



POCKET GUIDE

To Human Wildlife Conflict,
Emergency and Response



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1. WHAT IS HUMAN-WILDLIFE CONFLICT (HWC) AND WHY DOES IT HAPPEN?

HWC is an interaction between humans and wildlife with negative consequences for one or both parties. This occurs when **humans and wildlife compete for resources, meaning food sources or habitat (living/nesting space)**. Common conflict species are wildcats, crocodiles, owls, raccoons, coatis, raptors, parrots, snakes, opossums, bats and others. This conflict can be a problem for humans or livelihoods and often ends with the animal(s) being killed.

COMMON CAUSES OF HWC: Habitat loss leads to less space for wildlife. As people expand their footprint, wildlife habitat decreases, causing increased HWC. In fact, human activities ultimately cause most human-wildlife conflict. Fortunately there are some causes for conflict listed below that can be prevented or mitigated with very simple means and education (since most times humans are not aware that they are causing the conflict by creating an attraction for wildlife).

A very common cause of HWC is “**accidental/indirect feeding**” because of improper garbage management. Garbage, dog food or debris provides a food source which attracts wildlife.

Another common cause for HWC is “**purposeful/direct feeding**” of wildlife. Feeding is often used to create a tourist attraction. Some people feed wildlife and may be unaware of dangers this presents to their safety, health and property. Regular wildlife feeding leads to **habituation**, or animals losing their fear of humans, and receiving food from humans. A habituated predator can be dangerous or even deadly. Wildlife feeding is illegal for good reasons and education is key to changing this behavior in tour guides and the general public.

Another common cause for HWC is “**available access**” to nesting spaces in homes and other structures. For example: Holes in walls, broken/missing attic ventilation screens, and other construction gaps give easy access to birds, bats, rats and other mammals.

2. *WHAT IS ONE HEALTH AND HOW DOES IT AFFECT YOU?*

One Health is the idea that the health of people is connected to the health of animals and our shared environment.



When we protect **one**,
we help protect **all**.

www.cdc.gov/onehealth



One Health is a concept that connects the health of humans with the health of animals and the environment. Zoonotic diseases, or also called Zoonosis are a big concern under the One Health concept. Zoonotic diseases are shared and transmitted between humans and animals and can have serious or even fatal outcomes. Some of these diseases will be introduced later in this guide NUMBER in order to help you stay safe and educate others. There are many more topics of issue under the One Health Concept, like Antimicrobial resistance or food safety, for which BWRC will offer and recommend further training and education. The importance of recognizing the impact of animal and environmental health on our own human health, which includes even the emergence

of global pandemics like COVID-19, cannot be overstated. We recommend WHO/CDC WEBSITE link for further information.

In simple words: In order to have healthy humans we need a healthy environment and healthy animals. Or, unhealthy animals or unhealthy environments will cause sickness in humans. As veterinarians our profession is animal health, but it includes food safety, zoonosis prevention and disease monitoring as well. This pocket guide is intended to assist you in identification of human wildlife conflict while protecting your health. Through awareness about animal health, one health and how this impacts your health we hope you will be safer in your approach to conflict mitigation, illegal wildlife traffic or emergency response. The BWRC Wildlife hotline 615-5159 stands by to provide advice, support and disease monitoring.

WHY SHOULD WE CARE?

- Our human health is connected to and depends on the health of our environment and our animals
- If wild animals are poorly managed, they can cause danger, economic losses and negative interaction with humans.
- Wildlife species are also important to ecosystem health, and Belize's Eco-tourism economy.
- Animals are an integral part of the ecosystem and provide many ecosystem services.
- Animals are part of Belize's natural heritage, culture and history. Imagine Belize without its remarkable wildlife.
- Coexistence with wildlife and sustainable use is possible. Humans should be responsible stewards of wildlife and their environment ensuring long term benefits for future generations.

-Religions of the world share the belief that animals are God's creation, and that humans should be stewards of the environment and the animals within it.

3. HOW TO AVOID CONFLICT WITH WILDLIFE

(Be part of the solution) Often, people do not realize that the animals are on or in their property because humans have provided food and/or nesting space for the animal. Some wildlife are attracted to man-built structures because they provide nesting space. Also, garbage or other debris (fallen leaves or trees) provide a food source. Often, education and a thorough assessment will solve the problem without risk to human or animal health/safety.

GENERAL TIPS ON HOW TO AVOID/SOLVE HWC

- Secure garbage bins
- Keep food out of garbage
- Keep yard clean
- Remove debris
- Remove branches that touch or hang over roof
- Always dispose of your trash properly; this also avoids attracting unwanted rodents and insects
- Never leave trash by the roadside as it can cause wildlife-vehicle collisions.
- Eliminate access to walls and attics.
- Do not feed wildlife; avoid indirect feeding.
- Do not leave dog food outside at night.
- Secure pets at night.
- Build a secure chicken house.
- Walk dogs on a leash and do not let them roam free outside the yard.

- Drive safely and slow down for wildlife.
- Turn your brightness down when you see animals' eye-shines on the roadside at night (bright lights cause animals to freeze).
- Organize cleaning campaigns to remove trash off the roadside or within your neighborhood.
- Educate yourself and learn more about wildlife species in our backyard. There are many common wildlife-conflict species and scenarios. There are major health risks and dangers depending on the species and scenario. The Belize Wildlife and Referral Clinic (BWRC) has a 24/7 phone line to help with HWC assessment and advice (615-5159/632-3267). This guide provides general HWC advice and addresses a few common conflict species. The first and most important advice in almost all cases will be to **CALL A PROFESSIONAL BEFORE INTERVENING** to ensure overall safety for yourself and the animals.

