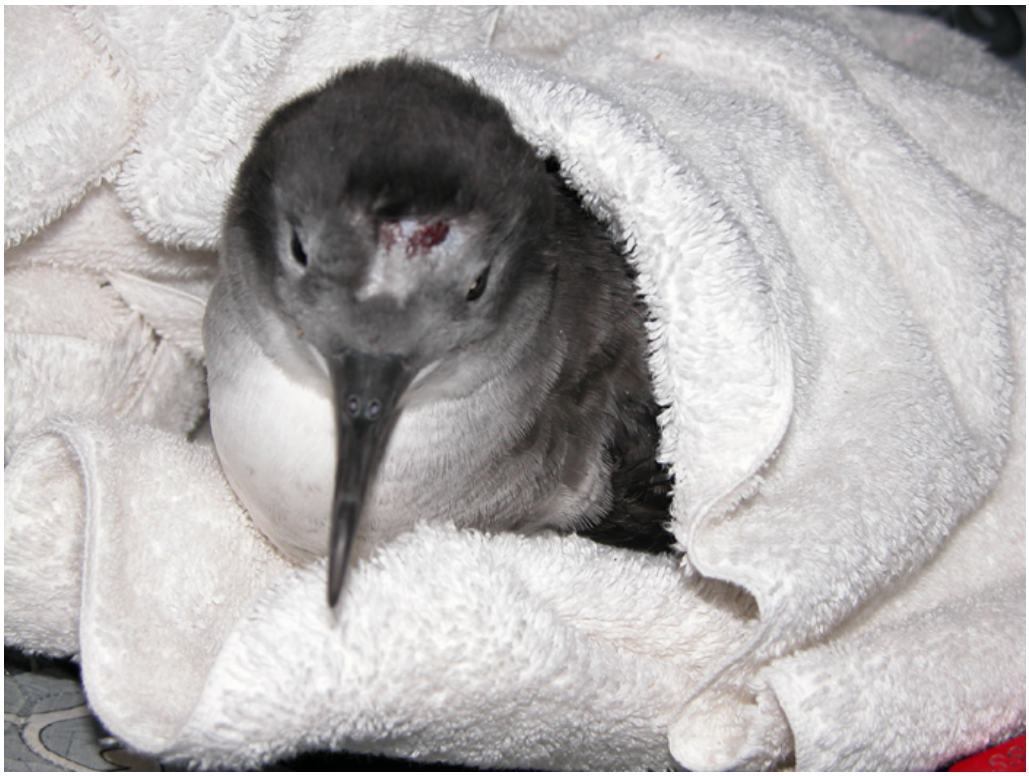
A GUIDE TO WILDLIFE REHABILITATION IN HAWAII



Injured Wedge-tailed Shearwater picked up on the East side of the island of Oahu.

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Wildlife Rehabilitation Overview

Wildlife rehabilitation is the act of providing temporary care to injured, sick, or orphaned wildlife with the goal of releasing the animal back into the wild. When an animal is admitted for rehabilitation it faces four fates: death as a result of its medical condition, successful rehabilitation, and release, permanent placement as an educational display due to factors preventing its release, or euthanasia.

Successful release of wildlife means that the animal must be able to live as a healthy member of a wild population. This includes the ability to recognize and find appropriate foods, socialize and reproduce with members of its own species, and exhibit normal behaviors such as fear of humans and predator avoidance.

As defined in *HAR 13-124-2 "*wildlife" means any member of any non-domesticated species of the animal kingdom. All indigenous wildlife, wild birds, game birds, and game mammals are protected by Hawaii State law and ownership of those animals remains with the State. Therefore, wild animals are not to be held in captivity without proper State issued permits or licenses. Anyone wishing to engage in wildlife rehabilitation in Hawaii is required to obtain a Protected Wildlife Permit from the Hawaii Division of Forestry and Wildlife. In addition, anyone wishing to rehabilitate migratory bird or those species protected by federal law must also obtain a permit from the U.S. Fish and Wildlife Service.

The Hawaii Division of Forestry and Wildlife issues Protected Wildlife Permits for wildlife rehabilitation to qualified individuals over 18 years of age. The intent of a wildlife rehabilitation permit is to ensure all persons engaged in the rehabilitation of wildlife are capable of providing humane care and housing for the animals being rehabilitated. Wildlife rehabilitation can be rewarding however it is extremely demanding and consumes a large amount of time, energy, and money. Potential candidates should seriously consider the numerous responsibilities with wildlife rehabilitation before actively pursuing a permit.

What is involved with Wildlife Rehabilitation?

Wildlife rehabilitators must be willing to:
Donate their personal time: Quality wildlife rehabilitation will take up a large amount of your personal time. For those wildlife rehabilitators caring for orphaned young expect to be feeding baby birds every 20 minutes and bottle-feeding baby mammals every couple of hours around the clock. Preparing diets, cleaning cages, and constructing new cages will take up even more time.

Most experienced wildlife rehabilitators recommend that beginners spend their first year on one or two common or easier to rehabilitate species. Finding out the species' natural history, rehabilitation recommendations, proper caging, and appropriate diet will be important. Once you feel comfortable working with that species you may want to consider your time availability and financial commitments before expanding to other species.

Remember that around the clock animal care can interfere with your social and family life. How will you go on vacation when you have baby birds to feed? Having well established relationships with other local rehabilitators can help you with some of these time commitments.

As you become known in the local community as a wildlife rehabilitator you should expect an increase in time dealing with public communications regarding a wide variety of wildlife related issues. You can expect phone calls at all hours of the day from the general public, the humane society, veterinary clinics, animal control personnel, nature centers, and pet stores. A responsible rehabilitator needs to know when to say "no".

