Sample

Spring 1990 Vol. 13, No. 1

WILDLIFE JOURNAL

Journal of the International Wildlife Rehabilitation Council



River Otter Rehabilitation Notes . . . Page 7

Guidelines for Authors for the *Wildlife Journal*

The *Wildlife Journal* is designed to provide useful information to wildlife rehabilitators and others involved in the care and treatment of native wild species with the purpose of returning them to the wild. All featured articles are subjected to a review process and our staff and reviewers work with authors to produce the most accurate information possible in our ever changing field.

The *Wildlife Journal* has various feature categories. We solicit submissions in the form of feature articles, rehabilitation notes, book reviews, news articles related to major events in the field, and selected case studies. Articles on veterinary medicine as it relates to wildlife rehabilitation are also welcome. We would like to expand the *Wildlife Journal* to include wildlife rehabilitation articles from countries outside the United States and welcome inquiries regarding such articles. We have two short features we use for basic information: "For The New Rehabber" and "Simple Things That Make a Difference". They are intended for basic information or new ideas that are easily demonstrated with a short text and photos. We pay authors a $25 honorarium for each article accepted for publication or provide a one year membership or renewal.

Submission Instructions

1. An original and two copies of the manuscript should be submitted to the Editor, IWRC, 1171 Kellogg St. in Suisun, California. The manuscript should include references, photo legends and footnotes, and should be typewritten and double-spaced if possible. Please put the authors name and address on at least the first page of the article so it can be readily identified.

2. The *Wildlife Journal* is prepared on a Macintosh and if papers are already written and on a disc the author should let us know that at submission what type of hardware and software systems were used.

3. Manuscripts are received with the understanding that they have not been submitted to other publications. It is the authors obligation to obtain permission or reprint rights if the submitted copy has been published elsewhere. All accepted manuscripts are subject to editing. Unused manuscripts will be returned.

4. A separate page should be submitted with a short synopsis of information on the background of the author. Included should be the name, address, rehabilitation organization, and phone number for the author. Where appropriate, please list any academic degrees, or special training that is relevant to the article (i.e., physical therapy—RPT, etc.)

5. Black and white photographs are preferred for use in the *Wildlife Journal*. When no other option is available, color slides and prints can be converted but this is costly and to be avoided when possible. Photo credits should be listed with the photographs.

6. Acknowledgments are limited to people who have contributed to the article in a major way.

7. References should be noted in the text with the last name of the author and the year published (i.e., Leighton, 1983) and listed at the end of the manuscript in alphabetical order in the following style:

LEIGHTON, F.A., Peakall, D.B., and Butler, R.G, 1983. "Heinz-Body Hemolytic Anemia from the Ingestion of Crude Oil: A Primary Toxic Effect in Marine Birds". *Science* 20:871-873.

WILDLIFE JOURNAL

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P.C. Hanes
P. O. Box 15223
Austin, TX 78761

MARKETING AND ADVERTISING
Dianne Pearce
17308 Queen Anne Bridge Road
Bowie, MD 20716

Printing by
Shoreline Printing
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Cover photo supplied by Melanie Cain-Stage.

• The IWRC Journal is designed so you can use a 3-hole punch and store back issues in a binder for easy reference.

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Editorial. . .

In Response to Peter Steinhart's Audubon Essay

This spring, *Audubon* magazine ran an essay by Peter Steinhart entitled "Humanity without Biology -- rehabilitation rarely helps and may harm wildlife populations." Like all Peter Steinhart essays, this one was well researched and thought out. However, in my opinion, the title seemed unnessarily provocative, is unsubstantiated, and served to negatively prejudice readers before they even started the essay.

Let us take the first premise that rehabilitation rarely helps. The author traces the history of rehabilitation through the eyes of the enforcement agencies--which have gone from being opposed to being neutral or even seeing animals coming in to rehabilitation centers as an alarm system for documenting new ecological threats. He cites wildlife officials who recognize the value of public education efforts sponsored and staffed by wildlife rehabilitators. Peter further cites the benefit rehabilitation skills have played in peregrine recovery programs going on to emphasize how skills learned on common species can be used to save rare populations. He asserts that when populations become marginal, something not particularly uncommon in today's world, wildlife rehabilitation may have clear benefits. After saying all that, why subtitle the essay that rehabilitation rarely helps? It makes one wonder if the editor of the publication didn't add the subtitles to assist in aligning the essay more along the lines of the National Audubon Society leadership views.

Then there is the flip side of the essay—a quote from Dave McMullen of the United States Fish & Wildlife Service (USFWS) in Portland, Oregon which says that he believes "there is a reason that some birds run into wires and some birds sit all day on a post. It may be an eyesight problem. It may be their minds are not working right. In nature the ones with problems get weeded out." My response is the reason for a bird's mind to not work correctly may be man-related. Research efforts by D.M. Fry on Turkey Vultures poisoned with 1080 coyote poison showed that the birds developed lower brain stem signs that left them looking as if their minds were not working right either. Rehabilitators in California working with the California Dept. of Fish & Game (CDFG) have shown that OPP poisoning also causes similar signs. The quote goes on to say that rehabilitators are saving the weak animals and perpetuating their weaknesses in the wildlife populations. What if these problems are not natural illnesses or population defects? Biologists need to wake up and smell the coffee here. Given the few actual examples listed, as well as many others that rehabilitators know from their existing work, and given the fact that wildlife rehabilitation is becoming more sophisticated as time goes on, I think that the long-term history may reflect many more examples of real contributions to the welfare of humans or wildlife than any documented undermining of the effects of evolution on a given population. If you think about it, a few key contributions where wildlife sentinels forewarn us of our own endangerment go a long way towards tipping the scales in favor of wildlife rehabilitation.

The same USFWS staffer is quoted as stating that little study has been done to determine the fate of released animals. Post-release studies on mammals have been published by rehabilitators such as

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The Goniometer: Its Indication and Use

Kathie Giblett, RPT
International Bird Rescue
Research Center
699 Potter St.
Berkeley, California 94710

Introduction

The goniometer is a valuable instrument for measuring the passive range of motion of a joint during the rehabilitation of an injured bird or mammal. Joint range may be restricted by bone or muscle injury, swelling or calcium deposits at the joint itself, ligament or muscle contracture, or following a period of immobilization. The goniometer is inexpensive to buy, simple to use, and can be invaluable to the rehabilitator for injury assessment and progress monitoring.

Indications for Use

A goniometer should be used any time an animal is presented with any dysfunction of its musculoskeletal system or, in the case of a serious injury, following a period of immobilization, whether it be conservative or surgical, to monitor the effects of treatment and assess the prognosis for recovery.

Immobilization of a wing or limb inevitably leads to joint stiffness, caused by shortening of tendons and ligaments, muscle contractures, and the loss of synovial fluid from the joint. The injury itself may also cause joint problems. For instance, if the fracture site is close to a joint, there may be chronic swelling, calcium deposits or callous in or around the joint, or damage to the joint surfaces themselves.

Joint stiffness may also occur in less serious injuries such as a minor sprain where acute swelling and muscle spasm may impede movement. The goniometer should be used only when the injury is stabilized and when passive movement of the joint will not result in further damage. For instance, if an animal is presented with a fracture, joint assessment and physical therapy begin only when the fracture site has completely healed. In the case of a minor problem such as a sprain or muscle injury, basic treatment needs to be instigated first to reduce pain and swelling, before the later stages of rehabilitation begin.

Once the injury has been stabilized and it is safe to passively move the involved joint or joints, the goniometer is very useful in evaluating the functional status of the part and in assessing treatment methods employed to return the part to normal function. The joint range of motion (ROM) should be measured each day before treatment begins and at the end of the treatment session. This is very important in order to assess whether progress is being made or not, whether the technique should be changed, or treatment stopped altogether.



Properly positioned, a goniometer will help assess range of motion in the joint being measured.

How To Use A Goniometer

A goniometer consists of two arms, one fixed and one movable, attached at a fulcrum where a 360 degree protractor measures the angle between the two arms. One arm is fixed to the 0 or 360 degree position. It is important to know the normal range of motion of a particular joint before assessing the dysfunctional joint. This may be done by measuring the same joint on the other side of the animal as there are differences between species and slight differences in individuals.

A hinged joint that moves in one plane only (such as flexion/extension in the elbow joint of a wing, or a knee joint) is very simple to measure. Some difficulty may arise, however, when attempting to measure a ball and socket joint, such as a shoulder or hip, which has three planes of movement, and it may be easier in these cases to make a visual assessment of these movements instead.

Before attempting to measure joint ROM, the animal needs to be adequately restrained. Removal of visual stimuli by covering the head with a towel or hood is also helpful to calm the animal and to reduce stress and unwanted movements. It is usually necessary to have a second person do the restraint for you, so you may have both hands free for accurate measurement. Position the animal to enable free and unimpeded movement of the joint you are evaluating.

To measure a joint, the center of the fulcrum is placed exactly over the center of the joint to be measured. (It may be helpful to wet the feathers with alcohol or water by spraying or sponging the area to enhance the definition of bone under the feathers that are being measured.) The arms are then lined up with the longitudinal axes of the two bones that make up the joint on either side. Passive ROM can then be measured by gently extending (or straightening) the joint while holding the arms of the goniometer in line with each of the bones on both sides of the joint, ensuring the fulcrum remains over the joint itself. This is achieved by placing your thumb on the goniometer arm and your four fingers underneath on the limb itself. When the end of the range is reached, the angle between the two arms may be read from the protractor and recorded. Once the goniometer is placed and the longitudinal bones are in the range being measured, the instrument should be checked to see that the fulcrum is against the axis of the joint.

The same method is used to measure flexion (or bending) of a joint, however movement in this direction is not often restricted.

An example: To measure the elbow joint of a bird following immobilization to stabilize a fracture of the radius and ulna: Feel the elbow joint and position the fulcrum of the goniometer exactly over it. Line one arm up along the humerus with the center of the arm pointed toward the shoulder joint. The other arm is lined up along the radius and ulna, pointing toward the wrist joint. These other joints should be allowed to move normally and unimpeded. Hold the arms of the goniometer firmly to the bones with each hand and gently extend the elbow until it comes to the end of its range. NEVER FORCE A JOINT TO MOVE FURTHER THAN IT CAN. Read the measured angle and record.

To measure the wrist joint, place the fulcrum over the wrist, align one arm with the radius/ulna, pointing toward the elbow, and the other arm with the first metacarpal.

For the knee joint, the fulcrum is placed on the lateral (outside) aspect of the knee, one arm is lined up along the tibia pointing toward the ankle, and the other is along the femur pointing toward the hip.

Measuring the shoulder or hip is more difficult but may be achieved by lining up one arm of the goniometer along the body, parallel to the spine, and the other along the humerus or femur. This, however, is awkward and may result in some inaccuracy, therefore, in the author's opinion, it is often quicker and easier to subjectively assess these movements by comparison to the normal joints of the other side.

It is important to remember to measure all the joints of the affected limb as immobilization will lead to stiffening of even non-injured joints.