BWRC can assist you:

- Wildlife emergency response and advice hotline
- Advice for Human Wildlife Conflict cases
- Assistance in emergency response
- Receiving imperiled wildlife
- Veterinary care and rehabilitation for wildlife
- Necropsy services (determining diseases and cause of death found in wildlife)

BWRC encourages non-lethal HWC resolution supporting co-existence of humans and wildlife, sustainable development and conservation for future generations.

4. HOW TO ASSESS HWC and emergencies, and information for EMERGENCY REPORT

Note that in many cases, this assessment may need to be conducted by a trained professional, but we are here for you and the BWRC hotline was established for this purpose.

4.1. SPECIAL NOTES ON HWC ASSESSMENT

- Misidentification of species is very common.
- Sometimes humans misinterpret normal animal behavior.
- Sometimes humans rescue animals that do not need rescuing.
- Kidnapping (of wildlife babies) is a common mistake.
- There are risks of injuries or disease transmission, making adequate training and use of proper protective equipment crucial.

4.2. INVESTIGATE THE CAUSE OF WILDLIFE IN YOUR YARD/HOUSE

Remember to:

- Try to find out what attracts wildlife to the yard or house.
- Eliminate the food sources such as food scraps and pet food left outside.
- Eliminate access to roosting or nesting areas.
- Use basic deterrence techniques, for example: Light shining into roosting areas, noises such as a radio played in roosting areas to encourage wildlife to move out.
- Call BWRC 615-5159 to ask for advice, after collecting as much as possible of the information listed below.**

Determine and log:

Name of person, telephone number, location, setting (rural/urban), problem encountered, duration of the problem and suspected species.

4.3. WHAT TO DO, ASK AND RECORD:

Determine: a) Species, b) Life Stage, c) Problem, d) Causes
e) Possible Responses

Depending on species, location and situation, **there are about 10 different specialized wildlife organizations** and individuals in Belize that work with the Forest Department and provide assistance for different species and problems. **BWRC hotline (615-5159) staff will help determine the best possible response** for whatever problem you encounter. In many cases, it is more important to know when not to intervene. In some cases, as described below you should call the Police Department, or Forest Department right away.

We hope you will continue to educate yourself about managing and avoiding HWC. Together we can decrease the incidents of HWC, improve wildlife emergency response, and learn to recognize common non-emergencies.

4.4. IS IT AN EMERGENCY? AN ANIMAL MAY NEED HELP IF:

- It does not attempt to escape when approached.
- An adult can be captured easily. If you have to chase an animal to catch it, it may NOT need your help.
- It has an obvious injury (blood present, open wound, not using a leg, wing droop, unable to move).
- A bird remains on the ground when others fly away. (Exception: raptors are frequently seen feeding along a roadside



with their wings at an odd angle and are sometimes mistaken for injured birds).

- It is entangled in something or it is trapped and cannot escape.

Before attempting to capture any animal, you should call **BWRC 615-5159** to seek advice, as specialist assistance may be necessary.



5. COMMON HUMAN-WILDLIFE CONFLICT AND WILDLIFE EMERGENCY EXAMPLES IN BELIZE

5.1. Jaguar/Puma *livestock predation*

Response: Call Forest Department 822-1524/828-4936

Prevention: There are several recommendations to help minimize jaguar attacks. Check out the Wildlife Ambassador website for more info www.belizewildlifeclinic.org/wildlife-ambassador-program/ as well as Panthera, Ya'axche or The Belize Zoo.

5.2. Crocodile *Predation of domestic animals/in swimming areas/canals/ponds*

Response: Call Forest Department 822-1524/828-4936. Several organizations assist the Forest Department in response to conflict depending on location, size and situation.

Prevention: Never feed or handle crocodiles, secure your garbage, do not swim in crocodile habitat between 6 pm – 6 am (prime feeding hours). Stay close to pets near shoreline in crocodile habitat. Clean catch away from homes and swimming areas.

5.3. Raccoon

Eating trash/soiling yard/stealing dogfood/nesting in walls/animal attacks/orphans

Raccoons, in particular, are a serious public health concern. In addition to carrying rabies, they can also carry *Baylisascaris*, the raccoon roundworm, which can be extremely harmful; especially to children. Find “Why raccoons don’t make good pets” on BWRC Facebook page. The raccoon roundworm can lead to severe neurological diseases including seizures, blindness and death in humans.



Response/Prevention: Secure trash can lids as raccoons have very agile hands, eliminate all food sources around your house or property and don’t leave dog food outside at night. Light and noise can be used as deterrence techniques. For animals nesting in walls please call for advice before using deterrence techniques and closing access. We want to avoid trapping animals inside walls.

5.4. Margay/Ocelot

Stealing poultry

Response/Prevention: Call Forest Department 822-1524. Build secure livestock caging. Lock up all small livestock at night (margays are nocturnal). Use lights and guard dogs as deterrents.

5.5. Owls

Nesting in attic/false myths

Problem: There are many **myths** associated with owls. None of those myths are true! The truth is, that while their vocalizations sound scary, barn owls are the most efficient rodent hunter in the animal kingdom. They are usually attracted because of large rat populations present in an area. High rat



photos by Katherine Egleston

populations can be caused by garbage or other food being available to rats. Owls often find access to attics. They gain access through faulty ventilation shutters or other holes giving access to the attic.

