

birding the triangle... and beyond, for over half a century

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The BULLETIN...

Chapel Hill Bird Club

April 2008

<http://chbc.carolinanature.com>

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>> Meeting :Monday, April 28 <<

When/Where: 7:15 PM/refreshments; 7:30/Meeting
The lounge, Olin T. Binkley Baptist Church, corner
of Hwy. 15-501 bypass and Willow Dr., behind
University Mall, Chapel Hill.

Jordan Lake – Two for One Special!

“What’s Hot and What’s Not”-
by Norm Budnitz, compiler of the Jordan Lake
spring and Christmas counts
plus
**"Nothing Is More Fun: Birding Jordan by
Canoe and Kayak"** by Ginger Travis, who has
done all her Jordan counts by kayak since 1999.

Saturday Morning Field Trips

The last regular trip of the season was the morning
of April 12, 2008. Regular field trips will resume
in September. In the meantime, we have the:

Spring Bird Counts

- April 27, 2008, Sunday– Durham Spring
Bird Count
- April 29, Tuesday – Falls Lake SBC
- May 3, Saturday -Chapel Hill SBC
- May 4, Sunday– Jordan Lake SBC

To :

No. 4

Organizers are looking for assistance with spring
counts. Neophytes will be paired with more
experienced birders. Please contact the following
organizers as soon as possible for further
information:

Durham:

Mike Schultz, ross.gull@verizon.net
(919) 490-6761

Falls Lake:

Brian Bockhahn, Brian.Bockhahn@ncmail.net
or cbockhahn@earthlink.net (919) 676-1027

Chapel Hill:

Will Cook, cwcook@duke.edu, (919) 382-9134

Jordan Lake:

Carol Williamson, cncbrdr@yahoo.com
(919) 383-2364

March 24 meeting summary:

John Gerwin on
“The Breeding Biology of the Swainson’s
Warbler in a managed Bottomland
Forest”

Swainson’s Warbler is a neotropical migrant, and
spends winters in the southern Caribbean. It breeds
in the southern Appalachian and in the Atlantic Gulf
Costal Plain, and is also found along major river
systems more inland in the Southeast.

Swainson's Warbler is an at-risk species, and the thrust of John's research is to gather information about the breeding biology of this species. The species was first described in 1834. It is monomorphic, with both sexes having the same coloring and size. The species requires bottomland hardwood forests with tree-fall gaps in the canopy. This creates viney, shrubby thickets around the light source that make for good nesting areas. This warbler species is a "leaf litter" specialist, almost exclusively. It has a long strong bill that is pointed at the end, and is an excellent tool for foraging in the leaf litter of the forest. This sort of bottomland hardwood forest in the southeast has been reduced by 80% from the amount available in the early 1800's.

This study site of about 300 hectares is located along the Great Pee Dee River in Marion County in South Carolina. The site is shared by Jennifer Thompson and by Richard Lancia, from NCSU. The site was originally owned by International Paper, and is now owned by the South Carolina Department of Natural Resources, via The Nature Conservancy... TNC arranged to buy about 200,000 acres of International Paper land, when IP sold all their holdings, which was about 600,000 acres.

The area had been cut in blocks, some in 1978 and then in 1983, and then allowed to regenerate naturally. The underbrush is dense, and often streams must be forded. During the period when breeding season, in May, June and July, the temperatures average from the 70 to 100 degrees Fahrenheit, and the humidity ranges from 60 to 80 per cent. The Fish and Wildlife Service objective is to discover whether the Warbler requires old forest or whether new growth can support the species.

The Swainson's Warbler is not accurately surveyed by the Breeding Bird Survey because of its preference for dense lower canopy shrubs and vine thickets. The goals of the study are to gain a better idea of its numbers and the requirements for successful reproduction, to identify the warblers' preferred diet, and to gain information about the species site fidelity. Prior studies include a breeding survey done in 1945 in areas of cane (*Anndinai gigantus*) by Meanley, who thought the cane species was an absolute necessity for a successful breeding site. Later it was discovered

that cane is not necessary to the breeding success of the Swainson's Warbler. Prior studies have been done in public lands, which occupy only 8 % of the bottomland hardwood forests in which the Swainson's Warbler nests. This study is using lands which were in private hands until recently.

The study design includes several techniques:

- Mist Netting** to count, and band birds.

- Survey of the Leaf Litter.**

Because the Swainson's Warbler is a "Leaf Litter Specialist," Amelia Savage of NCSU has spent much time staking out areas of leaf litter, and counting all the inhabitants of the litter. So far she has counted the contents of about 600 units of litter. The warbler has a long, strong bill designed for hunting through the leaf litter.

- Samplings of Bird Crop Contents**

(about 75 crop samplings were done in 2007.) Its favorite food is reputed to be coleopterans, but the study has revealed large numbers of spider remains in its crops, as well as beetle parts.

- Nest Searching** to locate nests and monitor clutch size and success

- Radio Telemetry** – to map territory size

and use, home range and nest success.

Transmitters that are used average 3-4% of the body weight of the birds (0.4-0.6 grams). Leg loop harnesses are preferred to glue. The transmitter is anchored on the back of the bird. Cotton or surgical thread is used, and these disintegrate over time, in 21-70 days.



