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Winter 1985

WILDLIFE JOURNAL

Journal of the International Wildlife Rehabilitation Council



Turkey Vulture Rehabilitation . . . Page 7

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2. Full length articles run between 1500 and 2500 words.
3. Fillers and short articles run between 500 and 1500 words.
4. The writer's name and address and organization should be typed on the first page, and name and page number should appear on all consecutive pages.
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8. We pay $25 for any feature article accepted; $5 for any fillers and "Handy Hints" under 500 words.

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EDITORIAL . . . .

Who's Going to be the Director?

In 1975, when I first became interested in wildlife care there were so few paid positions in this field that when people inquired about them, the appropriate response was a laugh and explanation that with a few exceptions positions were for volunteers only. While volunteers are still the main stay in this field, more and more Board of Directors are placing the day to day operation of their facilities in the hands of paid staff. The breadth of these positions varies from clinic director (rehabilitation responsibilities only) to executive director (sometimes mixed rehabilitation and administrative duties or just administrative ones). This is a continuation of a shift that has been going on since the late 1970's. Early positions were often associated with museum or nature center operations and combined curator or interpretive duties. Rehabilitation was simply an added responsibility. An early survey regarding these positions in the late 70's showed most of these jobs were held by men.

As we have gone into the eighties the numbers of animals handled has risen to the point where large care facilities have doubled their animal load from 4,000 animals annually to 8,000. Needless to say, more paid jobs have evolved. Still, the numbers are far too small to ever make the government manpower surveys.

Yet, recently I have noticed that even for the small number of openings this field offers, jobs still go begging for qualified career candidates. Why? What happened to all those enthusiastic volunteers that would love to get into this field? Does the applicant pool meet the job qualifications? What qualifications are these Boards of Directors of the facilities looking for?

Well, they want someone that can direct the wildlife program, i.e., with a background in program administration. Someone who can organize and direct a team of people. That lets out all the volunteers who are coming to this field "because I hate working with people — but love animals". Several job descriptions wanted a four year degree in wildlife biology, zoology, biology, or animal science. Applicants with animal health technology degrees will sometimes be considered. Once the educational requirements are fulfilled, journeymen level skills in wildlife care are required. This usually translates into a minimum of two years full-time experience. As you might imagine, the pool of qualified applicants for these jobs is limited.

What does the typical applicant pool contain? Well, applicants that have some wildlife care experience in volunteering part-time are often interviewed. Some are re-entry women who have a desire to go back into the labor force and liked their volunteer efforts. Some applicants are veterinary technicians or AHT's looking for a change in job responsibilities. A few have four year degrees, some with a science major. Even fewer are male applicants. Almost none have a solid background in administration or program operation.

Having hired full-time personnel myself and assisted other centers in their quest for a director, I know the frustrations of the process. I have asked people in the field who I thought would be interested why they did not apply. Their replies are revealing.

"I am happy working in this field one day a week as an appreciated volunteer, why ruin it by taking on a 40 hour a week job that I know full well is 60 hours a week and unappreciated."

"I want to have a career job that is respected as a legitimate selection. Agencies that deal with rehabilitation, especially state fish and game, show no respect for the work we do."

"A career in wildlife rehabilitation is like climbing a very short ladder. It offers low salary and very few opportunities for advancement."

"I've watched how the Board of Directors treats employees and employment issues. No thanks. I'll stay a volunteer."

"I work for an agency that has good benefits, retirement, and good working conditions/atmosphere. Show me a wildlife center that has these things and I'll bet that it is one with a director's job that does not become vacant often."

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Letter to the Editor . . .

Dear Editor:

Alexander Lindsay Junior Museum has a wildlife rehabilitation section with a well developed program for volunteers, and after cleaning birds from small and large oil spills over a period of 15 years, we are still learning new things. Due to our inland location we deal mostly with songbirds, raptors, and mammals. Since we have no permanent facility or space for seabirds, our reply to the IWRC survey of 1983 was that we could only take 50 oiled seabirds at any time. However, during the February 1986 oil spill, we took nearly 200 birds, 86% of which we released in good condition. We were able to do this because we have a specialized oiled bird team of 30 experienced people, plus a back-up of 400 willing volunteers. We feel very strongly that it is much more efficient to train volunteers before, rather than during, an oil spill. Extra members of our oiled bird team were also able to go and help at other cleaning centers.

In a team discussion following the spill our group recapitulated our experiences, which we would like to share with you.

1. We found that fat birds had a much better chance of survival and successful release than thin ones, so we fed them frequently as much as they could be persuaded to eat. We always put good eaters with non-eaters, as competition is an important stimulus to encourage eating in these birds. If birds will not take white-bait, live fish are worth purchasing to feed for limited periods. The Marbled Murrelet and Goldeneyes loved goldfish, whilst the Eared Grebe would eat up to 40 guppies at one meal! Luckily we got these birds out in a couple of days!
2. Soft bedding is essential for seabirds, since they cannot tolerate prolonged contact with hard surfaces. Keelbone sores and septic arthritic joints are easier to prevent then to cure. Various things can be used, but in this emergency situation we used "Chux" disposable pads under the blanket and sheets in the pens.
3. Only uncleaned birds need extra heat. We noticed even a warm room (70° F) caused clean birds to pant, to reduce preening, and even to stop eating. It is easy for a roomful of birds to become overheated when doors and windows are closed to keep them quiet. Birds can well be outside once they are cleaned.
4. For routine handling of birds when tubing etc., it is best to use the body hold with a towel dropped over the bird.
5. At one spill involving several hundred birds at which our members participated six years ago, we started out using 5% Dawn solution. To completely rinse out high concentrations of detergent it takes much hot water, much time, and hence more stress to the bird. Moreover hot water tends to run out, and detergent is expensive. After a period, we tried washing all birds one day using 2%; the next day we used 1%; and in subsequent days used .5% and .25%. This seemed the lowest level at which we got quick effective cleaning. It should be noted that birds in this experiment were covered with heavy bunker oil, and by the end of the oil spill period some birds had been covered for more than three weeks. Since that time we have always used 0.3% solution.
6. However, at any concentration Dawn by itself does not remove bunker oil. Mineral oil always has to be used first to loosen it. Usually when we pretreat, we smooth the mineral oil onto the feathers, wrap the bird in a towel, and wait about 20 minutes before washing. However, for the oil in the recent spill we found mineral oil had to be left on for at least half an hour, after which 0.3% Dawn easily removed it. It does not hurt to let the birds sit longer in the mineral oil, provided they are not still wrapped in a towel, which can cause them to overheat. On one occasion all the pretreated birds were not washed on the same day. The next morning it was found that the effect of the mineral oil had worn off, and we had to pre-treat again.
7. Next time we buy basins for bird washing, we will look for white ones, as they make it much easier to see when the water is clear.
8. During washing we found it best if the beak-tip hold is alternated with a very light head hold which hoods the eyes. It is less stressful for the bird and one is less likely to overlook oil.
9. We found the Water-Pic useful for more than head cleaning. Between baths, when the bird is resting on the side bench, the Water-Pic could be used most effectively around the upper leg area and round the vent and wing edges.
10. Before spray-rinsing we always immerse the bird in a basin of warm, clear water. This removes a large proportion of detergent quickly and cuts down on the spraying time, which is both stressful to the bird and to the feather structure.
11. It is better to have separate washing and rinsing stations, with the most experienced people doing the rinsing, as they are more likely to see oil that has been overlooked. Send a bird back for additional rewashing at this stage, if it is still in reasonably good condition, rather than repeat the entire process later.
12. We think that the importance of thorough rinsing cannot be overstressed. After experimenting with various sprayers, we now have one which directs the water onto a narrowly limited area. It is light and maneuverable, and it has a control in the hand grip which varies the water flow from a trickle, useful when checking "beading", to a fairly strong spray.
13. We used to stand the birds on the upturned wash basin to rinse them, but this is slippery. Nevertheless, it does rest the bird (and the holder) if the weight is taken off the wing grip. This time we used a plastic milk crate with a piece of fine-mesh plastic netting firmly attached over the open end. The bird sat on this and the detergent rinsed through efficiently. A murre could grip the netting with its toes; a loon or grebe could lie on it with its feet free to kick out behind. The bird had to be held up to spray its breast, but this was for a comparatively short time.
14. We used various drying arrangements, but we found that when we had a drier blowing down onto a bird sitting in a box, the drying was quicker and more efficient if the bird was sitting on a plastic milk-crate.
15. Sometimes if a bird gets wet dur-