Response/Prevention: Call Forest Department 822-1524. There are several organizations that will help with owl relocations. Ensure new roofs are well sealed, yard is maintained clean and any garbage is secured to manage rodent populations.



5.6. Raptors

Stealing poultry/false myths

Problem: Raptors are sometimes unfairly suspected of stealing livestock. The truth is that most raptors help control rodent (rat) and snake populations, and there are many more reasons why these beautiful predators are important to the environment. Did you know that vultures keep the environment clean of dead animals and can even digest deadly disease agents like anthrax?



Response/Prevention: Secure poultry. Use noise deterrence. Learn more about Belize's raptors through an educational tour at the Belize Zoo, or the Belize Raptor Center. If you find an injured raptor, call BWRC for advice. Veterinary care may be required and handling can be dangerous unless you are trained and familiar with the species.

5.7. Parrots

Eating corn/citrus/ fruit/noisy/ common illegal wildlife pet

Problem: Parrots can be noisy and eat farmers' fruit and grains. Farmers use deterrents to scare them away. Parrots are among the most targeted species by

poachers, and the most common wildlife pet. Remember that all wildlife is protected and wildlife poaching for the pet trade is illegal. Keeping parrots as pets without a Forest Department permit is illegal and punishable by fine and/or imprisonment.



Response/Prevention: Deterrence methods (noise) and/or inter-planting with crops or wild fruiting trees that attract parrots are possible solutions to conflict. Contact Belize Bird Rescue for more information on avoiding conflict with parrots. Contact the Forest Department 822-1524 with any questions on the required captive wildlife pet permit.

5.8. Woodpeckers

Pecking on buildings/noisy/nesting on walls

Problem: Woodpeckers eat insects. Note that a woodpecker pecking the side of your house may mean that the wood has termites and other insect food for the woodpecker. So this can be a natural alert to insects in your wall.

Response/Prevention: Check walls and ceiling for termites and other insect infestations. Sometimes woodpeckers peck for territorial display as well. A clear plastic foil over the place where the bird pecks will ensure the bird can no longer land and hang on. Please call BWRC for more advice.

5.9. Bats

Roosting in ceiling/walls/biting livestock

Response/Prevention: Bats can be deterred with light and noise. Placing a light and/or a radio in the roosting space will cause them



to move on. Once the bats have evacuated, eliminate access to your walls or ceiling. Otherwise, contact BWRC 615-5159 for further advice and recommendations for humane “pest” control service.

Note: Belize is home to over 80 different bat species and they are crucially important to the environment. However, vampire bats **can carry the deadly rabies** virus. If you see signs of bat bites on livestock please call BAHA **824-4872** immediately. If you find a bat on the ground, do not touch but call for advice first.

5.10. Porcupine

Dog attack/false myths

Problem: Porcupines are active at night and live in trees. Therefore, they are rarely seen. Unfortunately, many people believe that porcupines can shoot their quills. The truth is that the quills are firmly attached and more like thick hair. The quills are the porcupine’s main defense. The quills have barbs and when a dog bites a porcupine these quills will get stuck in the mouth.



Response/Prevention: If your dog encounters a porcupine, keep your dog tied inside your yard and away from the porcupine. Let the porcupine move away on its own. When in doubt, call BWRC for advice.

5.11. Opossum

Stealing food/garbage/chicks

Problem: Opossums are attracted by food sources. Because people associate them with rodents, which they’re not, they’re often abused and killed. Their role in the ecosystem is under-recognized. They eat anything, including thousands of ticks which transmit various diseases, as well as edible debris.



Response/Prevention: Eliminate access to your house or roof. Lock up all food sources (including chickens), keep yards clean of debris.

5.12. Snakes

Stealing poultry/in the wrong place

Response/Prevention: Eliminate access to your yard or chicken coup. Leave snakes alone. Remove dogs or cats that may cause a bite. Belize is home to over 50 snake species and only 8 could be dangerous to humans. Snakes play an important role in the environment by controlling rodent populations, for example. Did you know that some snake species of Belize pose no danger to humans, but in fact hunt other venomous snakes that could be dangerous to us? Learn more about snake identification and especially the 8 venomous snakes of Belize. For frequently encountered non-venomous snakes, a snake bag model can be provided. BWRC will provide a basic snake ID training free of charge.



5.13. Iguana

Stealing farmed veggies/abuse victims/illegal hunting

Response/Prevention: Eliminate access to farm if possible using fencing or shade houses. Remember all species of wildlife are protected by the Wildlife Protection Act. Animal abuse is a serious issue and linked to human abuse and violence. Please report abuse to the Police or Forest Department. Iguanas are listed as a game species in Belize. But remember that a hunting permit from the Forest Department is needed. Iguanas have a closed season for hunting from February to June and should never be hunted during these months.



5.14. Water birds

Stealing catch/ tangled in fishing line or nets

Response/Prevention: Do not leave fishing lines, nets or hooks behind. Do not feed and habituate wildlife as it may cause it to lose its fear of humans. If you see a tangled or injured water bird call for advice. Many water-birds have long sharp beaks used in their defense and sometimes large wings that can lead to injury and require safety gear and training.

6. COMMON EMERGENCIES AND NON-EMERGENCIES:

-Please note that knowledge of an animal's normal behavior and biology is essential to assess a potential emergency situation.

