

Magpie Monitors

Magpie News

Welcome to Magpie Monitors (also known as Bicycle Bird Biologists), an organization dedicated to helping better understand the relationship between Yellow-billed Magpie population health, West Nile virus, ecology, and genetics. Many of you have expressed an interest and a curiosity about our unique valley bird because you noticed an apparent recent decline of the Yellow-bills after years of sharing your neighborhoods with them. Hundreds of you have e-mailed our web site with valuable information about magpies you have seen or in many cases *not* seen. Partly because of your interest and reporting, the potential threats to Yellow-billed Magpie populations are being taken seriously.

We now have Magpie Monitors throughout the valley and Central Coast Range from Atascadero and Turlock to Chico and all points in between. We have Monitors in urban, suburban, and rural areas. All your observations are increasingly important, particularly data collected at regular frequent intervals following our protocols. You are a valued contributor to building a knowledge base for our very special valley bird.

Look for updates to our website over the next year: www.magpiemonitor.org

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How you can help

There are *several* ways that you can help monitor magpie populations:

1. Help us to identify specific locations of magpie nests and roosts
2. Starting any time after December 1 of each year, start monitoring nesting behavior of magpies weekly, then starting March 1 of each year, monitor specific nests.
3. A *roost* count would involve counting birds as they leave the roost each morning.
4. Collect *magpie feathers* for our DNA diversity studies
5. Finally, if you have already started a *Magpie Count Route* or Saturday Magpie count, continue collecting data.

For details on each of these ways of monitoring, please visit our website at www.magpiemonitor.org.

By counting magpies in so many different ways, *we hope to provide a better foundation to understand the health and ecology of magpie populations and the impact that West Nile virus is having on them.*

Magpie Paper Accepted!

The ornithology journal, *Auk*, will soon be publishing a paper by Scott Crosbie, Ph.D. student, working with Dr. Holly Ernest at the Wildlife and Ecology unit of the UC Davis Veterinary Genetics Lab and collaborators throughout North America. If you would like a copy of the paper when it becomes available, please email us.

Here is a brief overview of the paper:

Yellow-Billed Magpies become infected with West Nile virus very easily and evidence now suggests that abundance of the species has decreased considerably since West Nile virus became prominent in CA in 2004. Many of you expressed this same observation in your count data! California Department of Health Services data show a possible 49% decrease in Yellow-billed Magpie populations in just two years! (2004-2006). [Breeding Bird Survey data](#) shows a 25% decline as of 2005 and [Christmas Bird Count data](#) shows a 38% decline as of 2006. In 2006 at Davis, CA, as part of Dr. William Reisen's research, 38 blood samples were obtained from 21 Yellow-billed Magpies to test for West Nile virus specific antibodies (proteins found in the blood that indicate exposure to WNV and help animals fight infections) and only one Magpie was found to produce this line of defense. These findings call for range-wide monitoring in order to keep track of population trends of this particular bird (this is where our volunteers become very important!). It is also necessary to look at population size and structure as well as genetic diversity, among other things. Again this is where Magpie Monitor volunteers can help - the magpie feathers you send in are used to extract DNA and monitor populations for genetic diversity and other indices of population health.

Data shows a possible 49% decrease in Yellow-billed Magpie populations in just two years!

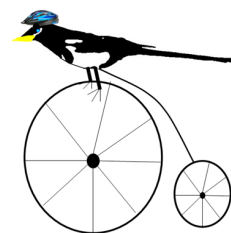
Source: Crosbie, P. Scott, W. Koenig, D. Walter, W. Reisen, V. Kramer, L. Marcus, R. Carney, E. Pandolfino, G. Bolen, L. Crosbie, D. Bell, H. Ernest. *Early Impact of West Nile Virus on the Yellow Billed Magpie (Pica nuttalli)*. In press 2008.

Research update



Levi Souza, Scientific Aid, Dr. Holly Ernest, Lizette Crosbie, and Scott Crosbie have finished collecting a years worth of data for estimating magpie population size and seasonal habitat-use patterns. They will continue collecting data through 2008. Overall, the project is going very well and Scott is just starting data analysis and predictive modeling!

