

newsletter

In This Issue

Membership Information, OBBA General Information	Page 1
President's Perch	Page 2
News and Articles	Page 3&4
News and Articles	Page 5&6
Birding Trivia/Fascinating Facts	Page 7
OBBA Slate of Officers Nominations/voting Ballot	INSERT
OBBA Spring Banding Event Flyer	INSERT
OBBA Spring Meeting Registration	INSERT

WWW.OHIOBBA.ORG

Upcoming Events

>> OBBA Spring Banding Event - Sat, March 29, 2008 - Caesar's Creek State Park
 >> OBBA Spring Meeting – Saturday, April 5 – Chillicothe, OH

IMPORTANT NOTICE!!!

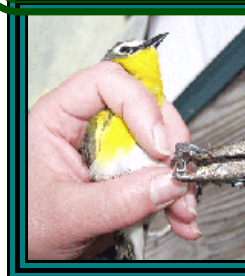
DON'T FORGET TO RENEW YOUR MEMBERSHIP WITH O.B.B.A. MEMBERSHIP IS FOR ANYONE FOR ONLY \$8.00 PER YEAR. WE APPRECIATE YOUR CONTINUED SUPPORT. THANKS! ☺

O.B.B.A. NEWSLETTER
 TIM TOLFORD, EDITOR
 P.O. BOX 157
 LIBERTY, IN 47353-0157

Editor@ohiobba.org
www.ohiobba.org

The Ohio Bird Banding Association

ORGANIZED IN 1981



Our Mission: We are all responsible for the stewardship of Ohio birds and their habitats. To make the correct environmental choices, we must cooperate to understand their complex behavior.



= Membership is only \$8.00/year =

Renewals and New Memberships may be paid at any OBBA meeting. (Dues may be included with registration fees) School students volunteering at an approved OBBA rostered project, at least twice, receive a one-year membership – FREE! LIFETIME membership is \$100 per individual. E-mail editor@ohiobba.org for details.

Donations are accepted and encouraged. Donations may include, but are not limited to: bird books/field guides, banding supplies, binoculars, and monetary gifts. All items donated will be used for OBBA programs and education purposes.

Please complete the *Renewal and New Member Application* (see below) to submit your requests.

NEWSLETTER INFORMATION

The O.B.B.A. Newsletter accepts articles, announcements, job vacancies, banding tips and items of interest concerning: bird banding, avian research, birding and conservation in and around Ohio.

Newsletter Article Submission Deadlines

February 1	May 1	August 1	November 1
Winter	Spring	Summer	Fall

Please submit complete, *already edited*, typed, or printed articles via e-mail or snail mail.

Submit your articles via e-mail to editor@ohiobba.org or mail to Tim Tolford, P.O. Box 157, Liberty, IN 47353

Website

Tim Tolford

Webmaster@ohiobba.org

Newsletter Editor/Layout - Tim Tolford - editor@ohiobba.org

Research Committee: Cheryl Dykstra, Anne Smedley, Tom Kashmer, Bob Thobaben, Donald Morse, Jr., Dave Russell

Executive Committee: OBBA Officers (see left column), most recent past President, newsletter editor.

O. B. B. A. RENEWAL AND NEW MEMBER APPLICATION 1/2/2005

*Name _____ Organization _____
Please Print Clearly

Mailing Address _____ Ph # (____) _____

City _____ State _____ Zip _____ E-Mail _____

Check / One \$8 RENEWAL \$8 NEW MEMBER \$100 LIFE MEMBERSHIP Today's Date _____

STUDENT DONATION/GIFT ~ I am making a gift/donation to help support the efforts of OBBA. (free for students who volunteer two times. Include project supervisor's signature in place of "Organization")



J Send all requests to Tim Tolford, P.O. Box 157, Liberty, IN 47353-0157 J

~ Make checks payable to "OBBA" ~

*All membership information submitted to OBBA remains confidential and is not available to solicitors or other organizations without individual member consent.



