

Amazon Breeding Today

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Environmental Enrichment; a Mark of Maturity

Abstract: Amazon breeding today has begun to take on the luster of a maturing enterprise. Although we have yet to reach our goal, the dust choked, over crowded, dung heaped, cage-cluttered bird room dungeons are becoming the mark of a crumbling insensitive and unenlightened era. Today, more and more breeders have compassion for their birds and place them in roomy well-lit flights with stimulating physical and visual surroundings.

Total indoor facilities are now more frequently equipped with spacious flights for flying, fans for air movement, built-in or manual rain simulation for showering the birds. Air-conditioning in the summer or an exhaust fan in the window keeps the dust and temperature down. Hepa air filters are the best for dust control. These rooms are painted, even decorated with interesting visuals for these highly visually oriented and stimulated birds. The fluorescent full spectrum lighting used in the modern indoor facility closely approximates the full visual spectrum of the sun. While the half-hour twilight period in the morning and evening is facilitated by switching on a low wattage light to ease the birds into and out of their daily routine. The additions of hanging real and artificial plants in the indoor facility mark that modern breeder as a person of insight, compassion and distinction.

Outside Enrichment

Indoor facilities are still the most common arrangement and, to be fair, some individual circumstances will not allow otherwise. However, many bird keeping facilities could at least have indoor/outdoor facilities if more information were available.

I am a staunch advocate of outdoor facilities. In the vast majority of cases, outdoor facilities of some kind can be constructed for the birds, if only for part of the year. No amount of indoors environmental manipulation and stimulation can match the refreshment of being outside. The sights, the sounds, the smells, wind and rain are all free and stimulating to all creatures. We humans all feel the compression of being indoors too long and even named it "Cabin Fever."

Thermal Tolerance

Totally neglected or purposely avoided in the parrot literature is the subject of thermal tolerance (weather tolerance) of the parrots in general or Amazons in particular. Frosty nights in the early spring or fall are of no consequence to a healthy Amazon residing in an outdoor flight constructed with wind and rain protection. Here in western Washington State, during the late fall or early spring, if the weather forecasts frosty temperatures, the hanging water bottles are brought in to avoid freezing and glass breakage. The Europeans tend to treat their birds with

much greater discipline than Americans, but Amazons can handle USDA growing zone eight with considerate cage site selection location and zone seven with proper cage site placement, wind and rain protection and judicious use of heat lamps during those really cold nights. Parrots in general are a lot tougher than most people think. A parrot that molts out completely while residing outside will grow longer (not more) down feathers for added insulation against the elements. But as in all advice, don't over do it. Fleshy feet can be injured in extremely cold weather and heat lamps or indoor residency are necessary during winter weather.

We bring the Amazons in every winter during the few coldest weeks (here in USDA Growing Zone seven) and flock or semi-flock the Amazons to allow these highly social creatures of socialize in the manner they have done for uncounted thousands of generations. Typically, all the Amazons go back out to their breeding flights in mid-February in preparation for the Spring Reproduction Festival (lasting from late March to early July in our latitude).

Food caloric requirements change with cooler weather.

During the cooler or colder periods, the caloric intake of the Amazons is adjusted upward to account for the additional calories metabolized during cold weather. Typically, we use peanut/Canola oil mixed in with the cooking mix and increase the amount of high fat seeds (sunflower/safflower). The weather forecasts are monitored daily and the food is adjusted to fit the weather on a similar bases.

General Management

All flights are up off the ground by 3.5 feet to facilitate the guard dogs' rapid passage beneath. Our six outdoor dogs consist of two Rat Terriers for vermin control and barking assistance when needed, two German Shepherds, one Rottweiler and one Border Collie. The larger dogs are extremely well pedigreed for their guard duty tasks. The Border Collie may seem out of place but she is on constant alert to be sure a new employee is not mistaken for an

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intruder by the less discriminating Rottweiler. In the 17 years at this location no one has successfully penetrated the perimeter fences although a few truly foolish have tried.

Heavily thorned blackberry bushes have been planted along the fence line of the less patrolled and assessable areas of our seven acres to assist in discouraging trespassers. The three farm access road gates are always locked and entrance is by appointment only during most of the year.