Again, it is vital to reassess joint ROM before and after treatments, and to record the results, in order to monitor treatment methods used, and assess prognosis. If no progress is being made, the treatment needs to be changed or stopped altogether, and the disposition of the animal may need to be re-evaluated.

Conclusion

It will take some practice to achieve accurate results of joint measurement, but with a little experience, the goniometer will become an invaluable tool in physical therapy and rehabilitation following orthopedic injuries in wildlife.

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Case Report:

Diagnosis and Recovery From a Severe Haemoproteus Infestation in a Red-Tailed Hawk

Marnie Allbritten
Joanne Richards, DVM
Umpqua Wildlife Rescue, Inc.
HC 51, Box 489
Winston, OR 97496

Introduction

The occurrence of *Haemoproteus* in raptors has been abundantly documented but little is known about the clinical significance of these organisms. Many authorities insist there is no evidence of pathogenicity, although one report from 1918 records acute pathogenicity in young Kestrels (Cooper, 1985). In this case, one of the consulting veterinarians noted that she had seen *Haemoproteus* frequently in wild birds but always in low numbers unless the bird was immuno-compromised by a more serious infection.

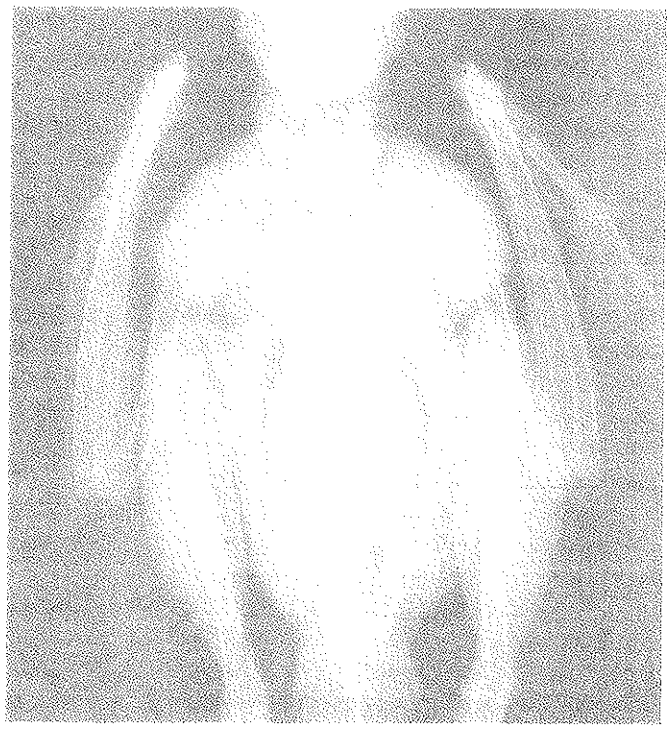
Eleven species of Haemoproteus have been identified in the Strigiformes and seven in Falconiformes. The *Haemoproteus* vector is believed to be the hippoboscid fly, and diagnoses can be made by observing intracellular gametocytes on stained blood smears. Little other information about this parasite is available in the literature.

History and Clinical Signs

A mature Red-tailed Hawk was found panting and unable to fly in a field. Although in good flesh, it had poor reflexes, an inability to stand, and was generally lethargic. Blood was dripping from the tracheal os at the rate of about 1 drop per 2-3 seconds.

Initial Examination and Treatment

On examination, the bird weighed 860 gms. and was still bleeding from the trachea. There was no sign of a foreign body or wound in the mouth or trachea but there was a palpable lump in the throat of the bird. The pupils were equal and reactive. The mouth appeared slightly gummy and was pale in color. The bird was given 20 cc's of Lactated Ringers solution per os and an intramuscular injection of Vitamin K at a dose of 1 mg/Kg on the chance that the bird had ingested a warfarin-poisoned rat or mouse. It was then placed in a warm cage overnight.



Radiography revealed an enlarged liver.

Ongoing Treatment

The following morning, the bird was offered several small pieces of rat which it took readily. Bleeding had stopped and the bird appeared bright and alert but was still unable to stand. Small bits of food were offered throughout the day and by 3 p.m. the bird was standing. A fecal sample was taken and both *Capillaria* and *Ascaridia* were found.

The next day, the bird began bleeding from the trachea while a tail sheath was being put on. Another dose of Vitamin K was administered and a throat swab was taken to determine if trichomoniasis was present. Results of the swab were negative.

The bird continued to improve and by the sixth day weighed 980 grams. Although the appetite remained good and the bird was bright, alert, and responsive, any stress would result in bleeding and a return to open-mouthed breathing.

On the eleventh day after admission, the bird was radiographed. The radiograph showed an enlarged liver. The total solids, by refractometer, were 5 g/dl and the PCV was 33%. Ivermectin was administered at 200 µg/Kg at this time to control intestinal parasites.

On the twelfth day, the bird developed some diarrhea and was given 1 cc of Bactrim™ (40 mg. trimethoprim and 200 mg. sulfmethoxazole), BID for three days. The bird showed some signs of improvement but continued to pant when stressed and was easily tired.

On the fifteenth day, the right eye was closed and some whitish matter was present in the eye. It was treated with Chlorbiotic™ eye drops (1-2 drops BID for one day) and did not recur. The bird seemed restless but was unable to fly with any strength. A blood slide was taken and stained. At this time, it was discovered that approximately 40-50% of the red blood cells contained the characteristic large granules of the *Haemoproteus* gametocyte. The bird also began to moult at this time.

On the seventeenth day, Dr. Eva Pendleton of Oregon State University College of Veterinary Sciences was called in for consultation. She recommended not treating the *Haemoproteus* infection as her experience with Quinacrine™ (the drug of choice) was that it was extremely hepatotoxic and caused extreme nausea in the birds treated. She suggested that the bird was extremely immunocompromised and her prognosis for the bird was dim. Her recommendation was for necropsy.

On day 22, the bird seemed improved. She was taken out and flew approximately 45 feet on an exercise line without any signs of bleeding or panting. From day 22 to 38, the bird was teathered outside on a perch for approximately 30 minutes to an hour every other day. During this time, she would bate off the perch to the ground and showed a steady improvement in the number of times she could do this without showing signs of fatigue. On day 45, she was flown on an exercise line and was able to fly well. Exercise flights were continued approximately every other day from day 45 to release. Her stamina increased until she was taking flights of 100' eight to ten times a day without any signs of fatigue. By day 62, signs of *Haemoproteus* in a blood smear were down to approximately 5%.

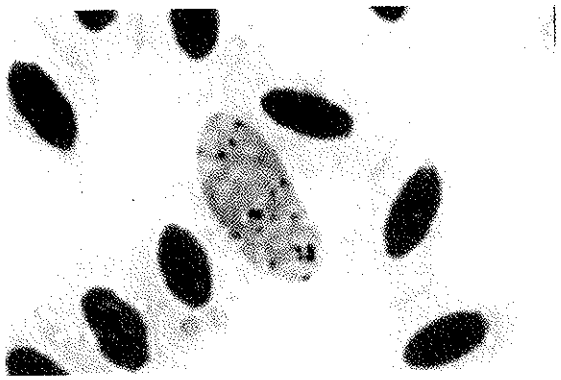


Figure 1. Gametocytes of Hemaproteus in an avian red blood cell.

She was released on day 64, flew well and has been seen several times since in her customary hunting grounds.

Conclusion

The reasons for the bird's recovery remain a mystery but one which this rehabilitator would very much like to learn more about. The authors would be very interested in hearing from any other rehabilitators who have had experience with *Haemoproteus* in raptors.

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Rehabilitation Notes:

American River Otter *Lutra canadensis*

Melanie Cain-Stage
H.A.W.K.E. Inc.
216 Hermosa St. Davis Shores
St. Augustine, Florida 32084

INTRODUCTION

River Otters are found in aquatic habitats with a range throughout the continental United States, Canada, Alaska, coastal Mexico, Central America and South America. They are generally remembered as being a playful member of the weasel family and are known for making slides in the snow bank or ice. However, these slides may be more a functional road for speedy transport than a playground (Chanin, 1985).

DESCRIPTION

•Otters are large furbearing mammals with dense, seal-like fur and light- colored cheek markings. Their fur coats go through various color and texture changes from birth to maturity. At birth, their fur is almost black and very shiny. At about two months of age they shed and then have a medium brown fur coat that is very soft and downy. This coat will further shed out to a sleeker auburn fur. At about seven months of age the otter develops a dark brown coat. At ten months of age their fur is almost black, very shiny, soft and thick with clearly defined light beige cheek markings. They rely on their dense coats to keep them homeothermic and do not have a lot of body fat. If they lose their waterproofing (via oil-contamination or fecal contamination) they can become quite hypothermic. Additionally, if housed captively in too warm an environment, they can become hyperthermic.

•The face of a river otter has white seal-like whiskers and very small beady black eyes. They have small round ears, a flat nose and very sharp, strong teeth. Their muscular tail is thick at the top and tapers to a point measuring from 11 3/4"(29.8 cm) to 20" (50.8 cm) long. The males are larger than the females. The average weight for river otters is 11 to 30 lbs. (5 to 13.6 Kg) and their length can be from 35" to 51 5/8" (88 to 131 cm). The normal body temperature for the River Otter is 99-102° F (37.2-38.8° C) (Evans, 1986).

•River Otters have large webbed feet for swimming and streamlined bodies for speed. Their undulations and movements while swimming are very much like a dolphin, as they arch their bodies through the water. Unlike seals and other aquatic mammals, otters can be very swift on land.



River Otter at about two weeks of age. Photo: T.W. Ransom

• River otters are active during the day or evening.

• The usual dental formula for the family Lutrinae is I 3/3, C 1/1, P 3-4/3, M 1/2= 34-36 (Ewer, 1973).

•For their size, the otter is unbelievably fearless and can drown a dog, or kill a large snake with ease. River otters are extremely intelligent, affectionate, and curious. Otters frolic in perpetual motion, and never seem to run out of energy. After swimming, otters will slither from side to side in the grass or dirt to help dry them off (Chanin, 1985). These rolling sites may play an important role in grooming and maintaining good coat condition which in turn may be important in preventing pneumonias, a common problem in captive river otters. A review of 88 post-mortems of captive zoo otters of various species revealed that 35% of them had died from pneumonia (Duplaix-Hall, 1975). They are very clean animals and will keep their coats well groomed and resistant to water.

•Senses: River Otters have a very good sense of hearing as well as an acute sense of smell. They have adapted well to sight under water through a modification of the shape of their lens (making it more spherical) to compensate for the altered refractive index of water (Chanin, 1985). Their sense of touch is very fine and is important in their hunting, especially when in murky water. Experiments have shown that in murky water, their vibrissae (whiskers) do assist them in locating fish or other sources of food.

NATURAL HISTORY

Home Ranges

•Adult River Otters are gregarious and rarely fight. Instead, they mark their territories with their scent (spraint) and avoid each other. Adults tend to live a solitary lifestyle but will pair for reproductive purposes (Chanin, 1985). However, adult females and their families have been observed to travel in the company of unrelated juveniles or yearling otters. In one case, an adult female without young was observed to spend a considerable amount of time with another family group (Chanin, 1985).