Greetings from southern Ohio! Our official hawk field season begins in mid-February and I am eager to be out doing fieldwork again. This winter, some banders down here have reported and banded some great irruptive species from the north, such as pine siskins and red-breasted nuthatches. (Unfortunately, most of them passed up my feeder and banding station).



OBBA has two terrific events scheduled for this spring and I hope to see you at both of them. On Saturday, March 29, OBBA is hosting the second annual winter banding event at Caesar Creek State Park in Waynesville, Ohio. Last year, 5 or 6 OBBA banders caught 110 birds of 17 species at the established feeders outside the visitors' center. We hosted more than 150 visitors at the banding station, many of whom had never seen a bird close-up before. Their enthusiasm was contagious and we banders had a fabulous day banding. It's always fun to watch beginners get excited over birds and I loved that we could bring the birds to them in such a unique way. This year, Caesar Creek personnel are planning even more advertising than last, so we may expect bigger crowds. We hope you can all join us.



The OBBA spring meeting is scheduled for Saturday, April 5, in Chillicothe and it promises to be a good one. The North American Banding Council (NABC) certification written test will be offered again at this meeting. It has been a few years since we've offered the test, and I encourage you to plan to take it if you haven't already and to advise your subpermittees to take it if they haven't. NABC certification will improve your application for a master banding permit, and (if nothing else) signing up to take the test will inspire you to re-read those easy-to-forget details of the Bird Banding Manual and Pyle. But seriously, taking the test does give you a great opportunity to review some important banding facts and skills. I am happy that I was encouraged to take it a few years back. And Ohio Bird Banding Association has been blessed with some of the top NABC trainers in the U.S. We're lucky to be able to train and work with them, and grateful that they are once again offering their time to help us improve our banding skills through NABC.

In addition to the NABC testing, the OBBA spring meeting will have banding, and reports from some of our own members on banding research they're doing in Ohio. If you are interested in reporting on your banding studies or in taking the NABC written exam, please contact Kelly Williams-Sieg at once.



I look forward to seeing you all again in a few short weeks!

Cheryl

== Reminder == Keep your permits up-to-date! == Reminder ==

-  Federal Bird Banding Permits must now be renewed annually via application. Please visit the BBL website for renewal applications. Permits are no longer renewed automatically!
<http://www.pwrc.usgs.gov/BBL/resources/forms/application.pdf>
-  State of Ohio Banding Permits must also be renewed yearly via application. They are no longer automatically renewed. Contact ODNR at 1-800-WILDLIFE. Request form 167 from the licenses & permits department.

L DEEP THOUGHTS 7

-  What do little birdies see when they get knocked unconscious?
 What do you call a slow swift?

(BIRD HUMOR (

- Which country reminds us of Thanksgiving? *Turkey*
- What bird is present at every meal? *Swallow*
- Which bird can carry the heaviest weights? *Crane*

Do You Remember...

In 1992, C. Holmes Smith was awarded a Life Membership to OBBA for lifetime contribution to bird banding and research in Ohio.

In 1987, the OBBA Spring Bandout included 9 banders and 45 total participants!

Fascinating Fun Facts

When is an eel really a bird?

When it's an Avocet. One old country name for the avocet was "awl," like a cobbler's tool, because of its sharp, curved bill. The old English word for this, was pronounced more like "eel." Some birds have more than one name, depending on what people notice most about them. The lapwing, named for the way it flies, is also called "peewit" after its call, and "green plover" because that is what it looks like. In Portugal, where they migrate in winter, lapwings are called "birds of winter."

Can birds predict thunder?

Farmers say that if the dawn chorus is late there will be a storm. This makes sense. The dawn chorus starts at first light, and if heavy clouds make the morning dark, birds will start to sing late, or not at all.

What is a Thunderbird?

It depends where you are in the world. In ancient Zimbabwe, lightning birds were said to look rather like eagles — they were put up to keep storms away. In North America the Indians call the tiny Ruby-throated Hummingbird a thudnerbird, because it makes miniature thunder noises with its wings as it flies. The Romans thought a woodpecker drumming on the sacred oak (the "thunder tree") would bring rain, and this belief survived in Britain after the Romans had left.