Transmitter ready to apply.



(photos by John A. Gerwin)

Bird with transmitter in place.

A new study along the Roanoke River was started in 2006. Neil Chartier of NCSU is looking at paternity/ sociality issues among Swainson's Warblers, and is using **video monitoring** of nests.

Swainson's Warbler is a neotropical migrant, and spends winters in the southern Caribbean. It breeds in the southern Appalachian and in the Atlantic Gulf Coastal Plain in April. It is also found along major river systems more inland in the Southeast.

It had been thought that the Swainson's Warbler required **cane fields** for successful breeding, but one result of John's research has been to discover that the bird requires the dense brushy areas at the edges of breaks in the canopy of the bottomland hardwood forests. These areas may be provided by trees downed during a storm. This increase of light allows the growth of dense vines and shrubs at the edges of the opening. Most nests were in areas where cane, vines, shrubs, blackberry or palmetto created "crossings" to support nests.

The nest usually appears to be a clump of leaves caught in the underbrush. The nest is usually much larger than the bird, and only by careful inspection can one see the female warbler sitting on her nest. She and the nest are a masterpiece of camouflage. After the first clutch of 3-5 eggs (usually 3 eggs) is hatched, a second clutch may be started. While the female is brooding the second set of eggs, the male looks after the fledglings. At any sign of danger, the male hustles the young birds into the dense thicket

that surrounds the opening in the forest. These are almost impenetrable, and provide wonderful protection for the young birds.

Banding has been going on since 1996, and at this site ~400 birds have been banded, and ~300 of them in color. (Color makes identification at a distance possible.) Territory (spot mapping) has resulted in 84 territories being delineated (1998-2001) The average territory size is 1.56 ha (± 0.12).

Nest monitoring revealed:

- '97-'98 52 total nests/16 active
- '99-'01 98 total nests/ 63 active
- '02-'06 28 nests active

Adult site fidelity is $\geq 60\%$ ~20 + males returned to the same territory, and 10 of 100 hatch-year birds returned. These data are from the 107 active nests that were monitored from the 1997-2006 period.

An average of 14 days of **incubation** is required, and about 10 days until the young are fledged. The average success rate is ~61%; the average nest produces about 1.5 young.

Nest failures appear to be caused mainly by snake predation. This was confirmed by the video monitoring of nests at the Roanoke River site. Where there is parasitism by Brown Headed Cowbirds, (9 of 99 nests), there were naïve parents. No Swainson's Warblers were hatched, and there were few Cowbirds from the parasitized nests.

There was a difference in the density distribution of nests at the study site. The territory per nest was much smaller in the high density site, there were more nests per unit area, but the success rate per nest in the more densely settled area was higher.

The United States Fish and Wildlife Service objective is to maintain and improve habitat for the Swainson's Warbler.

Management considerations:

Territory size:

In 50 year old Forest:

One study by Graves in 2001 listed a
territory size - **3-18 ha**

In 20-25 year old forest

territory size - **1.6-3 ha**
But telemetry studies show a
territory size of **5-10 ha**.

Question: which sites are **representative**? Other studies are needed at early successional sites, in addition to studies at mature forests such as Roanoke River and Howell Woods.

Habitat assessment is required. High density area may be due to more available nest sites (thickets), protection for young, higher food resources, or a combination thereof.

Monitor BHCO population. Brown Headed Cowbirds are the second cause of nest failure, after snake predation.

Hydrology

Graphs of water flow in the Pee Dee River in cubic feet per second, for 1998-2001 for April, May and June indicate initial flows of 5000 to 15000 ft³/second, with declining flow to ~ 5000 ft³/second by June. Further study will be needed to assess:

- Impact on nest initiation and multiple brooding
- **Altered flow considerations** - (Roanoke; Pee Dee)

— Increased flow decreased the amount of litter available for feeding, and may reduce the number of nests. The timing of the water release for dams may be one factor which can be adjusted to increase breeding success.

Much more needs to be learned, but we have made great strides in our understanding of this species. On the basis of information gained from this study area, recommendations can be made about when to cut certain tracts of the study site and when land should remain uncut. This kind of information may eventually be generated for other areas.

These data would not be available without funding from

- the U.S.F.W.S., International Paper Co. (Steve DuBose), National Audubon Society, NCASI, SC Dept. of Natural Resources.
- N.C. State Museum of Natural Sciences

- •N.C.S.U. Zoology, Wildlife and Fisheries Depts., & Center for Earth Observation

The dedicated help of lots of field technicians and volunteers has been one of the crucial elements required for these studies. The opportunity has been used to make intern training available to interested high school students. This has created increased interest and awareness in the interns, and has provided much volunteer labor for the study, a double bonus for all concerned.

Have you noticed a yellow mark on your address label? That means that your membership is due for renewal.

Membership Form

Name _____

Address _____

ph _____

email _____

new member: ____ or, RENEWAL: _____

dues: \$15/yr. individuals/family, \$10/year students
Please send checks payable to Chapel Hill Bird Club to:

Patsy Bailey, 277 Mint Springs Rd.

Reminder:

Check the Chapel Hill Bird Club web site
<http://chbc.carolinanature.com/>

for further information about the resumption of regularly scheduled Saturday Morning Field Trips in the fall.