-Often, situations are perceived as wildlife emergencies when they are normal.

-Sometimes an animal is dying and humans don't recognize it until it's too late.

-Humans commonly rescue animals that do not need rescuing, particularly young animals. In fact, it's kidnapping and causes more harm than good, despite good intentions.

-In emergencies your first response should always be to **call for advice**, unless you are familiar with the species and problem, and are properly trained to assist. When in doubt **call BWRC at 615-5159**.

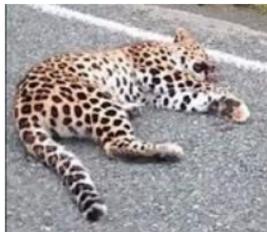


6.1. HIT BY CAR. One of the most common causes of injury/death for wildlife.

Situation: The outcome varies a lot:



- a) Animal keeps on moving out of sight or reach (no help needed)
- b) Animal is only briefly stunned, and slowly recovers and moves on (keep a distance and give up to 30 minutes to recover).
- c) Obvious broken bones or bleeding injuries (needs veterinary care, BWRC stands by providing this as a charitable service, as well as rehabilitation).
- d) Death



Response: Ensure you can safely stop, assess from a distance, and call **BWRC 615-5159** for guidance. If familiar with species and able to, move animals off road to safety. Follow instructions over the phone on how to proceed.

6.2. ATTACKED BY DOG OR CAT

Which species: All species of wildlife. This is one of the top causes for human-related wildlife injury.



Situation:

- a) Animal keeps on moving out of sight or reach (no help needed/possible).
- b) Animal is brought in by dog or cat without apparent injury (likely veterinary help is required to give the animal best chance at survival).
- c) With severe bite wounds, bleeding lacerations or broken bones (definitely needs veterinary assessment and help).

Response: Try to contain the domestic predator (dog or cat), assess from a distance, **and call BWRC 615-5159** for further advice. If familiar

with species, able to capture safely and instructed over the phone, capture and transport to care.

6.3. MIGRATING OR “LOST” MONKEY

Situation: With increasing habitat loss we see monkeys, particularly howler monkeys (or “baboons”), entering human-inhabited areas. Migrating is part of normal behavior for young males to find new habitat or troops. In human-inhabited areas they are sometimes harassed and chased by dogs. We also receive reports of monkeys in backyards or trapped in very small patches of remaining forest, with concerns of insufficient food. Dog attacks, being hit by cars and orphans are common incidents. Beware of poached babies illegally sold as orphans.



Response: This may be normal behavior but if assessment points towards any threat to the monkey call FD (822-1524). Wildtracks (660 4820) will respond to lost monkey calls countrywide and provide rehabilitation. BWRC provides veterinary care for primates, as well as relocation. Avoid harassing monkeys that may just be passing through. BWRC can also respond to monkey emergencies in the Cayo District. Remember that **it is illegal to keep monkeys as pets**. It is illegal to sell or buy monkeys and any orphans need to be reported immediately to give them a chance to survive.

6.4. ANIMAL ABUSE

Situation: Wildlife is harassed, molested and tortured. Fatal cases seen include monkey beaten to death, iguanas with severed limbs, birds and reptiles injured by slingshot and animals peppered with pellet guns.

Response: Animal abuse is not to be taken lightly. Remember that there is a link between people who abuse animals and those that are violent, human abusers and even murderers. Reporting animal abuse may save a human's life in the future! Please **report animal abuse to the Police and FD immediately** so that charges can be pressed. Remember that all wildlife in Belize is protected by law under the Wildlife Protection Act.



Unless you have legal authority do not intervene but always keep your own safety, the first priority.

6.5. ANIMAL TRAPPED (for relocation)

Situation: Sometimes farmers will solve their own problems and trap an animal before they call the Forest Department. This is considered an emergency because a trapped animal might be injured, is certainly stressed, and can die in less than 1 day without proper response. Wildlife can also get trapped in garbage bins/containers.

Response: Depending on species and time of day, please call FD or BWRC immediately.

Why relocations rarely work: It is important to find the cause of the HWC rather than to relocate an individual animal. Why? If there is a food source or another attractant, another animal will fill the niche in no time. The relocated animal may not adapt to the relocation, or will disturb other animals where it was relocated. Finally, if a nuisance or conflict animal is relocated, this will most likely become somebody else's problem. In some cases they will even return to their original

area. So it is always best to call for advice and to consider relocation as a very last resort.

6.6. BABY ANIMAL FOUND ON GROUND- is it orphaned?

Situation: A baby animal is found on the ground and is suspected to be orphaned.

Response: Assess animal from a distance. Take your time. Try to determine the species and life stage. Always look for parents and use the decision trees “Help I found a baby bird” and “Help I found a baby mammal” (provided as annex).

Look for parents. They likely are returning to the baby animal to feed it. If the baby animal is in danger from cats, dogs or predators, relocate it in its suspected nest site and observe. For example, take note that **deer leave their offspring for up to 12 hours** before returning. So finding a baby deer fawn does NOT mean it is abandoned. Removing the fawn is “fawn napping”. Also, take note that some **fledgling birds may spend up to a week on the ground** where they’re cared for by their parents before they are able to fly.