•Their home range, the area in which they normally live, includes feeding places, breeding places, resting sites, sleeping areas and all of the areas they pass getting to and from these areas. These ranges vary in size. In one study by Melquist and Hornocker (1983), these ranges varied from 31 Km (four solitary juveniles) to 50 km (one adult male).

Language

•Otters have a wide variety of sounds to communicate their moods and situation. The pups and adults can produce a loud continual chirping, used when they are hungry or upset. River Otters can make a soft chuckle when they are happy and a low chattering when they want to play. A pig-like grunt can also be a part of their natural expression. When angry or threatened, otters give out a short bark or deep growl. If a River Otter is extremely distressed, it can produce a hair-raising scream that can be heard for miles. This sound can only be compared to the angry shrill of the Bald Eagle, and it is so intense it can make human ears ache. Otters also whistle and snort.

Longevity

•While not a lot of information is currently available on the life span of River Otters in the wild, captive records indicate that they can live between 10 and 23 years. Although it is thought that mortality is high during the first two years of life, they are estimated to have an average annual survival rate of 75% (Chanin, 1985). In all probablility, few will survive to the age of ten years old in the wild.

NATURAL DIET

• River Otters are beautifully adapted aquatic carnivores that consume a variety of foods, depending on their availability in the home range. Various studies (Melquist and Hornock; 1983, Greer; 1955, and Sheldon and Toll, 1964) on food habits have shown that the major food item is fish and that important secondary food items include crayfish, molluscs amphibians, birds and mammals. Other authors (Stowe, 1964) state more specifically that otters prefer non-fish food items over fish and non-game fish (Carp, Suckers) over game fish such as trout. Specific food items include: bud minnows, burbot, salmon, freshwater crabs, eels, mussels, crayfish, turtles, frogs, snails, salamanders, newts, snakes, muskrats, mice and some ducks.

• There have been many complaints by fishermen that otters compete with them for fish. In some areas of the United States, the primary diet is crayfish (Stowe, 1964, Chanin, 1985). The author's experiences in Florida have found this to be true and it is also corroborated by Emil Liers (Stowe, 1964) who has bred and raised over 300 River Otters. Further, experiments with Eurasian otters where the tail fins of fish were altered to slow them down consistently found that the slow fish were more quickly hunted and eaten. The general feeding pattern is to take what is easiest and closest to shore to eat. River Otters eat larger fish on land and smaller food while in the water. They will sometimes work in pairs and drive a school of fish to a small inlet where they can be caught more easily. The author's observations were that River Otters always eat their fish starting with the head first. However, other rehabilitators have observed them to start eating in the middle of the fish (Porter, 1990).

One of the most favored

foods for the River Otter is the crayfish, which they root out of ponds and rivers with ease. The young otters that the author has raised had access to hundreds of fish in a pond but always preferred catching and eating crayfish. They were observed to eat about thirty in an hour's time, ignoring larger fish and minnows nearby.

BREEDING, BIRTH, AND CARE OF YOUNG

• Female otters are often choosey about mate selection. This species has delayed embryo implantation which allows for the suspension of embryo development until a future time when implantation occurs. The period of delay can be from several days to several months. This gives the female an advantage in that she has the option of breeding from December to April and still will bear her young when food supplies are at their peak. Once embryos have implanted, birth will occur about eight weeks later. Thus, the gestation period is long and variable.

• Females are about two to three years of age when they first breed. They bear litters of one to four pups. Birth weight information is scarce. The only information located was on a near-term fetus weighing 132 g. (Chanin, 1985).

• The young are totally helpless and blind. They open their eyes at between 28 and 35 days (Chanin, 1985). They are kept protected and warm in a den which has an underwater entrance as well as a ground-level entrance. An abandoned beaver house, muskrat or woodchuck burrow on lakes, ponds, or river banks are often used as dens by otters.

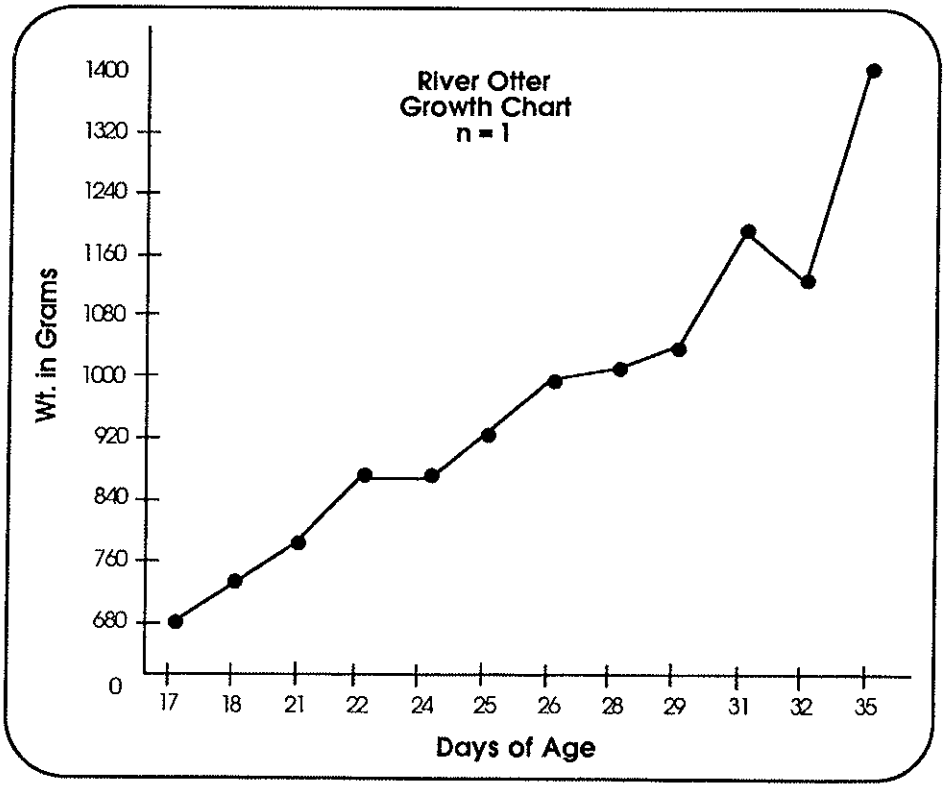
• The father is generally driven away after the birth of the pups, and not allowed to return until the young are about three months old. The infant otters stay protected in the den until this time and have no contact with anyone but their mother. Once the pups are out of the den, the male could but is unlikely to return.



A young River Otter feeding on fish.

• Swimming lessons begin at about the age of three months. Sometimes the mother will push her young into the water. She may also try to lure them into deeper water by tempting them with a crayfish. Females have been known to give a pup a piggyback ride and them spill them into water that is deep enough to force them to swim. The cub's coats provide them with plenty of buoyancy but make it initially difficult to dive. Over time, with practice, they master the skills necessary to swim and hunt.

• The young stay in their family group until they are skilled hunters and begin independent living when about eight or nine months of age.



CAPTIVE CARE AND FEEDING OF YOUNG OTTERS

• Initial evaluation of incoming pups will dictate the initial treatment and care required. Hypothermia and dehydration are common and are generally handled first. If they are old enough to have teeth, be sure to handle them with heavy gloves to avoid being bitten or scratched.

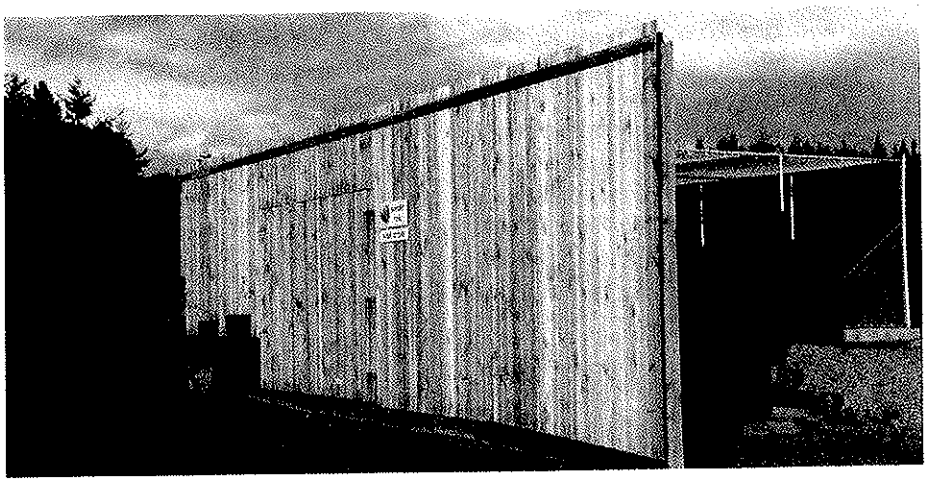
• History is very important. If it is known exactly where the young came from, it may be possible to return them to their mother. Ask if there were any signs of the mother (i.e., was she found dead, etc.). The den is permanent and will usually be on the bank of a pond or river. An external hole or entrance will be visible near the den. To return the pups, place them near the den entrance and get out of sight (and downwind). The pups will give a loud distress call and the mother will come and take the pups back.

•Otters are succeptible to canine distemper and should be vaccinated with Fromm-D™ (avianized tissue) canine distemper vaccine. This vaccine is a modified live but has been used in this species without adverse reactions. Vaccination regimens can vary but inoculations should occur every three to four weeks from eight weeks of age to 16 weeks of age.

•Other vaccines that have been used in River Otters include vaccinations for feline panleukopenia and canine parvovirus. Rabies vaccines have not been used on otters rehabilitated by the author. Only *killed* vaccines should be used in vaccinations.

DIET

• Various milk formulas have been used with River Otters. Milk analysis for this species reveals as follows: Solids 38%, Fat 24%, Protein 11%, Carbohydrates .10% and 2.60 Kcal/cc. In looking at the mothers milk, several things are evident. Because of the high level of fats in the milk, substituting cows milk would *not* be satisfactory. However, using a substitute such as Multi-milk with Esbilac™ or KMR™, higher fat and protein levels can be achieved. Some authors have recommended KMR™ alone (Evans, 1986).

