Sample

Vol. 16, No.1

JOURNAL of Wildlife Rehabilitation

A Publication of the International Wildlife Rehabilitation Council



Dealing with Avian Emaciation . . . . . p. 3

Guidelines for Authors

The *Journal of Wildlife Rehabilitation* 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 feature articles are subject 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 *Journal of Wildlife Rehabilitation* 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 *Journal of Wildlife Rehabilitation* to include wildlife rehabilitation articles from countries outside the United States and welcome inquiries regarding such articles. We also 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. All authors receive 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, 4437 Central Place, Suite B-4, Suisun, California 94585, USA. The manuscript should include references, photo legends, and footnotes, and should be typewritten, double-spaced, if possible. The author's name, address, and phone number should be placed on at least the first page of the article so it can be readily identified and the author contacted. Please note that each article should be accompanied by an abstract. If tradenames are used for products mentioned the author must indicate whether the product is ™ or ®. A product table at the end of the article should give readers the name and address of the companies involved and generic name or category of product.

2. The *Journal of Wildlife Rehabilitation* is prepared on a Macintosh personal computer with desktop publishing software. If papers are already on a personal computer disc, the submission cover letter should include that information, as well as what type of hardware and software systems were used. Obviously, being able to use the author's disc directly or translate it by machine to Macintosh format prevents input errors and speeds up the process. We are able to translate many IBM files provided that the software (including version) are written on the disk.

3. Manuscripts are received with the understanding that they have not been accepted for publication elsewhere. **It is the author's 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, phone number of the author and a biographical paragraph. Where appropriate, please list any academic degrees, special training, or experience that is relevant to the article (i.e., physical therapy—RPT, etc.) Articles pertaining to areas of veterinary medicine that involve tasks or decisions requiring a licensed veterinarian (e.g., soft tissue or orthopedic surgery) require a veterinarian as either the author or a co-author.

5. Black and white photographs are preferred for use in the *Journal of Wildlife Rehabilitation*. When no other option is available, color 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, FA; Peakall, DB; and Butler, RG. 1983. "Heinz-Body Hemolytic Anemia from the Ingestion of Crude Oil: A Primary Toxic Effect in Marine Birds." *Science* 20:871-873.

JOURNAL of Wildlife Rehabilitation

Spring 1993 Vol. 16, No. 1

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Cover Photo: Chris Mihulka

• The *Journal of Wildlife Rehabilitation* (ISSN: 1071-2232) is published quarterly by the International Wildlife Rehabilitation Council, 4437 Central Place, B-4, Suisun, CA 94585.

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Articles from this publication are abstracted and cited in *Focus On: Veterinary Science and Medicine*™, SCISEARCH®, and RESEARCH ALERT® .

Editorial . . .

Changing of the Guard . . or 'the old gray mare she just ain't' . . . .

In the late 1970's and early 1980's several wildlife rehabilitator-veterinarians established wildlife care centers. Two of us sat down to compare notes recently and noticed some parallels (and some differences) while reflecting on our efforts over the years.

I began the Suisun Marsh Natural History Association (1977) in a condemned, empty 2 bedroom county rental house. First, I built a team, then a county-wide service, and eventually a 2,000 square foot wildlife center on the edge of the Suisun Marsh. Concurrently, I attended college, applied and attended to veterinary school and was accepted into the class of 1989 at UC Davis. It was a very busy 12 years and I was ready for things to slow down. That however, was not in the cards as my first job out of school was the Exxon Valdez oil spill, quickly followed by several oil spills in 1990 and many (n=10) in 1991. I finished 1991 in the hospital with a bowel obstruction and major surgery, then took 10 months off to get the rest I needed badly. Today, I don't want to go back to running a wildlife center and certainly never want to start another one again.

This summer I traveled north to Puget Sound to do fieldwork and took a few days off to visit Dr. Jessica (nee Porter) Lainson, another pioneer who came to San Juan Is. in 1980 to set up a practice and eventually converted it to Wolf Hollow Wildlife Center. She also began working oil spills and was the bird veterinarian in Valdez (I worked in Seward) during the Exxon spill.

As we compared notes, we found parallels in both the past and present. Jessica had recently left her center on San Juan Island after having met the love of her life and relocated to Lopez Island where she has begun a part-time mixed veterinary practice. Her schedule, once totally filled with wildlife rehabilitation, has evolved to a mixture of theater/dance, veterinary practice, and 'homesteading' activities—as they build a home on the island. "Yes", she said, "there is a life after leaving a wildlife center."

In our forties, she and I have found that our priorities are continually honed by the lessons of life, and have guided us in new directions. Today, I work part-time at UC Davis Veterinary School at the new Wildlife Health Center and part-time as the Executive Director for IWRC. This combination allows me to remain involved in wildlife rehabilitation, teach, and do my research—all of which make working enjoyable. Additionally, I have weekends off, go home at 5 pm and operate at a pace that is light years slower than the days in which I ran a center. I have a garden, see current movies with friends, and travel with seabird biologists unlocking the secrets of the pelagic birds that enthrall me.

