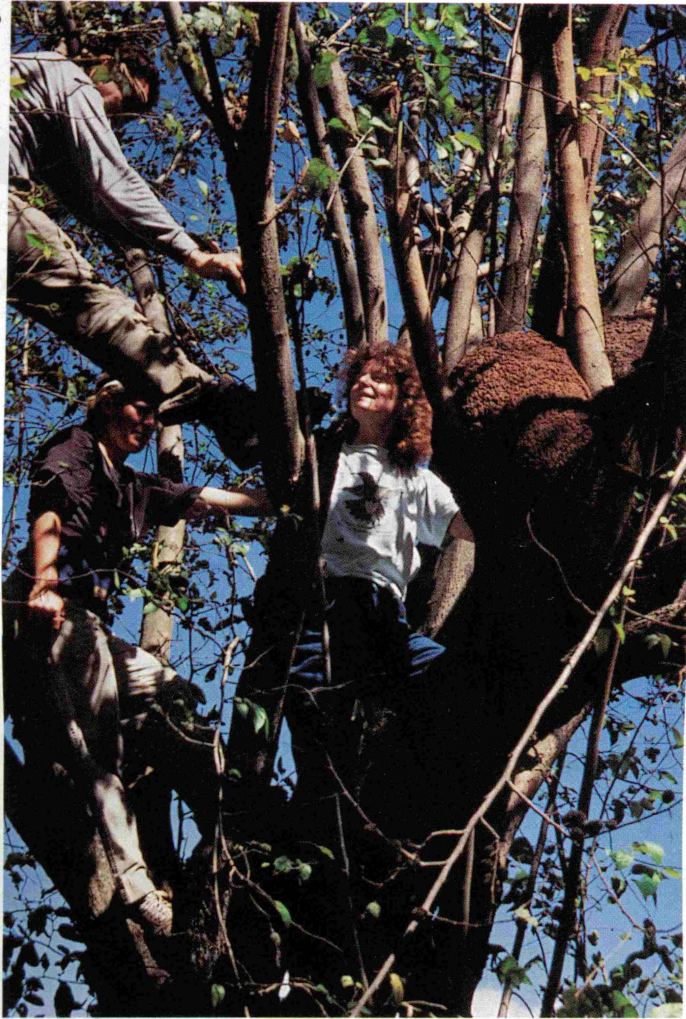


Photo by N. Berger



Drs. Brice (center), Joyner (lower left) and Wiley (upper left) inspecting a poached Orange-fronted Conure nest (located inside the termite nest) in southern Guatemala.

Photo by Diane Morrison



Orange-winged Amazon at the Psittacine Research Center's breeding facility.

## Psittacine Research Project: Parrot Research in the Lab and Field

by A. T. Brice  
Psittacine Research Project  
Department of Avian Sciences  
University of California, Davis

The Psittacine Research Project (PRP) is the only university-based program dedicated specifically to the biology of parrots. It was founded in 1978 and is part of the Department of Avian Sciences at the University of California at Davis. The early years of the PRP saw a focus on nutrition and management of Cockatiels (*Nymphicus hollandicus*). The research conducted by Dr. C.R. Grau and T.E. Roudybush in the early 1980s provided the avicultural community with the first scientific studies of psittacine nutrition, and the American Federation Of Aviculture was generous in supporting this work.

In the mid-1980s, Dr. J.R. Millam, an animal physiologist, became more involved with the project, and he and his students produced a series of papers on the reproductive biology of the cockatiel. This research addressed such topics as the importance of photoperiod in stimulating reproduction and the reproductive success of hand-reared versus parent-reared cockatiels. The results of the studies were directly applicable to those interested in captive propagation of parrots.

In 1984, the PRP purchased 50 Orange-winged Amazons (*Amazona amazonica*) to begin investigations into the biology of a second psittacine species of different size and habitat than the cockatiel. An Amazon was given special consideration since the genus contains so many endangered members. The Orange-winged was considered fairly plentiful at that time and, like most Amazons, had a reputation for not being a very reliable breeder. The new birds underwent a stringent two year quarantine period at the Department of Avian Sciences, and then another three years passed with no reproductive success.