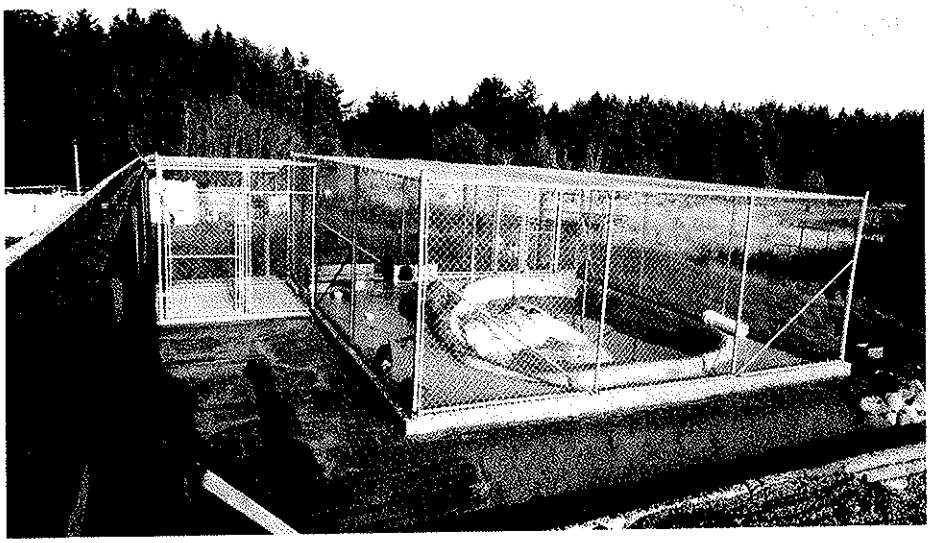


Otter Enclosure: Front View. Photo: Jessica Porter, DVM

• The formula used by the authors to raise several River Otters is Multi-milk™ one part powder to two parts water, 1/2 oz. liquid whole milk whipping cream, 1/2 tsp. white Karo™ syrup, one egg yolk, 1/2 dropper of liquid Hi-Vite™ multi-vitamins. Formula is made fresh daily and heated portions should not be re-heated. The formula is mixed in a blender and stored in the refrigerator until used. On a wet matter basis this formula yields 26% solids, 8.47% Fat, 4.57% Protein, 2.61% Carbohydrates, and 1.05 Kcal/cc.

• A composition more like the natural milk can be achieved using Multi-milk™, Esbilac™ and heavy whipping cream. The ratio is as follows: One part powdered Esbilac™ with two parts water and one part Multi-milk™ and one part heavy whipping cream. On a wet matter basis this yields: 30.89% solids, 19.73% Fat, 7.03% Protein, 2.31% Carbohydrates, and 2.13 Kcal/cc.

• River otters have also been successfully raised using Esbilac™. Growth data shown is for several River Otters using Esbilac™ (Porter, 1990).



Rear View of River Otter Enclosure. Photo: Jessica Porter, DVM

• At the age of six weeks onward, two tablespoons of Gerbers High Protein Baby Cereal™ can be added to the formula.

• All feeding instruments and storage containers should be cleaned well between use. Sterilization is the safest cleaning method.

• Pet-Nurser™ bottles with long nipples, work well for young pups. Nipple aperture size is dependant on the pups age and related sucking strength. If milk appears in the nostrils, the aperture is too large. Take a fresh nipple and make a smaller hole.

• Pups may not nurse readily at first. Scratch their backs gently as this sometimes will trigger them to get excited and nurse. Do not be alarmed by their loud chirping cries, this is normal. They are quite good at squirming away from their handlers so handle only one pup at a time for feeding.

• One four week old pup will drink about 1/2 oz. of formula at a sitting. Go on to the next pup but give them all a second time at the bottle. Each baby should drink about one oz. per feeding at this age. Following feedings, pups will burp if patted on the back.

• The feeding schedule varies by age. In the wild, River Otters are thought to feed every three to four hours (Chanin, 1985). Initially, four week old pups may need frequent feedings (every 1.5 to 2 hours) between 7 a.m. and midnight. As they adjust to the substitute formula and grow, they should be able to go three hours between feedings. Some rehabilitators consistently feed four times daily (10 a.m., 2 p.m., 6 p.m., and 10 p.m.) (Porter, 1990). They should not need to be fed after midnight unless they are in poor condition.

• At six weeks of age, a regular 4 oz. baby bottle can be used to feed the otter pups. They will take about 2 1/2 oz. per feeding. They will be more active now and play and fight in mock battles together.

STIMULATION AND ELIMINATION

• Nursing female River otters lick and stimulate their pups and clean up their waste. When they are older, they learn to defecate in one corner of the den. To handle these tasks, the rehabilitator can grip the pup much like a mother cat does (by the nape of the neck) and using a baby wipe, stimulate the pups anal/genital area until they urinate and defecate. This is necessary to do until they are about seven weeks of age.

• Keep notice of any change in consistency or texture of the stools. The normal bowel movement for this young pup has a consistency of toothpaste and is a green color.

• Changes in color or consistency may indicate problems with overfeeding (a common cause of diarrhea) or possibly a disease or parasite problem. Veterinary assistance should be sought if the problem is not overfeeding.

WEANING

• River Otters mature slowly and are not weaned in the wild until they are 14 weeks old (Chanin, 1985).

• At about 12 weeks of age they are coordinated on land and their vision is fully developed. At about this age, one begins the weaning process. A 4 oz. InfaFEEDER™ bottle found in the baby section of most stores has a strainer built in for use in feeding semi-solid meals.

• The weaning formula is two tablespoons of canned Feline Growth™ (Hills Brand Prescription), mixed with the formula in a blender. One can also add in a small smelt. Other weaning foods used for this species have included banana (initially) and then shrimp, and finally a high quality fishy cat food (Porter, 1990).

• The pups are generally eating every three hours. Skip one feeding and then offer them the modified diet. They may not like the taste at first, but they will begin drinking out of hunger.

• By the age of 14 weeks, the weaning formula can be offered in a heavy shallow dish in the cage. It will be messy! At this time, they will begin to eat live food items offered in their pools.

• By the age of 16 weeks, each baby otter should be eating at least 1/2 can of Feline Growth™ mixed with 1/2 tablet of Pet Cal™ Vitamin D-Calcium supplement. Each otter should be eating crayfish, smelt, or spanish mackerel (about 5-10 fish per day per otter) in addition to the canned food. For their size, the River Otter eats an incredible amount of food.

• When seven months old, the otter will be eating a whole can of Feline Growth™ and 10 to 15 fish per day plus all the crayfish and tadpoles they can catch. Pet Cal™ should be continued as above. When feeding substantial quantities of dead fish, vitamin B_1 should be added to the diet.

HOUSING

• At the age of four weeks the pups are totally helpless and their eyes are closed. The ears are hard to see because they are flat against the head. At this age the whiskers have not formed and the fur of the pup is dense, shiny and almost black. Their body length is 11" (28 cm) to 12 1/2" (32 cm) long and they weigh 1 1/4 (567 g.) to 1 1/2 lbs. (681 g.) each.

• Two pups this size can be kept in a large aquarium that allows them enough room to turn around in. At this age, pups do little besides eating and sleeping.

• A top, with plenty of ventilation should cover the aquarium. A heating pad needs to be placed under the aquarium with a towel or newspaper between the glass and the heating pad. A small thermometer should be placed

inside the tank to keep a constant check on the environmental temperature. The temperature should be kept between 81° to 84° F.

• A flannel baby blanket makes a soft lining for the aquarium.

• At the age of five weeks, the pups eyes will be open, but will not focus. They should be blue in color. They can pull their bodies and crawl in a worm-like manner over the floor.

• At six weeks of age, the otter pups can be housed in a child's 6' diameter fiberglass swimming pool with tall sides. At this age they would be in the den and not outside. The pool is partially heated by having the heating pad located under the pool and pillow cases can be used for bedding. Otters are very messy and the pool can be easily washed out and kept clean.

• At 12 weeks old and when the weaning process has begun, pups can be moved outside once the weather is above 50° F during the day. If night temperatures are still severe, they should probably come in at night.

• Minimum outside caging sizes: 8' x 8' x 6' (H). This size will not provide adequate room for development of muscles used in swimming, running, etc. It should be noted that climbing otters can fall on cement and fatally injure themselves. Therefore, cage heights should not allow them to get too high. If this size cage is used, it is recommended that the otters have access to larger area (yard sized) for play. Larger enclosures will provide adequate room for muscle development. See photos for caging ideas on larger enclosures.

• Materials for outside caging: Galvinized welded wire (hardware cloth) 1/2" by 1/2" or chain-link fence. The author has found that otters do not routinely attempt climbing when housed in a hardware cloth enclosure.

The floor should be smooth, not rough. Cement flooring with a vinyl floor covering that extends up to 12' on all sides of the cage has worked well. Natural flooring (i.e., dirt) is hard to keep clean and may allow for a escape by digging if special precautions are not taken to prevent it.

• Inside the cage: a moveable nest box with a small opening that will be big enough to hold them when they are full grown should also be in the cage. A kiddy pool with water about 4" deep should be offered to them once they have reached the age of 12 weeks. The otters will be scared at first and even climb out of the pool, but they will gradually get to enjoy the water. Do not allow them to get soaked and then chill. They are prone to pneumonias. While they are getting used to the water, make sure they are promptly dried following a swim.

• Offer live food such as crayfish, tadpoles, and minnows in the pool. If the water is not too deep, they will usually start catching the food.

SPECIAL CARE PROBLEMS/ENEMIES

• River Otters should be raised in pairs. Between the ages of 8 and 12 weeks, every attempt should be made to move single animals together into pairs so they can bond to each other and develop as otters. These animals tame too easily as it is. Raising them alone for release is not giving them the chance they deserve for successful rehabilitation. Contact other rehabilitators to find someone else with a single otter to make a pair.

• Otters can be crushers and biters! Handlers should wear protective shoes (not open-toed) and long pants to protect themselves.

• Otters are susceptible to canine distemper and even adults should be vaccinated. Do not mix new incoming otters with established ones until sure that they are healthy.

• Some pups may develop dry looking feet. A water soluble jelly can be applied or moisture can be added to the room air.

• Otters can develop serious foot problems (pododermatitis). The author prefers to house on a variety of surfaces such as dirt, grass, astroturf, or vinyl flooring, to avoid sore feet and fungus problems. Rough surfaces and cement have posed problems when used as main flooring surfaces.

• One common problem observed in young River Otters is pneumonia. One common mistake is to put the pups in water at too young an age. If they are wet (from swimming or following bathing) make sure to dry them while under 16 weeks of age. Do not let them sit wet and get cold. Pneumonias can kill them in only 24-48 hours.

• Where River Otters are living exclusively in sea water, there have been differences noted in behavior, diet, territory, and family groupings. Data discussed in this paper is geared towards River Otters living in fresh water ecosystems (Porter, 1990).

• Enemy: man. Trapping and hostile fishermen take their toll each year.

• Otters do not have a lot of body fat and their ability to thermoregulate is severely impacted when they become oil contaminated.

RELEASE

• One way to allow otters to develop their hunting skills is to take them on outings when they reach the age of 22 weeks to a secluded pond or lake where they will later be released. The area should be a protected one away from traffic, people, and pets.

•Alternatively, otters raised in large enclosures with minimal human contact will be less tame. The goal is to provide minimal human contact following

weaning. If trapping is a problem, using padded traps connected to horns can provide aversion training without harm to the otters (Porter, 1990).

• Otters should have no positive contact with dogs.

• They may not enter the water unless you do. When you leave, they will likely follow. The author developed a game of throwing them back into the water, from which they would return. Otters never tire of playing games. With each return to the pond, they will develop more skills such as: holding their breath for longer periods of time while under the water, swimming under water without leaving an air bubble trail, and catching crayfish and small minnows. Otters need at least two months of water training before they are released.

• The young otters do not need to be able to catch large fish before release if the area they will be going to has plenty of crayfish, snails, minnows, etc.

• The release area must be selected with great care. Otters need a large territory. The best spot would be a private nature preserve of several thousand acres that has a large lake or plenty of ponds with a good food supply. The site should not be close to busy roads, or allow hunting or trapping.