ing its first swim, though it has been cleaned by experienced cleaners, and there is no obvious sign of oil, it may still have Dawn in its feathers. An additional five minutes of hot rinse followed by thorough drying may well result in a good float the next time it swims. This re-rinsing is much less stressful to the bird and less time-consuming for the worker than complete re-washing.

16. Birds can get wet at their first swim due to incomplete washing of the dirty oil. If this is on the body, the bird obviously must be rewashed. However, this time we had several birds getting wet on their extremities, and on checking closely we found oil. We cleaned these limited areas with cotton-wool balls, white towels, and paint thinner. Done in the open air, away from flames or cigarettes, this proves to be very quick and effective. Traces of oil on the wings or round the tail sponged off readily without spreading the oil. An hour later the birds floated perfectly on the ponds and could be released. Again this is less stressful and less time consuming than a complete re-washing.

17. One advantage of detergent cleaning is that it can be carried out indoors and at night. Moreover from observation in the wild, water birds spend and enormous amount of time feeding at night. We found that evening shifts were a great help. We had an experienced group who came in after their jobs, and worked from 5 p.m. until midnight or later. The cleaned birds were in a separate darkened quiet room. Much re-rinsing, cleaning, and feeding was carried out by the night shift. This helped speed up the whole operation, which we think is very important. If a bird can be treated and released in a minimum amount of time it avoids so many secondary problems.

18. Finally we think that everyone

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1986 Northeastern United States Graduates

All individuals listed below have received a passing score of 70% or better on the IWRC Basic Wildlife Rehabilitation Exam and have completed two sets of homework on nutrition and calculating drug dosages. Additionally, all participants have successfully demonstrated adequate skills in wildlife care and handling in a supervised lab session. These individuals are IWRC certified in Basic Wildlife Rehabilitation.

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Stormville, NY

Linda Cleminshaw
Tully, NY

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Yonkers, NY

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Patterson, NY

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Troy, NY

Wildlife Rehabilitation in the Amazon Jungle

Paul Beaver, Quabug Bird Conservation Foundation
Ware, Massachusetts

The Amazon rain forest, the largest wilderness remaining in the world, is a treasure house of biological diversity. More species of plants and animals are found in the Amazon basin than in any other habitat in the world. This biological paradise is faced with many threats, however, the foremost problem being deforestation. Due to agriculture, logging, mineral exploitation, damming, and flooding, an area the size of West Virginia is permanently lost every year. If the destruction proceeds at its current rate, there will be no jungle left in 24 years.

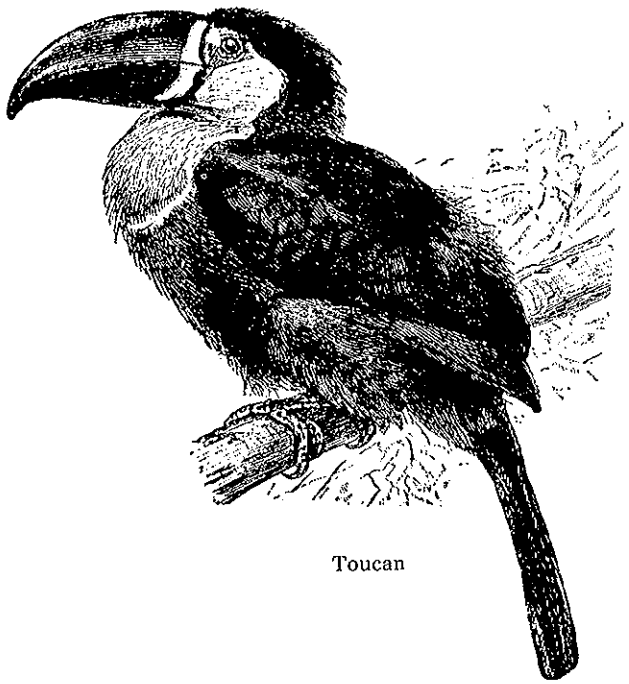
Even in the large tracts of jungle still intact, the wildlife is disappearing at an alarming rate. A major factor is the traffic in pets. Twenty years ago, monkeys, macaws, and other creatures could be found within easy walking distance of any human settlement. Now, we have to travel over 50 miles deep into the jungle to find most wildlife.

Most South American countries have laws for the protection of native wildlife, but these countries are poor and have little funds available for enforcement, so an illegal trade in tropical pets flourishes. Over half a billion dollars worth of Amazonian birds are smuggled and sold in the United States every year. New York recently became the first state to ban the sale of imported birds. Similar legislation has been introduced in my home state of Massachusetts, but has been vigorously opposed by the pet lobby.

The process of obtaining wildlife for the pet trade begins with the river people, who eke out a living in the jungle. These people are certainly not bad people; they actually have a deep reverence for the animals of the forest, a keen appreciation for their beauty, and they are generally unaware that they are breaking any laws. They usually hunt for a bird with a sling and a stone. If they are lucky enough to just wound a bird, it will be nursed back to health and its pinion feathers pulled to prevent flight. If a mammal is desired, the parent will usually be killed, so the infants, easily tamed, can be acquired. The river people are paid the equivalent of 10 cents for delivering a healthy macaw or marmoset to their local North American or European smuggler. These animals eventually retail for hundreds of dollars.

Only a tiny fraction of the animals confiscated from the illegal pet traffic are confiscated by authorities. Previously, there had been no means to return these animals to the jungle. Many were placed in zoos and research facilities; others that were difficult to place had to be destroyed.

What we are doing is introducing the concept of wildlife rehabilitation to Peruvian authorities and constructing a station for the purpose of rehabilitating and reintroducing confiscated animals to the wild. Our field station is about 80 miles from Iquitos, Peru, upriver Rio Amazonas, where it becomes Rio Ucayali, and up a small tributary called Yarapa. It is located in the midst



Toucan

of beautiful, pristine, tropical rain forest. The staff is primarily Peruvian; young people who are dedicated to the ideals of wildlife conservation.