We are open to the public from August to December, without appointment for four hours each Saturday afternoon only. One gate is opened and the dogs are enclosed. During this period as many as five breeding compounds are open to visitation with an experienced employee as a tour guide. The compounds are inspected in advance of every visitation for any sign that would lead to possible closure to the public. Bird concerns take precedence over public wants. No visitor or group is allowed to be unescorted to avoid the habit of fingers thrust into cages or dallying in front of a flight with a hen on eggs or small hatchlings. Groups are kept small for ease of management. Farm rules are clearly spelled out on footpath signs. All buildings but the bird show room is off limits to all but employees.

All flights are under the boughs of Douglas fir trees or partitioned with PVC lattice with vines growing on them to facilitate privacy. The vines used at White Mt. Bird Farm here in Graham, Washington include grapes of several varieties, hardy Kiwi vines and Hops (beer-type). Grapevines are the most commonly used vines here due to their great adaptability to our soil and climate. These varied species of vines not only provide abundant fruit in the fall but also serve as an endless distraction for the birds by toying with or feeding on the rapid growing tips as they twine into the cages. Cheap entertainment indeed.

Spatial Considerations

Getting the most bang for your buck is the unwritten rule in indoor facilities where space is at a premium and that fact alone tends to stimulate humans to overcrowd their birds. However, space

is the most common commodity in the great outdoors. The birds no longer have to be in close contact "chicken cages" that promote the poultry-fication of parrot breeding. If we truly believe that parrots are intelligent, sentient beings then breeding them in tight rows in small cages of mind numbing proportions will come back to haunt us. Parrots most suited for this impoverished life style pass their genes in disproportionately higher numbers down to the next generation. Do we really want to poultry-fy the parrots?

Caging Considerations

When deciding how to space your birds out, keep in mind that only a very few parrot types are actual colony breeders (i.e. Monk parakeets), the remaining 320 plus species are seclusion breeders. Don't try to colony breed your Amazons by overcrowding your bird room. Your chances of success are greatly reduced, indeed. Use the adage of the beginning breeder — When in Doubt, Space them Out.

Minimal cage size should allow the Amazons to fly. And since they are heavy-bodied birds that are primarily horizontal flyers, orient the longest axis of the cage to horizontal, not the vertical dimension. All too often I have heard people say they have spacious cages for their birds. They are seven feet high and two feet in width and deep. This is the wrong orientation of the cage — the birds can not fly in a cage oriented to the vertical axis.

Our smallest Amazon flight is 3' x 3' x 6' with the food bowl in front and nest box in the rear. All new or upgraded cages are a minimum of 4' x 4' x 6' & 8'. The preferred cage wire we use is 1" x 1" wire. One-inch by two-inch wire has been used in the past but we are phasing it out because on rare occasions, an Amazon can catch and hold the bend of wing in the two-inch wire.

Food Bowl inserts and Bird Blocks

Food bowls are slid into a form fitted cage wire compartment large enough to snugly hold one bowl and located at the very front of the flight. Each bowl is secured into position with the drop guard that prevents the bowls from being pushed out and the

ubiquitous European Starling from getting in. All Amazon flights are fitted with hanging water containers with rabbit type metal spouts. They are easy to clean with warm soapy water and household bleach. We do not use water bowls to double as water baths for the birds. We have installed overhead sprinkling towers that peak over the tops of the nut and fruit trees and simulate an actual rain shower during our annual dry summer season. Amazons are to rain bathing what alcoholics are to booze. Even during the coldest weather with temperatures just warm enough to rain and not snow, the Amazons will be hanging upside down with wing spread, squawking loudly and joyously. Even the coldest rain showers are better than no shower for an Amazon. All Amazon cages have a 1.5-foot split in the roof to accommodate their rain bathing necessities.

Natural Chewing Perches

Parrots of all types love to chew wood and Amazons are certainly no exception. Here at White Mountain, two types of perches are supplied. Straight horizontal perches often made from 2x4s and natural branches that provide a great variation in perching surfaces and fresh wood to chew. A parrot's beak grows throughout its life span and needs constant honing to keep it in regular shape and condition so give your parrots something to chew up and trash. More cheap entertainment equals less boredom.

Nestbox Placement

All of our nest boxes are placed at the opposite end of the flight from the feeding area. The continuous inadvertent invasion of any bird's nest site territory has disastrous potential. Avoid violating this area on any sort of a casual basis. We come around the back of the flight only when necessary for maintenance or pulling eggs for incubation.