• Otters can be released at eight months of age. Some have been released earlier, but often they have been returned.

• Slow-release by hacking works very well. Build a cage with a nest box at the release site and provide food proportional to what is eaten. Initially, a caretaker can check on them and lock them up at night until they no longer return to the cage. Make sure the cage is predator proof so they are not "sitting ducks." The caretaker should *not* be the person who reared the animals and should avoid contact once they are at the release site.

• By the age of ten months, the otters will be nearly full grown and searching for other wild otters to roam with.

• Although not recommended, tame otters have been released in protected areas using the methods outlined in this paper and have been observed living totally wild and free a year later. They appear to be able to tell the difference between familiar and strange humans.

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Those who wish to pet and baby wild animals,
love them.
But those who respect their natures
and wish to let them live normal lives,
love them more.

--Edwin Way Teale

"April 28," Circle of the Seasons

Editorial Continued from page 2

Carol O'Dell and Dan Ludwig. Gary Bogue published the results on 1000 banded birds a decade ago. Our failure as a new profession has been to emphasize how important this kind of information is and really push for this kind of work to be done. I can hear rehabilitators crying out, "How can we when we were so discouraged from even banding our birds?" Well, while most were told not to band, some persisted anyway, and that data needs to come out of the banding lab and find its way into the literature. Meanwhile, NWRA and IWRC are working with the bird banding people to try to get some further banding done so we can answer Mr. McMullen with facts. Additionally, we all learn best from our failures and to not know the outcome is as much a crime for us and our animals as it is ammunition for biologists who act as nay sayers for our field.

In the interviews that we had with Mr. Steinhart, Jay Holcomb and I emphasized the view of offsetting human impact. In fact, most of the rehabilitators interviewed talked to some degree on this. The author did not take exception to this concept.

That to which he did take exception to was incompetence. First he cites a case where the public presented an owl fed for four months on lettuce. This is sad—but has nothing whatever to do with the licensed rehabilitators who received the animal in that condition.

Then he cites a mountain lion who **may or may not** have been in contact with **licensed rehabilitators** or other people. The animal attacked someone. The article further states that California no longer issues permits for the release of mountain lions, as if the two were connected. Having lived in California as a rehabilitator since 1975, this doesn't jive. The CDFG has been extremely nervous about these predators for the last 15 years and the only ones I know about were rehabilitated by Gary Bogue in the 1970's. This **no release** policy is a lot older than 4 years. If this problem was caused by licensed rehabilitators, then we as a profession had better act to rectify it. IWRC/NWRA have set up a pilot program for Standards and Accreditation in California. Through peer review and self evaluation, we hope to continually raise the level of care given to wildlife. However, such a program takes support and participation from the rehabilitators, and I cannot say that we have been overwhelmed with applications to participate. Being professional takes more effort than just getting by on a day-by-day basis. We must take some giant steps here to become a permanent and respected part of the environmental community.

The part of the essay I really resented was regarding the San Gabriel Valley Humane Society release of red foxes in Sequoia National Park where they are non-native. It was stated as follows: "Last year the San Gabriel Humane Society boasted a release of Exxon quality." First of all, Exxon took responsibility for its spill in Alaska and hired the best scientists and rehabilitators (including Jay Holcomb and myself) along with many fisherman, to launch the largest wildlife rescue program ever attempted. Their program culminated in over 50% of the animals presented live being returned to their natural habitat. I believe the long-term history of the Exxon Valdez will be kinder once all the facts are made public—which may not be for years.

Sadly, this fox release did happen, and it could constitute a new threat to a native species. I assume it was a decision made in ignorance. I hope that it will not happen again. The CDFG acted quickly to draft a policy and address the California rehabilitators on this issue. Meanwhile, let us all remember how the rabies epidemic got started in the mid-atlantic (i.e., via raccoons trapped and transported from Florida with health certificates and with regulatory approval).

Peter Steinhart further quotes Mr. McMullen regarding a bird lady in Washington who had many birds flying loose in her house. Mr. McMullen went on to say that the woman treated the birds as pets. This is obviously someone whose efforts do not meet the standards of modern wildlife rehabilitation. Yet, we all either know someone like this or have heard a story such as this. Still, is this representative of the mainstream of wildlife rehabilitation today? I do not think so.

Peter Steinhart goes on to assert that "when humane and biological purposes clash, there is often a refusal to think." He cites an example about whether rehabbing hurts with a species such as starlings and how rehabbers feel about such releases. When asked, the anonymous rehabber replied, "I think realistically there isn't an answer. It is not something I worry about much." I don't think that she should be chided for that answer. 1] Peter doesn't cite any major examples where rehabilitation of "pest" species has affected other populations. 2] Why is it our job to regulate populations of existing animals—that is a job for regulatory agencies who can allow population reductions as needed. Rehabbers are not qualified population managers and don't pretend to be.

If anything she is "guilty" of limiting her efforts to areas over which she has primary responsibility and control. Population biology is not an issue for a rehabber to decide. Biologists have many efficient methods to manipulate populations—and none of them require wildlife rehabilitators to become euthanasia agents for the state.

Jan White, DVM

Weaning the Virginia Opossum *(Didelphis virginiana virginiana)*

Debbie Marcum
12405 Rusted Nail Cove
Austin, Texas 78750

Introduction

Wildlife rehabilitators often receive partial or entire litters of unweaned opossums that can be reared together. Additionally, unweaned opossums that are from different litters, but are comparable in weight and physical development, can be housed together unless there is a medical problem that would preclude such grouping. In the wild, opossums that have left the female's pouch will continue to nurse off and on until they are 97 to 104 days old (Hunsaker, 1977), in addition to eating solid food.

However, rehabilitators tend to wean this species earlier, due to any or all of the following reasons: the large numbers received; the fact that no substitute formula is equal to the natural milk; and because it becomes more difficult to tube-feed when the gagging reflex develops after the eyes open. In hand-rearing opossum, it is not uncommon for rehabilitators to encounter weaning difficulties with one or more animals within a particular group. Following are weaning methods that have proven to be effective.

Lapping

General Information

As healthy infant opossums become less wobbly, they are capable of beginning to lap formula (approximately 50+ grams). It is important that the rehabilitator remember that lapping formula is not a natural feeding routine for a species that is accustomed to nursing in a pouch, and the animal usually needs to be encouraged to lap.

Transition from Tube-feeding to Lapping

During the lapping phase, observation of the animal's stomach and its general mobility will determine how often an opossum should be tubed. Once it begins to lap, lengthen the interval between tubings (the amount of formula being fed may need to be reduced, depending upon the fullness of the stomach). As the animal becomes more proficient in lapping, decrease the number of tubings. It is better to underfeed than overfeed.

Container Method

This method is particularly effective for five or more opossums. Stimulate the animals over a litter tray that contains natural clay cat litter prior to placing them in a washable container (i.e., kitty litter pan, plastic dishpan, etc.). (For more detailed litter-training information consult *Rearing Orphaned Opossum*, Marcum, 1984.) Based on the number of animals, provide one or more shallow jar lids of warm formula (for seven to nine or more opossums, lids from gallon jars which can be obtained from restaurants, are recommended).

Initially the rehabilitator may have to put individual animals in front of the lid(s) and physically touch their mouths to the formula. Invariably, they will walk through it, get formula on each other, and may or may not lick it off. Clean any excess formula off the fur so that it does not dry and cake before returning them to their cage. The Container Method should be used approximately every four hours during the day and evening. As an added incentive to lap, jar lids of warm formula can be put in the cage if the formula is replaced every few hours during the day and again late at night.

Jar-Lid Method

The procedures for this method are basically the same as those outlined in the Container Method, but it is used for one to four opossums and is done inside the cage. The rehabilitator cannot assume that the animal(s) will automatically leave the nest area

and start lapping. They should be taken out of the nest area every four hours during the day and evening, stimulated over a litter tray, and then placed in front of the lid(s) per the Container Method.

In-cage lapping must be monitored in order to determine that *each* animal is lapping well. If it is not, the rehabilitator should not be surprised if he encounters one or more opossums that appear to be weak and/or wobbly. If this occurs, he must try to reverse the condition by increasing the tube-feedings, thereby causing a setback in the weaning process.

Thickening the Formula

Once the opossums are lapping regularly on their own and tube-feeding has been reduced to once or twice a day or discontinued (70 + grams), the formula can be thickened. Some rehabilitators routinely use Gerber High Protein Cereal for Baby™, adding a drop of Karo Light Corn Syrup™ to make it more palatable. The author prefers to use Purina Kitten Chow™ that has been soaked in water to a pudding-like consistency because it is a major component of the post-weaning diet—the modified-Jurgelski laboratory diet for opossums. This diet tends to inhibit the cannibalistic tendency of this species and is discussed in *Rearing Orphaned Opossum*, Marcum, 1984.

Regardless of what is used, begin by adding a small amount to the formula, gradually increasing it as the animals become accustomed to the taste. Warm the mixture and replace it several times a day and again late at night. A shallow container of water should be available round-the-clock. When the opossums are consistently eating the mixture (at approximately 80 to 100 grams), begin the post-weaning diet. At this time, the author routinely provides the Kitten Chow™ formula mixture once in the morning and the post-weaning diet at night. A shallow container of dry Kitten Chow™ is available at all times. Once the post-weaning diet is being eaten regularly, the morning feeding can be discontinued. Although it is more time-consuming and not feasible for all rehabilitators or centers, a jar lid of warm formula can be provided with the evening post-weaning diet. It is used until the opossums no longer want it or until they are moved to an outdoor cage.

Insects

General Information

Opossums that weigh approximately 70+ grams are usually capable of eating insects such as crickets. Crickets, which are high in protein, can be purchased at bait shops and are an excellent weaning tool. Opossums that refuse to lap formula or the thickened weaning formula will generally eat crickets and can be fed as many as they will consume several times a day. Usually, after eating crickets for several days, the animals will be interested in either the thickened formula or the post-weaning diet.

How to Feed

Opossums will fight over insects, even if there are enough for all. Feed each animal separately by putting each in a tall washable container such as a gallon bucket. Use a porous cover (i.e., lightweight cloth, spatter screen—used to cover frying pans—etc.) to keep the crickets in the container. Begin with one cricket, which you may have to help catch. Continue by dropping several crickets into the container. After they have been eaten, add more until the opossum is no longer interested. Clean any insect reside off the animal before returning it to its cage in order to avoid harassment by littermates.

Keeping Crickets Alive between Feedings

A small amount of crickets can be stored in the refrigerator in a coffee can with a perforated lid. They will become dormant until they are taken out.

A large quantity of crickets (i.e., approximately 100) can be maintained for several days in an open plastic garbage can. Cover the top with nylon net or screening and secure it. Rinse and slice a raw baking potato, lengthwise, and put several slices in the bottom of the can. Replace when they are no longer moist and are discolored and full of holes.

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Is The Time "Ripe" to Stop Comparing Apples to Oranges?