= For the sake of argument/discussion =

For more information about this abstract and other related articles, search "GAF Seber" on the internet

Estimating age-specific survival rates from bird-band returns when the reporting rate is constant.

G.A.F. Seber - Suckland University, Now at Otago University New Zealand

A probability model consisting of a product of multinomial distributions is derived for a bird-banding experiment in which a new batch of nestlings is banded and released at the beginning of each year and the bands from the dead birds are returned by observers in subsequent years. The annual reporting probability is assumed to be the same for all birds and to remain constant from year to year, while the probability of survival is assumed to depend on the age of the bird rather than on the calendar year. By considering the probability distribution of band returns conditional on the total numbers of returns from each release, explicit maximum likelihood estimates of the survival probabilities are obtained together with their asymptotic variance-covariance matrix. A goodness-of-fit test of the model is outlined and the theory is demonstrated by a worked example.

Winter Hummingbirds: Ruby-throated or not?

With the exception of perhaps a couple of species of hummingbirds, the Ruby-throated Hummingbird is the only species in Eastern United States ... or is it?

This is the question that has become commonplace the past few years after winter sightings of Anna's, Calliope, Green Violet-eared and Rufous Hummingbird have occurred in Ohio. Could there be more present than we know of in or around Ohio? Sure! Why not?

A total of 13 western species have now been accounted for in the eastern U.S. Rufous, Black-chinned, Allen's, Anna's, Calliope, Buff-bellied, Broad-tailed, White-eared, Green Violet-ear, Magnificent, Green-breasted Mango, Broad-billed, and Costa's. Many of them have been identified by those of us who feed hummingbirds and inadvertently leave a feeder out after the Ruby-throated's have left. If you notice a hummer that looks a little different after late July, or is at your feeder after the Ruby-throated's have gone, (especially in November or December), chances are pretty good that it will turn out to be a western species. Get out the binoculars and hummingbird books and contact a Hummingbird bander immediately. In hand identification is the best means to confirm these confusing winter visitors and often the only means!



Photo courtesy: Fred Dietrich

The best time to find rare species in our area is after the "Ruby-throats" have migrated away. This will typically occur after November 15 which is considered the "magic cutoff date" for lingering Ruby-throated Hummingbirds. In some instances a few "Ruby-throats" may linger past this date, but the chances of that occurring are quite small.

More of these "westerners" may be in Ohio. We just haven't known that we should be looking! So be sure to leave your feeder out next winter and what's left of this winter. Keep it clean and maintained and where you can view it easily. If the nectar is going down in the feeder, watch it for about an hour to see if you have a bird feeding on it. And don't worry about leaving nectar out in the winter – you will not make the Ruby-throated Hummingbirds "miss" their migration and stay if you leave your feeder out in winter. When it is time, they will migrate with or without your feeder.

There are tricks to maintaining a winter hummingbird feeder and preventing the nectar from freezing. Visit www.hbrcnet.org or www.hummingbirdplus.org for more information.

If you think you may have an unusual species of hummingbird wintering over, which could be a hummingbird that is very large, all green, or with rufous coloration somewhere on its body, contact the following Hummingbird banders:

Southwest Ohio (south of I-70 and Hocking Hills west), southeastern Indiana and northern Kentucky – Tim Tolford: hummers@tolford.com

Michigan, northern Indiana and the rest of Ohio
Allen Chartier: amazilia1@comcast.net

Illinois & Southern Indiana
Cathie Hutcheson: hutche@siu.edu

Log in to the hummerwatch group listserv (link is on the hbrcnet.org website) to log your sightings of Ruby-throated Hummingbirds and western hummers visiting your feeder(s).

Hummerwatch will track and monitor the movement of Ruby-throated Hummingbirds through our region with the help of the members who log their sightings. This is an ongoing study. Visit www.hbrcnet.org for more details.

Rufous Hummingbird Sightings in Ohio!



Photo courtesy: Bob Foppe

As of Feb. 1, two confirmed sightings of Rufous Hummingbirds have occurred in Ohio this 2007/2008 winter season. One in Bluffton, the other in Springfield Twp. of Cincinnati.

