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El Tecolote

Newsletter of the Santa Barbara Audubon Society, Inc.

Volume 37, Issue 3 · *November 1998*

Bird Brains

by Diane Lee and Nicola Clayton

The next time someone calls you a bird brain, simply say, "Why, thank you." Birds are amazing animals and bird brains are even more fascinating. You can see examples of their remarkable abilities in your own backyard!

Set out a few seeds and watch the neighborhood scrub jay pick them up hurriedly in his beak and fly off a short distance to hide them in various holes he has carefully dug in your lawn. If you watch long enough you may spot him sneaking back to his seeds, retrieving them from their hiding places, and nibbling away. What many people do not realize is that this friendly little jay has probably hidden hundreds to thousands of seeds in hundreds to thousands of locations all over your and your neighbors' yards, only to remember where each seed was hidden and to retrieve them days, weeks, or even months later.

Studies have shown that food-storing birds, such as jays, crows, magpies, nutcrackers, chickadees, and nuthatches, perform this incredible feat using a particular form of memory for spatial locations. They also have revealed that spatial memory relies on the hippocampus, a structure in the brain of many animals, including birds, mice, rats, monkeys, and humans. This structure is also involved when memories must last a long time.

The hippocampus is larger in many birds and mammals that store or "cache" food than in similar species that are non-storers. Furthermore, the size of the hippocampus corresponds to seasonal differences in caching behavior. In the fall, some food-storing birds spend more time caching, cache more times, and leave their caches for longer periods than they do in the spring. Correspondingly, these birds have a larger hippocampus in the fall than in the spring.

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Save the Date

1998 Christmas Bird Count

Saturday, January 2, 1999

More information and a sign up sheet coming in the December issue of *El Tecolote*. Questions? Call the Audubon office at 805/964-1469.

SBAS to Join the MAPS Bird Banding Program

By Kathleen Whitney

As part of our mission to further conservation efforts in SB County, SBAS will be joining the MAPS (Monitoring Avian Productivity and Survivorship) Program and opening our first MAPS bird banding station in May 1999. The MAPS Program, founded by the Institute for Bird Populations (IBP), utilizes a nationwide network of bird banding stations to gather information on the population sizes, demographics, recruitment, and survivorship of landbird species. The MAPS Program, now in its tenth year of operation, is endorsed by the National Audubon Society and the Neotropical Migratory Bird Conservation Program (Partners in Flight) as an important tool for avian conservation. Recent declines, particularly in neotropical migrant species, have motivated efforts to establish baseline

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November Program

Wednesday: November 18
the

Carpinteria Salt March Ecosystem

with

Wayne Ferren

Doors open 7:30 p.m./program 8:00 p.m.
at the Santa Barbara Museum of
Natural History, Farrand Hall
Free

As Executive Director of the UCSB Museum of Systematics and Ecology, Department of Ecology, Evolution, and Marine Biology AND Associate Director of the Natural Reserve System and Marine Science Institute, Wayne Ferren is an "old salt" in the areas of biology and conservation. He will present a rich and informative program about the myriad bird and other species which inhabit the Carpinteria Salt Marsh just south of Santa Barbara for us this month.

Welcome New Members

Santa Barbara Audubon Society extends a warm welcome to all new members. We look forward to seeing you at upcoming Audubon programs and field trips. We're glad you're part of the growing number of local supporters for Audubon's efforts to excite people about birds and the preservation of their habitat. Thank you for joining:

MR/MRS ROBERT BAKER
PAUL/VIRGINIA BARRETT
LESLIE BURTON
CLARK H EDWARDS
MRS MAURICE FAULKNER
MS MARY GIBSON
BRO. LAURENCE HARMS
MS STAR HARTHERN
ELISABETH J HUMPHREYS
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MS CHRIS JOHNSON
NATHAN KANDUS
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MS MURIEL A PERRY
DELORES ROMERO
MS PRAKASH SHIVA
STAN SPINK
MRS D THOMPSON
RAGNAR THORENSEN
MARY VIGIL
RUTH WARREN
CAROL WASHINGTON
MS V L WEISS
RICHARD L WHITE
MR JOHN S WILLIS