Linda A. Wolf, D.V.M.
Wildlife Rehabilitation Clinic
University of Minnesota
1365 Gortner Ave.
St. Paul, Minnesota 55108

Apples? Oranges? Ripe? Has Dr. Wolf gone bananas? What, you ask, does all this have to do with wildlife rehabilitation? In two words "statistical standardization."

Dealing with a large number of facilities throughout the country, I have noticed a tremendous range of methods and definitions used to record and tabulate wildlife care statistics. This variability makes comparison of statistics between organizations or facilities difficult at best, and often meaningless. I see a tremendous value in being able to compare statistics. If a center has a lower mortality rate, I'd like to know what they're doing to achieve that success and if I can incorporate their methods. If I look at facility "St. Elsewhere" with a 90% release rate and my facility with a 40% release rate, I feel I'm doing something very wrong. Looking closer at the statistics it turns out that St. Elsewhere defines DOA (dead on arrival) as any animal who dies within 48 hours, defines released as any animal who is released, placed, or transferred and does not enter EOA's (euthanized on arrival) in their statistics. Whereas my facility defines DOA as any animal who is dead and gets no treatment from us, released as any animal who is rehabilitated and released back into the wild and does include EOA's in the statistics.

As a member of the joint NWRA/IWRC Standards and Accreditation Committee, I propose that if we are ever going to be able to utilize and compare statistics with any significance, we need to establish standard definitions and methods for statistical recording. Following are examples of some situations we defined:

DOA (Dead on arrival): any animal that dies before any life-saving measures or treatments have been implemented in the care facility or by a home rehabilitator.

DIC (Died in clinic or shelter or in-house): any animal that dies subsequent to any handling, exam, treatment, or life-saving measures implemented in the care facility.

EOA (Euthanized on arrival): any animal euthanized after initial exam upon arrival.

E (Euthanized): any suffering or unreleasable animal that is humanely put to death.

R (Released): any animal that is returned to its natural wild habitats.

T (Transferred): any animal transported to another wildlife rehabilitator or facility for further rehabilitation.

PA (Placement animal): any animal determined to be unreleasable while undergoing wildlife rehabilitation efforts that is placed in a non-rehabilitation situation (i.e., education, propagation, research, zoo, etc.).

P (Pending): animals currently undergoing rehabilitation efforts at the time of documentation.

We don't have all the answers. We do have a lot of questions. Should we separate statistics on introduced species from native species? Should we include EOA's in our statistics? Should we include DOA's? How should we define the different situations, or shouldn't we? I would appreciate responses to this article and your feelings on the subject.

In short: Is the time ripe to compare apples to apples?

Wanted: IWRC State Representatives

Interested Licensed Wildlife Rehabilitators should send complete resume to:

Jay Holcomb, IWRC
4437 Central Place
Suite B-4
Suisun, California
94585

Simple Things That Make A Difference:

Raptor Perches

Crystal Norris
The Bird Rescue Center
P.O. Box 475
Santa Rosa, California 95402

Introduction

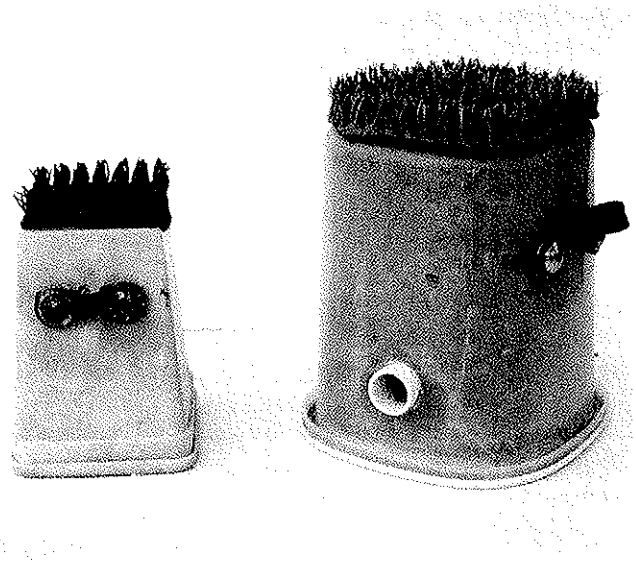
Coming up with durable, inexpensive perching systems that can be used indoors or out can present a challenge to the rehabilitator. Over the years, we have developed several perches that have worked well for us, which are illustrated below.

"T" Perch

This perch is one that is very simple to make. The base is an umbrella stand which can be filled with water. The "T" is made of PVC pipe. The upright portion is 15" to 18" high and is fastened to the base with PVC glue and two small screws. The top portion of the "T" joint should be 22" to 24" and is covered withAstro Turf™. Suggested sizes and types of AstroTurf™ on this perch are 3/4" to 1" high turf of the rigid stock. The upright and top portions are joined by a "T" joint and are glued together. The ring to which the leash is tied goes on prior to attaching the top portion of the "T". This perch can weigh up to 40 lbs. when filled with water, but is an excellent way to weather an eagle. All materials can be purchased at any hardware store.

Block Perches

These perches can be made in a variety of sizes. They are made from plastic freezer containers. Materials needed for each container consists of: four 1/4" lag bolts (two-3-5" and two-1"); four washers; leather; 3/4" PVC pipe; astro turf; and concrete. Predrill the two holes on the side of the container about 1/3 of the way down from the solid end. These predrilled holes should be about 2"-3" apart. Leather strips are cut 2 1/2" - 3 1/2" long and punched with holes for the bolts. This is where the leash would be tied. For larger containers also predrill two other holes about two inches from the open end of the container directly opposite each other. These holes should be large enough to place a piece of 3/4" PVC pipe completely through the container. The purpose of the PVC is to tie the perch down to a table so that if a raptor bates t off the block it does not fall from the table. Prepare concrete mixture, place 3/4"

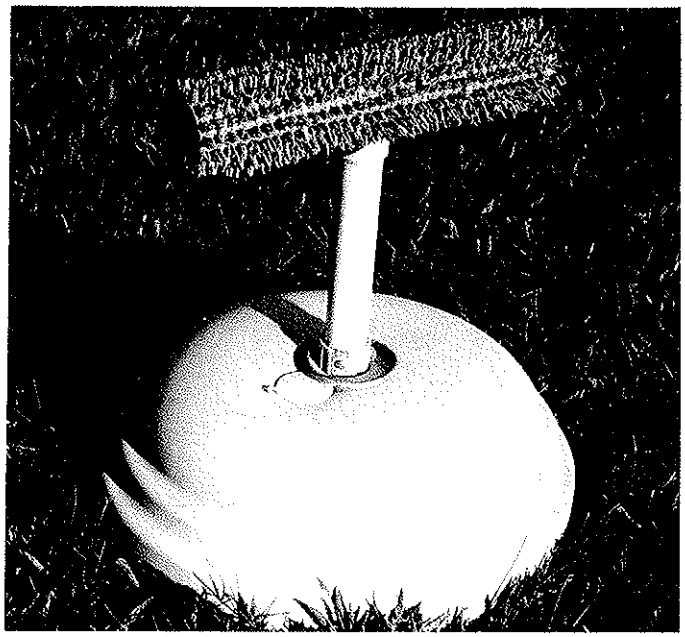


Two block perches of varying sizes used for raptors.

PVC in the hole; attach leather, washers, and bolts (3"-5") on the side; and pour in your concrete mixture. Replace the container top and let it set up to dry. Cut the AstroTurf™ to fit the solid end of the container. The two 1" bolts and washers are used to attach the astro turf. (The AstroTurf™ can be put in place at the time you pour the concrete mixture or attached after the concrete has dried.) It is recommended that the longer, stiffer type of AstroTurf™ be used as it is better for raptorial feet.

Conclusion

The two perches presented in this article are fairly easy to make from local materials and have been found to work very will over a long period of time. Additionally, they are inexpensive and yet look very professional. They are useful for both a center or an individual working at home with raptors.



A simple "T" perch made from a modified umbrella stand.

Letters to the Editor . . .

Dear Dr. White:

In reading through the latest issue of the Wildlife Journal (Vol. 12, No. 2), I noted with some interest your comments on page 14 about deaths in opossums that had been treated with ivermectin. I teach exotic animal medicine here at the University of Tennessee, College of Veterinary Medicine, and am responsible for seeing clinical cases of pet exotics and also wildlife presented to our hospital. We treat a number of opossums each year (we have five on hand currently). For worming them, I have safely used ivermectin, Droncit™, Strongid-T™, and Panacur™ without any obvious ill effects.

Regarding the use of ivermectin, I use the bovine preparation (Ivomec™) simply because that is the preparation available from our in-house pharmacy. I dilute one part of the commercial Ivomec™ with four parts of propylene glycol (the vehicle in which the ivermectin is suspended), yielding a final concentration of 2 mg/ml. I then dose the animals at 200 micrograms per kilogram of body weight, weighing the animals carefully. I have treated both juveniles and adults of both sexes with intramuscular shots. For long-term captives, we give them a second dose (based upon a second weight) at two weeks following the first dose.

I have seen adverse reactions to ivermectin in species other than opossums, especially birds, when the animal was not weighed accurately or the dosage was either miscalculated or drawn up incorrectly such that overdose occurred. Birds thus overdosed may be very depressed and inactive for several days, or die. Our opossums are weighed on a gram scale or on an accurate pediatric scale. They are then injected by myself, my technician, or our senior veterinary students, and we have had no problems with ivermectin in opossums. I do not have an exact count of the number of opossums that we have treated with ivermectin, but it surely must be several dozen animals. I wonder if the animals you mentioned that had died may have succumbed to other causes—were necropsies performed on them to determine the cause of death?

I hope this information might prove helpful to you.

Sincerely,
Richard S. Funk, MA, DVM

P.S. I have also safely used ivermectin in some other species of marsupials including pet wallabies and zoo kangaroos.

Editor's Note: No necropsies were done and the animals may well have died from other unrelated problems. I wanted to know if people were using this drug successfully in opossums and now we know. Thanks!

Letters Continued

Dear Editor:

This is a quickie . . . my busy season started before Thanksgiving! I do not use ivermectin in opossums as it doesn't appear to be effective against *physaloptera*. Regarding its use with sarcoptic mange, are you certain they have sarcoptic mange? I've never seen it in a California opossum, but it is rather frequent in dogs and cats. I assume a microscope exam was done. The worst skin condition I've seen was related to a severe flea allergy that responded to flea control measures. I suspect the deaths were related in some way to the drug by an unknown mechanism. Who knows? The bottom line is that I don't use it. I use Levamisole injectable (cattle multidose vial) for *physaloptera*. One can underdose if need be, and the dose can be repeated in 1-2 weeks if necessary (the usual time is in 3-4 weeks).

Sincerely,
Anita Hennen, D.V.M.
Opossum Society of CA.
P.O. Box 3091
Orange, CA 92665-0091

Dear Editor:

Thanks to Ed Shaw and Karen Gardiner for the article on House Finches (*Wildlife Journal*, Vol. 12, No. 2). These birds have enjoyed an explosive spread into southern Ontario in recent years, competing successfully against established species. They are now regular visitors to many city and suburban bird feeders, and of course are beginning to show up at rehabilitation centres.

Another species which has moved north in increasing numbers is the Virginia Opossum.