Knowing your limitations will help you to manage your time most effectively and ensure that the animals in your care receive the best rehabilitative treatment possible.

Assume the financial obligations that come with providing quality animal care. Wildlife rehabilitation is a voluntary activity in which all costs incurred by a permitted wildlife rehabilitator are the sole responsibility of that individual. Wildlife rehabilitation can quickly become an expensive activity and you will need to have the financial resources to provide adequate care for the animals in your facility. It may cost you hundreds, and possibly thousands of dollars per year to conduct wildlife rehabilitation depending on the number and variety of the animals you take in. You will have to buy or construct appropriate caging for each species, handling equipment, medications, and appropriate diets. In addition you should also expect to pay for at least some veterinary advice and services for treatment of sick and injured animals. Many wildlife rehabilitators network with members of their local community for goods and services and seek donations of used equipment and supplies.

There are also indirect costs to consider: increased use of your personal vehicle, as well as increased telephone, and household utilities. Responsible rehabilitators will also spend money on reference materials, subscriptions to magazines and journals that cover natural history, ecology, and animal care techniques. In addition all rehabilitators are encouraged to attend lectures, classes, and conferences to remain up-to-date on the newest rehabilitation information and practices to ensure the best care of the animals in their facilities.

Wildlife rehabilitators cannot charge for services, it is a strictly voluntary service. Establishing a non-profit organization can sometimes help with the costs associated with wildlife rehabilitation activities. Information on this can be obtained from the Hawaii Department of Taxation and the Internal Revenue Service.

Build a good relationship with a licensed Veterinarian. Most wildlife rehabilitators are neither trained nor properly licensed to diagnose and treat animal diseases. Rehabilitators are not allowed to practice veterinary services in Hawaii unless they currently hold a Hawaii Veterinary Medical License. Medical or surgical treatments, drug prescriptions and administrations, injections, vaccinations, and anesthesia must only take place at the direction and under the supervision of a licensed veterinarian. As a condition of their permit Hawaii wildlife rehabilitators must establish a relationship with a cooperating veterinarian. Veterinary care is a critical part of wildlife rehabilitation and the welfare of the animal undergoing rehabilitation will only benefit from a good working relationship between you and a veterinary consultant.

You should consult a veterinarian immediately if:
- There is a possibility of fractures
- There are signs of internal injuries
- Medication is needed
- The bird is obviously sick and not responding to supportive treatment

Veterinarians Role
All permitted wildlife rehabilitators should understand how licensed veterinarians fit into wildlife rehabilitation activities.

1. Licensed veterinarians may, at their discretion, serve as voluntary consultants to permitted wildlife rehabilitators.

2. Veterinarians are not required to have a wildlife rehabilitation permit to consult with or provide advice on care and treatment to animals undergoing rehabilitation.

3. Veterinarians may treat wild animals in their clinic without possessing a wildlife rehabilitation permit provided that the animals do not stay at the clinic for over 48 hours.

4. Veterinarians who retain wild animals for longer than 48 hours are required to have a wildlife rehabilitation permit, or be working with a permitted wildlife rehabilitator, or must notify the Division.

It is recommended that you negotiate a good working relationship with your consulting veterinarian to avoid conflicts. There are several details that should be agreed upon in advance including:

1. Goods and services that the veterinarian is willing to provide.
2. Charges by the veterinarian for the services and supplies provided.
3. Species that the veterinarian will and will not work with.
4. Types of consultation that the veterinarian is willing to provide over the phone.
5. How often the veterinarian is willing to be available.
6. If necessary, is the veterinarian willing to come to your facility?
7. Arrangements for bringing the wild animals to the clinic (appointment only, in case of emergency, etc.).
8. How wild animals should be brought into the clinic (secure carrier, through back door, etc.).
9. Where wild animals will be kept while at the clinic in order to minimize stress (noise, foot traffic, proximity to predators, etc.).
10. What type of diagnostic procedures will the veterinarian perform (radiographs, hematology, etc)?
11. What type of treatments will the veterinarian perform (prescribe and administer medications, fracture management, surgery, etc)?
12. Establish protocols for follow-up care, treatment, record keeping, and communications.
13. Establish protocols and agreements on euthanizing animals. Agree, in advance, on a process of how you and your veterinarian will make euthanasia decisions. Make sure to address the details of how the process will be carried out including safe disposal of the carcass and prior notification of State and Federal agencies for listed species.

Release of the animal. The purpose of wildlife rehabilitation is to release healthy animals back to the wild. It is one of the most rewarding aspects of the rehabilitation process. Nevertheless, release of the animal is not always easy, as even the most experienced wildlife rehabilitators foster an emotional connection with the animals in their care. In order to ensure the highest rehabilitation success rate possible and make release a little bit easier, wildlife rehabilitators should incorporate release criteria into their rehabilitation plan.