The first of the adult male Rufous Hummingbirds can appear in the eastern United States as early as mid to late July. Any Hummer in your yard with a brown back is a male Rufous

The Cincinnati sighting was a single visitor to a feeder. This particular feeder was intentionally left out to feed a "hummingbird that kept coming back". The homeowner continued to feed a lone hummingbird she presumed was a Ruby-throat that continued to visit her feeder well into November. She was surprised to find out by a birding friend it may not be a Ruby-throated Hummingbird, but a possible rare Hummer. Little did she know it would be a breeding resident of the Yukon territory!

It was banded on November 30 by Tim Tolford as an adult female Rufous Hummingbird. In winter, the female adult Allen's and Rufous can be identical to one another. The only "reliable" method to identify this species and whether or not it is a male or female is by taking measurements and studying feather characteristics only visible "in-hand."

The shape of tail feathers (rectrices) 2 & 5 are the in-hand definitive indicators differentiating a female Rufous from a female Allen's in winter plumage. r5 is much wider on a Rufous than Allen's. r2 has a slight dip or "notch." These are subtle and can only be determined through bird banding.



Photo courtesy: T.K. Tolford

Sixty-eight American Kestrels Fledged From Roadside Nest Boxes

by Dick Tuttle

The last kestrel nestling fledged after 17 August 2007 to complete a 142-day season from the first egg laid on March 29. All 16 nest boxes claimed by "sparrow hawks" produced young -- 68 fledglings in all.

Since the project's beginning in 1993, 429 kestrels have been raised from roadside nest boxes. The Delaware County Bird Club and the Delaware County Health Department were the original co-sponsors. Speakers from the health department and the bird club encouraged students to donate pennies and dollars from recycled aluminum cans to buy wood and other materials. Club members assembled ten nest boxes that were attached to the backs of traffic signs along Routes 23 and 36/37 east and north of Delaware, with permission from Ohio Department of Highways. Five club members began monitored segments of the roadside box trail in 1993. The first successful falcon nest produced five fledglings in 1995 and the population started to build along the busy highways. Kestrels nested within 15 feet of the white berm lines, and they accepted boxes as low as eight feet above the ground. Still, after two nest box signs were hit by sleepy motorists in 1999, all partners agreed that the boxes should be moved to safer habitats for the welfare of the birds — and sleepy motorists.

Starting in 2000, Consolidated Electric Cooperative stepped up to the plate and has since allowed us to hang boxes from their poles along rural byways.

Due to excellent rural habitats, during the 2007 season, 69 (87.3%) of 79 eggs hatched and 86.1% fledged with 98.6% of the hatchlings flying from their nests. Only two of the 18 boxes were snubbed by kestrels. Of course, the extremely high success rates will be adjusted if Dick Phillips and I find kestrel remains buried in the caked waste during nest box cleaning. We always lower the boxes before winter to remove several inches of caked feces matted with regurgitated pellets containing fur from mice and meadow voles, bones, and feathers. Other refuse includes individual bird bones, insect wings, and occasionally, frog remains. Once excavated, we cover the nest chamber floor with three or more inches of commercial white-pine livestock bedding so kestrels can have safe and snug winter roost sites – an important wildlife management strategy for this species.

All nestlings were tagged with U.S. Fish and Wildlife Service aluminum leg bands which bear nine-digit identification numbers. During the banding process, healthy nestlings are frisky, feel plump, and behave like birds of prey as they try to bite and grab with sharp beaks and talons.

During the season, only one nest held remains from a dead nestling and the other nest mates were underweight. However, the family recovered to fledge, possibly because the parents discovered an additional prey source.

We never bother the adult birds on the nest, except to photograph them from above. I was fortunate on May 30 to photograph a male kestrel guarding eggs. Male wings are slate-colored, whereas a female's wings are reddish-brown, or rufous.

We credit this year's phenomenal nesting success to several new management practices. First, before the season, we added aluminum flashing below the nest boxes to stop climbing raccoons, and we moved several boxes so all hang from poles at least one pole beyond field driveways. We suspected that newly parked farm machinery and associated activity spooks kestrels from the nest sites which can cause nests to fail, especially during the incubation period.