I think that it is extremely important for wildlife rehabilitators to begin to think globally rather than nationally, as wildlife respect neither state, provincial nor national boundaries. If rehabilitators are to succeed as a group it will only be through organization and coordinated activities across the whole of North America; and indeed, only with reference to Central and South America, where so much of "our" wildlife migrates to in the winter.

Towards this end, I urge the IWRC, and all its members to seek a vision of one Earth, one inter-connected community of living things, and to apply their skills in wildlife rehabilitation with this single community in mind.

Yours sincerely,
Kip Parker
Vice President
WILDCARE Wildlife
Rehabilitation Centre
Ontario, Canada

Editors Note: Thanks for the letter. IWRC is reaching out to other countries as we find people there to contact. We have just recently arranged our first South American Basic Skills seminar course. The manual is being translated into Spanish and we will be sending two Spanish-speaking veterinarians along with one regular instructor to teach the class in Guatemala. Your point about international wildlife is well taken.

News From the NWRA . . .

The National Wildlife Rehabilitators Association announces its small grants program. This program makes available two $1,000 research grants in the field of wildlife rehabilitation. Each may be applied to one large project or several smaller research projects each totaling less than $1,000.00. 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 literature review and an itemized budget.

An annual report on progress is required. It is expected that those receiving NWRA support will present the results of their projects at an NWRA national meeting within two years of receipt of the grant.

The deadline for submitting proposals for research grants is December 15 of each year. Recipients will be announced at the NWRA annual meeting in February and in writing.

Proposals should be mailed to:

Mark Pokras, DVM
Tufts University School of Veterinary Medicine
Wildlife Clinic
200 Westboro Road
North Grafton, MA 01536

"THE EFFECTS OF OIL ON WILDLIFE" October 17 - 18, 1990

Wildlife rehabilitators, veterinarians, biologists, toxicologists, governmental officials and other wildlife professionals will meet to discuss the recent global epidemic of oil spills and their effects on wildlife populations.

This multi-disciplinary symposium is presented by:

International Bird Rescue Research Center

International Wildlife Research

Tri-State Bird Rescue & Research, Inc.

These organizations have years of experience and research in the field regarding the treatment protocols and rehabilitation needs of oiled wildlife.

Symposium topics include field and laboratory research; protocols and recent findings in rehabilitation of oil-contaminated animals: general information ranging from contingency planning to damage assessment; and a special session on the Exxon Valdez Oil Spill.

The Symposium is being sponsored by a grant from The Procter & Gamble Co.

The Symposium & Conference will be held at the **Ramada Renaissance Hotel** at Washington Dulles International Airport. At discounted rates, attendees will enjoy luxurious accomodations including use of a health spa on site. For Symposium & Conference information, send a self-addressed, stamped envelope to: IWRC, Dept. J, 4437 Central Place, Suite B4, Suisun, CA 94585.

OR CALL THE IWRC OFFICE
(707) 864 - 1761

INTERNATIONAL WILDLIFE REHABILITATION COUNCIL 13th ANNUAL CONFERENCE October 19 - 21, 1990

This 13th Annual Conference will provide new and innovative opportunities to learn state-of-the-art hands-on techniques, treatment protocols, management strategies, and more...

- Keynote Address: "A Tenderness Towards All Creatures: Paradoxes And Portents In Wildlife Rehabilitation" by **Dr. John E. Cooper, British Wildlife Rehabilitation Council.**
- Over 40 Exhibitors in the spacious Exhibit Hall
- Auto-Tutorial Room featuring video and audio tapes for personal viewing throughout the Conference. Programs covering captive rearing/reintroduction, fundraising, time management, stress reduction & assorted rehabilitation topics have been assembled so far.
- Over 30 workshops covering topics such as medical management of reptiles; humane euthanasia choices; proven techniques leading to release of injured and orphaned squirrels, hedgehogs, rabbits, hummingbirds, opossum, and raptors; & how to continuously get funding and supplies for rehabilitation centers and home-based rehabilitators.

SAVE $ - WIN FREE AIRFARE - SAVE $

Register for the Annual Conference by September 10, 1990 and your name will be enterted in a drawing for a free domestic roundtrip airline ticket to the Conference! Travel arrangements will be made through All Around Travel, the official Conference travel agency. NOTE - registration must be received in the IWRC office no later than 5pm. September 10, 1990.

"BEYOND A BIRD IN THE HAND"

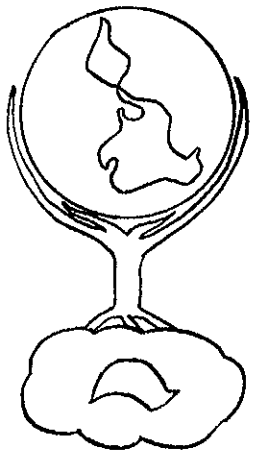
2-Day Oil Symposium Added

The Partnership of Wildlife Rehabilitation and Conservation Education

International Wildlife Rehabilitation Council

Conference, 1990

Washington, D.C. October 19-21st



Papers are in the works on:
*Raccoon, Deer, Javelina, Fox, Bobcat, Otter
*Goldfinch, Roadrunner, and Dove
*Avian Hematology and Clinical Pathology
*1989 Alaskan Oil Spill: Short & Long-term Effects
*Reptiles and Their Rehabilitation
*The Expanding Need for New Sources of Funds
*The Ever-Present Problems of Day to Day Operation

The Conference Committee would like to expand the focus on a subject only peripherally covered before — Conservation Education.

§ When people leave an animal with you, do they leave your facility committed to preserving the habitat that supports animal life?

§ How, within your limited time frame, do you impress upon people that, more important than the grebe or warbler they have brought you is the preservation of the wetlands or tropical forest that species **must** have to survive?

§ If you have the answer to these questions, we want to hear from you! You may contact the IWRC Conference Chair, Jonolyn McCusker at 11631 E. Calle Javelina, Tucson, AZ 85748 (602) 296-5920 or call our national office (707) 428-4972 for further information. If you don't have the answers, but have suggestions or questions, we still want to hear from you!

IWRC 1989 Annual Report

President's Message

By Jay Holcomb

In the beginning there was a baby bird lying helplessly on the ground. Eventually a predator devoured it. Then two more baby birds fell from their nest and another predator came along --only this one had a conscience. He was called Abel. Some other men had been trimming the tree and inadvertently disturbed the bird nest, knocking its occupants to the ground. The men working on the tree didn't know what to do with the babies. Abel had raised quite a few baby birds in the past so he thought he could do a good job of raising these also. He felt a sense of responsibility and enjoyed rehabilitating birds so he decided to become a surrogate parent to the babies. He knew that in order for wild birds to be happy they would need to be set free when they matured. He worked hard at getting them through that rough first three or four days. He did the best he could with the knowledge that he had and everything was going along just fine. He had become the local expert in baby bird rehabilitation over the years and people knew to call him when any bird needed help. The people praised him for his efforts and rewarded his good intentions with wishes of good will, stories written about his unusual hobby, and gifts of food and money to help support his efforts.

Cain had been watching all of this. He too believed that the little birds should live free some day but he felt left out and jealous. Abel was being recognized and receiving donations to support his work and Cain was getting nothing. His own personal insecurities and fears were aroused by all the attention that Abel was getting and he became green with jealousy. Abel knew of Cain's interest in animals and offered to show him how he raised baby birds. Cain would barely talk to him and left in a jealous rage. He then decided to tell everyone that would listen to him that he could do a much better job than Abel was doing. He had very little experience in raising baby birds but wouldn't consider admitting this to anyone. He saw the praise and money that Abel was getting and he wanted it. He concluded that since the tree that the birds fell out of was closer to his house than Abel's, he should have been summoned to raise the babies. After all it was his territory. Of course he was not available at the time of the accident nor did he possess the patience and experience raising baby birds that Abel had gained through the years, but that didn't matter to him. These birds were in his self-proclaimed territory and that is all that mattered. His anger grew into bitterness and he began to cause trouble by spreading rumors about Abel's bird care techniques and intentions. Cain's own sincere commitment to helping animals in need was completely overshadowed by his feelings of territoriality and jealousy. He came across to everyone as very sincere, knowledgeable and concerned about the welfare of the birds in his accusations about Abel's rehabilitation techniques. He was very persuasive and even though the birds were growing and doing well, people started questioning Abel's abilities and motives. Cain went to all the community leaders and gossip mongers to inform them of Abel's supposedly less than admirable intentions. They ate it up! He recruited his wife to help him lobby and even sent spies over to Abel's house to catch him at any wrong doing.

For the rest of the time that Abel was raising and preparing the young birds for release, he was constantly inundated by reporters and concerned people who questioned his every move and particularly his motives. Why did he take money or supplies? Was it just personal gain? Did he even care about birds? He spent so much time having to explain and defend what he was doing that his attention was taken away from the birds. At a time when the babies needed a lot of attention and monitoring, he was forced to listen to ridiculous accusations and explain to people ignorant of wildlife rehabilitation procedures, what he was doing and why. If he didn't take the time to talk with them, they accused him of trying to hide something. He had no choice but to make time for these people.

The smaller of the birds became weaker each day and eventually died because Abel was constantly being forced to spend more and more time defending his work and less time with the birds. The other baby was eventually released but Abel knew that he could have saved both of them if hehadn't been distracted by the petty politics with which he had to deal. He wondered why Cain did this when the birds were in good hands. Cain never asked Abel any questions or even accuse him to his face. It was all done behind the scenes. It made Abel wonder if he would ever try to raise baby birds again. He knew that he had a gift that could help wildlife but was it worth all the trouble? He questioned whether or not it was wrong to let people contribute to him. Maybe it would be better to just kill the birds so they would not have to be subject to unintentional neglect. He knew that Cain would strike again. In fact, Cain continued to spread his venom around town to make sure that Abel lost his supporters and credibility.

I wish I could say that this is a completely fictional story but unfortunately it is based on fact. Of course the names and places have been changed to protect the not so innocent. There is a disturbing trend that I have seen increasing over the years in the field of wildlife rehabilitation. It is the lack of ethics and ethical conduct.

The organization by which I am employed maintains a team of trained and experienced

professionals in the area of oiled wildlife rehabilitation. This puts us on the front line during oil spills and we receive constant attention from the news media. Because oil spills happen in the most unpredictable places we often find ourselves in close proximity to a wildlife rehabilitator or two. Often these colleagues of ours join us in the attempt to save wildlife and become part of the immediate team. But sometimes they become territorial. In a recent oil spill where my organization was hired to manage the oiled wildlife rehabilitation effort, local "wildlife rehabilitation professionals" decided that they did not like how we went about our work. They knew very little about oiled wildlife care and even went so far as to promote bird cleaning products that have been tested as such and were proven to be detrimental to the survivability of the released animals, but none the less they became instant self- proclaimed oiled wildlife experts. In their attempt to discredit us they managed to get the media aroused and intent on finding out the *truth* about what was going on. They were encouraged to question our motives and our salaries. They did, and I spent most of the first 48 hours at that spill fending off reporters that were checking out the story. The most crucial time in setting up an emergency oiled wildlife care facility is the initial 48 hours when the first animals require attention and the facility must be established. Every minute counts. Responding to accusations from pushy reporters and spies from the the local rehab group became so time consuming that lengthened the set-up process for facility. These delays resulted in a significant impact on the survivability of a number of the animals that were in our care during those first days. The volunteers, staff and other agency representatives were shocked and couldn't believe that fellow rehabers would do this for no good reason. Unfortunately, I wasn't shocked. I was familiar with these people, knew they lived near the spill site, andwas afraid they would probably cause trouble for no good reason. Unfortunantly, I was right.