As Jessica and I talked, we found we had both grown away from the shackles of our past—ACOA's, co-dependence, need for control--and had refocused on the things that make us happy, for a change. While quality of life issues were always important for our patients—those same issues are now equally important to us!

Creating a wildlife center is a lot like having an only child, it becomes the focus of your life. In both of our cases, life's events took us down another path before our centers were as "mature" and self-sufficient as we would have liked. In both cases the new leaders pulled hard and fast for their independence and got it. We left, knowing what lay ahead for them, and began new, enriched lives. They inherited the facilities and institutions we left behind and could start where we left off (rather than at the beginning as we had)—though the daily struggles with finances, staffing, and animal case loads were unenviable. We both felt like we got the better end of the deal!

What forces were at play? In your twenties, anything seems possible and long-term security issues are a low priority. Creating a non-profit institution means that you are building a "castle" you never can own. The more developed the project, the less control its founder has—by design. Delegation becomes a path for survival. However, new institutions spend most of their time worrying about the immediate future and not much time planning for long-term retention of their "brain trusts." Often boards see staff as

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Avian Emaciation: Unraveling the Mysteries of Recovery

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ABSTRACT

Wildlife rehabilitators are routinely faced with animals, usually birds, who have faced prolonged periods of time without food and have lost a substantial amount of weight. Experience has shown that simply feeding these animals their normal diet is counter-productive and often results in fatality. This article sets guidelines for determining when an animal is emaciated, describes various complications of starvation, and delineates a protocol for recovery based on experience with hundreds of birds of prey.

KEY WORDS: raptors, emaciation, starvation, feeding, PCV, Total Solids

Introduction

There is perhaps nothing more frustrating to a wildlife rehabilitator than trying to do battle with something you cannot see, and watching an animal starve to death in the midst of plenty. There are, however, no 'cookbook' methods to saving these birds. Designing an emaciation protocol, beyond some basic guidelines, is essentially done case by case, since each case is different.

Anyone working with raptors is going to face starvation cases, and lesson number one is to resist the urge to feed them! A bird that has lost, say 30% of its body weight might use its last available calories to break down any food offered, and might very well die before the resulting energy is available on the cellular level. If the calories to digest that food are not available, the food will sit in the crop or stomach and rot, resulting in a proliferation of bacteria, toxemia, and death.

Starvation is, in essence, the prolonged absence of nutrition, and is sometimes found in medical texts under 'inanition' or 'anorexia.' The result is emaciation. One of the many difficult aspects of dealing with emaciation is that it NEVER presents alone: it is either the *result* of some underlying physical problem (e.g., a wing, eye, or foot injury which prevented hunting), or *results in* debilitating physical problems (e.g., suppressed immune system, parasite infection, anemia, dehydration, or kidney damage), or BOTH. At times, it is almost a relief to detect an obvious cause of starvation, because those cases where all of the physical systems seem otherwise normal can be a real challenge. Occasionally you receive a juvenile bird that simply is not hunting well; but more often there seems to be something like organophosphate poisoning (and irreversible kidney damage), aspergillosis, or some other insidious cause, difficult to detect and treat.

Physical Signs of Emaciation

How can you tell if a bird is starving? There are some subjective and some objective measures.

Subjective

1) Breast musculature should be rounded and, with most species, reach the top of the keel bone. Although you can always palpate the keel

(leading edge of the breast bone) in a bird that is flying and within its normal weight range, these muscles will feel full and well-developed; in a bird that is starving, these muscles waste away to varying degrees, leaving the keel very prominent. A 'knife-edge' or 'razor' keel is, like it sounds, when you can actually pinch the keel, feeling bone with the pads of your fingers. Other bone, like the lumbar area of the lower back, will also be palpably prominent. 2) One of the primary signs of prolonged inanition is a lime-green dropping: when the gastro-intestinal tract is empty, there is nothing to mix with the bile that is produced automatically (whether the bird is eating or not) by the gall bladder, and the mutes (droppings) come out lime-green. Often the droppings are primarily urates; sometimes even foamy in appearance. 3) And even notice the 'feel' of the bird in your hand compared with your normal experience (a biologist bringing in a red-tailed hawk handed the author what she thought was an empty box; the bird had a fracture of the humerus probably two weeks old and had been found hopping up and down a logging road, eating bugs like a robin. Its body had been working so hard to simply stay alive that there was no callus formation at all at the fracture site).