Among the 18 nest boxes, none are closer than one-half mile apart, along a route that is slightly longer than fifty miles. Also, we have always placed our boxes near wires in habitats where kestrels can see their nests from all directions, hundreds of yards away.

Years ago, we learned not to remove starling nests. We only remove starling eggs during regular monitoring visits every two weeks. Many times, single kestrels have usurped starlings by decapitating them, then they use the grass nests for future falcon families once they win partners. Monitors know starlings have become history once the three-inch-wide "starling (nest) cup" is reshaped into an oblong "kestrel cup." Also, since European Starlings are so abundant and persistent, any grass nest found without starling eggs between the first weeks in April and June, belongs to a kestrel, so let it be.

We believe the project failed "to keep" interested kestrels during its first two years because [we] monitors mistakenly removed starling nests and added white-pine bedding. We have learned that kestrels are extremely sensitive when it comes to investing in new nests. How would you like to come home to find foreign furnishings in your house? How would you react?

As a proven wildlife management practice, we try to pamper our finicky raptors by supplying them with irresistible housing, then we keep our interruptions to a minimum.

Raptor on!

Dick Tuttle

"Mist-netting with the public" a guide for communicating science through bird banding ...

By Melissa Pitkin

"Watching bird banding is an exciting way to learn about birds and science."

This 38 page guide offers step-by-step instructions on conducting public programs at banding stations. It also provides teaching tools for educators who want to share the science of bird banding with youth and adults.

Melissa states that interest in combining educational programs with bird research programs is growing. As a result, biologists and informal educators at various bird observatories and non-profits in the Americas have requested help in designing and implementing such programs.

To answer this request, this manual was created with two goals: to connect the public with science, scientists, and conservation and to improve the quality and quantity of education programs delivered in conjunction with bird research that use mist nets.

OBBA participated in its development as a resource for Melissa through e-mails and an information survey completed by OBBA President at the time. We are listed in the credits!

The manual includes pre-visit planning, hiring/training, bird/human safety, developing interpretive tools, publicizing, program evaluation, and answers to frequently asked questions, to name a few. Get a copy, it's very well put together! it is a worthwhile investment and resource to have on-hand.

For \$5.50, it is available at www.birdday.org/shop_books3.html.

Notable Recoveries! A second year "SY" Yellow-breasted Chat banded April 2000 by Tim Tolford was re-captured in April 2007 making this bird 7 years 11 months old. An Ohio longevity record! and 12 months away from a national longevity record for this species!

The Ohio Bird Banding Association is not the only "OBBA!"

For those of you not familiar with the "other" OBBA, you will be impressed to discover them and all that they have been doing. Below is a brief summary of who they are as it appears on their website. Visit their website for more information on their projects and activities. The officers of Ohio Bird Banding Association hope to keep up the dialogue started over the past few years with OBBA as well as the Michigan Bird Banders to create a joint effort between the three groups. All three are in favor of such an idea!

Among its many accomplishments, in 1960 OBBA proudly founded Long Point Bird Observatory, North America's first Bird Observatory, which has evolved into "Bird Studies Canada". OBBA has also assisted in the establishment of, and retains close ties with, several other bird observatories in Ontario.

The Ontario Bird Banding Association provides a forum for communication among Ontario's banders and those interested in the results of such work. It encourages the training of new banders, serves as a liaison among Ontario's established bird observatories and sponsors special banding projects.

OBBA publishes a Newsletter three times a year that keeps members informed of current events and activities and includes short articles and reports. The Association's annual journal, Ontario Bird Banding, includes reports from Ontario's bird observatories and other articles on banding and recoveries.

The Association holds an annual meeting featuring keynote speakers and reports from bird observatories throughout Ontario. OBBA works closely with the Bird Banding Office of the Canadian Wildlife Service and with established bird observatories on technical and regulatory matters.

Visit their website www.ontbanding.org.