Exclusion Wood: Pre-breeding Season

Nest cavity exclusion wood is an idea that has not been brought fully to the foreground in psittaculture. Fundamentally, the concept is this.

Parrots tend to increase their wood chewing prior going to nest. A significant increase in wood chewing is related to a rise in reproductive hormones. If the nesting hole is covered with wood to exclude the bird from entering, then it must chew through the wood to gain access to its treasured nest cavity. It is thought that the very act of chewing out the entrance hole fixates the bird to that nest-site and may cause a further increase in reproductive hormones with a resulting increase in overall nesting success. Breeding success is often gained by a succession of small steps. And this makes good biological sense to me. Try nest site exclusion wood on a pair that has previously laid infertile eggs. You may be pleasantly surprised.

Breeding

The Breeding Season

In western Washington State, the breeding season, measured by egg drop dates, extends from late March to early July—spring to very early summer. This annual rhythm has not var-

ied more than two and a half weeks in the 17 years I have been at this location. These estimates are based on approximate 3,000 parrot years of data (number of Amazons times the number of years measured). These dates apply only to birds bred under natural daylight conditions. Amazons bred in daylight conditions that are well outside their evolutionary accustomed ranges respond to what the ethologists refer to as "supernormal stimulus." In this case, the exaggerated increase in daylight hours beyond their naturally accustomed day length causes the birds to respond to the relic tendency of Photoperiodicity in their reproductive cycle. I insert this tidbit of information only because the questions are still being asked of what stimulates Amazon parrots to breed under natural lighting conditions in North America. Under natural lighting conditions, the answer is age, nutrition, good pair bond, satisfying environmental conditions, rising daily temperatures, and increase in daylight length.

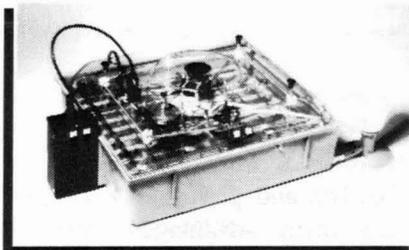
Breeders in South Africa confirm my

comfort with the above statements. They are on the opposite side of the planet and in the Southern Hemisphere approximating North American lighting conditions. Again, their Amazons breed in their spring to early summer period that is just the opposite of us — our fall and early winter.

Quality Breeding Stock Selection

One of the shortcomings too often practiced in today's Amazon breeding is to allow underqualified birds into companion parrot breeding facilities. The term "breeder quality" has become a thinly veiled phrase that means the bird in question is unfit for human companionship. "He is just not happy in the house and I'm sure he would be a good breeder" are the bylines of these unfortunate birds. Select only those birds best fit for the habitat of your living room — not the misfits that degrade the gene pool. Not all dogs qualify for breeding and neither do all parrots.

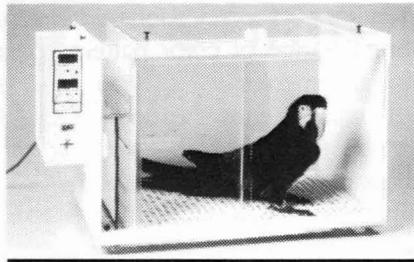
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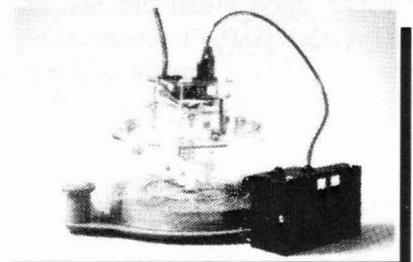
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makes as much sense as breeding a duck hunting dog that can not adjust to hunting ducks and passing his unfit genes down to the next generation. Or breeding a sheepdog that has no sense of herding sheep. Our potential companion bird breeding stock is selected for health and vigor, natural tameness and the pronounced ability to talk. These are all under genetic control and can be selected for. If your young parrots are produced for the pet trade then breed for the task at hand. Breed for human companionship quality.

