

DEVELOPING A CONSERVATION ETHIC IN AVICULTURE

Published in the International Avian Research Foundation Newsletter, Vol. 1, Issue 2, 1991, pp. 2-4.

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Regardless of how the parrot trade may be regarded among zoologists and conservationists, it is undeniable that the current status of captive breeding in psittacines owes much to the private breeder's pioneering efforts. Considerable debate hovers over the meaning of "conservation"; not to mention the degree to which it is an issue for the private breeder. Nonetheless, virtually all aviculturists recognize that conservation, in some form, will influence their future involvement with birds. In this light, I would like to offer a commentary on conservation philosophies in aviculture and their relevance to breeders.

The politics of the Endangered Species Act notwithstanding, only 22 parakeets or parrots are currently listed under CITES I. Many of those are entirely absent from private aviculture, or are unlikely candidates due to strict regulations. Despite this limitation, imports of most psittacines have dropped dramatically in the last few years in response to political pressure to reduce trade in wild-caught parrots, economics and fewer numbers of birds remaining in the wild. Originally the recipients of most imports, parrot aficionados and private breeders now produce the bulk of birds entering the pet trade as domestics. The shift toward raising domestic birds as pets is without question the single greatest element of conservation yet to arise in aviculture, and has long been overdue. Nonetheless, virtually all species that have been successfully raised domestically are expected to be listed on CITES I or II within the next few years, essentially ending the import of wild animals and severely curtailing the international trade in all species. (There are also rumors that USDA will regulate breeding facilities by that time.) Though considerable, the breeding successes of parrots in captivity have not excused the over-harvest of wild populations for pets, nor obviated the aviculturist's responsibility to adopt a population-management perspective for the vast numbers of birds destined to survive only under human care.

Most breeders belong to the community of aviculturists who attempt to obtain more, and better, representatives of the species they are interested in breeding. If business oriented, they hope to increase production and profit; if hobbyists, acquisition may simply be a way of augmenting the flock, or experimenting with new species, for whatever reason. The demand for proven breeder birds typically exceeds supply many-fold, which accounts for many of the unproductive birds in aviaries, and the infamy of the words "proven" and "laying" in the parrot want ads. Beyond the confines of one's own facility, few aviculturists are aware of the genetic relatedness of available breeders with which to augment a species inventory; often, this can be attributed to long-term breeder birds having been imported.

If offspring are surplus as pets, pedigrees are often disregarded altogether, though many aviculturists are now conscientious enough to keep first or second generation records for birds slated to be breeders. Interestingly, I have noticed that records are far better for birds that return to the parent flock compared to birds that leave the aviary. In many respects, the population profile of aviaries is similar to that of island sub-populations; what we know about the birds is sketchy, and a collection usually consists of a small, fixed number of breeding pairs, with unknown or limited variation in age and relatedness. Since small populations rarely persist in captivity for more than several generations without genetic exchange from outside sources (bear in mind that all zoological lineages have eventually gone extinct), the prospect for species survival through private collections requires a coordinated effort, the beginning of which is management. The foundation of any species management plan is detailed information, such as age, sex and pedigree. This applies to blue and gold macaws as well as palm cockatoos, and really sets the stage for cataloguing which birds reproduce, when they do, and how many chicks of each sex are successfully fledged.

Today, a grim scenario for birds and breeders alike is evidenced by the over-investment in unproductive pairs, single birds or too few birds of any one species in many private and zoo aviaries. Given that the likelihood of population increase and longevity is proportional to the number of founding individuals in a

population, it behooves the aviculturist with long-term breeding goals to concentrate on those species with which he/she has had success, and to adopt a population-management perspective with those species. This means taking the approach that a true population of each species is required to maintain production for both surplus (sale/trade for new genetic stock) and flock stability.

One must minimize relatedness among offspring returned to the parent flock for viability, and maintain a group of birds with reproductive potential and variation in age as insurance against tough times in the future. Realistically, we are entering an era in which the private breeder with just a couple of pairs of birds who sells all of the babies as pets is going to have difficulty remaining in aviculture. Unfortunately, there are thousands of such persons, and collectively they possess tens of thousands of birds, which, despite their potential genetic diversity, are unlikely to contribute to future generations.