Veterinarians or experienced staff within the Division of Forestry and Wildlife or the U.S. Fish and Wildlife Service is able to assist in assessing whether a bird has fully recovered and meets all release criteria. Some of the most important pre-release considerations include:

- Exhibition of normal feeding behavior and recognition of natural food sources
- Good body condition with a body weight in the normal range for the species
- Good pectoral muscle mass and near perfect plumage for birds
- Exhibition of normal wild behavior; e.g. looks for escape routes, flies/runs to the far end of the enclosure when disturbed; restless rather than apathetic; seeks shelter in inclement weather; active at times of day/night appropriate for species
- Full recovery from all physical problems
- Waterproofed and able to maintain normal body temperature after several hours on the water (for seabirds)

- Releasable at the appropriate time:
  -species active during the day should be released one hour after dawn and nocturnal species should be released one hour after dusk to avoid intense competition for food during the first hour of the active part of the day
  -pelagic seabirds should be released on a windy day (some species cannot take flight at speeds of less than 25 knots) from a coastal cliff top or from a boat at sea. Smaller species that are crepuscular or nocturnal feeders should be released at dusk

Choosing appropriate release sites is a critical step in successful wildlife rehabilitation. Release of any animal to the wild requires an understanding of many biological and non-biological factors. Species have habitat requirements, which are the minimum needs necessary to ensure their survival and reproduction potential. There are many characteristics in habitat selection that must be considered and it is critical to understand which characteristics are important to the animal being released.

Once a release site is chosen, a plan for the actual release should be developed. All of the necessary materials (gloves, carrier, nets, etc.) should be organized so the release runs as smoothly as possible minimizing the stress on the animal. So as to reduce stress to a newly released animal releases should only be done during periods of current and forecasted mild, precipitation-free weather.

A final release criterion should include pre-release health screening. This screening should not only consider the animal's recovery from injury, but also its exposure to infectious diseases during the rehabilitation process. This step is imperative in order to minimize the unnatural spread of parasites and diseases among wild populations.

Rehabilitation and release should only be undertaken when an animal has a reasonable chance of survival in the wild. For more information on release considerations please refer to the National Wildlife Rehabilitators Association's *Principles of Wildlife Rehabilitation*.

Deal with death and euthanasia. While the goal is to rehabilitate and release the animals that come into your care, you can expect about one-half of the admitted animals will die or must be euthanized. Euthanasia is defined as "the act or practice of killing or permitting the death of hopelessly sick or injured individuals in a relatively painless way for reasons of mercy". As with all rehabilitation efforts, euthanasia must be performed in the most humane way possible. Euthanasia is one of the hardest tasks a rehabilitator must be able to perform and is one of the reasons that the Division requires all permittees to have experience working with wildlife rehabilitation. If you know or suspect that the animal in your care belongs to rare, threatened, or endangered species, you must contact the Division for advice on what to do.

Euthanasia always involves emotions and people interested in becoming wildlife rehabilitators should first consider their personal feelings about euthanizing animals and their willingness to do so should the need arise. As a permitted wildlife rehabilitator you need to have the ability to put your personal emotions and beliefs aside and look rationally at the quality of life for the animal. The animals in your care must be treated responsibly.

The need for euthanasia presents itself in many circumstances. If an animal is unable to recover due to the extent of its injuries or illness, or if it is imprinted on humans, or tamed due to improper care during the rehabilitation process, the animal has little chance of survival if released. An animal with a terminal illness or injury deserves the best treatment you can give. In most circumstances, releasing the animal back into the wild is irresponsible.

Wildlife rehabilitators must commit to making relatively difficult decisions throughout the process of rehabilitation for each animal in their care. Establishing and, more importantly, following set guidelines for evaluation and long term outcomes for each patient must be addressed from the beginning. While the need to euthanize in not always obvious, most often it is better to make the decision to euthanize an animal as early on as possible in the rehabilitation process. Experience gained by volunteering and practicing wildlife rehabilitation will help you to better identify animals that may survive.

An animal that has come into a facility may ultimately have to be euthanized even though it was not a critical case upon admission. Many factors can influence an animal's ability to recover sufficiently for release back to the wild. An animal may be doing well initially and then take a turn for the worse. It is also common to receive animals that with proper care and treatment could survive, but that cannot be returned to the wild. If an animal is determined to be non-releasable there are two options: 1) euthanasia and 2) life in captivity.

While placement in permanent facilities is an option for some non-releasable animals, each animal must be considered on a case-by-case basis. The nature of the injury or illness and/or the animal's psychological state will help determine whether an individual animal may adjust to life in captivity. In addition the U.S. Fish and Wildlife Service requires that birds that are unable to feed themselves, perch or ambulate; that are blind or require amputation of a leg, foot, or wing at the elbow or above be euthanized (50 CFR 21.31). Keep in mind that non-releasable wildlife **cannot** be retained under a Wildlife Rehabilitation Permit and that quality placements are hard to find. Even though euthanasia is not the only answer it is often the best answer. Wildlife rehabilitators need to focus on what is best for the animal, not what is best for them.

Human Safety

Protect yourself from injury or disease when catching or handling birds.

- Wash hands thoroughly before and after handling an animal
- Wear gloves and a face mask if you suspect the bird is diseased or contaminated
- Wear protective clothing and clean the clothing with a disinfectant after use
- Wear safety glasses. Many birds use their beaks for defense and can cause serious eye injury. Always hold a bird at a safe distance from your face and gain control of the head as soon as possible after capture
- Thoroughly wash and disinfect any scratches or wounds received by an animal

Examples of "*zoonosis*"-diseases carried by animals that are infectious to people:

- *Campylobacter*, *Salmonella,* and *Yersinia* are bacteria commonly shed in the droppings of infected birds that may appear healthy. Symptoms in people include diarrhea, fever, and abdominal cramps.
- High levels of *Cryptococcus neoformans* yeast can occur under pigeon roosts and cause pneumonia in people who have inhaled spores.

Initial Response to Finding a Sick/Injured Bird

Before disturbing a bird that appears sick or injured you should first observe it from a distance and take the time to assess whether it is actually sick/injured or simply resting. You are more likely to correctly diagnose abnormal behavior when the bird does not feel threatened. Once aware of your presence the bird will most likely try to mask its symptoms.