Some of the species that we have worked with include: marmosets, monkeys, ocelots, capybara, tree sloth, parrots, parakeets, macaws, toucans, and caimen. While an in-depth description of the rehabilitation of these species is beyond the scope of this article, a brief overview of the types of problems observed will be included.

Marmosets: these small primates have been a favorite of the pet trade for some 300 years. They are even adored as house pets among Indians living in the

jungle. They are very affectionate, intelligent and curious little primates which are easily tamed, so they should be isolated from people as much as possible. They have to be provided with many branches to climb on as they are an entirely arboreal species. Our current studies of captive marmosets include detour learning and foraging success with embedded foodstuffs. Both of these abilities are thought to relate to post-release survival success.

Monkeys: Larger primates, such as spider monkeys, titi monkeys, capuchins and squirrel monkeys are occasionally confiscated from the pet trade. Amazonian monkeys require an omnivorous diet of vegetable matter and animal protein. They are susceptible to infections of intestinal worms and other parasites as well as respiratory infections. Although monkeys are often kept as pets, they do seem less susceptible to the pathological effects of taming than are the marmosets.

Ocelots: The demand for ocelot fur is the primary threat for this species, but if an adult is taken that has kittens, the young are often sold as pets. Many young ocelots we have received have been severely malnourished and infested with parasites. Usually, they must be held for several months to regain their health prior to release. While in captivity, observations on their predatory responses are being made. The rehabilitation protocol for ocelots is similar to that used by rehabbers for birds of prey and mid-sized predatory mammals (i.e., bobcats). They are housed in large enclosures and given multiple opportunities to catch live prey while minimizing human contact.

Other Mammals: Other mammals we have cared for and released to date include capybara and tree sloth.

Parrots and Parakeets: A large variety of Amazon parrots and parakeets are popular items for the pet trade. When confiscated, these birds are often received in poor condition. The feathers may be damaged and the pinions are usually pulled to prevent flight. Rehabilitation consists of proper housing and feeding until the feathers have grown back.

Macaws: Macaws are the largest of all psittacines. Their size, beauty and verbosity make them attractive targets for the pet trade. Of the 22 species of macaws, eight are now extinct. In captivity, one has to respect the powerful bill when handling macaws. They have such strength in the bill that they have been observed hanging by the bill from the ceiling of an enclosure, for over a minute. Enclosures have to be well built, as a macaw is easily capable of demolishing its cage. Young macaws mature very slowly, with feathers appearing after four weeks of age. At ten weeks, they are pretty well covered, but their primaries are still not fully grown. They appear capable of flight only after about three months of age.

Toucans: Toucans and related forms, such as toucanets and aricaris are also sold as pets, typically costing from $500-$1000 in the United States. Toucans are extremely attractive birds, with large bills that usually sport from 3-5 different colors. As with macaws, when handled, one has to respect the bill, especially in those species which have serated bills. Their diet consists of fruit and protein matter. Toucans are hatched in a very undeveloped state and mature slowly. When hatched, they show bare red skin without so much as a downy feather. Their eyes open only after three weeks of age. The feathers grow so slowly that the nestlings still have bare patches of skin at a month old. The young of the larger species probably remains in the nest for the first two months of life.

Reptiles: Large caimen are usually killed for their skin while smaller ones may be sold for pets. The Spectacled Caimen of Peru has to be one of the world's most beautiful crocodilians, and many do wind up in the pet trade. They are probably also the world's nastiest crocodile, appearing to me to be next to impossible to tame. Of course, this helps the rehabilitation process; as even young caimen are self-sufficient. All that is required generally is a brief examination and relocation if in good health. Other reptiles handled include an anaconda, brought in by a farmer who found it on his plantation. It was relocated deep in the jungle. Other reptiles cared for and released include boas and several red-footed tortoises.

In conclusion, the Amazon rehabilitation project is exploring a new and meaningful frontier in the practice of wildlife rehabilitation. The project is still new and needs a lot of work to fully develop it. It is a very rewarding endeavor and one we are offering to share with interested people via internships. Interns pay their own airfare and for room and board. Interested people should contact the Quabaug Bird Conservation Foundation at 315 Palmer Rd. in Ware, MA 01082.

ANNOUNCEMENT

FOR SALE: Quabaug Bird Sanctuary. Paul Beaver is putting the Sanctuary up for sale in order to devote full time efforts to his conservation and rehabilitation work in South America. The Sanctuary includes: 30 acres of forest and wetlands; a four bedroom house, garage, parking lot, rehabilitation center with indoor caging, clinic, office, kitchen, research/observation room, and eight large outdoor aviaries. The Sanctuary is managed by a non-profit foundation with an annual income in excess of $20,000. Asking price: $115,000. For further information contact Paul Beaver at 315 Palmer Rd., Ware, MA 01082 or call (413) 967-7519.

Rehabilitation Notes: Turkey Vulture: *(Cathartes aura)*

Kirstine M. Thorne, Wildlife Biologist
Clinic Director, Marin Wildlife Center, San Rafael, California

INTRODUCTION

The Turkey Vulture belongs to the family Cathartidae or New World vultures. The genus name *Cathartes* is derived from a Greek word meaning cleanser. Cathartidae are limited to the Western Hemisphere. There are seven species in the family with four species in North America. The Turkey Vulture is the most widespread, ranging from North America throughout South America. In the fall the Turkey Vulture migrates from the northern parts of its range in southern Canada to southern South America. Those migrating are generally the ones whose nest range is north of an east-west line from Maryland to northern California. Since the signing of the Migratory Bird Convention with Mexico in 1972, these birds have been protected by Federal law.

Common in a variety of habitats such as open plains, deserts, forests, and jungles, the Turkey Vulture can often be seen as it soars 200 feet above its range at flight speeds of 15-35 mph. This master of static soaring flight is awkward and clumsy on the ground.

An important component of the ecosystem, the Turkey Vulture feeds mainly on carrion either solitarily or in sociable groups. It occasionally will kill and eat other birds, infant mammals, and insects. At rest, these birds are colonial roosters with over 30 birds sighted in a tree.

DESCRIPTION

Adult: Total length 26-32" (66-81 cm) with wingspread of 68-72" (173-183 cm). The bare skin on the head and neck are lackluster-red to purple-red. Nostrils are oval and perforate below a soft cere. The bill is ivory colored, rounded and hooked. Eyes are colored grey/brown. Feathers range from a glossy black to a weathered brown. The legs are dark red. Sexes are alike with the average weight being 1467g ± 132g. In flight, their dihedral wing silhouette gives them a V-shape.

Juvenile: Young are naked at hatching but soon develop white down on the entire body except head and legs. The bill is dark grey and the legs are pale. Body temperature is 102.5°C at one week of age and by the second week normal body temperature (103.6°C) is reached. At two weeks primary quills start to emerge. By five weeks the primaries, secondaries, and tail feathers are at least 3" (7.5 cm) long. Only the neck and ventral area have down at eight weeks. Full juvenal plumage occurs at approximately ten weeks of age. The bare skin on the head of juveniles is black, slowly becoming red as the animal matures.