Count Me In !



MagpieMonitor.org



Feather Collection



It is very important that our volunteers collect feathers in addition to roost counts, point counts, etc. to be used in DNA analysis. The DNA extracted from these feathers will help us to track changes in population health and genetic diversity over time.

What you should know:

1. Good places to find Yellow-billed magpie feathers include the ground under roost sites and nests.
2. The best time for feather collection is after breeding, during late spring and summer.
3. At your first visit to a roost, clear the ground of all the old feathers so that on your next visit all the feathers will be newly shed, ensuring fresh DNA.
4. Collect feathers after magpies have flown away.
5. Place feathers in a dry, paper envelope and write your name, the collection date and the collection location address on the envelope and then place it in a second envelope with a return address and your contact info (phone number/email address). Avoid touching the feather tip with your hands to reduce contamination.
6. Use different envelopes for each roost site.
7. If sending multiple envelopes at once, place those in one large envelope with a return address and your contact information

Send feathers to :Magpie Monitor Program
c/o Dr. Holly Ernest
Wildlife and Ecology Unit
Veterinary Genetics Laboratory
University of California
One Shields Ave. Davis, CA 95616-8744



What to look for: Identifying characteristics of YBMAs include blue/green/purple iridescence and strips of white on some feathers as shown here



DNA Work Published



10 microsatellite DNA markers (DNA probes, similar to those used in human forensic CSI-type cases) for Yellow-billed Magpies have been developed at UC Davis, and these will aid ecological studies of the population-level effects of diseases, such as West Nile virus.

Source: Ernest, Holly B., Kurushima, Jennifer D., Well, Jay A. *Development of 10 microsatellite loci for Yellow-billed Magpies (Pica nuttalli) and corvid ecology and West Nile virus studies. 2008.* To read the article follow this link: [DNA work](#)

How Magpie research is helping conservation efforts for the endangered Island Scrub-jay



Island Scrub-jay
Santa Cruz Island, 5 May 2004
© Henry Detwiler, Southwest Birders

Island Scrub-jay,
© Henry Detwiler, Southwest
Birders

Scott Crosbie, Dr. Holly Ernest, and a number of avian ecology and health researchers around the country met in San Diego in February 2008 to provide advice on monitoring corvids (magpies, crows, jays, ravens) to non-governmental organizations, and state and federal agencies. Magpie Monitors was highlighted as a way to involve the public in monitoring and sample collection for birds that might be at risk of population declines. You can read more about Island Scrub-jays at the following website: <http://audubon2.org/watchlist/>



MM Contacts



The Magpie Monitors and Bicycle Bird Biologist Programs are administered by Holly Ernest, DVM, PhD, School of Veterinary Medicine, University of California, Davis. Holly is a wildlife veterinarian and conservation geneticist with interests in application of genetics and other tools to improve wildlife health and conservation.

🚲 Priya Motupalli is our volunteer coordinator. Priya is a UC Davis student majoring in Animal Science with an emphasis on Avian Science.

🚲 Scott Crosbie coordinates point counts and nest monitoring. He has worked as a wildlife biologist for environmental consulting firms and federal agencies conducting endangered species surveys, habitat assessments, population monitoring and other wildlife studies. He is certified as a Master Bird Bander and operates bird-banding (MAPS) stations for The Nature Conservancy on the Tahoe National Forest. Scott studied the Yellow-billed Magpie for his Master's Thesis at CSU Sacramento and is continuing field studies on this species.

🚲 Lizette Crosbie is a wildlife biologist currently working for the Sacramento Area Flood Control Agency as their Senior Natural Resource Specialist. She has also taught biology courses such as Ornithology, Natural History, Environmental Biology, Zoology and Field Methods in Ecology at Sacramento City College and CSU, Sacramento. Lizette coordinates roost monitors and trains new roost-census volunteers.