Remember, babies are always best off with their parents. **The myth that a “mom won’t take her baby back once humans have touched it” is FALSE.** She may just be waiting for you to step away. True orphans, especially very young ones (no fur or feathers, eyes closed) are considered an emergency. True orphans will need proper care within 24 hours to survive. When in doubt, call for advice. **Do not try to raise a baby animal on your own.**



A few words on wildlife rehabilitation: Humans, often with good intentions, collect animals with hopes to raise, rehabilitate and release them. **Rehabilitation requires specific knowledge** of the species habitat, feeding habits, health, and life history and requires training for **every species**. This training is critical to ensure that the animal will survive captivity, and be suitable for release. **Baby animals reared in captivity may lack survival skills** if they are not taught by other individuals of the same species and/or through careful human intervention. **Do not attempt to raise and release a wild animal unless you are trained.** Remember, you need a Forest Department permit to work with wildlife. Please contact **BWRC 615-5159** if you would like to learn more about wildlife rescue and rehabilitation. Or check out the International Wildlife Rehabilitators Association and learn how you can become a certified wildlife rehabilitator. We hope to give you the knowledge to educate well-meaning humans about the risks humans pose to wildlife when unsuited raising and release practices are employed.

6.7. FOUND A NEST/TREE ON THE GROUND- can I help?

Situation: An animal inside a nest is found on the ground.

Response: Look if there is any immediate threat from cats, dogs or other predators. Contain dogs/cats if possible. Lift nest up off the ground and quietly observe from a distance. Take your time. Look for parents and carefully secure nest back in the original or an adjacent tree. If nest is destroyed, but parents are there, you can provide an improvised nest. Please call for more advice.



6.8. ADULT ANIMAL FOUND ON THE GROUND-can I help?

Situation: An adult wild animal is found on the ground.

Response: If an adult wild animal does not try to get away from you, it is likely in critical condition. Please be careful and assess from a safe distance. Take a picture if possible. This can assist to determine species and estimate age. Call for help for more specific advice. Remember that a wild animal could have the deadly rabies virus, so do not handle it without instruction and proper protective equipment.

6.9. I FOUND A TURTLE/TORTOISE- can I help?

Situation: Turtle found on the road/in backyard/brought in by dog.

Response: If you can do so safely, you can help the turtle across the road. However, please move the turtle in the same direction as it was moving, otherwise it will turn around and keep moving in the same direction. If you see a turtle in your yard, tie dogs to prevent an attack, and let it move through. In some cases, you can move the turtle to the closest waterway in your backyard. But it is recommended that the turtle should be relocated within 1 mile of the site of origin. If you find a turtle that was hit by a car or bitten by a dog with visible puncture wounds, please call BWRC. BWRC receives, treats and rehabilitates injured turtles. And we can help you identify them as well. HERE ARE SOME SPECIES WE HOPE YOU'LL RECOGNIZE.

6.9.1. Critically endangered turtle- Central American River Turtle "Hicatee"

Many people's favorite! This species will soon disappear forever due to overhunting. **Note:** Hicatee is regulated by the Fisheries Department. No person may possess or use a net to take hicatee. Selling hicatee meat, hunting more than one individual per person



or carrying more than 3 in one vehicle is illegal. Any females must be between 15.2-17.2 inches. Buying hicatee meat is illegal. Because this species is nearly locally extinct, a national breeding program has been started at the Belize Foundation for Research and Environmental Education (BFREE). Confiscated turtles have been sent to BFREE to support the breeding efforts for future generations. BWRC provides veterinary care for injured, ill or rescued hicatee. Contact Fisheries (224-4552), BFREE (671-1299) or BWRC if you see hicatee in trouble.

6.9.2. Red eared slider

This species has been classified as one of the 100 worst invasive species globally by the International Union for Conservation of Nature (IUCN). This species is imported by pet stores and sold to pet owners. Once owners grow tired of the turtle, they release them not understanding the ecological problems this turtle creates. If you find a red-eared slider turtle, please contact BWRC. Hold on to it and we can help to rehome it.



Please find an excellent guide to Freshwater turtles in Belize here:
<http://edis.ifas.ufl.edu/pdf/files/UW/UW37300.pdf>

6.10. ILLEGAL PETS/ILLEGAL HUNTING- how can I help?

Situation: It is illegal to possess wildlife without a Forest Department Pet Permit. Wildlife is kept illegally in people's homes, yards, businesses and farms. Sometimes, wildlife is kept illegally as a tourist attraction. Wildlife poaching is always illegal. Hunting wildlife out of season for a particular species is illegal. **It is always illegal to poach, hunt or keep monkeys as pets.** Selling wildlife or wildlife products is illegal. Sometimes hunting weapons are found on people without a hunting license. Sometimes hunters are found in protected areas, or private

lands closed to hunting. Sometimes hunters are found with non-game species, or with species that are out of season (See the guide “Wildlife and Law”).

Response: Call Forest Department and Police immediately if you witness wildlife poaching, trafficking, selling, displaying wildlife as a tourist attraction or illegally keeping wildlife as pets. Unless you have legal authority do not intervene but always keep your own safety, the first priority. For illegal pets, once you have received One Health training, you can try to educate owners about the disease risks their pets can pose. This can often assist to convince illegal owners to relinquish animals voluntarily. BWRC will receive all species of wildlife rescued from illegal traffic and provide veterinary care and rehabilitation where possible.

Remember: wildlife ownership requires a permit and the owner should display the permit. For most wildlife species, pet ownership is illegal. When observing wildlife as a tourist attraction, ask for the captive wildlife permit. Note that in some cases, parrot owners are in the process of receiving their permits and they may not yet have them on display. Please contact the Forest Department or police to report observations of wildlife kept as pets or to find out about the legal status of a captive wild animal.