Moulting occurs once a year, the time dependent upon location.

In captivity, a Turkey Vulture has lived over 20 years at the National Zoo in Washington, D.C.

NATURAL DIET

In the wild these birds feed mainly on carrion. They are able to consume even putrid foodstuffs. Additionally, they have been known to kill and eat newborn pigs, young ibises and herons, as well as insects such as grasshoppers, and fish. They locate their food by their well-developed sense of smell and keen eyesight.

BIRTH AND YOUNG

The breeding season is between February and June. One to three dull white to cream colored eggs are laid and hatch in 31-48 days. Both sexes incubate the eggs in a nest cavity such as a hollow log or stump or on bare ground in dense brush. The young are fed by regurgitation from both parents. When 70-80 days of age, the young can fly. There is only one brood per year.

Photo by Gerrie Reichard



Adult Turkey Vulture

CAPTIVE CARE AND FEEDING

The Turkey Vulture is a species that is extremely susceptible to imprinting and taming. Care should be taken to minimize contact with humans and to maximize contact with other Turkey Vultures. It has been reported that young raised without conspecifics and not isolated enough from humans (except at feeding time) have become irreversibly tame. Successful rehabilitation of these birds depends upon keeping contact with humans to an *absolute* minimum and raising the young with others of its own species.

One technique used successfully (Bogue 1977) is to locate a nesting colony and to add the orphan to a group of similarly aged birds. When wild juveniles fledge they often group together awaiting the periodic return of the adults with food. Rehabilitators can integrate new fledglings into these groups and the adults will feed them also. This provides the best alternative to trying to train the bird to soar and locate food. Follow-up observations should confirm feeding by adult birds.

If it is not possible to do this, feeding should be accomplished in such a way to block visualization of the human. Hand puppets have been used with California Condors, another vulture species. Older birds can be fed via a food shunt.

This species uses its bill as a weapon. To capture and restrain it use a towel to cover the head. This tends to help relax the bird and discourages regurgitation. The young can be handled for a short time by wrapping in a towel. When handling adults, welders gloves should be worn to protect the arms from "beak attacks" as well as from the talons.

INFANT: (Up to 3 weeks)

- *Housing:* As nests in the wild are primitive, housing in captivity can be spartan with the emphasis on cleanliness, warmth, and isolation from human activity. Young are not homeothermic and therefore require supplemental heat. Ambient temperatures in the enclosure should be 80-90°F. Monitor the chick closely for dehydration (i.e., excessive skin wrinkling, sunken eyes, dry mucus membranes). Reduce the temperature slightly if the animal is too warm and is becoming dehydrated due to the excess heat. The normal body temperature for these birds is 103.6°F. Provide perches that will be high enough to keep the tail off the ground once the birds begin to stand and actively walk. If possible raise in pairs by transferring birds between rehabilitation groups.
- *Diet:* In the wild, the young drink regurgitated material from the parents' mouths. Captive diet should consist of whole rodents ground in a blender until becoming a thick liquid. Lactated Ringers can be added instead of water if electrolytes are needed. The mixture should be heated to room temperature and then offered to the young in a receptacle. Since the mixture will sour at room temperature fairly quickly, it should be removed and discarded at the end of the day. If they do not self-feed, a force-feeding regimen must be instituted. If feeding by gavage, cover the animal's eyes to reduce visual contact with humans. At this age they should be fed every three to four hours during the day, or on demand. Start with 25 cc's and work up to 75 cc's every two to three hours during the day. Weights need to be monitored. If the animal is not gaining weight, either feed more often or give a larger quantity.

ADOLESCENT: (3-8 weeks)

- *Housing:* Adolescents no longer require supplemental heat if the ambient temperature is 65-75°F. Birds should be in a cage that allows them to stand erect and stretch their wings. The absolute minimum cage size is 36"L x 36"W x 4'H. When healthy and eating on their own, young birds can be moved to an outdoor aviary where they will learn to fly and get some exercise. The minimum size for this species is 20'L x 10'W x 15'H. For best results make the enclosure longer. Water should be offered for drinking or bathing. Perches should be of uneven surfaces (rope-wrap, natural branches, etc.) to prevent foot damage.
- *Diet:* Water should be available at all times. Avianized vitamins should be added to the food items. Birds that are three weeks old should begin eating dead rodents and chicks. Whole adult rodents are nutritionally balanced. If feeding chicks or muscle meats, the Calcium:Phosphorus ratio must be balanced to two parts Calcium to one part Phosphorus. Detailed information on how to do this can be found in the IWRC Basic Widlife Rehabilitation book.
- The young should be fed three to four dead mice or chicks or two dead rats three times daily until they are five weeks old. After five or six weeks of age, feed five to six dead mice (or chicks) or three rats twice a day. Each animal has a slightly different caloric requirement. If all food offered is readily eaten, more should be offered. If food is being left by the bird, weigh the bird to determine weight stability. Healthy birds are released at eleven to twelve weeks of age or integrated into colonies at the age of nine to twelve weeks.

ADULTS:

- *DIET:* Adults will eat 150-200 g of mice or chicks daily (about six chicks) depending on their individual metabolic requirements. Sick or recovering birds require more calories than healthy ones. Putrid food should not be offered. One problem often encountered with this species is that they use vomiting as a defense mechanism. When chronic, the results can cause substantial weight loss. Birds in marginal condition may not survive this defense mechanism. To try to prevent vomiting human contact should be minimized especially around feeding time. Some birds will reingest their meal when left alone. Force feeding should be done in a quiet environment and the bird should be held for about five minutes after the feeding before slowly returning it to the cage. Hooding the bird or otherwise covering its head has been found to be helpful in preventing regurgitation.

- *Housing:* Injured adults in cage rest situations can be housed in a 4'L x 4'W x 4'H enclosure or in a large equivalent sized veterinary cage. While the Turkey Vulture does not often perch in a small cage a perch should be offered. The perch should be tall enough so that the tail feathers do not touch the bottom of the cage and low enough so that the bird's head does not touch the top of the cage. The enclosure should have five solid sides and a towel covered door to reduce visual contact and stress. This species will drink water so a water dish should be provided.

  When the bird is ready to leave this size of housing, but not yet ready to be in a flight pen, an intermediate sized enclosure can be used to allow it to begin to use its wings. This pen should be 6'L x 6'W x 4'H. Solid sides are again important here.

  For conditioning prior to release, birds should be housed in a flight aviary and encouraged to exercise. One way to do this is to only place perches at opposite ends of the pen. The pen should be constructed with wood, fiberglass, or coated 1"x 1" welded wire. Materials used for flooring are pea gravel, grass, concrete, or concrete covered with Astroturf. Loose materials such as pea gravel should be changed at least annually, more often if the enclosure is used heavily.

DISEASE

Turkey Vultures usually have a variety of ectoparasites such as feather lice and hesperid flies. If the bird is infested, it should be treated with a commercial pyrethin-based product. Follow the manufacturers instructions and do not put the bird in a poorly ventilated area immediately following treatment.