Objective

1) Compare the weight upon intake to normals. Obviously, even this objective measure has an element of subjectivity to it; given the often large size/weight ranges for most species, especially gender size variances, and given that sexual dimorphism is not common among raptors, you don't always know to which normal range to compare the bird. An excellent resource book (and essentially the only resource beyond your own records of species' weights in your area) is *Body Weights of 686 Species of North American Birds* by John B. Dunning, Jr., now available through the International Wildlife Rehabilitation Council. For example, say you receive a red-tailed hawk with a fracture of the left leg; the fracture doesn't seem fresh; the bird seems thin to you; its weight is 856 grams; average weight for a female, according to Dunning, is 1224 gm; a male 1028 gm. The author makes a subjective decision, based on overall size, especially size of feet, and the degree of muscle wasting (severe), that this bird is a female and could be as much as 30% down in weight. This has an impact on treatment, as will be discussed, but a note of warning on the use of these printed averages: although the referenced book is an excellent resource, it must be used with a grain of caution. It is a compilation of many different surveys, which are referenced in the back of the book, and which also vary by geographic location and time of year. Western great horned owls, for instance, tend to be smaller than the eastern owls; with those species that migrate, where and when the study was done, with its implications of whether migration was beginning (fat) or ending (thinner), needs to be taken into consideration. There is really nothing better than your own experience with the birds of your area. Record-keeping of intake and release weights is critical. 2) A very useful indication of whether or not a bird has been eating is if it casts in the first 24 hours; the *absence* of a cast is not definitive, because impaction from bruising or other internal injuries can delay pellet egestion. The presence of a cast, however, does indicate that the bird has been eating and what - the author has seen some that consisted of nothing but dirt and pine needles.

Categories of Emaciation

Treatment protocols vary by the degree of starvation. Category I birds are between 90%-100% of normal; the keel may be slightly prominent but not severe. Perhaps there has been a storm; perhaps the bird has been trapped in someone's garage; perhaps it has been sitting in a daze in a ditch for a couple of days, but in essence it is not in a critical state of starvation. Category II birds are 75%-90% of normal and you will be seeing some complications of prolonged malnutrition, as well as of the underlying injury or disease process, such as anemia. Category III birds are 50%-75% of normal weight and are an extreme challenge to save. By the time you see this degree of wasting in a wild animal, you are seeing a lot of changes inside: some things are no longer functioning well and may never recover. This does not mean that you give up on these birds. The bird in the 'empty' box mentioned previously was definitely a Category III case, and he recovered, while many in Category II and even Category I do not, depending upon what else is going on.

Complications of Starvation

Whether or not there is an underlying injury or disease process, starvation almost always presents along with severe dehydration, anemia, and both ecto- and endo-parasites. Obviously, treatment of the dehydration is imperative and can be addressed in multiple ways. On intake, the author frequently administers subcutaneous fluids in the inguinal flap; IV fluids are difficult to administer, even into the jugular, when veins are collapsed and blood pressure low, but can often be used after SQ fluids have added volume to the

system. Oral electrolyte solutions are also used unless there is blood in the mouth or any sign of respiratory compromise, but may or may not be well-absorbed. (The author had at least one case where oral fluids essentially ran right through the system unchanged.) Replacement volume calculations can be found in IWRC's *Basic Wildlife Rehabilitation 1AB*, a Skills Seminar manual.

Ectoparasites are always treated, by the author, with the application of a pyrethrins-based powder, because these mites and lice can present a risk to other birds in the center. Endoparasites are treated at the discretion of the rehabilitator and veterinarian based on severity of infestation and degree of debilitation.

Anemia will probably respond to general supportive treatment but can also be addressed with iron dextran injections weekly and/or a tonic such as Beecham's Pet-Tinic™ orally. *Iron should NOT be administered in the presence of an infection,* however, as bacteria find iron exceptionally beneficial and can multiply faster than antibiotics can take care of them.[1] Get any infection under control before using iron supplements to treat anemia. Severe anemia can be assisted by blood transfusions and the author has used an education bird as a donor, as well as a bird under rehabilitation. The Raptor Center at the University of Minnesota typically transfuses any bird that presents with a PCV of less than 20.

Emaciation Protocol

Successful treatment for emaciation involves *rehydration*, the *calculation of the calories* necessary for a slow and steady weight gain, and the various means of *supplying those calories*. Each of these steps involves choices.

Hydration

Typically, the author gives nothing but electrolyte fluids during the first eight hours. If, however, the eight hours would stretch into more overnight, she adds an *amino acid solution* to an oral hydration formula, in order to provide some nutrition. Such solutions contain very few calories, however, and neither do electrolyte solutions. The bird may gain some weight from rehydration, may lose a little since little or no calories are being provided in the first few hours, or may roughly balance out. DO NOT ATTEMPT TO PROVIDE CALORIES BY WAY OF A HIGH PERCENTAGE GLUCOSE SOLUTION: a) their addition makes a solution hypertonic and may actually complicate dehydration and b) raptors have a very low tolerance for glucose and high levels can actually kill them.[2] To calculate the amount of fluids necessary to compensate for the deficit and provide the normal daily maintenance levels, see the Fluid Therapy section of the IWRC *Basic Wildlife Rehabilitation 1AB Manual.* To rehydrate a bird is a prolonged process and must be continued for the first few days, or as long as any signs of fluid deficit are present, even after emaciation treatment feedings have started.

