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

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The BULLETIN…
Chapel Hill Bird Club

To:

March 2011

http://chbc.carolinanature.com

Vol. 39 No. 3

Meeting: Monday, Mar. 28, 2011

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.

Who: **Dr. Rob Bierregaard**
from the
Biology Department of UNC Charlotte,

will be speaking about

What: **Sex (And Barred Owls, and Mice) And the City: Barred Owls in Rural and Suburban Habitats**

"My graduate students and I have been studying Charlotte's thriving population of Barred Owls for 10 years. Questions that we have addressed over the years include: 1) How can 300 pairs of Barred Owls make a living in a heavily populated suburban environment? 2) How are "city" owls different from "country" owls? 3)Are the city owls as successful at raising young as the country owls?

Using radio telemetry and video cameras mounted in owl nest boxes, we have documented much of the natural history of this remarkably adaptable species.

My talk will review a decade's worth of ecological studies and provide answers to these questions."
Dr. Rob Bierregaard

Barred Owl Parent and Chick
Photo Courtesy of William Majoros, Duke University, Durham, North Carolina. See his on-line book at
http://www.digitalbirdphotography.com/windows/contents.html.

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"How Owls Hunt in the Dark"

(This short article is from *The Birder's Handbook* by Paul R. Ehrlich, David S. Dobkin, and Darryl Wheye, published by Simon and Schuster/Fireside in 1988.)

"Nocturnal Owls are formidable, silent hunters. Their silence on the wing derives from the structural modification of the first primary feather on each wing, a trait shared by all owls. The forward edge of the feather is serrated rather than smooth, which has the effect of disrupting the flow of air over the wing in flight, and eliminating the voetex noise created by

airflow over a smooth surface. Thus equipped, owls arrive upon their prey without a sound.

Owls, especially those that hunt at night, are able to locate even faint sounds with remarkable accuracy. The best studied of these nocturnal predators is the Barn Owl. Extensive experiments conducted by neurobiologists Marc Konshi and Eric Knudsen in totally darkened soundproofed rooms have unequivocally demonstrated that Barn Owls can locate and capture prey by sound alone. The Barn Owl's sensitive hearing is enhanced by its vertical ruff, a concave surface of stiff dark-tipped feathers. The ruff functions as a reflector, channeling sounds into the ears. Once a sound is detected, the owl orients toward it and accurately pinpoints its location to within 1.5 degrees in both the horizontal and vertical planes.

The cue used to determine whether a sound comes from right, left, or straight ahead is the difference in time that it takes for the sound to reach each ear. When the sound source is dead ahead, no time differential occurs. Another cue, the difference in intensity of sound received by each ear, is used to locate the sound vertically. Barn Species (*Tyto* species), along with owls of at least eight other genera, have asymmetrical openings to their ears- as shown in the accompanying figure. A sound coming from above will seem slightly louder in the ear with the higher opening; if a sound is equally loud in both ears then the source must be at eye level.

[Illustration shows left and right side of owl head with feathers pushed aside. One can see asymmetrical ear openings at sides of owl's head, one lower that the other.]

The Owls' ears are linked to specialized cells contained within a discrete region of the midbrain. Each cell is sensitive to a unique combination pf time and intensity differentials and responds only to sound issuing from one small area in space. The Barn Owl's brain thus contains a "neural map" of auditory space. So armed, it is little wonder that the Barn Owl has been so successful that today it is arguably one of the most widespread species on Earth.

But their auditory systems are not the only reason that some owls can hunt successfully in the dark. Their sensory abilities are coupled with sedentary habits. As shown in studies of Tawny Owls in England, individuals hold a hunting territory in which they operate night after night. Familiarity with the environment, especially with such things as the heights of favorite perches above the ground, seems to be essential to the owls' ability to pounce on prey. Hearing helps to replace the absence of sight, but intimate knowledge of the habitat completes the job."

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Photo by William Majoros, Duke University, Durham, NC See on-line book at http://www.digitalbirdphotography.com/windows/contents.html.

Saturday Field Trips

Trips are usually led by Doug Shadwick and depart from Glen Lennox Shopping Center Parking lot off HWY 54 promptly at 7:30 most Saturday mornings. Remaining field trips are scheduled for March 26, April 2, April 9, and April 16 - last regular local trip of the season. (Please noted correction of dates.)
All skills are welcome. Trips are usually over by noon. Dress for the weather and for walking. For further details, call Doug at 942-0479.

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