A healthy bird should appear bright and alert. The birds breathing should be barely perceptible and its body sleek and in good plumage condition. Be aware that a healthy moulting bird may look scruffy. Check for bilateral symmetry. Both sides of the bird should look and move similarly. There should be no sign of trauma, swelling, lameness, abnormal posture, or wing carriage. Systematically observe each part of the bird's body from a distance starting from the head and working towards the tail so as not to miss any subtle abnormalities.

A sick bird may exhibit the following symptoms:

- Damaged, ruffled or dirty plumage (see note on moulting birds above).
- Hunched stance or fluffed-up feathers.
- Tail bobbing, labored or open-mouthed breathing which may suggest the bird has respiratory problems.
- Reduced responsiveness, problems with balance, coordination, orientation, or consciousness.
- Use of bill, tarsi, or wings for support when resting on the ground.
- Wind droop, lameness, bleeding, or other obvious signs of trauma.

If the bird appears to be resting, moulting, or recently fledged and is not in dangers way, do not touch it. If there is an obvious injury or problem interfering with the birds ability to move or feed normally capture and assess whether the bird needs treatment.

Transport

Always use transport containers that are disposable or that can be thoroughly cleaned and sanitized after each occupant to ensure there is no disease transmission between individuals. Make sure that transport containers have adequate ventilation and avoid wire-meshed cages as they can damage feathers. Large birds such as albatrosses should be wrapped in a cloth or towel to restrain their wings or placed in a suitably large container such as a cardboard box. Ensure that all containers are sufficiently robust and secure to prevent a bird's escape.

Transport containers must have dimensions that allow the bird to stand up, extend its head and provide sufficient head-to-tail length. It is neither necessary nor desirable for the bird to be able to fully extend its wings during transport. Boxes that are too large allow birds to flap about and potentially injure themselves further. Do not place more than one bird in each container.

Layering a towel (check that there are no frayed edges to entangle the bird) on the bottom of the container is a good way of providing padding for the bird. This is especially recommended for transport of seabirds. Some land birds will appreciate a perch. Fasten any perches securely so as not to injure or entrap the bird. Make sure that the transport container does not have any sharp edges or protrusions.

In most cases transport containers should be kept at ambient temperatures. For birds that are chilled a warmer temperature should be maintained. Birds should be monitored during transport for signs of heat stress such as panting and holding the wing away from the body.

The transport environment should be quiet and dark. Turn the car radio off, avoid loud noises, and keep conversation to a minimum. Cover the container with a visual barrier that does not impeded ventilation.

Facilities

Adequate facilities are absolutely essential to quality wildlife rehabilitation. The number and types of cages, pens, and treatment areas you have directly affects the species and number of animals you can admit. Wildlife

rehabilitators must make a conscious effort to provide adequate housing for the wildlife they care for and treat. The Division requires that wildlife rehabilitators comply with the minimum housing guidelines outlined in the NWRA's *Minimum Standards for Wildlife Rehabilitation.*

Federal Rules and Regulations

Migratory Bird Treat Act – The Migratory Bird Treaty Act (text) (summary) makes it illegal for anyone to take, possess, import, export, transport, sell, purchase, barter, or offer for sale, purchase, or barter, any migratory bird, or the parts, nests, or eggs of such a bird except under the terms of a valid permit issued pursuant to Federal regulations. The migratory bird species protected by the Act are listed in 50 CFR 10.13.

In order to rehabilitate any migratory bird you must apply for and obtain a permit under 50 CFR 21. A permit issued under this law gives a wildlife rehabilitator permission to possess migratory birds for the sole purpose of wildlife rehabilitation. This type of permit is species specific. Much like State of Hawaii requirements, the U.S. Fish and Wildlife Service requires an annual report including yearly rehabilitation activities.

A federal rehabilitation permit does not authorize the rehabilitator to possess any bird for longer than 180 days. A separate Migratory Bird Special Purpose Permit must be issued to a person wishing to possess a migratory bird (dead or alive), its nest, egg, or feathers for use in educational programs.

Endangered Species Act – This law provides special protection for birds, mammals, reptiles, amphibians, fish, invertebrates, and plants that are threatened with extinction. An individual possessing a federal rehabilitation permit under 50 CFR 21 is not required to obtain a separate permit for federally listed threatened and/or endangered species. However, if a rehabilitator does not possess a federal rehabilitation permit, as may be the case with a mammal rehabilitator, a permit to rehabilitate federally listed species must be acquired under 50 CFR 17. A separate permit must be issued if a person wished to possess an animal (live or dead), its nest, eggs, feathers or hide for use in educational programs. This type of issuance is species specific.
http://www.fws.gov/endangered/permits/index.html

Contact Information

Wildlife Rehabilitation Organizations

National Wildlife Rehabilitators Association
14 North 7th Avenue
St. Cloud, Minnesota 56303-4766
Phone: (320) 259-4086
Internet: www.nwrawildlife.org

Hawaii Wildlife Center
P.O. Box 551752
Kapaau, HI 96755
Phone: (808) 889-5180
Internet: www.hawaiiwildlifecenter.org

Government Agencies

US Fish and Wildlife Service
Migratory Bird Permit Office
Region 1 Office
911 N.E. 11th Avenue
Portland, OR 97232-4181
Phone: (503) 872-2715
Internet: http://www.fws.gov/permits/mbpermits/birdbasics.html

Hawaii Department of Land and Natural Resources
Division of Forestry and Wildlife
1151 Punchbowl Street, Rm. 325
Honolulu, Hawaii 96813
Phone: (808) 587-0166
Internet: www.dofaw.net

Banding Office

Contact the USGS Bird Banding Laboratory (address below) whenever you handle a banded bird. Band information is valuable for research and can provide useful information for the management of threatened and endangered species. The Bird Banding Laboratory office will provide you with information that may be helpful for your rehabilitation efforts. If the bird is dead, remove and flatten the band and post it along with your contact information. Never remove a band from a living bird except in rare instances where band removal is required to allow healing of a lower leg or foot injury.