Calculation of Calories

Different types of animals have different metabolic rates and different caloric requirements. The formula for determining the caloric needs of a bird in your care is as follows:

Animal Factor x (weight in kg) $^{.75}$ x
basal rate factor = Kcal/24 hrs.

The **animal factor** is a multiplier based on the metabolic rate of different types of animals; as you would assume, these vary from a reptilian low of 10 to a small bird high of 129. Birds are typically divided into two classifications: *passerines* (or those weighing 100 gms or less), with an animal factor of 129, and *non-passerines* (those weighing over 100 gms) with an animal factor of 78.3.

This formula is an inverse exponential function of the body weight: i.e., the daily caloric requirement is negatively related to body weight (but not in a straight line) or, as we have all noticed, a kestrel needs to eat far more in relation to its body weight than does an eagle!

The **basal metabolic rate** (BMR) is defined as the number of calories necessary for an animal AT REST, IN A THERMO-NEUTRAL ENVIRONMENT to MAINTAIN its body weight. The **basal rate factor** depends on the age and condition of the bird and is a multiplier of the basal metabolic rate. That is, a healthy adult bird, in order to maintain its body weight in normal activity, needs 2x the BMR; a sick adult needs 3x, in order to maintain body weight AND provide energy for healing; a healthy, growing juvenile needs 4x; and a sick juvenile, 5x.

The IWRC *Basic Wildlife Rehabilitation 1AB* manual explains this at length and provides examples of these calculations, as well as charts that can be used in the absence of a calculator with a y^x key or a square root key.

Whether your bird is a sick adult or juvenile, it is important to start it out on the low end of the scale: providing no more than 1.5-2x the BMR in the first day of feeding, and gradually working up over several days to the appropriate basal factor of 3, 4 or 5.

What to Feed, How Often, and How Much

Two of the primary decisions to be made are what to use to provide these calories and how to balance the benefit of numerous small feedings against the stress of handling.

Category I and II birds can usually be started (after the initial period of rehydration and often the addition of small amounts of an amino acid solution to second/third fluids and the first few feedings) on Ultracal™, Isocal™, Osmolyte™, or Ensure™, all of which are easily digested and absorbed, nutritionally complete, isotonic human tube-feeding formulas. They are approximately 1.0 or 1.1 kcal/ml. The author prefers Ultracal™ because of the addition of fiber, which has helped to control some of the diarrhea which tends to accompany the use of Isocal™. Category III animals will probably need an elemental diet: a diet made up primarily of the building blocks of nutrition and which takes little or no energy to break down. Some examples are Vivonex™ or Tolerex™, human elemental tube-feeding formulas; they are, however, hypertonic, so since they are usually used while the bird is still being rehydrated, care needs to be taken to offset the hypertonicity with extra fluids. In the absence of these products (which are very expensive), the author has used higher quantities of amino acid solutions in conjunction with Ultracal™.

Using Ultracal™ as an example, the quantity to feed is easily determined by taking the result of our kcal formula and dividing by 1.1 kcal/ml. That is, a 300 gm starving (and 10% dehydrated) barn owl which received only fluids and then fluids with amino acids in its first 8 hours, would then need in its next 24 hours, 47.6 kcals (1.5 x basal) or 43 mls of Ultracal™. To calculate how much to tube in each feeding, the rehabilitator must factor in both the volume of Ultracal™ and the volume of hydration solution (25 ml) needed for a total oral volume of some 68 ml that must be ingested. A rough rule-of-thumb for figuring out stomach capacity of an animal is 55 ml/kg of body weight: for a 300 gm barn owl, that would mean its maximum capacity would be some 16 ml. In order to minimize the risk of aspiration in an already debilitated bird, the author recommends stepping that number down to approximately 12-15 ml/feeding. Thus, dividing the 68 ml of volume needed during this 24 hours by 15, results in 5 (rounded); resulting in a suggested 5 feedings of 13.7 ml each - 8.7 ml of Ultracal™ and 5 ml of fluids. If volume is a problem or the bird regurgitates, fluids can be given SQ instead of orally.

Obviously, the daily calorie requirements will go up as the bird is moved up the scale to its necessary 3, 4, or 5x basal **and** as it gains weight. This can pose a problem, especially in the smaller raptors such as kestrels or pygmy owls which use the higher, passerine animal factor and, thus, whose volume capacity is rapidly hit. Raptors by nature fast and gorge; the author tries to ensure that the system of a debilitated bird is clear of food for at least part of each day, usually overnight. This means that an ever-expanding amount of calories and volume needs to be ingested over a period of some 14-16 hours.

Category I and II animals can, by day 3 or 4, have Nutri-Cal® added to their diet: it is a low-volume, high calorie supplement which provides 6 kcal/ml. Because it is fat-based (34.5%), it takes a certain amount of energy to assimilate and the bird needs to be able to provide this. Nutri-Cal® should be used very judiciously and with caution on a Category III animal. If a Category III bird is moved slowly up the scale to 3 or 4x basal, it may be able to assimilate Nutri-Cal® by the time many small meals have exhausted its volume capacity.

