yields large areas where nests produce male offspring exclusively and equally large areas where nests produce female offspring exclusively.

No one gets hurt, but male-female shortages are pushed into uncharted regions where theoretical predictions can be assessed.

We saw some amazing results following the first season of cross-fostering in 2012. As predicted, the prevalence of cooperative breeding shot up dramatically in areas where males were produced in excess (60% vs. 20%). The size of cooperative groups also increased with over half the groups containing 2 or more male helpers (not just one helper). In a normal year, only 20% of the groups have 2 or more male helpers.

A female helper appeared in areas where the experiment created an excess of females. Female helpers are extremely rare, yet theory predicts their appearance if a shortage of mates (males in this case) influences behavior. Preliminary data also suggested the sex of young was changing. Nestlings produced in the area with an excess of males were predominantly females, while nestlings were predominantly males in areas with more females. In some unknown manner (and as predicted by theory), nesting females appeared to be altering the sex of the eggs they laid in an attempt to counter the manipulations.

Jessica focused on changes in nesting behavior that emerged in the altered social settings. Using digital cameras, she recorded uniquely marked adults as they brought food to nestlings. One female essentially stopped feeding her young midway through the nesting cycle. Instead, her workload was borne by three males associated with the nest. Lightening the workload for females can be a huge benefit, but nothing this dramatic had ever been seen previously. Females typically provide 35-45% of the food when nesting with a single male and at least 20-30% when working with 2 males.

This is the first time a manipulation of this type has been attempted with a wild bird. We plan to continue the research for at least three years given the number of interesting questions that might be addressed. This plan also helps to account for the effects that habitat and weather differences may have, as well as an opportunity to gather data on dispersal and other complex behaviors that require large samples.

CONSERVING DECLINING POPULATIONS

A Roller Coaster Ride with Red-cockaded Woodpeckers

The phrase wildlife management seems oxymoronic at first blush. Can you really mange something that is wild?

This thought came up frequently during efforts to reestablish Red-cockaded Woodpeckers (RCWs) on Tall Timbers. The Red Hills region supports the largest population of this imperiled woodpecker found on private lands, but woodpeckers disappeared from Tall Timbers in the early 1980s. Returning the flagship bird required working with finicky wildlife that, by definition, might not be wild about the idea.

The first hint of a wild rollercoaster ride came with the release of eight teenage woodpeckers in fall 2006. We had spent months installing scores of artificial cavities high in our pines. The cavities would provide great homes for RCWs being transported from other areas in the Red Hills.

Rather than taking to the new environs, most birds flew so quickly away that we suspect they did not stop until reaching Alabama. Furthermore, the two males and single female that stayed did not interact regularly during the winter months, an unusual behavior for this social bird.

The rollercoaster did not inch above these clouds of doubt until we found a single egg in a cavity in late May. There was another egg the next day, and we suddenly had the first nest recorded on Tall Timbers in over 25 years. We were on an upward swing for sure, but a predator took the eggs a few days later and the rollercoaster swooped back down in a rush. We stayed in a depressing trough for weeks until a second nesting attempt put us on a permanent plateau. In June, the nest fledged two healthy young.

Eight teenage woodpeckers were released again in the fall of 2007. We had better retention with this release that led to production of 11 young during the next breeding season. The population seemed ready to take off, but then came tropical storm Fay later that summer. Woodpeckers and heavy rains do not mix very well, and the deluge brought by Fay wiped out about half the population.

Up, down, up, down, up… it might be time to get off this ride!

Ten more woodpeckers released over the next two years seem to put the population on even ground. We had nine successful nests this past breeding season, and the population has grown steadily since the release of woodpeckers was suspended in 2010. We seem poised to reach the goal of 10-11 territories within the next couple of years, but we'll keep our fingers crossed as does everyone who attempts to manage wildlife.