A fecal check for endoparasites should be a part of the standard rehabilitation procedure.

Lead poisoning is not unusual amongst these carrion eaters. Signs observed are typcial for this malady (i.e., crop statis, inability to fly, inability to stand in later stages and anemia).

Birds displaying signs of illness should be isolated until evaluated in order to minimize the possibility of spreading disease.

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Photo by Gerrie Reichard



Young Turkey Vulture

For the New Rehabber:

Tubing Mixtures for the Rehabber on the Go

Kathy Hobson, President IWRC

Being ready for the unplanned and yet inevitable situation is every rehabilitator's nightmare. Taking precious time to plan in advance seems somehow hard to do and yet veteran wildlife rehabilitators have generally achieved their level of efficiency and competence in just this way. These efforts result in many measures to reduce wasted time while maximizing the endeavor. One example of such an effort is to pre-mix tubing mixtures of dry ingredients, bag them up, and then when needed carry them to the location to be used, add water and feed.

Dry ingredients such as dog food, powdered vitamins, calcium powder, etc. will keep well if pre-mixed. However, not all dog foods work equally well. In particular, those with milk or gravy are not recommended. Science Diet products and Purina foods have worked well. Those items that are pelleted can be ground up in a blender or food grinder to get them to a fine powder. The powder is then sifted with a strainer to remove any chunks that would not pass through the tube. Dry vitamins or other ingredients can be added at this point. The batch can be divided into smaller portions and sealed in air tight containers such as canning jars.

The mixture should be stored in a cool dry place. It should be replaced after six months. High fat diets will go rancid within a year. When rancid, they will not mix well with water or go through a tube well (i.e., they clump).

This system allows for an easy and convenient way to travel with a tube mix, should that be necessary. Most of the work in making a tube mix is therefore done ahead of time before the mixture is to be used. All that remains to be done when feeding time arrives is to simply add water. Team leaders may wish to present tube mixes in this dry form to new volunteers who are already confused enough by all of the variables in wildlife care. Team leaders are then assured that the whole team is feeding the same food and that it is fresh.



Photo by Liz Beard

Shown above is a food blender with Feline Science Diet ground into a powder and SuperPreen, a vitamin/mineral supplement, added at a ratio of one cup kibble to 1/2 teaspoon SuperPreen.

NATURAL HISTORY NOTEBOOK:

The White-Throated Swift

Terry Preston
Wildlife Education and Rescue Center
Hayward, California

INTRODUCTION

> *"The White-throated Swift belongs to the heavens, not to earth. Beautiful as the creature is, when seen lying among the rocks where it has fallen, or on your hand, it somehow is no longer a White-throated Swift at all. Like a fish from the deep sea that has burst in shallow water, it is only a mass of flesh already starting to decay — of feathers that so recently had pushed aside the thin atmosphere of dizzy heights; feathers that twanged and rustled as the bird shot forward a 100 yards in a twinkling; feathers that knew nothing of the shadows of forests, that knew only the shadows of clouds, the full blaze of the sun, the coolness of clean unscaled pinnacles."*

To the wildlife rehabilitator, these words from the writings of Dr. George M. Sutton (1935) have a special meaning. Like many of the creatures we care for, the White-throated Swift, out of its natural environment, and in a state of captivity, seems to no longer be the same species that we gaze at in awe as it displays its seemingly endless aerial movement.

The White-throated Swift *(Aeronautes saxatalis)* is a member of the family Apodidae, a Greek term meaning "without feet". The genus name *Aeronautes* is derived from the Latin *aer* (air) and *nautes* (sailor). The species name *saxatalis* is Latin for rock, as this bird is often closely associated with rocky cliffs. Another common name for this bird derived from its Latin species name is "rock swift".

IDENTIFICATION

This swift, one of four species found in North America, can be identified by its sooty black wings and back, with a white throat and a broad white streak of white that runs from the center of the breast to the abdomen. White patches run along the sides to the base of the tail. The White-throated Swift is the second largest swift on this continent. The largest being the Black Swift. It measures approximately six and one-half inches long with a wing span of 14". Their feet are not designed for walking but are well adapted for clinging or climbing about on rough surfaces, the types of surfaces you would find along rocky cliffs or caves. The tail is slightly forked, and the wings are considerably longer, relative to body size, than is true for swallows. Unlike swallows, swifts with their shorter legs have a difficult time perching or moving about freely on the ground. The small size of the legs and feet along with the length of the wings relative to the body size are probably responsible for the birds inability to become airborne from a low area. The swift has a large mouth designed for aerial insect trapping and a small, flat, triangular bill.

Male and female White-throated Swifts have similar plumages. Juvenile swifts take on the same color patterns as the adults although they are paler and less defined. These birds have ten primaries and ten rectrices.

In flight, the White-throated Swift can be distinguished from other swifts by the sailing quality of its flight, with fewer wingbeats or flaps than the smaller swifts or by the bold black and white pattern on the breast, sides, and abdomen. These birds may often be mistaken for Violet-green Swallows, a species that they at times associate with. The key differences in appearance at a distance between the species are the longer, narrower wings of the swift relative to body size, a more rapid, fluttering movement of the wings while flying, the tendency to sail for a longer period between wing flaps, and the greater degree of darkness on the underside of the body as compared to the all white underside of the Violet-green Swallow.

Susan Brain



White-Throated Swift

VOICE

The voice is a loud ji-ji-ji-ji-ji-ji-ji-ji, a high pitched call that sounds like chuckling laughter usually given while the birds are in flight. Soft twitterings are emitted when the birds are in their roosting or nesting crevices. The bird does not emit any sound that could be considered a musical vocalization or song.

RANGE AND HABITAT

The White-throated Swift ranges from southeast British Colombia, eastern Washington, Montana, northwest South Dakota south through the mountainous areas of the west (except in humid coastal regions) to El Salvador and east to northwest Nebraska, east Colorado and west Texas. While it winters as far north as central California, central Arizona, and southwest New Mexico, it more commonly winters in southern California and Mexico south to El Salvador.

The habitat of the White-throated Swift is primarily open sky over coastal cliffs, foothills or steep mountain canyons and valleys adjacent to these areas. Roosts of this species have also been found in tall buildings of city areas.

BEHAVIOR

Possibly the most remarkable aspect of the behavior of the White-throated Swift is their seemingly endless flight. There is comparatively little information available about this species because these birds seem to spend most of their life in the air. Little research can be conducted on the natural behavior of a species if that species passes its daytime hours in the air and its nightime hours deep in crevices far from the reach of human hands.

The White-throated Swift is a gregarious species. They are often seen flying in small groups as they forage high in the air. Several hundred may be found in a single roosting area. Anyone who has had the opportunity to observe these birds entering a large roosting area has been amazed at the speed and accuracy these birds exhibit when such a large number are able to enter such a small roost entrance in such a short period of time. Fifty birds were observed entering the same three inch by two and one-half inch wide crevice in a two minute period. Over 100 birds were seen entering a crevice within a five minute period.