Domestic Pairing just After Weaning

The monogamous parrots select their lifelong mates at a surprisingly early age. Place all qualified breeding applicants of appropriate species together shortly after weaning. Do not place all males or all females in one flight for many months before introducing them to each other. Individual behavioral patterns co-develop with members of the opposite sex as the individual matures. Same sex flights go counter to this natural unfolding of behavior and can not be considered beneficial. Place the young breeders' flight within good visual distance of proven breeding pairs. Observations of appropriate behavior greatly facilitate breeding success in the next generation.

Wild-caught Pairing —Free Choice

Monogamous creatures of any type are very fussy about their mates. For best results, if your birds are mature and or wild-caught, allow them to pick their own mates. This assures the breeder of a good pair bond. Forced pairing often results in two birds sitting on opposite ends of the flight sharing the same food bowl and nothing more.

Do not put potential mates together immediately before, during or immediately after the breeding season. Introduce new birds to each other during the late summer, fall or early winter when hormones are at their lowest and mental processes are at their highest.

Exact Phenotype pairing

There is a growing idea in psittaculture that one should only pair birds

with look-alike birds. I am not referring to an anti-hybridization stance but rather to pair your birds with their exact mirror images or at least as close as possible. Exact phenotype (physical appearance) breeding has its origins in the belief that if your Orange-winged Amazon has only a small dab of orange on its face, then its breeding partner must look the same. This, it is felt, is how birds select mates in the wild.

This is an extraordinarily dubious premise. Without belaboring the obvious, birds lack mirrors even to begin making the comparisons and do not know what even they themselves look like to base their selection of mates on. Although there is nothing wrong with phenotype pairing, it is based on a bogus concept in avian biology.

Color Breeding

The pages of pet bird magazines are occasionally graced with photos of a rare blue mutation of a common Amazon making the beholder of those blue genes the rarest of the rare. Breeders would re-mortgage the farm for one and wealthy would-be-owners can only drool in anticipation of owning one of these unusually colored parrots. Owning a blue mutation automatically sets you apart from the rest of the crowd. Yet, there is another type of color breeding that receives scant attention. Color selections within the normal range of color patterns common to the species.

Double Yellow-headed, Orange-winged, Blue-fronted, and Panama normally display a great deal of color pattern variation. When considering only color patterns, we select Orange-winged Amazons for high orange faces and the other extreme, only blue faces. Blue-fronted and Double yellow-headed are color selected for maximum yellow. All pet market birds are selected for human companion behavioral quality with color selection secondary.

Estimates vary but Dr. George A. Smith, eminent ornithologist and veterinary surgeon from England, maintains that one out of every six Amazons carry split mutations with cinnamon being the most common. One bird in 20 is split for the lovely blue mutation and is passed down to half its offspring for generations.

When one carrying the unexpressed blue gene mates with another of like kind, they produce the visible blue mutations. Inbreeding increases your chances of mutations considerably. Good Luck.

Food Selection

Pellet Envy

While visiting international class avian collections in various countries, it does become obvious that these facilities do not suffer from "pellet envy." Availability does not appear to be the issue here. Mixed seeds, sprouts, fruit/vegetables and nuts and weekly vitamins are still the preferred fare abroad. I am certainly not against using pellets but nor am I a glassy-eyed apostle of Pellet Worship. The complete reliance on pellets as the sole nutritional basis for your birds is an act of faith, indeed. I do not share this conviction. Real parrot nutrition is far from being scientifically understood. So, virtually all parrot pellet formulas are based on the poultry (chicken) nutritional tests with modest variations. Some are colored, perfumed and cutely shaped to attract the human buyer. The complete reliance on pellets is just plain boring fair for the birds. However, we do use some pellets on a daily basis. These pellets consist of various parrot pellets, game bird breeder crumbles, pigeon pellets, Vigor Plus (breeding season only) and, occasionally, dog food kibble (fat and protein). Pelletized food has many advantages when mixed with other foods.

Cooking Mix

There is an increasing number of commercial cooking mix products on the market. Basically, most of these are based on the pigeon grain formula with more peas and beans mixed in. During the cooler fall and spring mornings, the birds eagerly eat warm cooking mix. When using a cooking mix, I suggest that with a little added creativity, the cook can make a pleasing taste treat for the parrots. Garlic and onion seasonings are regular additions to the cooking mix. Other flavorings are limited only by your imagination. The parrots enjoy even soup mixes. This is another source of enrichment in the daily lives of domes-

tic parrots. Incrementally, they all add up to a richer environment.