Record the following band information:

- Band number
- Species
- Age class and sex (if known)
- Location found
- Circumstances
- Cause of death (if found dead and the cause is obvious)
- Outcome (e.g. released immediately, released after being rehabilitated, died, euthanized)
- Your name and contact details
- Color band combination (left leg top-bottom, right leg top-bottom)

Send band information or report the information online:

USGS Patuxent Wildlife Research Center
Bird Banding Laboratory
12100 Beech Forest Road
Laurel, MD 20708-4037
Telephone: (301) 497-5790
Internet: http://www.pwrc.usgs.gov/BBL/homepage/call800.htm

Record Keeping

It is important that you keep good records. This will assist you with any future rehabilitation efforts you undertake and will improve our general understanding of the species. Accurate record keeping will also assist you in comparing treatments and will help to ensure that the most humane and successful methods are used. Remember that you will need to report the treatment and outcome of each animal for your annual DOFAW report.

Request and record the following information from the finder of the injured bird:

- Where and when was the bird found? Include the location (e.g. Kailua Park) and situation (e.g. disorientated by lights/attacked by cat).
- What was the bird doing when it was found?
- When and how was it captured?
- Since capture, how was it housed, fed, and treated before coming to you?
- Were there any obvious hazards or toxins in the area where the bird was found?
- Ask about recent weather conditions, especially stormy events.

Details to record:

- Species (if unsure, classify as far as you can until confirmation can be made by an expert)
- Age class (e.g. chick, fledgling, sub-adult, adult, unknown).
- Sex (in some species identification may be difficult as both sexes may look similar)
- Any obvious injuries or symptoms such as weakness or paralysis.
- Any band number or other identification.

Record captive treatment data:

- Any further diagnosis (x-rays, disease screening, etc.), treatments, and medications including details such as quantity, concentrations, and frequency.
- Types, amounts, and frequencies of feeding methods.
- Body weights at regular intervals and prior to release.

Identification Guides

Several publishers offer excellent field guides for identification of native and non-native bird species in Hawaii. You may find that you need to purchase several books depending on what species you wish to rehabilitate. Check with other rehabilitators and local nature centers to find out what is available and what seems most useful. Below are some great identification guides to start with:

- Hawaii's Birds: Hawaii Audubon Society
- The Birds of Hawaii and the Tropical Pacific: Pratt, Burner and Berrett
- Field Guide to the Birds of North America: National Geographic Society

You should also set up a reference library including books on natural history, wildlife rehabilitation, wildlife medicine and a contact list of other wildlife rehabilitators in your area.

APPENDIX I

QUESTIONS YOU SHOULD KNOW THE ANSWERS TO

Multiple Choice

1. Your facility is full and further case loads would compromise your standard of care. If someone brought you another animal you should:
    A. Take the animal anyway
    B. Tell the person finding the animal to take it home
    C. Refer the person finding the animal to another rehabilitator or euthanize the animal
    D. Tell the person finding the animal to take it back to where they found it

    Answer: C

2. A responsible rehabilitator devotes a lot of attention to:
    A. Talking to the animals to get them used to human presence
    B. Handling the animals to provide them with a sense of security
    C. Isolating the animal from unnecessary human contact
    D. none of the above

    Answer: C

3. Imprinting is a condition by which a young animal:
    A. Established a permanent psychological guideline that control its sexual and social relationships
    B. Goes through a critical period during which it learns its species identity
    C. Becomes non-releasable if imprinted on a human
    D. all of the above

    Answer: D

4. Confining a recently injured animal in a darkened cardboard box or kennel:
    A. May reduce stress
    B. Is cruel
    C. May help to tame it for treatment
    D. May damage the animal's vision

    Answer: A

5. In rescuing an animal in the field the wildlife rehabilitator's number one concern is:
    A. Securing the animal at all cost
    B. Safety to the people involved
    C. Using high-technology capture equipment
    D. Working alone

    Answer: B

6. Which of the following is an important question that should be asked when taking an animal in for care?
    A. Where was the animal found?
    B. Howl long has the person had the animal?

C. Did they feed or treat the animal?
D. All of the above

Answer: D

7. When you are presented with an endangered species, you should:
   A. Treat it like any other wildlife
   B. Not touch it and leave it in a box
   C. Place the animal in a zoo
   D. Begin treatment and contact the Division of Forestry and Wildlife and the USFWS within 24 hours

   Answer: D

8. When deciding whether to continue treatment or euthanize an animal, factors to consider include:
   A. The availability of an effective and human course of treatment
   B. Once treatment is complete will the animal be able to be released into the wild with a reasonable chance of survival?
   C. Justification for keeping the animal in captivity if it is not releasable
   D. All of the above

   Answer: D

9. A State of Hawaii Wildlife Rehabilitation permit allows you to:
   A. transport live wildlife for the purpose of veterinary care AND rehabilitation ONLY
   B. transport live wildlife for the purpose of public education
   C. transport live wildlife out of the state
   D. all of the above

   Answer: A

10. What behavioral considerations are important for an animal to exhibit before it can be released into the wild?
   A. Competitive feeding behaviors
   B. Species recognition and socialization with its own kind
   C. Predator avoidance
   D. All of the above

   Answer: D

True or False

1. Wild animals make suitable pets when they are hand raised.

   Answer: False

2. Wild bird and mammals should be maintained away from the sights and sounds of a household.

   Answer: True

3. Rehabilitators should seek professional veterinary services when fractures are involved.

Answer: True

4. A zoonotic disease is one that humans can contact from animals.

Answer: True

5. Animals being warmed by an external heat source (e.g. heating lamp, pad, hot water bottle) should be left alone and not monitored.