The White-throated Swift is the finest and fastest flyer of all the North American swifts. It is also the fastest flying North American bird. One bird was observed flying at speeds up to 200 mph as it was being pursued by a Peregrine Falcon. This swift rarely, if ever rests during daytime flight (some researchers believe that these birds continue flying throughout the night, ascending to higher altitudes to avoid collision). The fact that they are often found far out over flat valleys, far from any possible resting area, indicates that they have a great cruising range. The streamlined body, grace and speed in the air, and extraordinary awkwardness on land make it clear, even to the casual observer, that the White-throated Swift was created and designed for flight.

Like the Poorwill and hummingbirds (species closely related to the swift) the White-throated Swift has the ability to go into a torpid state. Individuals of this species have been found dormant within their crevices during cold weather. This is not surprising considering the fact that these birds cannot forage on the ground and that during cold weather flying insects, their only food source, are not available. Without this adaptation, the swift would die of starvation during unexpected extended periods of cold weather.

Most rehabilitators are aware that the White-throated Swift, once grounded, finds it very difficult and often impossible to become airborne again. Often these swifts are presented to wildlife centers in apparent good health, with their only problem being that they were temporarily struck from the sky (collision, heavy rain, etc.). This is especially true of young or fledging swifts. Unless the swift can somehow locate a high perch and successfully crawl to and up to the perch so that it may soar downward and catch a wind current, the bird is permanently grounded. These birds, when released off a high cliff or bridge will flutter and sail off, continuing their aerial life in the skies.

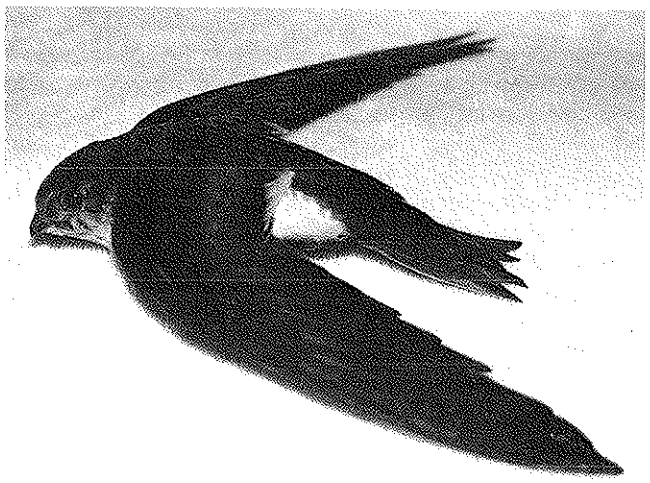
FOOD

Foraging is entirely on the wing. The food consists of flying insects; beetles, bees, wasps, flying ants, bugs, leafhoppers, etc. This swift is able to carry large amounts of insects in its throat while in flight. Over 600 insects were found in the throat of an Alpine Swift. Foraging behavior is similar in appearance to a bat. Sharp, rapid, turns are often made, probably to catch an insect.

COURTSHIP

Like most of the life processes of the White-throated Swift, courtship is also on the wing. Swifts arrive on the nesting range from March to May. During the breeding season, pairs may be seen in aerial chases where they make repeated passes at the face of their nesting site, turning at the last instant and continuing the process again. Copulation usually takes place in the air, although it may also occur in the nest crevice. Pairs have been observed engaged with their bodies held together at an angle as they spiral downward, separating at the last second to avoid collision with the earth.

Susan Brain



White-Throated Swift

NESTING

Nests are made from grasses or feathers glued together with saliva and cemented to the wall of the nesting crevice. Nests are placed in cracks of walls on buildings, or under bridges or in crevices of rocky cliffs at elevations from sea level to 13,000 feet.

Because the swift can successfully nest in these areas, the young are normally safe from the reach of predators. The nest takes on the shape of the crevice in which it is constructed. One notable observation is that swift nests are often infested with insects.

This species lays from 3 - 6 pale to creamy white eggs. A typical nest contains four eggs. The eggs are commonly fly-specked or speckled with insect droppings from the insects that infest the crevice. Because of the nesting and airborne habits of this species, little is known of the incubation period or care of the young. Weights for this species range from 26 - 36 g.

REHABILITATION THOUGHTS

The difficulty in the rehabilitation of the White-throated Swift is in part, due to the fact that so little is known about this species. This is further complicated by the fact that they usually never become self-feeding in captivity. In caring for these birds a few things have been learned the hard way. Caging should be "swift-proof". Once they have escaped, because of their inability to become airborne, they are vulnerable to severe injury. Before attempting to release a swift, be absolutely sure that the bird can fly. This is not as easy as it may sound. Wing fractures on this species can be difficult to detect without radiographs. Nerve, muscle, ligament or tendon impairment can also be difficult to detect. Closely observe movement and positioning of the wings.

When the decision has been made to release the bird, a high site that gives the bird adequate time to catch a wind current should be selected. The second floor of a building with a large parking lot is ideal especially if it is near a known nesting site. Additionally, the site should be such that the bird can easily and quickly be retrieved should the launching be unsuccessful. When released, the bird should fly up into the wind and not glide to the ground. Once grounded, they are usually unable to fly up into the air.

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The National Wildlife Rehabilitators Association announces a small-grants program and the establishment of two awards. The grant makes funding available to support a single $1000 project or several smaller projects that total $1000 in the field of wildlife rehabilitation. Applicants must demonstrate financial need and submit a typewritten proposal that includes name(s) and resume of personnel involved, objectives of the project, a brief description of how the project will be carried out, a brief statement of the literature reviewed and an itemized budget. An annual report on progress is required.

The awards include the Lifetime Achievement Award given to an individual whose primary identification is with rehabilitation of wildlife and who has contributed to this field in a major way for many years. The Significant Achievement Award is for a person who has contributed something of merit to the field in the last two years. The contribution may be a research finding, publication, organization of a program, etc., with a major theme in wildlife rehabilitation. Both awards consist of a plaque, $100, and free registration at the NWRA conference where the award will be presented. The deadline for submittal of proposals for the grant or nominations for the awards is December 1 of each year. They should be sent to:

Daniel R. Ludwig, Ph.D.
Awards and Grants Committee
Willowbrook Wildlife Haven
P.O. Box 2339
Glen Ellyn, Il 60138
(312) 970-4900 Ext. 283

Philosophy of Wildlife Rehabilitation:
The Wildlife Rehabilitator's Pocket Guide to Self-Defense

Lynne Frink, Director
Tri-State Bird Rescue & Research, Inc.
Wilmington, Delaware

Wildlife rehabilitation is a profession in which, unlike many other more mundane careers, the rehabilitator is frequently asked to explain or defend the value of his/her work. You will seldom hear of a dentist, secretary, or truck driver being backed into a corner at a cocktail party by a slightly tipsy, now grown assertive individual who demands that the dentist justify her/his life's work. It is a sign of the newness of our profession, and the lack of consistency of quality among rehabilitators, that we meet with people who, having no clear idea of what rehabilitators really do, form their own preconceived notions. Hopefully, we all have considered and come to terms with our reasons for pursuing this work. We would certainly be fools if we spent 12, 14, or 16 hours a day cleaning cages, being defecated on, footed by birds, and frustrated and hadn't defined to our own satisfaction the value of our work.