When to Add Solids

Two of the most critical elements to monitor in emaciation treatment are blood values: PCV and serum protein. Blood should be drawn on Day 1 (and adjusted heuristically for the false elevation of these values caused by dehydration) and monitored again approximately every other day. PCV provides a reading of anemia; the author has seen birds come in with values less than 10%; from the hematocrit tube (and even better from a blood smear), the rehabilitator can judge whether any anemia is regenerative (amount of immature red blood cells) and whether or not the bird is battling an infection (prominent buffy coat or white cell count). Serum protein, or the amount of circulating protein expressed in grams per deciliter, is a measure representing a fairly complicated interaction between protein synthesis and catabolic rate, or in other words, measures how able the bird is to convert available protein to usable energy. In a bird that has not eaten, serum protein is typically very low. Readings lower than 2 gms/dl indicate an inability to perform that conversion well, and birds with low serum protein should not be fed solid food.

Unfortunately for those of us who might like clear guidelines, the author has also had several birds come in with serum protein at adequate levels who were still unable to process food. Some came in with packed, sour crops; some ate food provided by the author but were unable to process it. With hawks, eagles, or falcons (i.e.,

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IWRC PROFILE

by Bill Marshall, IWRC Board Member

Jan White, BS *(Social Work - '75 Cal State University, Sacramento), DVM, ('89 University of California, Davis).*

Some people are characterized as "an open book"; you can read what they are about very easily. Jan White is one of those books. So here is my review of Jan White.

When you look at what she is involved with in a given year, and you stack up her accomplishments and contributions in wildlife rehabilitation, you realize that she lives the lives of at least two people or has an identical twin or has successfully cloned herself. Making truth of saying that a change is as good as a rest, Jan finds new roles every year and more hours in a day than you or I can. Although her curriculum vitae is getting to the point that it needs to be bound, I'll try to give you some measure of this remarkable woman.

* Jan continues as half-time Executive Director of the International Wildlife Rehabilitation Council (since 1987) and is half-time Staff Research Associate in the Veterinary School at UC Davis. This year she served as Treatment Crew Leader and Neonatal Manager at the California Raptor Center (University of California at Davis), supervising 20 veterinary students and conducting raptor hatching and rearing. Jan lectured and taught labs for the Raptor Medicine course, a team-taught effort at the veterinary school.
* During the summer of '93, she will be doing field work in Washington state finding normal blood values in seabirds with seabird biologists George Divoky and Mary Mahaffy.
* By fall, Jan plans to be working on pulling together the best knowledge on oiled animal triage and publishing the results (through a grant).

How Jan got so involved today can be traced back to an experience in California in the mid-70's — finding lifeless and mutilated ducks along the shores of Dover Pond in Fairfield, the handiwork of bored and brain-dead teenagers. By 1977, Jan and a veterinarian friend, Dr. Sandra Emanuelson, started off as the Wildlife Rehabilitation Service, Inc., which later became the Suisun Marsh Natural History Association. Jan served as its president from 1977 to 1990 (except for 1989) and its Executive Director from 1977-85.

Creating a knowledge base has been one of Jan White's major achievements. Since 1979, Jan has authored (and coauthored) over 20 professional papers on wildlife rehabilitation. That only skims the surface of her print contributions to the world of wildlife rehabilitation — she has also been editor of IWRC's **journal** since 1983 and has been editor or coeditor of Skills Training Manuals and of conference proceedings on oil spills. Equally important has been her talent in interesting dozens of other professionals to write articles of use and interest to the rehab and veterinary communities.

Putting that knowledge into practice was a logical next step for Jan. She developed and taught wildlife technician programs locally 10 years ago and that quickly evolved into her chair-



USFWS Biologists Mary Mahaffy and Camille Bennett and Dr. White take a blood sample and field measurements from an adult Pigeon Guillemot in Port Townsend, WA.

ing and teaching in IWRC's Skills Seminar Programs. Some 500 rehabilitators a year take these courses. Making sure that wildlife receive the best of care, Jan was also founding chairman of the joint IWRC/NWRA National Standards and Accreditation Committee. Basic Standards were completed and approved in 1989, and a pilot accreditation project was carried out in California in 1990.