Anna's Hummingbird Chirps With Its Tail During Display Dives

Science Daily (Feb. 5, 2008) — The beeps, chirps and whistles made by some hummingbirds and thought to be vocal are actually created by the birds' tail feathers, according to a study by two students at the University of California, Berkeley.

The students used a high-speed camera to record the dive-bomber display of the Anna's hummingbird (*Calypte anna*), the West Coast's most common hummer now in the heat of mating season. The video established that the chirp a male makes at the nadir of his dive coincides with a 60 millisecond spreading of his tail feathers - faster than the blink of an eye.

Wind tunnel tests confirmed that the outer tail feathers vibrate like a reed in a clarinet. The bird's split-second tail spread at dive speed thus produces a loud, brief burst that sounds like a chirp or beep.

"This is a new mechanism for sound production in birds," said lead author Christopher J. Clark, a UC Berkeley graduate student in the Department of Integrative Biology. "The Anna's hummingbird is the only hummingbird for which we know all the details, but there are a number of other species with similarly shaped tail feathers that may use their tail morphology in producing sounds."

The most likely birds to make tail-feather chirps are the Anna's relatives, the "bee" hummingbirds, which are the tiniest hummers in the world. They include the ruby-throated and black-chinned hummingbirds that migrate between the eastern United States and Central America, the Allen's and Costa's hummingbirds that, like the Anna's, reside year-round in the western U.S., the widespread Rufous hummingbird that migrates between the United States and Central America, the tropical woodstar hummingbirds and the bee-sized bee hummingbird of Cuba, the world's smallest.

"Most have funny tail feathers with tapered or narrow tips, all have mating dives, and all make a different sound," Clark said. "It's possible that sexual preference by females has caused the shape of the tail feathers, and thus the sound, to diverge, thereby driving the evolution of new species."

"This phenomenon nicely illustrates the strength of the evolutionary process, and sexual selection, in particular, to derive novel functions from pre-existing structures."

The tail-feather beep of the Anna's hummingbird is similar to the whistling feathers of ducks and other birds, including the mourning dove, the whistling swan and nighthawks. Those sounds, however, seem to be incidental to wing flapping, the researchers said.

The tail-feather beep of the Anna's hummingbird, on the other hand, is an important part of the dive display that seduces females and also serves to drive away rivals or other threatening animals.

Nevertheless, Clark said, the reed-like mode of sound production may explain other bird feather "sonations." For example, while researchers have found tail feathers to be the source of winnowing sounds made by snipe, an elusive member of the sandpiper family, the mechanism is unknown.

Clark emphasized that the tail-feather sonation is not a whistle, as some have described the chirp. A whistling sound is produced as air moves through a constriction, as in a tea kettle, or over a rigid edge - a classic pennywhistle. The dive chirp is produced by the vibrating vane of a feather.

The display of the male Anna's hummingbird, a green-backed hummingbird with green head and red throat and weighing less than a nickel, is one of the most dramatic of the hummingbirds. During the breeding season, which lasts from November through May, males ascend rapidly to a height of 100 feet or more, then execute a looping dive at speeds of over 23 meters per second (50 miles per hour), Clark and Feo calculated from their video. When they reach the bottom of their dive and round upward near a perching female or intruder, the birds produce a loud chirp.

Ornithologists have debated whether this sound is produced vocally or by the tail, and in fact, one of the earliest reports suggested a tail-feather source.

Continued on page 5



"Envisioning a Natural Transformation" www.audubonohio.org

submitted by T. K. Tolford

A couple of months ago, I visited a board meeting of Audubon Ohio. As secretary of the local chapter of Audubon, I was able to visit as a "non-board" member. It was quite interesting. I have been very impressed with the direction Audubon Ohio has been moving. Growing up, I developed a "bad taste" in my mouth of the National Audubon Society (NAS). I was on a membership list and received a magazine ... period.