Seed Mix

If we were stricken with the "hysteria de jour" — the newest, most fashionable "parrot hysteria-of-the-day" fad promoted on the internet or certain articles in bird journals, we would allow ourselves to believe that a seed mix of any proportion of the diet "will kill your birds." Sunflower seed will make your bird addicted/go crazy/become aggressive/ etc. I have heard these choice bits of myths both with and without the benefit of a full moon. The nutritional aspects aside; when it comes to cracking and manipulating seed with their prehensile tongue, all parrots have what the ethologists refer to as "action specific energy" to perform a certain task. This biologically prepared learning has its origin deep in the evolutionary past of the creature and directed toward task in question. You have all noticed that seed cracking lessons are not necessary for a young parrot to learn to open seeds (sunflower seeds or peanuts shells). After some initial baby clumsiness, the seedpods are opened with the ease of a concert pianist playing "Chinese Chop Sticks." This rapid learning process is fueled by action specific energy and needs expression in the parrots' normal daily behavioral patterns or that energy will be used in a vaguely related way that may not always be so agreeable.

A well-formulated seed mix with fruit and veggies — that is all consumed during the day — is still the most broadly used diet in psittaculture on a world-wide bases. The key is to get them to eat all the mix and not pick and choose their favorite morsel to the exclusion of the rest of the meal. Overfeeding is usually to blame here. In this aspect, the pellets are superior but seldom are they more desirable or palatable to the bird.

Sprouts

The purists would have us believe that feeding only sprouts is the only all natural way to go. Again, if parrots ate only sprouts in the wild, they would never have evolved that action specific energy necessary for the rapid learn-

ing and manipulating of seedpods. However, sprouts are indeed a welcome addition to the diet. Beans, peas, corn, the ubiquitous alfalfa sprouts and even rice sprouts are taken with obvious delight.

All the Above

Feeding all the above on a daily or seasonal basis offers these intelligent birds a feeding stimulation that helps satisfy the need for variation in their lives. Fruits and vegetables in season are always recommended. Remember that environmental impoverishment is a major consideration to be avoided in parrot husbandry. A broad and varied menu is a basic source of enrichment that is all too often ignored.

Supplements

Vionate vitamins are sprinkled on the soft food once a week. Avoid the overuse of multiple vitamins. The gut bacterium *acidophilus* is added to the food once to twice a week. A light sprinkling of poultry grade sea kelp for iodine is an every other day addition to the diet. A feather loss associated with a hypothyroid condition is all too com-

mon in Amazons. Wheat germ oil (Vitamin A and E) is used to lightly coat the pellets fed that day. Be mindful of over supplementation and do not muck up their food with heaps of additives making it look and smell like a horrible mess.

Lactobacillus powder is added to the soft food 2-3 times a week as a gut bacterium supplement. There is a significant amount of information on this procedure to suggest it is advantageous to your bird's good health.

Parent Rearing Tame Youngsters

About 15 years ago I found it necessary to handle and weigh on nearly a daily basis half a clutch of second generation Lilac-crowned Amazons to monitor growth gains of handfed birds verses those raised by their parents. These babies became quite tame by virtue of this necessary handling process and were later sold as pets. They adjusted nicely the living room environment of their new homes.

I thought of those tame babies many times over the following years so it was a delight to learn the Avian

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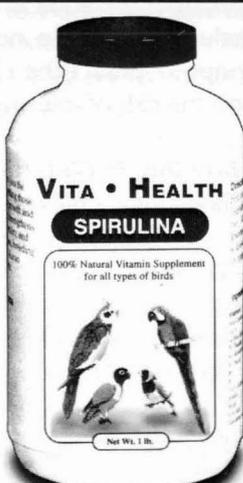
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Science Department at UC Davis had conducted behavioral research studies using their colony of Orange-winged Amazons with just that idea in mind — the production of tame parent-raised baby Amazons. The study helped establish the start of the handling periods and established a rating system to judge the success of the experiment. Basically, after about two weeks of age, the young ones were handled with gentle touching for about 15 to 30 minutes a day per bird as the babies matured. This relatively low-labor technique could be a blessing to the small breeder faced with handfeeding on top of a busy personal schedule.

