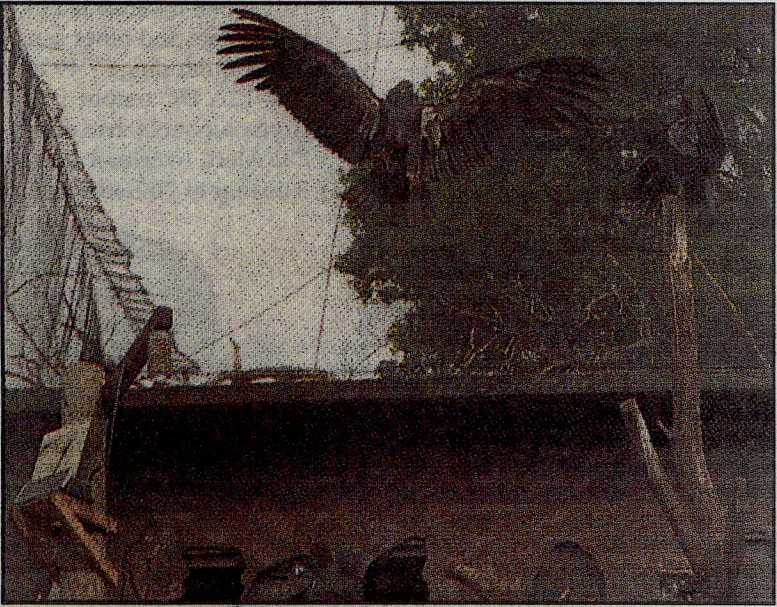


Preparing young birds for the real world



ORVILLE MYERS/The Herald

Joe Burnett and Jessica Steffen of the Ventana Wilderness Society, carry a cage holding a condor out of a plane at Monterey Peninsula Airport on Friday. Three birds, two 9-month-old condors and a 9-year-old condor, will be transported to Ventana Wilderness, where they will enter a pen, below, for training.



ORVILLE MYERS/Herald File

Condor chicks arrive for lessons

By **HOLLY DAVIS**
Herald Staff Writer

Like sophomores arriving at school for their first day of driver's education, two condor chicks arrived in Monterey on Friday to begin the training they'll need to go out into the real world on their own.

Condor-style defensive driving involves learning how to avoid electric power line poles. For these two young condors, who are part of a new study conducted by the Ventana Wilderness Society, the defensive-driving lessons will also include

avoiding windmills. Accompanied by their 9-year-old mentor bird, the two condors arrived at the Monterey Peninsula Airport on a private turboprop plane donated by the Monterey Airplane Co. After a quick check by the resident veterinarian, Dr. Michael Murray, the Ventana staff whisked the trio up to Ventana's release pen in the Santa Lucia Mountains.

These three join three others already in training. The young birds

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will be released in April, bringing the total number of condors living in the remote area surrounding the release pen to 19.

Given their desire to expand the condor's range in California, biologists are looking for alternative release sites, said Kelly Sorenson, Ventana's assistant director.

The birds that will be released in spring of 2002 could find a home in the Pinnacles National Monument in the Gabilan Mountains, or at one of several possible sites in the Diablo Mountains in Santa Clara County.

The only hitch is that the Altamont Pass wind farm, where a notable number of red-tailed hawks and golden eagles have been killed by wind turbines, is close enough to the Mount Diablo release sites to make U.S. Fish and Wildlife Service officials uneasy.

Based on Ventana's previous work with the bald eagle recovery effort in Central California, the Fish and Wildlife Service asked the Ventana group to head up the reintroduction of condors along the Central Coast. As part of that request, Ventana must ensure a plan exists to minimize the impacts to condors from wind turbines. To this end, Ventana is cooperating with the National Renewable Energy Laboratory, which has expertise in the interaction of birds with wind turbines.

Based on the laboratory's study in the Altamont Pass, there is hope the condors will be at a much lower risk of hitting a spinning wind turbine blade than other raptors. Turkey vultures, condors' close relatives, are one of the four most abundant birds in that area, yet they have an exceptionally low mortality rate, said Carl Thelander, principal investigator for the study.

Thelander finds that it is a bird's behavior that puts it at risk. Red-tailed hawks and golden eagles, which hunt for their food by scanning the ground from great heights, then diving intently to capture it, make up the largest number of birds killed by wind turbines.

Thelander said he thinks that in the focused dive of the hunt, the raptors just don't see the spinning blades. Other birds, like turkey vultures, don't actively hunt, but just fly around above the wind farm waiting for lunch to show up. This behavior could explain their low death rate in

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the wind farm, Thelander said.

He cautions, though, that if condors do enter a wind farm, they could be at risk. He worries that because they are such large birds it could be difficult for them to maneuver in the wind farm.

Since condors are naturally curious creatures, some scientists believe they are likely to land within the wind farm.

To minimize this risk, Ventana and the renewable-energy lab will try to teach condors to avoid the turbines.

To understand how scientists hope to teach defensive flying to these sophomore fliers' education, it helps to step back in time.

Wild condors are tough old birds that survived the last ice age 10,000 years ago. Hunting, egg collecting and poisoning over the past 150 years, however, left the California condor on the brink of extinction. With only 27 birds still living, scientists took matters into their own hands. In 1987, a biologist captured the last wild condor and brought it into captivity to try to preserve the species.

Wildlife biologists at the San Diego Wild Animal Park and the Los Angeles Zoo have bred California condors in captivity since then, bringing the total number of condors in the wild and in captivity to 164.

When the first groups of condors were released in 1992 and 1993, some 31 percent of the birds died from electrocution or collision with power lines. They even fought each other to sit atop power poles, said Lloyd Kiff, scientific director of the Peregrine Fund in Boise, Idaho.

Since condors top the charts as North America's largest bird, their impressive 9½-foot wingspan can connect two power lines, electrocuting the bird. When biologists saw the high number of condors killed by electrocution or collision with power lines, they recaptured the birds they'd released and devised a plan to

train them to avoid power poles altogether.

Since 1995, all condors released in the wild have gone through aversion training, in which the condors are given a slight shock if they land on a mock power pole in their pen. The shock is similar to the kind used to keep a dog in a yard, only six volts at low amperage.

"Amperage is what kills; voltage is just annoying," Sorenson said.

Only 2 percent of the condors released since 1995 have died from electrocution, so it appears the training is working. Biologists, however, don't know why. Trying to find out is the first goal of the study.

Interestingly, condor biologists in Southern California observed some startling behavior with their mock power pole system. One morning the condor caretakers arrived to see the birds in the pen perched on top of the power pole, when just the night before they clearly avoided the pole because of the six-volt shock. The caretakers realized the battery for the shocking wires had died and the pole no longer shocked the birds. After the battery was replaced, the birds kept their distance from the pole.

Since this occurred a second time, study design expert Mike Morrison, consultant to the energy lab, thought something interesting might be going on. He wondered how the birds knew the battery had died. They had already been trained to avoid the pole. Either they were continually testing to see if the pole still shocked them, or something else was repelling them. This something else could be the weak electromagnetic field generated when current flows through wires, Morrison said.

After the 9-month-old condor chicks that arrived Friday help scientists with the first goal of the study, they will go on to the second phase of the experiment: the turbine test. Condors will be trained to avoid a mock wind turbine the same way they learned to avoid a power pole.

Kiff of the Peregrine Fund doubts that electromagnetism can repel a bird, but he admits that nothing is known about the effect of electromagnetism on condors.

"It is quite useful to do," he said. "If they don't find anything, well, that's something."

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