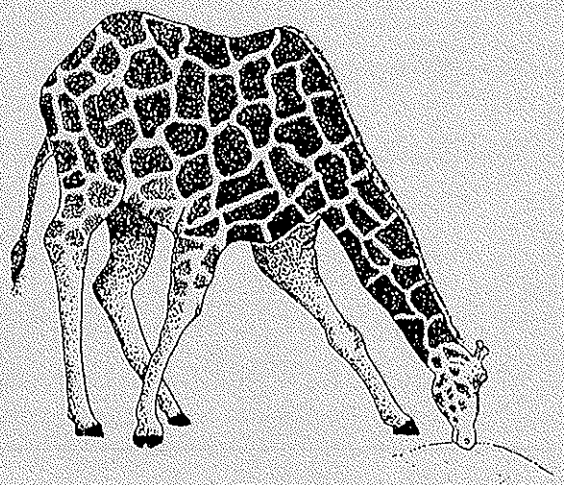
Jan's work on the major oil spills of the last few years came about through her being the staff veterinarian for the International Bird Rescue Research Center from 1989-91. She has been at 11 major spills and taken on many roles - from trainer to operations manager. She even established the Alaskan Wildlife Response Center during her time in Alaska.

It would be easy to keep writing about Jan's work and commitment in the field of wildlife rehabilitation. Did I mention that she was a Board member of NWRA for nine years? And a director of IWRC from 1 980-92, serving as its President from 1982-85? A director of an Audubon Society, the local SPCA and the Solano County Animal Health Care Foundation for a few years each? Her keen sense of duty, professionalism and leadership in this field have been amply spread around.

On personal, face-to-face experience with Jan White, you find the intensity that can accomplish so much. Oh, sure, she's only human (most of the time); she falls behind a bit in some things while she strides ahead in others. She sometimes boldly goes where no other has gone before. Did I mention that she is a bit of a character? Ooops. Running out of space for this article. Maybe another time.

As she approaches up the ramp to middle age, you would think that she would be changing gears and slowing down a bit. No, she buys a new car. It looks like Jan is just beginning. Because wildlife rehabilitation is a new frontier in medicine and care techniques, the challenges to know more, do more, to do it better, continue to tantalize the boundless energy and curiosity of one Jan White, a book only half-written.

Members Forum will appear in the next issue of the newsletter. If you have an animal care or ethics question or another issue you wish to see discussed, send it to Marge Gibson c/o IWRC 4437 Central Place, Ste. B-4, Suisun, CA 94585.



ANNOUNCING THE GIRAFFE AWARDS

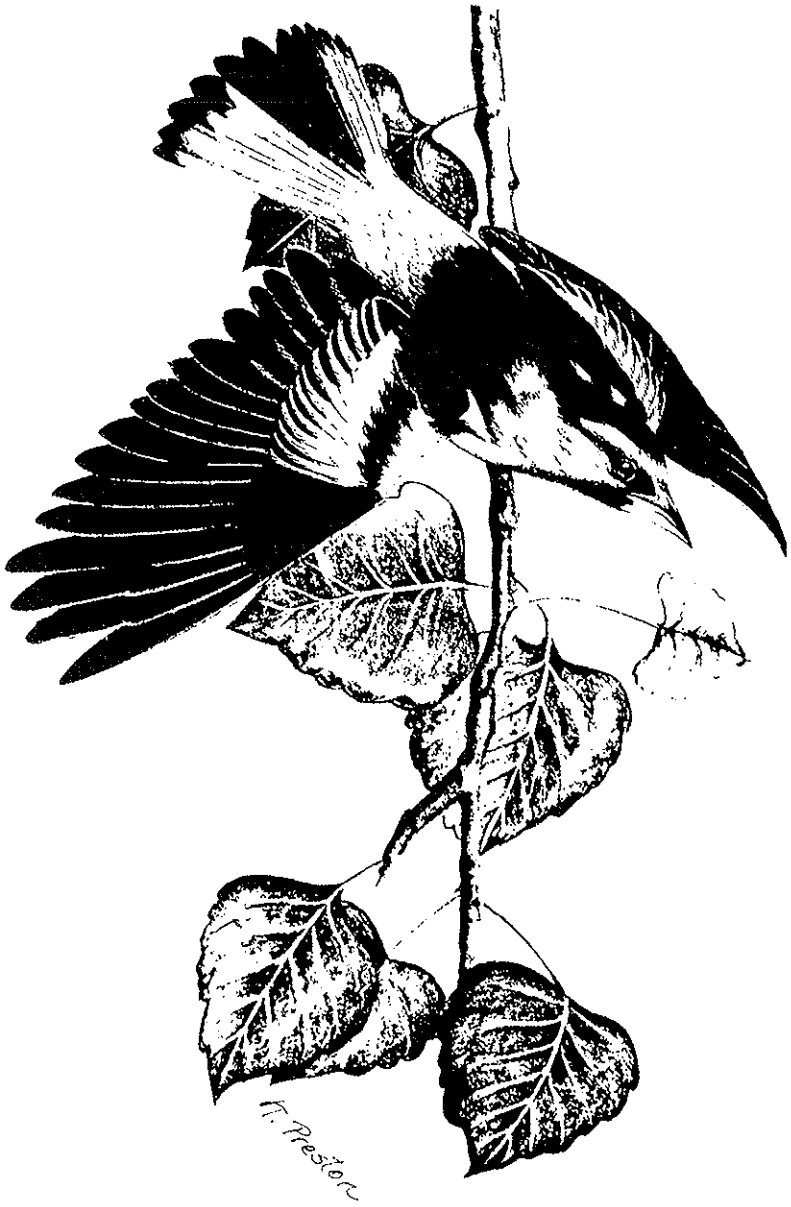
IWRC has something new up its sleeve! We have decided that it is high time we begin to recognize a special kind of leadership in wildlife rehabilitation. The Giraffe Award is for the wildlife rehabilitator that "sticks his/her neck out" **and** in doing so makes a significant contribution to the field of wildlife rehabilitation. This is sort of an "anti-politically-correct" award for the rehabilitator that listens to his or her own drummer and is able to convince the " powers that be" that a path less trod is the way to go! These people have common sense and are well-grounded in matters of ethics. They are leaders, not bullies, and create effective teams, not dictatorships. We are particularly interested in those who are able to affect public policy in such a way as to benefit wildlife, though we are open to other forms of "Giraffism".