I personally have questioned the value of wildlife rehabilitation; usually the strongest doubts arise shortly after an oil spill on Christmas Eve or when someone delivers an Osprey with a gunshot wound on my birthday. Despite the demands wildlife rehabilitation places on me, I have never found any difficulty in arriving at valid reasons for doing it. Having received my academic training in the humanities, including philosophy, I have tended to keep track of these various reasons over the years, and now have the great enjoyment of being able to present a well-rounded barrage of justifications to the cocktail-party doubter. "Come now," she/he says deprecatingly, "with children starving in the Third World (or the threat of nuclear annihilation, or the large number of toxic dumps, or the destruction of wilderness areas, etc.), how can you *really* justify saving a few little birds?"

At this point I smile, and say "Which response would you like? Your choices include, but are not limited to: The philosophical approaches, both humanistic and existential; the biological rationale; the medical verification; and wildlife in an urbanized world. "The last one," I tell them confidentially, "is my newest and favorite." If I haven't scared them off by this time, they may try to call my bluff, by saying, "okay, let me hear all four." What they will soon realize is that there is no bluff. I am deadly serious about the work I do, and I believe strongly in its importance.

The first point we must make is that our rehabilitation work does not detract from the tremendous threat of thermonuclear war, global starvation, or habitat destruction. Certainly these are serious concerns, but we all respond to the innumerable crises in the natural world in the manner in which we feel we are best able to help. Moreover, there is a certain arrogance surfacing in the individual who presumes to tell me how I should spend my life. Certainly, I haven't dared to tell a school teacher to quit her job and do something "more important, like saving whales," nor do I urge a game biologist to stop counting deer for game management programs and go out to halt clear-cutting of rainforests. Once I make this clear, it is time to take the doubter to a quiet, comfortable place. I don't want to try to explain the philosophical tenets by which I live my life while I'm standing in front of the ham dip or during the television commercials of the Rose Bowl.

Once I have their serious attention, I tell them how I feel: We all have our own reasons for our commitment to animals, and the reasons are usually more than one. Depending on our personalities and beliefs, the reasons range from the philosophically arcane to the biologically pragmatic. Some of us simply hate to see another living creature suffer. This is a humanitarian concern, and it *is* a valid reason for being a wildlife rehabilitator. This is usually the first reason a veterinarian will give for his involvement with animals. Many of us feel that Man is only one of many millions of species on this planet, yet he has taken a greatly disproportionate amount of the natural resources available to living creatures. Man's negative impact on other life forms is tremendous. To those of us who feel this way, any effort we can make to help animals which we have deprived of clean water, air, breeding habitat, and food is an attempt to take some positive action for the devastating effect our way of life has had on them. This is a philosphical approach, and is likewise a valid reason for our work.

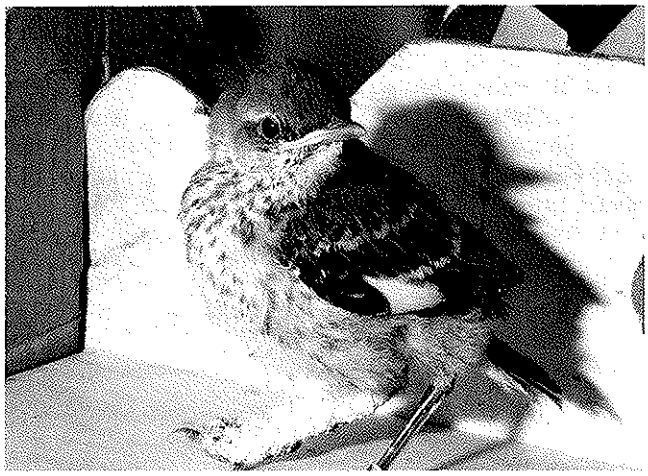
If anyone scoffs at this type of thinking, and you want to pull out some heavy guns, refer them to the concepts of the universe and God put forth by Spinosa and elucidated by Albert Einstein, in which the most important aspects of life are not a self-centered focus on Man and Man's needs, but the "rapturous amazement at the harmony of natural law, which reveals an intelligence of such superiority that, compared with it, all the systematic thinking and acting of human beings is utterly insignificant." When we join Einstein in viewing the world in this context, putting a wild animal on a par with *Homo sapiens* is not so sentimental.

Physicians and veterinarians who are concerned with treating the individual animal applaud the efforts of conscientious wildlife rehabilitators to study disease and injuries in wild animals and thus expand the store of knowledge in these creatures. Information such as blood values, dietary needs, and drug efficacy in wildlife has been, in many cases, discovered only through the efforts of those doing wildlife rehabilitation. The organization I work with has published such findings in journals like *JAVMA* and the *Journal of Wildlife Diseases.*

Most biologists will agree that the healthiest world, the most stable world, is a biologically diverse world. Imagine, for example, a United States that depended entirely on corn for food, and planted the continent from shore to shore with just one variety, for example, Silver Queen. An infestation of corn borer would make us a starving nation. Taking this one step further, a biologically (species) diverse world would not be possible without a genetically diverse world. Each species must have a viable gene pool. A Kestrel or Purple Martin we release today, enriches the gene pool for its species tomorrow. Even though we don't know what genes our patients carry, the Cardinal that recovered from an attack by a cat may carry the beginnings of resistance to some common environmental toxin.

Birds in today's world have had to struggle to stake out feeding and nesting territories on less and less available ground. All the wild animals we receive are survivors, the ones who have fought long and hard for their niche. Don't let anyone tell you that the animals you receive are succumbing to "natural selection" and should be allowed to die. The injuries these animals come to us with are not a sign of their inability to survive in the *natural* world; on the contrary, our studies at Tri-State reveal that over 85% of our avian caseload was injured directly through human activity: hit by cars, attacked by cats, contaminated with oil, or poisoned by manufactured toxins. We are caring not for the weakest animals but those which have been strong enough to adapt to urbanization and Man's impact on the natural world. These are worthwhile reasons for our work.

Unfortunately, not every rehabilitator accomplishes the goals of wildlife rehabilitation. I hold no admiration for the woman who insists to me that she can make a warbler well by staying up all night and holding it in her hands, or the accupuncturist who claims to cure dehydration and starvation solely with needles, or the



rehabilitator who told a national newspaper reporter that she cures pesticide poisoning with antibiotics and uses vegetable oil to clean oiled birds. After a few feeble attempts to discuss some more medically sound approaches with these individuals, I tend to back away smiling. I recognize their good intentions, but would never vote for these people for public office or ask them to remove a splinter from my thumb.

These are the rehabilitators who set our profession back years with each statement they make. These are the individuals who confuse emotion with understanding and mistake compassion for competence. Their goals are not mine. They want to love something, and to them that is enough. They don't seek to learn from their mistakes, they in fact avoid learning; we don't see these people at our conferences and workshops, and they hesitate to speak with others on the telephone. They want the satisfaction of caring without the responsibility of informed judgement.