Exclude the Parents First. Be Careful Here.

The first and foremost consideration in instituting this technique is to exclude the parents from the nestbox while taking the babies out for handling. Slip a sheet of metal or wooden excluder over the entrance hole while the female is out of the box. An enraged hen protecting her babies from a hereditary predator (humans) is a formidable adversary and may even badly injure her chicks while trying to protect them. If the adult is not physically excluded from the nestbox, do not attempt to extract the chicks, it is not worth the risk of injuring a chick.

Daily Handling in Clutch Groups

Handling all the chicks in the same clutch for the same 15 minutes to a half an hour may prove to be a viable amendment to the procedure established at UC Davis. This procedure closely approximates the handling of the Lilac-crowned clutch that produced the tame babies years ago.

Medical Precautions

Management is the Key to Disease Prevention.

The overall view of your breeding facility is the key to disease prevention. Quarantining of new birds, cage site selection, good accepted avian nutrition, cage spacing to reduce crowding, stress management, and environmental enrichment are your first defenses against the introduction and prevention of disease, accident, and abnormal morbid behavior prevention.

Crowded, musty, cage-stacked indoor facilities have a disproportional number of disease outbreaks compared with the more relaxed and environmentally enriched outdoor facilities. Indoor crowding and endless boredom keeps the stress levels high and disease resistance low.

Establishing a professional relationship with a veterinarian that specializes in birds is a definite plus. Vaccinating your flock again the most dreaded diseases only makes sense. Our flock is vaccinated against Pacheco's virus and we will start on polyomavirus vaccine this fall. Getting hit with one of these killers will make a believer out of the most skeptical. Money is usually the stated problem with us pre-Lottery-Winners so start with the most susceptible species first. Your vet will advise you on this approach.

Daily Observations Report

At this facility we have a form called the Daily Observations Report. This easy to fill in form has spaces for cage numbers, nest box activity and other appropriate comments. Each cage is observed at approximately the same time each reporting period — usually daily. Comments include: Female or male in the nest box, perch replacement, toenails need trimming, antagonistic pair behavior, etc. This insures that each flight and cage is carefully observed daily and accidental neglect or oversight for any reason is reduced substantially. I review this report as a daily update and to detect trends within pairs, groups or the entire facility and the information provided often assists in preparing the employees' activities for the following day.

Retirement Flights and the "Granny Effect"

When to Retire Breeding Birds?

Since much of today's breeding stock is still of the wild caught generation, there is no way of knowing, in terms of years, when to retire the birds. And, since most wild caught pairs were mated with no consideration as to age class of either sex, it is difficult to assess which one of the pair initiates the retirement status first. However, there are clues.

If a previously fertile pair stops pro-

ducing fertile eggs, the male may be ready for the Old Bird Folks Home. If the hen stops laying eggs, she may have reached retirement status. A well-bonded pair should be retired together. Parrots are very emotional creatures and splitting up a life-long mated pair is just plain inhumane.

The longest verifiable continuously successful captive reproductive life of any Amazon pair that I am aware of is a pair of Double Yellow-headed Amazons *Amazona oratrix* that successfully reproduced every year for the previous 36 years before I first saw them. Two years later the male was stolen, ending 38 years of captive breeding.

The "Granny Effect" — Grandparents Teach Future Young Breeding Stock

This season's records indicate that a pair of Panamas, old when I got them, are probably too old for further reproduction. This was the third season of no eggs from a once normally productive pair. These fine retired birds that I have known for nearly two decades will be placed in a larger exhibition-type flight that contain the juveniles being saved back for breeding. In such enclosures, housing the very young and the very old, we establish a social situation in which the older birds pass on to the younger birds any local traditions developed over the years. Ethologically, this is referred to as the "Granny Effect" and serves an important function in the domestic environment and presumably in the wild as well. These traditions may consist of knowledge of seasonally new food items, recognition of all on-site watchdogs, precautions to take with stray cats or Cooper's hawks and most important learned social interaction.

Care must be taken to introduce the old and young birds first in separate but close-by cages for appropriate introductions and to facilitate any necessary changes in their contact or recognition calls and other vocalizations that identify a group of birds as members of a particular social unit. For this concept to work effectively, the Granny flight should be as large as feasible. 

From AFA Proceedings, 1997