6.11. SURRENDERED WILDLIFE- what to do?

Law enforcement entities or some community ambassadors have to deal with wildlife that has been kept illegally as pets or hand-reared by well-meaning animal lovers. In these instances, you should contact Forest Department or BWRC at 615-5159 immediately for advice. Any attempt to return these animals to the wild without veterinary assessment and rehabilitation may cause suffering or death to that animal and/or is likely to result in HWC.

7. CAPTURE, RESTRAINT AND TRANSPORT

7.1. HUMAN SAFETY ALWAYS COMES FIRST - WORDS OF CAUTION ON THE RISKS OF WILDLIFE RESCUE, ZONOTIC DISEASES AND INJURIES

Human health and safety comes before that of the wild animal. If proper precautions are taken, the handler can avoid injury and illness, while maintaining the animal's safety. When human or wildlife injury does occur, it is usually due to improper handling and procedures. Only attempt to handle and restrain species with which you are trained and familiar, always assess the animal before handling, use common sense to avoid harm to yourself or the animal, and never do something with which you are uncomfortable.

Zoonotic diseases, bites, scratches and wound infections are serious concerns. It is crucially important to learn about a species' biology and behavior, including its defenses, before attempting to capture or restrain an animal.

Personal protective equipment is designed to keep you safe when used appropriately. Any **injuries are to be cleaned immediately**; and consult a physician.

7.2. ZONOSIS:

Also called "zoonotic diseases", these are infectious diseases that can be transmitted from humans to animals or vice versa.

Some zoonotic disease examples by species groups

All Warm-blooded animals (especially bats) – rabies, mange

Monkeys – tuberculosis, intestinal parasites like giardia or worms, scabies

Parrots – psittacosis, bird lice

Coatis – intestinal worms, skin fungus

Birds - Avian flu, Newcastle Disease

Dogs/cats – intestinal worms, fleas, skin fungus

7.2.1. RABIES! The most important

Rabies can be transmitted THROUGH SALIVA to humans by any infected warm-blooded animal bite. Cases of rabies in wildlife have been reported in Belize, Livestock cases have been frequent and vampire bats are usually vectors. The Belize Agricultural Health Authority (BAHA) is the authority responsible for rabies testing and control. Rabies shows few signs at first and by the time signs appear it is UNTREATABLE and DEADLY. **Bite prevention is absolutely essential and any bite by suspected rabies-infected animals needs to be reported and treated immediately.**

Rabies causes an infection of the brain which alters the animal's behavior and ultimately paralyzes and kills it. If you notice an animal showing unusually friendly and tame behavior OR furious behavior or lack of coordination be mindful! Do not approach, unless you have the appropriate equipment and training. Paralysis is another possible indicator of rabies and can be difficult to differentiate from an injury or extreme weakness. This may be the most important reason to seek further training and advice, prior to taking action with appropriate equipment. Check out Global Alliance for Rabies Control for more information on rabies. If you suspect a domestic animal may have rabies, call BAHA immediately (822-1378). In suspected wildlife cases you can call BWRC (who will transfer to BAHA as soon as suspicion is confirmed by our wildlife trained veterinarians).

7.3. SAFE ANIMAL HANDLING

In order to stay safe, it is best to assume that any animal may have zoonotic diseases. The consequences of these transmitted diseases in

humans can be severe or fatal. It is our responsibility to warn people of the risks and we urge you to ALWAYS practice diligent personal hygiene and always wash your hands after handling any wild animal. When working with wild animals, vaccinations such as tetanus should be up-to-date and rabies vaccination should be considered.

Note that **most diseases are contracted by bite wounds and/or direct contact with infected animals**. Zoonotic diseases in the animals are diagnosed and treated by veterinarians and the BWRC stands by to provide further training on this subject.

Scratches and Bites: If a scratch or bite occurs while handling a wild animal, wash the wounds IMMEDIATELY with antibacterial soap and warm water. For best results, wash thoroughly with soap and warm, running water within MINUTES of the scratch or bite. **Thorough washing can prevent UP TO 80% of disease transmission and wound infections.** Contact your doctor after cleaning the wound.



Most importantly, know an animal's defenses before attempting to capture it. Defenses include the beak and talons of raptors; birds with long pointed beaks used as stabbing tools, teeth, claws, hooves and legs of mammals, and powerful jaws and fangs of some reptiles. Always point the animal's head and legs away from your body. Appropriate safety equipment such as gloves is essential to keep yourself and the animal safe.

7.4 PERSONAL PROTECTIVE EQUIPMENT (PPE) AND CAPTURE TOOLS

Good quality equipment is important in wildlife capture, restraint and transport. The simplest things, like gloves, goggles, towels, blankets, bags and a box will be your most essential tools. If an enforcement entity, community ambassador or PA manager finds that they are

receiving an increasing number of wildlife calls, they may wish to consider obtaining any of this equipment.

Gloves are your most important tools of capture, restraint, and handling. Gloves can protect against bites, scratches, and spread of disease.

Thin leather gloves (gardening type) are used for handling a number of different types of animals, including small but hard biting birds, gulls, small raptors, and some small mammals.