If you know a wildlife rehabilitator who has gone against the grain and "had the crop come in", — we would like to recognize him or her. Send a letter with background information to ***"Giraffe Awards", c/o IWRC 4437 Central Place Suite B-4, Suisun, CA 94585.*** We will get in touch with you.

The IWRC Newsletter will profile Board Members, staff, Committee members and Journal associate editors in future issues. We would like to recognize the contributions of all those who are working to make IWRC a first class professional organization.

INTERNATIONAL WILDLIFE REHABILITATION COUNCIL

Wildlife Care Catalog
Fall / Winter 1993



IWRC
Literature Order Form

IWRC Skills Seminars[SM]	Qty.	Total
Session I - Basic Wildlife Rehabilitation 1AB[SM] ISBN 1-884196-02-0 by Jan White, DVM Revised 1992 ***Reinforced covers and wire binding for longer wear!*** With the purpose of standardizing rehabilitation skills through a professional packet, the author covers rehabilitation methods and techniques from capture to release. Basic animal physiology, treatments and medications, nutrition, and husbandry are covered for mammals, birds, and reptiles. Also included are nutrition and housing charts which can aid the rehabilitator in determining how to care for and raise wildlife. This 150 page manual also includes individual rehab notes on common species. **Price $25.00**		
Session II - Restraint of Wild Animals by Dave Jessup, DVM, William Clark, and Brian Hunter, California Department of Fish and Game. These materials cover basic considerations and responsibilities for restraint procedures, pharmacology, equipment, medical concerns and safety considerations for the rehabilitator handling wild animals. **Price $7.50**		
Session III - Laboratory Procedures & Diagnostics in Wildlife Care[SM] by Tami Anderson, AHT Procedures covered include the various aspects of hematology, laboratory tests, urology, parasitology, testing done for heart worm, and basic information on bacteriology and culture sensitivity testing. Revised 1987. **Price $7.50**		
Session IV - Physical Examination & Initial Care[SM] by Sandra Emanuelson, DVM & Jan White, DVM Topics covered include intake procedures, initial exam, treatment for basic shock and for selected poisons. **Price $7.50**		
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Session VI - Physical Therapy in Raptors[SM] by Nancy Horowitz, RPT A registered physical therapist, the author brings to our field her knowledge of the principles, application and cautions in the use of physical therapy on wild raptors. This packet also includes a "New Method for Exercising and Rehabilitating Raptors" by Terry Schultz, Julie Klingman and Russell Tucker, DVM; and "The Goniometer: Its Indications and Use" by Kathie Giblett, RPT. **Price $6.00**		
Session VII - Basic Necropsy Procedures[SM] by Pat Gullett, DVM This packet provides rehabilitators with procedures for both avian and mammal necropsy, complete with diagrams. Reptile illustrations are included for reference along with a necropsy form for the rehabilitator. **Price $6.00**		
Session VIII - Fluid Therapy in Wildlife Care[SM] by Michael Murray, DVM Dr. Murray explains the different types of fluids available, when to use them, criteria for their use and routes of administration. Basic and acid-base balance is also covered in this packet. **Price $ 7.50**		

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Wildlife Restraint Handbook by the Wildlife Investigations Staff, California Department of Fish and Game 1989 This 172 page book is designed for the wildlife rehabilitator and field biologist. It has sections on mechanical capture of animals, transportation of captured animals, restraint equipment (ropes, gloves, hobbles, Ketch-All Pole™, pole syringes, dart guns, etc.), pharmacology of restraint drugs, legal information on scheduled drugs, medical concerns in restraint, safety, and specific information on various species (including drug dosages) such as Black Bear, Mountain Lion, Bobcat, Coyote, Fox, Skunks, Badgers, Fishers, River Otters, Beavers, Raccoons, and Sea Otters. **Price $20.00**		