As president of IWRC I am exposed to many horror stories about one rehaber fighting with another over the rights to rehabilitate an animal, or one rehab group at the throat of another etc. As wildlife rehabilitators, we started from scratch and created a field that is now getting international recognition and attention from all avenues of the news media. It's normal to expect the criticism of biologists who really wonder if we are doing more harm than good with our rehabilitation efforts. Many of us have questioned that ourselves. I even understand the motives of animal rights activists who take their mission too far at times but are genuinely concerned about the welfare of the animals. The questions and misunderstandings by people outside this field are normal and, like our own personal evaluations, they help us to continually review and improve our work. As rehabilitators, we are definitely feeling the growing pains of rapid recognition. Wildlife rehabilitation has grown up. Well, some of us have. What I do not understand is the people in this field with their own personal agendas who automatically assume the worst, verbally attack their colleagues, spread lies and misrepresent their own programs for the most idiotic of reasons or pure self-aggrandisement. Jealousy and a belief that there is not enough money, attention, or whatever to go around seems to spur them on. More and more I hear the disheartening tales of greed and sabotage where ethical behavior wasn't even an after-thought.

Ethics is defined as the study of standards of moral judgement and conduct. I think that in our haste to be recognized as professionals and to secure that rare dollar for our wildlife rehab programs, it has become easy to lose sight of why we got involved with wildlife rehabilitation in the first place. I think that our most common goal is to save lives and we hope, reduce the impact that man has had on the environment. This must always be first and foremost. Much of the unethical conduct that I have personally witnessed involves jealosy. Time is a rare commodity to many of us in wildlife rehabilitation and I think that the time spent thinking about what others have that you *don't* would be btter spent on establishing one's own horn of plenty.

I am saddened at the conduct of these and so many other so called "professional" wildlife rehabilitators. As a wildlife rehabilitator committed to creating a professional image I am embarrassed by this kind of behavior. This type of animosity and destructiveness drives all of us further away from our original goals. Wildlife rehabilitation needs people who are open-minded, and cooperative and willing not be right all the time. I think it is of the utmost importance to recognize individual or organizational limitations and areas of expertise, and to always keep in mind your original commitment to the environment and use that as a guide when judgment is in question. We must work together as wildlife rehabilitators and build support systems that make us united and infallible. This unity will be recognized as the foundation of a legitimate field of expertise. What will follow is the realization that our efforts are worthwhile and worthy of funding.

We all live by our own personal code of ethics. They are the belief systems that we develop as we grow. The IWRC and NWRA joint Standards and Accreditation committee will be working on a code of ethics for wildlife rehabilitators. It will be a part of the standards and accreditation program that we hope to make available on a national basis in the next few years. We intend for this document to be a guide to which you can refer, particularly when ethical issues arise. The bottom line is that no piece of paper can tell you what to believe or what to do. You must to decide that for yourself. Keep in mind though that this entire profession is effected by the actions of its professionals. It only takes one Cain to jeopardize the achievements that many Abels worked hard to accomplish. What was the reason that you got into this field in the first place? Why do you work long unrecognized hours? When the money and the volunteers are running out, remember the personal commitment you made to the cause. No one made you do it. It was your choice! Take responsibility for your commitment and your actions and promote this profession with integrity.

IWRC Income Statement
January 1 - December 31, 1989

CASH ON HAND 1-1-89		**$7,710.37**
INCOME		
Skills Seminars	$ 31,700.00	
Conference	9,687.00	
Literature	10,682.83	
Membership	20,891.50	
Other Income	3,102.39	
TOTAL INCOME		**$76,063.72**
EXPENSES PER COMMITTEE		
Skills Seminars	$17,357.45	
Conference	9,402.26	
Journal	17,856.65	
Literature	3,121.32	
Membership	1,920.58	
Administration	26,077.32	
Board of Directors	1,314.64	
Standards & Accreditation	672.82	
Hotline	301.93	
NWRA	238.63	
California Issues Meeting	2,021.73	
TOTAL EXPENSES		**$80,577.68**
CASH AT YEAR END 12-31-89		**$ 3,196.41**

Treasury Notes

by Jan White, Executive Director
Crystal Norris, Treasurer

Looking at the financial statement, one thing is clear, we spent nearly all of our funds operating our programs. Every year that the income increases, the programs increase as well. There seems to be no limit to the kinds of requests we get for assistance and we cannot keep up with them all. We function on limited resources: mainly earned income from skills seminars, literature, conferences or membership revenues. We receive occasional letters sniping at the fact that we charge a fee for literature sales. I would just like to say for the record that even though we are committed to "sharing the knowledge" we *must* to charge to cover our costs of development the literature (phone calls, staff time, printing, mailing, etc.) Without an investment of funds, little new literature would be forthcoming. This is because most rehabilitators take considerable prodding to write up what they know. Once written, it must be peer-reviewed, edited, typeset, and proofed. All of these things cost money. We do offer bulk purchases and anyone interested should contact the IWRC office for quotes on prices.

We, along with the other Board of Directors, feel that in order to secure a financially stable future for IWRC, we are going to need a bigger contingency fund than that with which we have operated over the years. Jan White is returning to volunteer status as Executive Director to save the funds that would have gone for her salary. It is hoped that during 1990 money can be saved to provide IWRC with a better buffer.

What can members or supporter do? Renew your membership and get other rehabilitators to join! Support literature development through your purchases. Come to our conferences or skills seminars. And remember, we are a 501 (C) 3 non-profit organization that gratefully accepts donations.

IWRC is a fast-growing organization with a budget that reflects the quality of its work in wildlife rehabilitation. It publishes the best journal and literature in the field. It operates quality programs that have earned the respect of many professionals around the world. We must now take the time to do the financial planning necessary to ensure that the future will hold the best for our members.

1989 Conference Report
by Jonolyn McCusker

The theme for the International Wildlife Rehabilitation's 12th annual conference was "Wildlife Rehabilitation — On the Move." It was an appropriate theme, not only because our field is growing so fast, but also because this was our first conference to be held outside California. The host city was Austin with Wildlife Rescue, Inc. serving as our host organization. With much hard work, IWRC and Wildlife Rescue put on a great learning experience.

The three day conference ran from January 20th-22nd. Mornings were spent in lectures and the afternoons in workshops. A few of the topics discussed included baby bird identification, raptor diseases, fire ant problems, rabies, leprosy, restraint techniques, fundraising, cage designs for rehabilitation animals as well as non-releasable animals. A wide range of species were covered including cottontail rabbits, swifts, bats, great-horned owls, hummingbirds, raccoons, and white-tailed deer. The papers presented were compiled into a proceedings volume which is available through the IWRC literature sales department. We were pleased to see 150 rehabilitators from 25 states as well as a few from Canada and Great Britain.

The conference committee is now planning the 1990 conference which will be a joint affair that will extend over a five day period. Beginning on October 16th and continuing through the 18th a special symposium will be held on "The Effects of Oil on Wildlife." Sponsored entirely through a grant from the Procter & Gamble Company, this symposium has arranged to bring together the primary people who study the effects of oil on either birds or mammals and the rehabilitators who handle most of the major spill rehabilitation efforts. The steering committee for this event are five people who come from the three organizations in the United States with the most experience in oiled wildlife rehabilitation. They are International Bird Rescue Research Center, Berkeley, California; Tri-State Bird Rescue and Research, Inc., Wilmington, Delaware; and International Wildlife Research, La Jolla, California.

A special section of the symposium will be on the 1989 Alaska oiled wildlife rehabilitation efforts to report on the many new things that came out of the Exxon Valdez oil spill. Other topics will cover the effects of oil on populations, natural resource damage assessment programs, human hazards associated with handling oiled wildlife, oiled wildlife efforts in other countries, and a workshop on how to clean oiled birds. For any rehabilitators who may face an oil spill, this is a event that must not be missed!

Then, on October 19th through the 21st, we begin the IWRC conference hosted by the Chesapeake Wildlife Sanctuary. The keynote address will be given by J.E. Cooper, a veterinary surgeon from the British Wildlife Rehabilitation Council. Over 30 workshops cover topics such as medical management of reptiles, humane euthanasia choices, rehabilitation of squirrels, hedgehogs, rabbits, raccoons, hummingbirds, opossum, and raptors. For the administrators of wildlife programs, we will be holding conference round tables on such topics as beginning, advanced and special event fundraising, labor laws, insurance, and liability issues, computer programs for wildlife rehabilitators, and grant proposal preparation. This will surely be our best conference ever!

And that is not all! Our 1991 conference site has been selected for British Columbia -- making it our first international site for this event. Hosted by the Wildlife Rescue Association of British Columbia , topics will focus on the many coastal species of birds and mammals. The conference hotel is fabulous and we got a good price break on rooms for participants.

Hotline Summary
by Nicolette Heaphy

For the past year, I have been the mysterious voice at the receiving end of the many hotline calls. For those of you to whom I have spoken, it has been a pleasure to meet you. Together we've solved a lot of frustrating problems. Many calls were from folks who received a particular species of animal for the first time needeing general advice on care and feeding. In this case, I gave the caller as much personal knowledge as I had, and referred them to specific species experts. Other calls concerned "what-would-you-do-if-you-were-me" situations where the caller wanted to double-check diets and/or care techniques.

I got a wide variety of calls: from a nighthawk with broken tail feathers, an emaciated Great Blue Heron that was eating a rehaber from North Carolina out of house and home, a constipated squirrel, to a cormorant with paint on it's back! All in all, 1989 was a very eventful and, I hope, helpful year on the hotline.

Because I am part of the International Bird Rescue Research Center which has been spending a great deal of time responding to oil spills lately the IWRC office staff, Rose Green and Mary Reynolds, will be taking over the hotline duties. Both are experienced rehabilitators and also know how to connect with the experts in our field. I wish them luck: hotline calls are never boring.

Skills Seminars 1989

This was a busy year yet with some 10 basic skills classes and two advanced classes in 8 states serving nearly 452 people. We had our first international skills seminar in British Columbia which was well received. We held classes in New Hampshire, Texas, Oregon, California, Colorado, New Jersey, and Ohio. Our instructors spent many a week-end on the road in their travels this year. But working with wildlife rehabilitators makes it worth the effort. Teaching is a very rewarding thing when the students are so hungry for knowledge and willing to work so hard to get it.

We are looking forward to 1990 and the many opportunities that the skills seminar program presents. Rumor has it that a South American rehabilitation group is near approval on a grant to bring the class to Guatemala! We also hope to get a new revision of the manual out in late 1990 or early 1991. One thing is for sure, it will never be dull!