RCW at nest cavity. Photo by Tara Tanaka

Grant Support

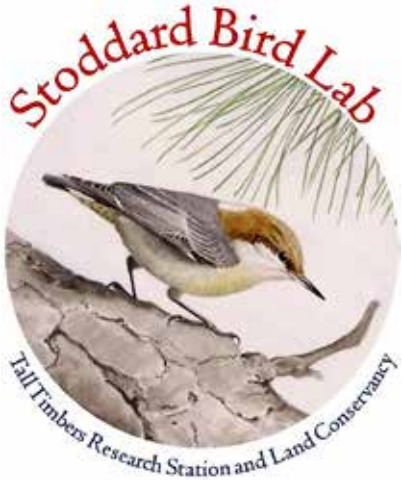
The **Stoddard Bird Lab** received $32,400 in grant support in the first half of 2014 to help imperiled Red-cockaded Woodpeckers. A grant from the Georgia Department of Natural Resource enabled Todd Engstrom and intern Wilson Taylor to monitor woodpeckers on Silver Lake Wildlife Management Area and develop a GIS database of cavity trees for the site. Funds provided by the Georgia Ornithological Society were used to install new artificial cavities in the Red Hills region.

Intern Wilson Tyler with a nuthatch.

Publications

The **Stoddard Bird Lab** submitted three articles to scientific journals in the first half of 2014. The articles included:

- genetic assessments of Bachman's Sparrow that will assist in conservation planning;
- a summary of the Red-cockaded Woodpecker reintroduction effort on Tall Timbers;
- details on the intriguing social structure of Brown-headed Nuthatch families based on genetics and field observations.



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LOOKING AHEAD

The next few months will be spent gathering nuthatch dispersal data, excavating still more artificial cavities (about 60), wrapping up additional manuscripts for submission, conducting surveys to determine whether the abundant pine cones now developing on trees will affect winter bird numbers, and working on several fundraising initiatives, including an exciting new "Red Hills Birding Bonanza" that we hope will be wildly popular. To hear about these and other upcoming activities, drop at note to firebird@ttrs.org or call the number above.

CULTIVATING APPRECIATION

Field tours, outreach events, and presentations led by the **Stoddard Bird Lab** directly reached more than 1000 people thus far in 2014.

Major accomplishments included:

- Field tours of Tall Timbers provided to Audubon chapters from Miami to Pensacola as well as a **Move Tallahassee** event that attracted over 120 outdoor enthusiasts.
- Meetings and site visits with 26 Red Hills landowners and their guests
- Lab sponsored lectures on Swallow-tailed Kites and the birds of Cuba brought 115 eager learners to Tall Timbers' E. V. Komarek Science Education Center
- Staff presentations that reached 135 members of civic and conservation organizations (Apalachee Audubon, Florida Ornithological Society, Thomasville Historical Society, and others). We also gave a special presentation on birds and burning at the FSU Marine Lab in June for 45 attendees.
- Professional workshops on bird, timber, and fire management were presented for 284 natural resource specialists in the U.S. Forest Service, National Resource Conservation Service, Prescribed Fire Training Center, and LAD Foundation.
- Instructional field trips for classes from Florida State University, Kennesaw State University, Indiana University, and the Universities of Florida, Georgia, and Kentucky provided hands-on information about prescribed fire, pine forests, and the birds they support.
- **Stoddard Bird Lab** staff indirectly reached tens of thousands of additional eyes through information provided to *National Geographic Magazine*, a feature article in the *Tallahassee Democrat*, blogs prepared by visiting scientists and photographers, and articles appearing in the new *Tall Timbers eJournal* and *Tall Timbers eNews*.

—Feathery Field continued from front page

appreciation for these fire-dependent species, and learn more about their basic biology. Working with small songbirds and woodpeckers may not seem as flashy as watching pelicans plunging into coastal waters, but the birds have some fascinating stories to tell and we hope our enthusiasm comes through clearly in our newsletter.

None of our work would be possible without the generous contributions we receive. If you are already a member of Tall Timbers, THANKS for your support. If you are not a member and like what you see in the *Firebird*, please become a member now on-line to help keep the accomplishments coming. Membership provides critical support for our bird work, and members also receive invitations to dozens of special presentations and field events throughout the year in addition to our newsletter.

We also extend huge thanks to Dave McElveen, Tara Tanaka, and Greg Holder for their outstanding volunteer services. We also appreciate the superb field help provided this year by Sean Campbell, Miguel de Villa, Mike Keys, Margaret Rohde, Emma Schlatter, Elliot Schunke, Wilson Taylor, and Bethany Williams (in addition to a wonderful nuthatch sketch provided by Margaret).

Jim Cox, Director