As I became involved in Field Ornithology, I rapidly became aware of the fact that NAS really did not do much for local research efforts or, for that matter, local chapters. It seemed as though it was just a "numbers" game so they could promote their political agendas. These agendas were not always what I considered "bird friendly." About 4 years ago, a friend approached me about helping out with the local Audubon chapter Audubon Miami Valley (AMV) as secretary. I thought I would go ahead and give it a try. www.audubonmiamivalley.org

Over a short period of time, I found the local chapter to be very supportive of local research efforts, including small grants for bird banding projects in their area. They were also ready and willing to voice an opinion to NAS whether in support of or against what NAS had been attempting to promote. The best decision NAS made, in my opinion, was the choice to allow the local chapter to be "local." Dues go to local, and the member could choose whether or not they wanted to be a part of NAS. Then ... I discovered that another branch of Audubon had formed in Ohio. A "statewide" version of NAS. Hmmm. Are they "us" or are they "them."

It did not take too long to realize Audubon Ohio is most certainly here for "us." The latest, and probably most impressive goal that is beyond the dreaming stage is a new project/development that will benefit everyone in Ohio (*including the flora and avifauna!*). The goals and hopes of this endeavor, according to board members on the development team, will be ongoing. There are also plans to incorporate bird banding research. I expressed my support and availability and offered the input and assistance of OBBA.

The next few paragraphs are paraphrased from the Audubon Ohio advertisement brochure about their new Center.

~ ~ ~ ~ ~

Less than a 10-minute walk from downtown Columbus, on a half-forgotten bend in the Scioto River, lies a fragile green oasis, a tiny jewel, a hidden haven for wildlife and birds set amid an industrial landscape now in transformation.

This is the Whittier Peninsula, a vibrant river refuge bordered by acres of old warehouses and vacant lots - acres now being reshaped by a groundbreaking vision of a great urban green space - a park of restored natural habitats, home to a world-class educational resource, a sanctuary reconnecting a city's people with nature.

At the heart of this transformation will be the Grange Insurance Audubon Center, one of the first such centers in Audubon's storied history to bring hands-on conservation and nature-based learning this close to the core of a major American city.

Located within the 84-acre Scioto Audubon Metro Park, the Center will be part of Audubon's interconnected network of 120-plus nature centers and sanctuaries nationwide.

In keeping with Audubon's conservation philosophy, the Center will be a "green building," based on national LEED criteria, using alternative energy sources for heating and cooling.

The facility will include: educational exhibits, classrooms, library, nature store and a multi-purpose room seating up to 200 visitors.

The Center's 5-acre grounds will feature: gardens, observation deck and terrace, bird feeders, an outdoor amphitheater, and more.

Anna's Hummingbird ~ continued from page 4:

The most recent paper on the subject, a 1979 article by the late songbird expert Luis Baptista of the California Academy of Sciences, argued that the frequency of the chirp is similar to the hummingbird's vocalization frequency, and thus the chirp is probably vocal. To determine the origin once and for all, Clark and Feo observed for two springs the mating flights of male Anna's hummingbirds at a San Francisco Bay shoreline park called the Albany Bulb. With a borrowed high-speed camera taking 500 shots per second, Clark and Feo recorded male display dives performed for the benefit of a stuffed female hummingbird attached to a low bush or of a caged female.

The video revealed a very brief flaring of the tail feathers at the bottom of the dive, just prior to the bird's ascent for another dive. The flaring coincided with the chirps.

To confirm, the students captured males and plucked or trimmed their tail feathers, knowing that birds can fly without tail feathers and that they typically grow back in five weeks. Those males missing the outer pair of five pairs of tail feathers, or those with the trailing (inner) vanes of the outer feathers trimmed, were unable to make dive sounds.

High-speed video showed the sound was produced by the fluttering of the trailing edge of the outer tail feathers; outer tail feathers missing the inner vane produced no sound. Apparently, barbules linking the barbs of the feather vane make the vane stiff enough to vibrate like a reed in a wind instrument. "Just blowing outward on the tail feather makes the same frequency as in the dive."

Interestingly, the tail chirp of the Anna's hummingbird is louder than its vocalizations, leading the researchers to note in their paper, "This suggests that switching to feather sonations has allowed (small birds) to escape the intrinsic constraints on vocal sound volume" imposed by their small song box, or syrinx.

Adapted from materials provided by University of California - Berkeley, via EurekAlert!, a service of AAAS.