Transfers to Chapter
MR/MRS PETER BEURET
LOIS CAPPS
PAUL S PHILLIPS

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Perhaps most important, the hippocampi of food-storing birds show considerable neural plasticity. That is, the size and number of cells in the hippocampus can change. For example, a higher rate of cell birth, or neurogenesis, occurs during the fall when caching activity is at its peak. It was believed for some time that all animals are born with a fixed number of brain cells that gradually decreases with age—that the brain is incapable of forming new cells. Quite to the contrary, the Clayton laboratory at UC Davis has shown that food-storing birds are born with too few cells to accurately remember where their caches are hidden. Studies have shown that young mountain chickadees must be allowed to cache before their hippocampi grow. In fact, as few as three episodes are necessary to trigger this brain growth.

These remarkable brain and behavior changes in the wild have been studied in the laboratory of the UC Davis Biological Sciences. Using a peanut-shopping exercise to investigate the role of the hippocampus in food retrieval in birds, they discovered that. hippocampal damage lead to impaired memory formation for tasks that relied on spatial cues but not for those that relied on color or visual cues. *(Please see original source for details of exercise.)*

Another exercise compared the memory of birds that do not ordinarily store food with food cachers. Instead of birds caching and retrieving food, researchers cached the food for them and watched as they searched, found, and remembered where food was hidden. Alaskan black-capped chickadees were better at remembering the location of a hidden peanut than California white-crowned sparrows when asked to remember the location for a short time (5 min.), and especially better when asked to remember the location over a long period of time (90 min.). Also, female Alaskan chickadees were better peanut shoppers than the males. This observation was surprising because in studies involving a variety of species, including humans, males usually perform better on spatial memory tasks.

Bird brains hold great secrets of how the brain functions when confronted with learning new things. They also hold great promise. We

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now know that bird brains are exceptionally plastic (capable of change) and may hold the key to unraveling one of the many ways that the brain forms memories. They may also be a vital link in understanding how the brain repairs and/or replenishes itself and aid in our attempts to prevent deterioration associated with age, disease, or physical injury.

Bird brain? Why, thank you very much!

Excerpted with permission from UC Davis Biological Sciences: News from the Division of Biological Sciences, *Volume 6, No. 1, Winter 1998.*

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population data and long-term population monitoring programs for landbirds in the North America. The mark-recapture studies of MAPS bird banding stations are an important contribution to these studies and there are currently over 430 such stations registered in the United States and Canada.

MAPS stations are standardized bird banding stations that are run during the nesting season from May through August at approximately ten-day intervals. Captured birds are identified, fitted with US Fish and Wildlife Service number ID bands, and the age and sex of the bird are determined if possible. Fat and molt are then assessed, weight and standard measurements are taken and the bird is released. It is the recapture of these birds at the same or other banding stations that provides some of the most interesting and valuable data and IBP expects a minimum commitment of five years and preferably ten years to the MAPS program. Ideally, SBAS could run two or three MAPS stations concurrently in the Santa Barbara area.

We are currently researching potential sites and beginning to fund raise for our first MAPS station. We will need to raise $2000.00 by March 1999 to purchase quality mist-nets, net poles, and assorted banding and handling supplies. Any contribution, however small, will be greatly appreciated. We are also looking for volunteers to sew sixty holding bags for the captured birds and to assist in the creation of the net runs once the MAPS site is chosen.

We encourage our membership to support this exciting new project which contributes not only to the conservation of our local birds and their habitats but also to the larger effort to conserve avian diversity in North America.

Field Trips

HOLLISTER RANCH NEAR GAVIOTA
1998 NOVEMBER 14, SATURDAY, 7:30 AM
Meet at mandatory carpool place
Birds of beaches, ponds, or stream sides
Guy Tingos, 805-681-0026, gtingos@west.net
Reservations required (limited spaces)
Drivers may appreciate gas money
101 to Storke, Glen Annie exit in Goleta. Go south on Storke Rd to Jack-in-the-Box parking lot near corner of Storke Rd and Hollister Ave. Car pool from here. To reserve your space, leave your name with Guy no later than Thursday Nov. 12. Limit of two vehicles. If you are willing to drive a vehicle that seats many people, let guy know along with how many people your vehicle can carry. For those who only make the waiting list, take heart; indications are that we will be invited to Hollister Ranch again. Bring water and snack. Trip over by noon.