In light of the inevitable CITES designations for many, if not all, hook-bills, a population-management strategy is not only a way to reduce the waste of countless birds held in unproductive captivity—thus helping private breeders perpetuate their successful collections—it may well be the only means for private breeders to guarantee any future whatsoever with psittacines.

Population management is the crux of conservation, and is actually an easier strategy for private individuals to adopt than some zoos or conservatories. One reason that psittacine culture has been so universally successful is that birds have been affordable in numbers to many people, and parrot production is fairly economical compared to that for other domesticated, exotic species. As a result, most of the largest and genetically most representative populations of parrots are today found in private collections.

Private collectors rarely have to yield to public pressure (or a board of directors) to increase the variety in a collection at the expense of fewer numbers per species. Even some species which are currently listed on CITES I (such as *Aratinga guarouba* or *Amazona spp.*) can be found in substantial numbers in private aviaries.

Encouraging rare species to breed, particularly those that cannot be obtained in large enough numbers to justify a true, potentially self-sustaining population, is a formidable challenge. Sadly, most of the frustration is over finding mates for birds, since “rare” usually translates into “valuable” or “expensive”, and signals those birds which are coveted even as singles. Greed and competition among collectors frustrates developing a cooperative network for breeders (such as the Species Survival Plan of the AZA), something that may arise only as a last resort, when birds are truly on the brink of extinction. Given the pending legislation on parrots, it is useful to think of all species as threatened or endangered when designing a breeding program.

Outdoor aviaries often have advantages with particularly rare species, because groups of birds can be physically interspersed so as to minimize disturbances and stress; however, I do not mean to suggest that indoor aviaries have not claimed equivalent successes. Basically, with endangered or threatened animals, a Machiavellian approach has to be adopted—whatever works is the best strategy.

Many factors weigh in the decision to raise rare or threatened species, including housing facilities, climate (including risk of exposure to endemic disease), dietary requirements and, of course, finances. Investing in a reasonable number of birds to begin a management plan (I recommend at least eight to ten breeding pairs, with a target of 15-20 as a carrying capacity) is expensive enough, and should not be contemplated unless long-term prospects can be ensured. Often, special food requirements, such as select fruits or nuts, restrict geographically where birds can be kept, and obviously preparations must be made well in advance. Diseases, such as *Sarcosyis*, which is devastating to old-world parrots must be weighed against the aviary’s ability to absorb such a blow, either through outside replacement (which may be impossible for some species, regardless of funding) or by having a sufficient population from which to draw a new recruit.

Nothing is more relevant to propagating and conserving rare birds in captivity than the fate of offspring. Since few private aviculturists are fortunate enough to be able to produce vast numbers of parrots for the sheer fun of it, and since there is as yet no official network for the genetic management of most captive parrots (though studbooks are on the rise), there often has to be some return, besides pride, for one’s

efforts. At least initially, some of the most threatened species' offspring are safe from the consideration "for sale" because of their extreme scarcity. As numbers increase however, the decision to surplus, and how, becomes more complicated. For example, in whose interest is it to hand-raise rare birds so that they are imprinted on humans? Evidence from zoological literature suggests strongly that un-imprinted animals, preferably parent-reared, comprise the best first- and second-generation breeders; I have corroborated this claim from anecdotal records of many private breeders. Surely, hand-rearing is unavoidable in many cases, but if the imprinted babies become non-reproducing adults, then really nothing has been accomplished, conservation-wise. On the other hand, letting rare chicks die simply because they have poor parents would be regarded as the epitome of negligence by virtually all breeders. These are tough decisions. Responsible management is the only real safeguard against endangered species being preferentially raised as non-reproductive pets—a safeguard which is likely to be precarious at best if the current number of pet hyacinth macaws is any kind of forecast.

As we approach a time when all captive species comprise a very finite number of individuals, the actions of all breeders will determine the avicultural options available in the future. Aviculturists as a lot are already conservation-minded in many respects—their deep-seeded personal and financial investment in propagation is testimony to that. We would all like to realize a future when species again fill their former ranges in the wild, but this is certainly a distant dream. Until then, species preservation is entrusted to all breeders, and we must accept that weighty challenge responsibly.