Answer: False

6. Adhering to regular feeding schedules is equally as important as feeding the proper diet.

Answer: True

7. Sterile dressings applied to open wounds should be carefully monitored and changed to avoid infection and promote proper healing.

Answer: True

8. For their size, growing juvenile's animals have greater caloric requirements than adults.

Answer: True

9. Humane euthanasia is not a part of wildlife rehabilitation.

Answer: False

10. Releasing healthy, prepared animals back into suitable habitats is the main goal of wildlife rehabilitation.

Answer: True

APPENDIX II

LEGAL STATUS OF HAWAIIAN BIRDS
(see next page)

Legal Status of Hawaiian Birds

Listing by Scientific Name

(updated February 2001)

According to Title 13, Part 2, Chapters 122 and 124 of the Hawaii Administrative Rules, a State-issued permit is required to possess, injure, kill, destroy, sell, or offer for sale, transport, or export any indigenous wildlife or introduced wild bird; including game birds, except those game birds which have been legally taken during an established hunting season.

* -- Endemic to the Hawaiian Islands
I -- Introduced, non-native birds with established populations in Hawaii.
M -- These birds have been included in the Migratory Bird Treaty Act by the U.S. government. Despite the fact that most Hawaiian populations of these birds to not actually migrate, a permit from the U.S. Fish and Wildlife Service is still required in order to have them in your possession.
E -- Endangered. In addition to the permit required by the State, species that are listed as endangered by the federal government require a special permit. These are available from the U.S. Fish and Wildlife Service.
T --Threatened. In addition to the permit required by the State, species that are listed as threatened by the federal government require a special permit. These are available from the U.S. Fish and Wildlife Service.
O -- Considered to be extinct
G --These birds are listed by the State as "game birds." G,n -- Game birds for which there is no established hunting season.

Sea Birds:

Scientific Name	Common Name	Hawaiian Name	State Status	Federal Status
Anous minutus melanogenys	Black (Hawaiian, White-capped) Noody	Noio	-	M
Anous stolidus pileatus	Brown (Common) Noddy	Noio-koha	-	M
Bulweria bulwerii	Bulwer Petrel	'Ou	-	M
Fregata minor palmerstoni	Great Frigatebird	'Iwa	-	M
Gygis alba rothschildi	White (Fairy) Tern (Only the Oahu population is listed by the State as threatened.)	Manu-o-ku	T	M
**Oceanodroma castro cryptoleucura*	Band-Rumped (Hawaiian, Harcourt) Storm-Petrel	'Ake'ake	E	M
Oceanodroma tristrami	Sooty Storm-Petrel	-	-	M
Phaethon lepturus dorotheae	White-tailed Tropicbird	Koa'e-kea	-	M
Phaethon rubricauda rothschildi	Red-tailed Tropicbird	Koa'e-'ula	-	M
Phoebastria albatrus	Short-tailed Albatross	-	E	M, E
Phoebastria immutabilis	Laysan Albatross	Moli	-	M
Phoebastria nigripes	Black-footed Albatross	-	-	M
Procelsterna cerulea saxatilis	Blue-gray Noddy	-	-	M
Pterodroma hyploeuca hypoleuca	Bonin Petrel	-	-	M
**Pterodroma phaeopygia sandwichensis*	Dark-rumped (Hawaiian) Petrel	'Ua'u	E	M,E
**Puffinus auricularis newelli*	Townsend's (Newell's) Shearwater	'A'o	T	M,T
Puffinus nativitatis	Christmas Shearwater	-	-	M
Puffinus pacificus chlororhynchus	Wedge-tailed Shearwater	'Ua-u-kani	-	M
Sterna fuscata oahuensis	Sooty Tern	'Ewa'ewa	-	-
Sterna lunata	Gray-backed Tern	Pakalakala	-	M
Sula dactylatra personata	Masked (Blue-Faced) Booby	'A	-	M
Sula leucogasterplotus	Brown Booby	'A	-	M
Sula sula rubripes	Red-footed Booby	'A	-	M

Water Birds:

Scientific Name	Common Name	Hawaiian Name	State Status	Federal Status
Anas acuta	Northern Pintail	Koloa-mapu	-	M
Anas americana	American Wigeon	-	-	M
Anas clypeata	Northern Shoveler	Koloa-moha	-	M
**Anas laysanensis*	Laysan Duck	-	E	M,E
**Anas wyvilliana*	Hawaiian Duck	Koloa-maoli	E	M,E
Aythya affinis	Lesser Scaup	-	-	M
Branta sandvicensis	Hawaiian Goose	Nene	E	M,E
**Fulica americana alai*	American (Hawaiian) Coot	'Alae-ke'oke'o	E	M,E
**Gallinula choloropus sandvicensis*	Common Moorhen, Hawaiian Gallinule	'Alae'ula	E	M,E
Nycticorax nycticorax hoactli	Black-crowned Night-Heron	'Auku'u	-	M
**Porzana palmeri*	Laysan Rail	-	O	-
**Porzana sandwichensis*	Hawaiian Rail	Moho	O	-