MUSEUM OF SYSTEMATICS AND ECOLOGY, UNIVERSITY OF CALIFORNIA, SANTA BARBARA
1998 NOVEMBER 22, SUNDAY, 4:30 PM
Study skins of raptors, female ducks, and other species that you request
David Kisner 805-692-9792
kisnerd@silcom.com
From the north take 101 to Glen Annie, Storke exit and go south on Storke Rd to the end. Turn left onto El Colegio Rd and go east into the UCSB main campus. Bear left onto Ocean Rd then turn right onto University Rd. At the East Gate bear right onto Lagoon Rd and turn right into Lot 1. From the south take 101 to 217 to UCSB. At the East Gate bear left onto Lagoon Rd and turn right into Lot 1 and park. Walk west to Noble Hall (544), go to the 2nd floor and look for rm 2225 which will be on your right as you walk west. Bring your field guide if you have one, pen and paper for notes. Beginning birders, you have the opportunity to see field marks "in the feather" and in your hand. Experienced birders already know the value of study skins for sharpening field identification skills. We should finish up by about 6 PM. Afterwards, those so inclined will go out to eat.

Unless otherwise noted, field trips are free and reservations are not needed. If you would like a loaner pair of binoculars for a trip, call the leader.

Calendar of Events

Pampas Grass Removal, Goleta Slough*	Sunday, Nov. 1 Contact Darlene Chirman for location
*San Jose Creek Planting**	*Saturday, Nov. 7 (If Oct 31 date rained out)*
Hollister Ranch f.t.	Saturday, Nov. 14
Atascadero Creek Plantings*	Sunday, Nov. 15, (rain date Nov. 22)
Carpinteria Salt Marsh Ecosystems	Wednesday, Nov. 18
Museum of Systematics & Ecology f.t.	Sunday, Nov. 22
San Jose Creek Planting*	Saturday, Nov. 28 (Rain Date Dec 5)

*Please call Darlene Chirman if you have questions about volunteering at (805) 692-2008.

WORLD WIDE WEB SITE FOR
SOUTHERN CALIFORNIA AUDUBON FIELD TRIPS
http://socal.ca.audubon.org/trips.html

Population and Habitat
Local Case #1: The Devereux Slough
by Dave Wass

IT IS NOT NECESSARY to look too far to find an egregious example of population pressure negatively affecting bird habitat in our own region. Just take a ride to the Devereux Slough, where the parcel of land immediately south of the golf course is slated to be the site of 122 deluxe faculty homes. The University of California feels it needs to raise its student population cap to 20,000 in order to accommodate the expected increase in students statewide. Of course, more students means more teachers, and to attract the quality of faculty to meet its standards the University feels that it is necessary to build a class of housing suitable to attract those professionals.

So the University planners have chosen to build the best faculty homes here. Unfortunately, this will put at risk land that has been designated as Environmentally Sensitive Habitat (ESHA) by the Coastal Act. The Coastal Commission will not look favorably on this. But, the University feels it has no other choice.

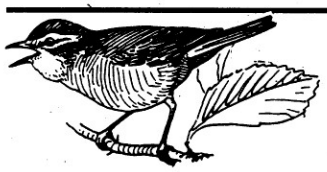
Actually, in this case, despite the pressures, there must be other choices. We urge the University to look at other options and consider the negative effects of such development in an environmentally sensitive area.

Wildlife habitat encroachment due to human population growth can been seen right here in our midst, demanding our thoughtful consideration.

El Tecolote is published for the benefit of SBAS members. Submissions to the newsletter and non-member subscriptions ($15.00/year) may be mailed to Santa Barbara Audubon Society, 5679 Hollister Avenue 5B, Goleta, CA 93117. Please make checks payable to SBAS.

RARE BIRD ALERT	*Lists rare birds sighted recently.*	964-8240

Officers and Committee Chairs meet the second Thursday of the month. Members are welcome to attend. Please call the Audubon office to verify dates and times (805) 964-1468; FAX (805) 967-7718. Cover art by Daryl Harrison.



Santa Barbara Audubon Society
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