Heavier leather gloves (heavy welders or metal reinforced cat gloves) can be used to capture and handle various sized mammals and various sized raptors. Keep in mind that the heavier and thicker the gloves, the less control you will have in how tightly you hold the animal. Most wild animals can puncture through most types of gloves, so training in proper handling skills is absolutely necessary for the prevention of injury.

Latex gloves may be required for handling certain animals and used for cleaning to protect against the possibility of disease.

Safety goggles/glasses should be worn when capturing and restraining any adult mammal and any size water bird or raptor. The goggles will protect the handler's eyes and prevent any serious injury that may occur during the capture.

Towels / Blankets These items may prove to be some of your most important tools. Towels, sheets, or blankets can be used to capture most animals. Approaching an animal slowly with an outstretched towel or blanket and then tossing it over an animal is an easy way to

manage and restrain an animal. The darkness of being covered by a towel/blanket calms the animal. Covering its eyes after the animal is caught and restrained reduces stress. Likewise, covering transport box reduces stress. Towels/blankets can also be used to create barriers when attempting to capture a fleeing animal. They can also be used to provide padding within a transport box, draped over a box to keep it dark, or used for warming the animal.



These tools are basic, simple, and essential to capturing and handling wild animals. **Note that sometimes animals can be captured without even touching them.** A broom, mop or shovel can sometimes be used to gently scoop or slide an animal into a box. Nets, cat tongs and rabies poles are additional tools to aid in various circumstances but require training to ensure safe use. Please consider requesting further training in wildlife capture.

Snake hook (snake grabber or snake tongs): A snake hook is recommended for more experienced handlers. It is a tool used for handling and lifting most snakes. For venomous snakes and for inexperienced handlers, snake tongs are recommended. The **snake tongs** allow you to grab the snake around the neck and control the head with the tongs; thereby physically restraining the snake. Snake tongs come in different models.

Snake bag: Please request simple model description for a locally made snake bag. You can use a snake bag to relocate non-venomous snakes. Remember that even non-venomous snakes can bite causing injury and

infections. Most snakes want to flee humans and if given a safe escape into a bag NO handling may be necessary. Reptiles should be relocated within 1-mile of the rescue site for best chance of survival. Do not hesitate to ask for more information or a brief training on basic snake identification.

- Bolt/wire cutters and scissors for entangled animals
- Flash light for night rescues
- Human first aid kit
- Newspaper for box lining
- Ventilated transport boxes (cardboard or pet carrier style)
- Orange blaze vest for roadside rescues.
- Duct tape
- Broom/mop/shovel (for coaxing or shoveling injured animal into box).

7.5. Capture

Once you have determined that the animal needs rescue and capture; you need to prepare and plan before acting! Capture has to be done by experienced individuals. Please contact BWRC for training on wildlife capture, handling, restraint, transport and zoonotic disease transmission prevention.

Remember that **capture causes extreme stress** to an already debilitated animal. Remember that the stress can cause shock and death to the animal you are trying to rescue. Remember to **remain calm** at all times, keeping sounds and gestures to a minimum. Minimize background noise, talking, and tell onlookers to be quiet and keep their distance. **Be confident**, as an animal can sense when an approaching person is stressed and anxious. **Be deliberate**, but cautious. Do not act impulsively. **Know your limitations** and don't hesitate to get advice or assistance when needed.

Evaluate the space around you and look for possible escape routes, barriers, or dangers to yourself or the animal (i.e. roads). If possible, use the buddy system. Some animals should never be captured by one person (i.e. eagles and medium to large mammals). Starting with a good plan will help keep the handler in control of the situation and ensure the safety of the handler and the animal.

When dealing with wildlife, never make assumptions about the animal's behavior. **Always expect the unexpected.** You need to know normal animal behaviors (i.e. diurnal vs. nocturnal, playing possum, fight or flight), but be prepared for the unexpected. **Remember, the animal thinks you want to eat it.**

7.6. TO KEEP THE STRESS OF CAPTURE AS BRIEF AS POSSIBLE

FIRST call BWRC to get species-specific advice for assessment, capture, handling, restraint and transport.

1. Know where you're taking the animal.
2. Gather protective gear, capture, handling equipment and transport box.
3. Select the best person or team for the capture.
4. Plan your approach. Have situational awareness of dangers such as roads, obstacles, etc.
5. Then move swiftly.

Always try to cover an animal's vision with a sheet, towel or shirt and work quietly but efficiently to reduce the stress.

7.7. EXAMPLES OF SPECIES, THEIR DEFENCES AND PPE TO USE

Jaguar, puma, tapir, peccary – Do not try to handle these species. They require a tranquilizer administered strictly under veterinary supervision.

Crocodiles - Do not try to handle these species without proper training. These species can cause severe injury. Please call before you intervene. If crocodiles are already captured upon call, please put the animal in a shaded, quiet place, and cover their eyes with a towel. Additionally, **DO NOT** tie up the legs and feet high on the crocodile's back (you can restrain legs parallel to the body).

Small carnivores (Coati, fox, margay, ocelot, jaguarundi, tayra, grison, otter) – Do not try to handle these species without proper training. These species can inflict severe bite injuries and can be vectors for rabies. Please call before you intervene. **PPE:** Thick leather gloves, towels and possibly needs chemical restraint to ensure human safety.

Parrots - use their beaks to bite. PPE includes towels, sheets or nets. Parrots can be handled with gloves (basic bird hold demonstrated). **PPE:** Gloves, towels, nets.

Raptors – use their talons and/or beak to defend themselves. **PPE:** includes nets, towels and sheets to capture and thick leather gloves to handle.