The rehabilitators that I am truly honored to know are those who constantly strive to do what is best for an animal in their care, even when such actions may cause them pain, hardship and much toil. These people renew my strength and give me faith in our work. Over the years, whenever I have questioned the worth of rehabilitation, I find that the doubts I experience are not with the value of rehabilitation but with my lack of progress. My uneasiness at these times is always a sign to me that I have been stagnant; I have been remiss in not working hard enough to learn new and better techniques, conduct better research, or communicate with my colleagues. It is my feeling that we owe a debt to wildlife never to rest in our efforts to expand our store of knowledge. We need to take pride in what we do and feel free to draw upon each other for encouragement, solace, and support. Our work has great value, so let us be patient enough to explain this to the doubters, for no one can justify our profession better than we can.



Letters to the Editor

Three weeks ago, we cleaned a fat grebe the same morning she came in, swam her at midday, and in the afternoon released her. She is in a relatively small body of water and has been recognized several time since, as she is a white-faced female and there are only five other grebes there. Seeing her swimming and diving happily helps us forget the bad moments and makes all our efforts seem worthwhile.

who worked with the oiled birds should be thanked for their hard and exhausting work, and congratulated on their results. We still have oil spills, but our techniques have come a long way. In 1971 the Western Grebes which some members worked with, required two to three months for a complete molt.

Yours Truly,
Alexander Lindsay
Junior Museum Oiled Bird Team

Editorial

"My family comes first, if I was a wildlife director, I would have to be married to it. It would consume my personal life."

It seems to me that if we are going to attract qualified career people, a few things are going to have to change. The number one thing on my list is the not-so-subtle expectation by board members, volunteers, and government agency staff that the rehabber is expected to work until he or she drops from exhaustion. Efforts should be made by all of these people to see that they do not contribute needlessly to the already heavy workload of the director. I could list many examples but the one in San Rafael, California several years ago will make my point. Several released and tagged raccoons traveled far from their release site and entered an Audubon Sanctuary only to scale trees and eat baby egrets. From the point of view of the rehabilitator, the raccoons were displaying normal predatory behavior. It became a political issue with the state fish and game managers taking the position that the wildlife center could accept any raccoon it wished but could release none back to the wild. While the politics raged on, the director endured much stress that really was needless. Eventually, the raccoons were allowed to be rehabilitated back to the wild.

Boards of Directors who oversee the working conditions of the organization can do much by observing their employee and bearing in mind the difference between an employee and a volunteer. When directors spend their days off at work "catching up" on a consistent basis, inefficiency will soon follow as they become run down due to lack of time away from the job. Good job efforts should be rewarded by praise, letters of commendation, and a regular increase in salary and/or benefits. Efforts in hard times, i.e., oil spills should especially be recognized by the board. Boards should be careful not to create the impression that they expect staff to consistently work overtime without pay or on their days off.

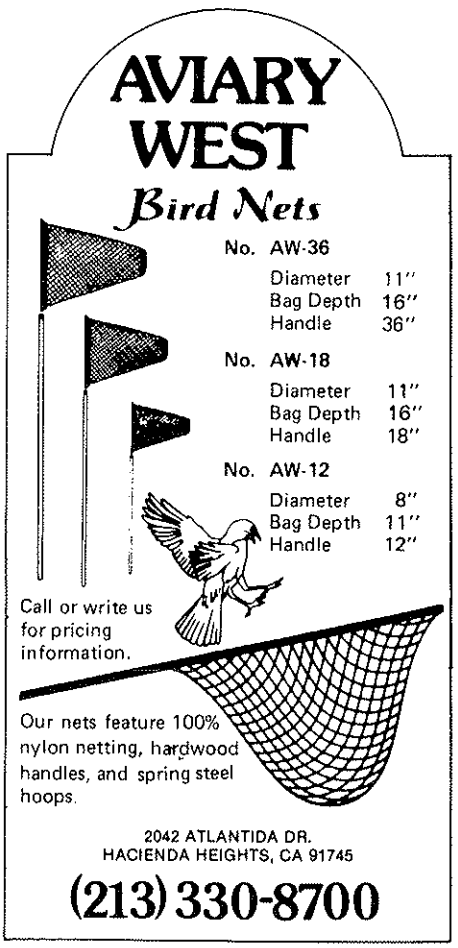
Volunteers should remember that it is quite a different task to be responsible for facility operation on a full-time basis. If volunteers are faithful in discharging their part-time duties, the directors working conditions are far more manageable. Constant calls from multiple volunteers stating they won't be in today can send any director into a fit of dispair. Reliable volunteers doing a good job on their shift will make them worth their weight in gold to that director. If a group of volunteers dumps work on the director, to whom does the director give work? Can the director handle the extra workload or will it only contribute to the immediate demise of animals needing care or ultimate demise of a worn out director?

Secondly, there is no management training program for wildlife rehabilitators should anyone decide to pursue a transition from volunteer to paid staff. IWRC perceives a need to develop curricula for seminars in management. Training staff in this area is far better than throwing them into a job and hoping they will figure out how to run your program before your volunteers leave. Anyone interested in developing or contributing to a seminar program should contact us.

As our field grows over the years, we need a good applicant pool from which to select our leaders. Without it, the results may lead to stagnation in our field which would affect both our services to government agencies and to the public, not to mention the quality of care given to the animals.

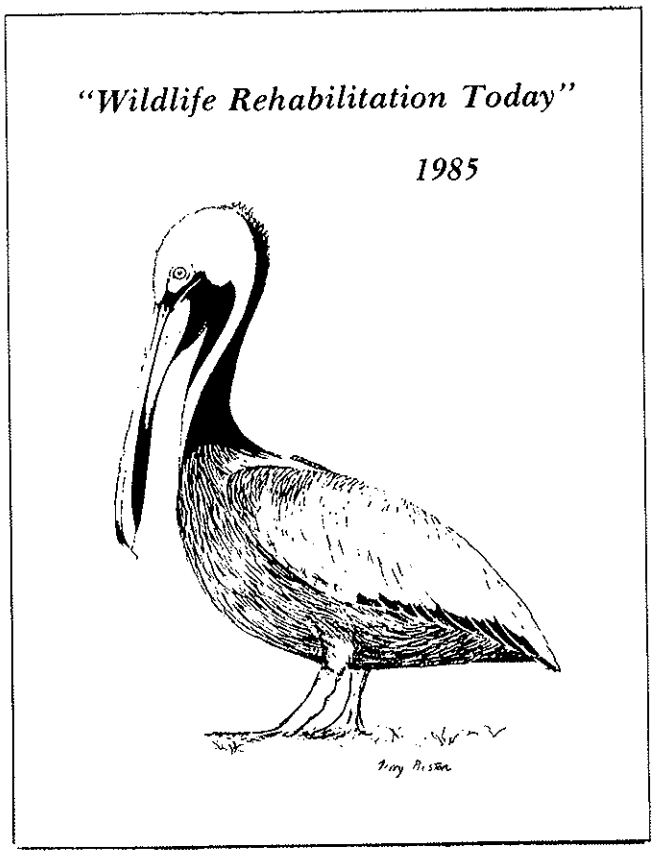
Next issue — I'll write about volunteerism and what directors can do to attract and keep them.

Jan White



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