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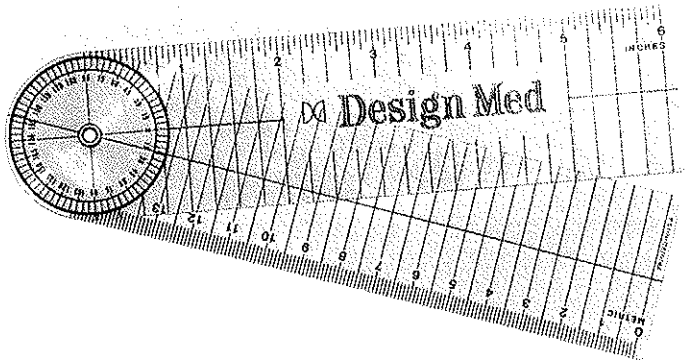
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"A Day In the Life" at the IWRC Office"

by Jan White, DVM, Executive Director

Recently, both of my staff went on vacation, leaving me to tend to the office and answer the phones. With Marilyn in Paris and Mary in the San Juan Islands off the coast of Washington, I thought I would get caught up on a project to computerize our books. (I thought by myself I could work without interruption and be really efficient.) Boy, was I wrong!

I started the week off with my early morning lap swim. I was one of the first three in the pool at shortly before 7 AM and proceeded to start the first of 50 laps at the health club. As I approached the turning point in the lap, I noticed a small brown creature in the lane swimming madly to get out of my way. It was a small house mouse that had fallen into the pool before the club opened and couldn't get out. I gently went around it and picked up the water-logged rodent by its tail. I noticed that its face and top of head were still dry and gently placed it on the ledge of the pool. It was exhausted and just sat there while I climbed out of the pool to further move it out of harm's way. Meanwhile, the fellow in the lane next to me said, where are you going, you only just started! I picked up the mouse and took it outside into the grass. When the lady in the lane next to him saw what I was doing, she did what one would expect — let out a shriek! I came back into the pool and everyone was talking about it and saying how "brave" I was. I checked on the mouse 45 minutes later when I finished my laps, and it was almost dry but hadn't moved. Once dry, it scurried off into the shade and protection of the shrubbery. I thought, this week has started off in an interesting way!

I arrived in the office and the phone began to ring. What is a good diet for baby flickers? Where can I find out more about prairie dogs? When is the next Basic Wildlife Rehabilitation 1 AB class? How do we locate the wood duck speaker from the last NWRA conference? It was my day for squirrel questions with two more calls — one on 1 3-lined ground squirrels and another on chipmunks! So much for trying to get to the regular business of the day.

After lunch was no better with calls for literature orders (yes, we do them over the phone or by fax), requests for conference registration materials, and a call from our contact in Connecticut who is setting up our first skills seminar class of the fall season in September. Raccoon vaccinations were a popular topic. It seems that some people haven't been able to locate Fromm-D™ canine distemper vaccine and wanted to know what else they could substitute. Could one vaccinate for rabies (with a killed virus) at the same time? When should we vaccinate? That resulted in a few phone calls to see what other people were doing and then a return call to the rehabilitator who asked. Then there was the family in Maine who found two baby raccoons and a dead mom. They were creative. They had strung up a temporary enclosure on the spot where they found them! I gave them about four people to call and wished them on their way.

Back to setting up the Connecticut class and calling potential instructors! I also had a fellow who called trying to find "Hawk Quest" in Colorado. He had tried everything — and I came up short as well. Needless to say, the computer project was getting nowhere fast.

I left to get a deli sandwich and returned to a message wanting information on imprinting songbirds. Then the accountant called to say the 1992 balance sheet was ready to pick up. Good, I thought, now I can get Volume 15 #4 off to the printers. He asked me if I could come pick it up — I told him to mail it. I wasn't going anywhere today! The mail lady showed up about 3 PM so I sorted the mail and dealt with the work that it brought. There were membership renewals, literature orders, people wanting to know where to find the nearest rehabilitator, someone wanting a job (resume enclosed), requests for membership information and of course the ever-present bills. I did the daily bookkeeping and before I knew it, the day was gone! I then had to write on my time sheet how I had spent the day (by committee). As I closed up for the day, I thought, tomorrow I will get on to the computer.

Well, as luck would have it, the calls continued that week unabated, and I never did get on to the computer. Boy, was I glad to see my office staff return! Fresh from their travels and ready to dive into the conference mailings — they returned with their vacation tales and I shared the events they had missed at work. Mary just laughed at me. She wouldn't have been so foolish as to think that, alone in the office, she could ever seriously get into a big computer project. Not too long after that day, we got a letter from a member wondering why we had not written her back a response to her letter of about a month and a half ago. I thought, "if she only knew".

Editor's Note: *IWRC office staff really deserve appreciation for how much work they can accomplish under absolutely hellish circumstances. Occasionally, even they get overwhelmed (right before conference time, for example), but they are usually quite prompt at responding to inquiries and literature requests. And to think, they are unfailingly courteous even after a day such as Jan has described.* ***Thanks, Jan, Mary and Marilyn!***