Shore Birds:

Scientific Name	Common Name	Hawaiian Name	State Status	Federal Status
Arenaria interpres	Ruddy Turnstone	'Akekeke	-	M
Calidris alba	Sanderling,	Huna-kai	-	M
Heteroscelus incanus	Wandering Tattler	'Ulili	-	M
**Himantopus mexicanus knudseni*	Black-necked (Hawaiian) Stilt	Ae'o	E	M,E
Numenius tahitiensis	Bristle-thighed Curlew	Kioea	-	M
Pluvialis dominica	Lesser (Pacific, American) Golden Plover	Kolea	-	M
Pluvialis squatarola	Black-bellied Plover	-	-	M

Birds of Prey:

Scientific Name	Common Name	Hawaiian Name	State Status	Federal Status
**Asio flammeus sandwichensis*	Short-eared (Hawaiian) Owl (Only the Oahu population is listed by the State as endangered.)	Pueo	E	M
**Buteo solitarius*	Hawaiian Hawk	'Io	E	M,E
Tyto alba	Common Barn Owl	-	-	M

Forest Birds:

Scientific Name	Common Name	Hawaiian Name	State Status	Federal Status
**Acrocephalus familiaris familiaris*	Laysan Millerbird	-	O	-
**Acrocephalus familiaris kingi*	Nihoa Millerbird	-	E	E
Cettia diphone	Japanese Bush-Warbler, Uguisu	-	-	-
**Chaetoptila angustipluma*	Kioea	-	O	-
**Chasiempis sandwichensis sandwichensis*	Hawaii 'Elepaio	'Elepaio	-	-

**Chasiempis sandwichensis sclateri*	Kauai 'Elepaio	'Elepaio	-	-
**Chasiempis sandwichensis gayi*	Oahu 'Elepaio	'Elepaio	E	E
**Chloridops kona*	Kona (Grosbeak) Finch	-	O	-
**Ciridops anna*	'Ula-'ai-hawane	'Ula-'ai-hawane	O	-
Copsychus malabaricus	White-rumped Shama	-	-	-
**Corvus hawaiiensis*	Hawaiian Crow	'Alala	E	M,E
**Drepanis funerea*	Black Mamo	Hoa, Oo-nuku-umu	O	-
**Drepanis pacifica*	Hawaii Mamo	Mamo	O	-
Garrulax caerulatus	Gray-sided Laughing-thrush	-	-	-
Garrulax canorus	Melodius Laughing-thrush, Chinese Thrush, Hwa-mei	-	-	-
Garrulax pectoralis	Greater Necklaced Laughing-thrush	-	-	-
**Hemignathus chloris*	Oahu 'Amakihi	'Amakihi	-	-
**Hemignathus kauaiensis*	Kauai 'Amakihi	'Amakihi	-	-
**Hemignathus lucidus affinus*	Maui Nuku-pu'u	Nuku-pu'u	E	E
**Hemignathus lucidus hanapepe*	Kauai Nuku-pu'u	Nuku-pu'u	E	E
**Hemignathus lucidus lucidus*	Oahu Nuku-pu'u	Nuku-pu'u	O	-
**Hemignathus munroi*	'Akiapola'au	'Akiapola'au	E	E
**Hemignathus obscurus ellisianus*	Oahu 'Akialoa	'Akialoa	O	-
**Hemignathus obscurus lanaiensis*	Lanai 'Akialoa	'Akialoa	O	-
**Hemignathus obscurus obscurus*	Hawaii 'Akialoa	'Akialoa	O	-
**Hemignathus parvus*	Anianiau , Lesser 'Amakihi	'Anianiau	-	-
**Hemignathus procerus*	Kauai 'Akialoa	'Akialoa	E	E
**Hemignathus sagittirostris*	Greater 'Amakihi	-	O	-
**Hemignathus virens virens*	Hawaii 'Amakihi	'Amakihi	-	-
**Hemignathus virens wilsoni*	Maui 'Amakihi (Only the Lanai population is listed by the State as endangered.)	'Amakihi	E	-
**Himatione sanguinea freethii*	Laysan Honeycreeper	-	O	-
**Himatione sanguinea sanguinea*	'Apapane	'Apapane	-	-
Leiothrix lutea	Red-billed Leiothrix	-	-	-
**Loxioides bailleui*	Palila	Palila	E	E
**Loxops coccineus caeruleirostris*	Kauai 'Akepa	'Akeke'e	E	-
**Loxos coccineus coccineus*	Hawaii 'Akepa	'Akepeu'ie	E	E
**Loxos coccineus ochraceus*	Maui 'Akepa	'Akepeu'ie	E	E
**Loxops coccineus rufus*	Oahu 'Akepa	'Akepeu'ie	O	-
**Melamprosops phaeosoma*	Po'ouli	-	E	E
**Moho apicalis*	Oahu 'O'o	'O'o	O	-
**Moho bishopi*	Molokai 'O'o	'O'o	O	-
**Moho braccatus*	Kauai 'O'o	'O'o'a'a	E	E
**Moho nobilis*	Hawaii 'O'o	'O'o	O	-
**Myadestes lanaiensis lanaiensis*	Lanai Thrush	Oloma'o	O	-
**Myadestes lanaiensis rutha*	Molokai Thrush	Oloma'o	E	E
**Myadestes myadestinus*	Kauai Thrush	Kama'o	E	E
**Myadestes oahuensis*	Oahu Thrush	'Amaui	O	-
**Myadestes obscurus (Listed as Phaeornis obscurus in the Migratory Bird Treaty Act.)*	Hawaii Thrush	'Oma'o	-	M
**Myadestes palmeri (Listed as Phaeornis palmeri in the Migratory Bird Treaty Act.)*	Small Kauai Thrush	Puaiohi	E	M,E