I became coordinator of the



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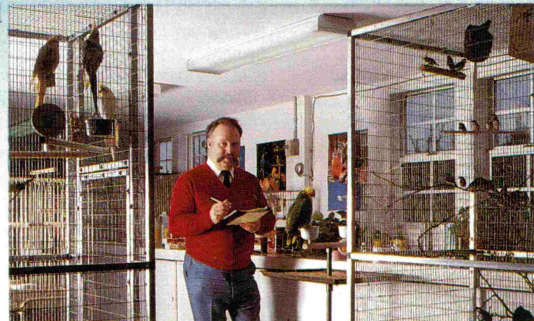
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\* Position open — contact regional vice president if interested  
\* Indicates 2 year term has been fulfilled. If no new interested party  
comes forward and indicates a desire to serve, incumbent remains in  
position.

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Mark these dates and plan to attend!

**SPRING QUARTERLY  
DIRECTORS MEETING**  
February 1992  
(place & date to be announced)

**AFA CONVENTION 1992**  
Miami, Florida  
August 1 - 8, 1992

project in 1989. At that time Dr. Millam, his graduate students and I agreed that a new approach was needed to stimulate reproduction in the parrots. In the winter of 1990, we implemented a multifaceted experimental design with 15 pairs of the Orange-wings. Seven pairs received five "environmental enrichments" which had been selected from many that bird breeders had suggested were stimulatory for their birds — separation into same sex flights for three months, nest boxes that were deeper than the control boxes, an insert over the nest entrance to encourage chewing, misting daily and fruit offered three times a week. The eight pairs that served as controls were simply given nest boxes. The results were impressive. Six of the seven experimental pairs laid eggs and only one of eight of the control pairs.

The American Federation of Aviculture funded the PRP to switch pairs and conduct the same experiment in 1991. The preliminary data show that four of eight of this year's experimental pairs, which had been the controls in 1990, laid eggs. As interesting, however, was the fact that five of seven of the control pairs, last year's experimental group, laid without any of the enrichments. It appears that once the birds are stimulated to breed the first time, they learn the behavior and don't need as much external stimulation in subsequent breeding seasons.

We are continuing research with our captive Amazons in order to learn more about the mechanisms controlling breeding behavior. We are also beginning a study of the development of pair formation with our one-year-old Orange-wings. Our current cockatiel research includes the following studies: the effects of stress on weight maintenance; the role of gonadotropin releasing hormone in stimulating reproduction; and the importance of nest box design in reproductive success.

In addition to our work at UC Davis, we have also begun studies of the biology of wild parrots in Guatemala. We know that habitat destruction and the pet trade have taken a toll on many parrot populations, but surprisingly little scientific work has been conducted on the ecology of wild psittacines, which are legally imported into the U.S. at a rate of some 250,000 per year. What factors regulate the populations of wild

parrots? If we can identify them, could we manage them in some areas to increase the population to a level that could tolerate some regulated harvesting for the pet trade? Or would that proposal be totally unworkable? The current level of poaching psittacine nestlings is extremely high in Guatemala and throughout many accessible areas in Latin America. How can we change this destructive practice and provide some alternatives for the local people? What about the feasibility of captive propagation of parrots in source countries for export so that local income can be generated? These are some of the questions we are grappling with as we begin our second season in Guatemala.

Our field research team consists of Dr. Kim Joyner, an avian veterinarian well-known to aviculturalists; Dr. Jim Wiley, a parrot biologist with the U.S. Fish and Wildlife Service; several students from the U.S. and Guatemala and me. Our short-term goals include the initiation of an intensive conservation education program on the cattle ranch where we are working with the objective of diminishing the poaching levels of the Yellow-naped Amazon (*Amazona auropalliata*), the Orange-fronted Conure (*Aratinga canicularis*) and the Orange-chinned Parakeet (*Brotogeris jugularis*) which breed there. This will include a trial program of financial rewards for nest guarding as well as signs, brochures, t-shirts and school programs. At the same time we will begin a long-term study of the demography and ecology of the Yellow-naped Amazon, a species which is extremely popular in the pet trade. By studying its biology and the factors that regulate the population in our study area, we should be able to make some recommendations regarding its status and manageability in a disturbed habitat such as the one where we are working.

The Psittacine Research Project is committed to parrot conservation biology. It is only through objective, scientific inquiry that the extent of psittacine population decline can be assessed and solutions proposed.

Those who would like to support the Psittacine Research Project with a donation and/or receive more information about its programs may write to Dr. Ann Brice, Psittacine Research Project, Department of Avian Sciences, University of California, Davis, CA 95616. ●