



BACKGROUND



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Press Contacts: Julia McHugh 805 569-3303 or juliapr@west.net
or Dean Noble 805 962-5339 or dnoble@sbzoo.org

NEST MONITORING PROGRAM **SANTA BARBARA ZOO & U.S. FISH & WILDLIFE SERVICE** **KEEP CLOSE WATCH ON CONDOR NESTS**

Seven wild California condor chicks successfully fledged (left their nests) in California during a very successful breeding season in 2008. Four of these nests were in the Hopper Mountain National Wildlife Refuge Complex, where Zoo staff and volunteers keep a dawn-to-dusk, seven-day-a-week watch on wild condor nests as part of a nest monitoring program with the U. S. Fish and Wildlife Service.

Estelle Sandhaus, Assistant Director of Conservation and Research, leads the Zoo's conservation research activities. She helped develop the scientific protocol for the program, facilitates the data entry and analysis, and collaborates in writing grant proposals and reports.

But this isn't a desk job.

Estelle spends a good deal of her time in the isolated backcountry where the condors nest in caves high in sandstone cliffs. If she is not observing or collecting data, she is training program staff and volunteers how to.

She shows how to recognize condor courtship displays and pairing behavior, and how to use powerful spotting scopes to identify individual birds, often flying miles away, by their wing-tag numbers.

Estelle also prepares the workers for the rigors of hiking, often for several hours through rugged terrain, to the hidden observation locations, how to avoid poison oak, and what to do should they encounter wild animals. Rattlesnakes, bobcats, bears and mountain lions all live in this remote area.

"The volunteers are basically sitting, for hours on end, hidden in a blind made of existing foliage and camouflage netting," says Estelle. "They are watching for condor behaviors and activity at the nest. It can be insanely hot during the summer and chilly in the winter, especially when you are sitting still."

The volunteers are rewarded with breathtaking views of condors flying in the wild, raising their chicks, and, if the timing is right, a chick's first flight.

Condors do not build the stereotypical bird's nest of sticks and feathers. Instead, they choose a protected location, often in an isolated cave. The female lays one egg directly onto the cave floor. In some lucky cases, volunteer researchers have a clear view directly into the cave.

"Behaviors we are most interested in are egg incubation, nesting and nest maintenance, brooding of the chick, and the social interactions between the parents and the chick, such as feeding and preening," says Estelle. "But we also see 'play,' when the chick engages in energetic bouts of hopping, running around in circles, picking up sticks, putting them down and pouncing on them."

If they can't see into the nest, researchers record the amount of time each condor spends there, when the pairs switch off, and, once the chick is grown, when it ventures out of the nest.

Though isolated, volunteers aren't totally alone. They are in radio contact with other researchers and Refuge staff also working in the field, either monitoring other nests or locating the birds visually or by radio telemetry. (Most adult condors are tagged with radio transmitters.)

"Often the call will come over the radio, 'hey, Estelle, number 21 is headed over your way,'" she says. "We work together."

Observations begin in late Fall when researchers begin to see two condors spending time together. The condor pair often visits several possible nesting sites before the female decides on the final spot. One single egg per female is laid generally between February and April. The egg incubates for 56 to 58 days and hatches in Spring. Then it is another five and-a-half to six months before the young chick fledges.

"This year, 2009, has been running a bit late," reports Estelle. "We didn't see displays until January. But we've had an egg hatch just this week (April 16)."

The eggs and then chicks are checked regularly by biologists or veterinarians and there have been interventions to aid an ailing chick. Co-investigator Joseph Brandt (U.S. Fish and Wildlife Service) has extensive backcountry survival and mountain rescue experience and serves as the climbing specialist as well as lead biologist on most nest entries.

"It's a good thing too, as it our monitoring, nest entries, and interventions have increased the number of successful wild fledglings," notes Estelle. "We are giving these chicks the best start on life possible. This is especially important in a species with a long life span and a long period of parental dependence like the condor – early learning experiences will affect the bird's behavior throughout its entire lifetime.

Several years ago, a chick had to be airlifted out for emergency treatment. A program intern stayed in a bivouac outside the nest to keep the adults from coming into the cave. "If they had discovered the chick was missing, they might have abandoned the nest," she reports. "Within 24 hours, the chick was back and reunited with the parents. It eventually fledged successfully."

This season, as of April, there are four active nests in the study area, with more in Big Sur and Arizona.

"Last year, in our study area, we had five active nests. Four of those chicks fledged successfully, but one had to be airlifted to the Los Angeles Zoo because it had microtrash and lead in its system. But it has recovered and will be released soon."

Data collected is used to learn about condor behavior, which is the subject of the PhD dissertation that Estelle is currently preparing.

"We want to find out the differences between adult condors who were captive-raised vs. those raised by condor parents," she notes. "What are the different parenting styles? Are there different success rates for birds that were wild-fledged vs. those captive-raised and released?"

Estelle, Joseph, and the other program researchers are also interested in determining why parent condors bring trash into the nests and how to prevent it.

"We've done amazing work against the odds and rescued these birds from extinction," says Estelle. "But there is still work to get the lead out of the environment. The ban on lead shot is still very new. It is too early to evaluate its full impact."

Learning what will help these huge birds, once numbering only 24 individuals, now over 320, continue to survive and breed in the wild – that may be worth getting a case of poison oak for the nest monitors.

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On Earth Day, April 22, 2009, the Santa Barbara Zoo opened California Trails, a new exhibit complex showcasing threatened or endangered California natives including critically endangered California condors plus Channel Island foxes, bald eagles, desert tortoises, and local raptors, reptiles and amphibians. With this exhibit, the Santa Barbara Zoo becomes one of only three zoos in the world to display California condors, a species which has rebounded from the brink of extinction. But there is still much work to be done to “save” all these species. For more information, visit www.sbzoo.org.

The Santa Barbara Zoo is open daily from 10 a.m. – 5 p.m.; general admission is \$11 for adults, \$9 for children 2-12 and seniors 60+, and children under 2 are free . Parking is \$4.

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