**Oreomystis bairdi*	Kauai Creeper	'Akikiki	-	-
**Oreomystis mana*	Hawaii Creeper	-	E	E
**Palmeria dolei*	Crested Honeycreeper	'Akohekohe	E	E
**Paroreomyza flammea*	Molokai Creeper	Kakawahie	E	E
**Paroreomyza maculata*	Oahu Creeper	'Alauwahio	E	E
**Paroreomyza montana montana*	Lanai Creeper	'Alauwahio	O	-
**Paroreomyza montana newtoni*	Maui Creeper	'Alauwahio	-	-
**Pseudonestor xanthophrys*	Maui Parrotbill	-	E	E
**Psittirostra psittacea*	'O'u	'O'u	E	E
**Rhodacanthis flaviceps*	Lesser Koa Finch	-	O	-
**Rhodacanthis palmeri*	Greater Koa Finch	Hopue	O	-
**Telespyza cantans*	Laysan Finch	-	E	E
**Telespyza ultima*	Nihoa Finch	-	E	E
**Vestiaria coccinea*	'I'iwi (Only those populations on Oahu, Lanai, and Molokai are listed by the State as endangered.)	'I'iwi	E	-

Game Birds:

Scientific Name	Common Name	Hawaiian Name	State Status	Federal Status
Alectoris barbara barbara	Barbary Partridge	-	G,n	-
Alectoris chukar	Chukar	-	G	-
Colinus virginianus virginianus	Bobwhite Quail	-	G,n	-
Columba livia	Rock Dove, Homing pigeon	-	G,n	-
Coturnix coturnix	Japanese Quail	-	G	-
Francolinus erckelii	Erckel Francolin	-	G	-
Francolinus francolinus	Black Francolin	-	G	-
Francolinus pintadeamum	Chinese Francolin	-	G,n	-
Francolinus pondicerianus	Gray Francolin	-	G	-
Gallus gallus	Red Jungle Fowl	Moa	G,n	-
Geopelia striata	Barred Dove	-	G	-
Lophortyx californicus	California Quail	Manu-kapalulu	G	-
Lophortyx gambelii	Gambel Quail	-	G	-
Lophura leucomelana	Kalij Pheasant	-	G	-
Meleagris gallopavo	Turkey	Pelehu	G	-
Numida meleagris	Helmeted Guineafowl	-	G,n	-
Oreortyz picta	Mountain Quail	-	G,n	-
Pavo cristatus	Indian Peafowl	-	G,n	-
Phasianus clochicus	Ring-necked Pheasant	Kolo-hala	G	-
Phasianus versicolor	Green Pheasant, Blue Pheasant	-	G	-
Pterocles exustus hindustan	Chestnut-bellied Sandgrouse, Indian Sandgrouse	-	G	-
Streptopelia chinensis	Spotted Dove, Lace-necked Dove, Chinese Dove	-	G	-
Zenaidura macroura	Mourning Dove	-	G	M

Field and Urban Birds:

Scientific Name	Common Name	Hawaiian Name	State Status	Federal Status
Acridotheres tristis	Common Mynah	-	I	-
Alauda arvensis	Eurasian Skylark	-	I	M

Amandava amandava	Red Avadavat, Red Munia, Strawberry Finch	-	I	-
Bubulcus ibis	Cattle Egret	-	I	M
Cardinalis cardinalis	Northern (Kentucky) Cardinal	-	I	M
Carpodacus mexicanus	House Finch, Linnet	-	I	M
Collocalia bartschi	Guam Swiftlet, Gray Swiftlet, Edible-nest Swiftlet	-	I	-
Estrilda astrild	Common Waxbill	-	I	-
Estrilda caerulescens	Lavender Waxbill, Fire-finch	-	I	-
Estrilda melpoda	Orange-cheeked Waxbill	-	I	-
Estrilda troglodytes	Black-rumped (Red-Eared) Waxbill	-	I	-
Lonchura malabarica	Warbling Silverbill	-	I	-
Lonchura punctulata	Nutmeg Mannikin, Spotted Munia, Ricebird	-	I	-
Lonchura malacca	Chestnut Mannikin, Black-headed Munia, Black-headed Mannikin	-	I	-
Mimus polyglottos	Northern Mockingbird	-	I	M
Padda oryzivora	Java Sparrow	-	I	-
Paroaria capitata	Yellow-billed Cardinal	-	I	-
Paroaria coronata	Brazilian Cardinal, Red-crested Cardinal	-	I	-
Passer domesticus	English Sparrow, House Sparrow	-	I	-
Psittacula krameri	Rose-ringed Parakeet	-	I	-
Pycnonotus jocosus	Red-whiskered Bulbul	-	I	-
Pycnonotus cafer	Red-vented Bulbul	-	I	-
Serinus canaria	Common Canary	-	I	-
Serinus mozambicus	Yellow-fronted Canary	-	I	-
Sicalis flaveola	Saffron Finch	-	I	-
Sturnella neglecta	Western Meadowlark	-	I	M
Tiarus olivacea	Yellow-faced Grassquit	-	I	-
Uraeginthus bengalus	Red-cheeked Cordonbleu	-	I	-
Zosterops japonicus	Japanese White-eye, Mejiro	-	I	-

Prepared by: Hawaii Department of Land and Natural Resources, Division of Forestry and Wildlife