Water birds (pointy long beaks) – use their dagger like beaks and long necks to stab, often towards face and eyes. Can lead to serious injury. They may hit with wing and cause bruising. Capture with nets and sheets, protect face and eyes with safety goggles and restraint neck and head first with a sheet over the wings to protect handler and bird. **PPE:** Gloves, goggles, towels/sheet, net.

Rodents (agouti, gibbon, squirrel) – use their long rodent teeth to inflict serious bite injuries (to the bone). Capture with thick towel and gloves or use broom and box. **PPE:** Thick towels & thick gloves.

7.8. TRANSPORTING WILD ANIMALS (*safe/quiet/dark/quick*)

Once a wild animal has been captured, safe and humane transportation may be vital in ensuring its safety and survival. Overheating, too much stress and delayed transport may lead to DOA (dead on arrival) cases.

Remember the most important is to keep the animal dark and quiet and at an appropriate temperature (not too hot nor too cold depending on the animal and situation)

1. Be in contact with Forest Department or BWRC 615-5159 before attempting capture, restraint and transport.
2. Be in contact with FD and BWRC to determine where the animal should be transported to.
3. Record history of the animal. Make note of any care given to the animal. Be as specific as possible. Make note of species, body condition, age, sex, location animal was found, circumstances, date and time.
4. Record name of rescuer and their contact information.
5. Once captured, place the animal in a secure, dark, ventilated box/holding container. Choose a box size appropriate for the size of the animal. Note too large a box can cause further injury to the animal. Don't use a box that has been used for domestic animals unless it has been well-sanitized.
6. Do not leave a water bowl or unnecessary items in the box while transporting an animal. The items might harm the animal.

7. Do not feed or handle the animal unless instructed to do so by a wildlife veterinarian or FD partner professional.
8. The best place for the box/holding container is on the floor in the back of the vehicle.
9. Use only newspaper or a soft cloth to line the box.
10. Keep the animal out of direct sunlight.
11. Keep talking, music and noise to a minimum during travel.
12. Keep domestic pets out of the vehicle while transporting ANY wild animal.
13. Remember that wild animals carry a variety of diseases that are detrimental to your pets as well as yourself, therefore limit contact between yourself and these animals.
14. If transport will take more than 30 minutes and you are transporting babies that have no fur or feathers, you might have to provide a heat source external to the box/holding container (i.e. heated dry rice in a sock).
15. Transport the animal directly to the appropriate location. This includes the Forest Department, BWRC or another FD wildlife partner.
16. If the animal must be held temporarily at another location, ensure that it is not held near, within sight or sound of dogs and cats. The stress caused by captivity in close confines with a predator can contribute to suffering and cause death. The animal should be kept in a quiet dark area and not handled, looked at or touched. A registered and qualified wildlife veterinarian should see the animal as soon as possible. Any delay will contribute to suffering and may lead to death.

17. It is illegal for baby animals to be kept and hand reared by humans unless under special permits. Hand reared wildlife, unless raised in a specialist rehabilitative environment, will become habituated to humans and will be unsuitable for release as adults.

8. IMPORTANT TELEPHONE NUMBERS

Belize Forest Department (FD) - Wildlife Program – 822-1524 Call for: All illegal wildlife reports, conflict reports for jaguars and crocodiles, pet permit applications and more. Note that this phone number is only available during office hours.

Belize Wildlife & Referral Clinic (BWRC) – 615-5159, 632-3257- This phone number is available 24/7 (call repeatedly and/or send us a message in WhatsApp in case we are briefly out of reach). **What we do:** Wildlife conflict, injured wildlife and emergency advice for all species. Registered veterinarian and certified wildlife rehabilitator. Further training upon request via bzwildlifeclinik@gmail.com. Further resources on species ID and conflict/emergency assessments and avoidance to be listed on www.bzwildlifeclinik.org

Ya'axché Conservation Trust - Office 722-0108, Field Station 666-8115-Ya'axché provides response to jaguar conflict reports from communities in the Toledo District.

Belize Agricultural Health Authority (BAHA) Central Farm 824- 4872, Belmopan 822-0818 Call for: Bat bites observed on livestock, bats on the ground, suspected rabies case in an animal.

Wildtracks - 660-4820, office@wildtracksbelize.org : Wildtracks will respond to distressed monkey calls nationwide. Manatee rescue and rehabilitation.

Crocodile Research Coalition - 660-3936, 651-6510: CRC is available 24/7 and responds to crocodile issues countrywide.

ACES- 623-7920, info@acesbelize.org- ACES provides 24/7 emergency response to wildlife on Ambergris Caye and northern Belize.

The Belize Zoo & Tropical Education Center - 613-4966. TBZTEC is authorized by FD to house all terrestrial wildlife species as needed, and particularly responds to large mammal conflict situations, including jaguars, tapirs, and pumas.

Belize Bird Rescue-610-0400: provides rehabilitation and sanctuary to avian patients with a focus on parrots (but also barn owls and other birds).

Belize Raptor Center- 615-0226: provides educational outreach, sanctuary and rehabilitation for raptors.

Belize Foundation for Research and Environmental Education-BFREE - Hicatee conservation, education and captive breeding.

Further numbers (*Feel free to fill in your local enforcement officers numbers*)

MAKING A DIFFERENCE

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**ONE ANIMAL
AT A TIME**



www.belizewildlifeclinic.com