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Willowbrook Wildlife Practices: Risks and Rewards

by Caine Rees

(Biology 2870)

Willowbrook Wildlife Center, located in Glen Ellyn, IL, is one of many wildlife rehabilitation centers in the world that are working to care for injured and orphaned wildlife. It, like others of its kind, performs an integral role in conservation and wildlife management. There are both benefits and risks of this human invention. An otherwise unnatural amount of human viewing and handling happens during the rehabilitation process and, while this is necessary for the survival of admitted animals, it may also alter animal behavior.

There are four “Rs” of the wildlife rehabilitation process: rescue, rehabilitation, release, and research (Pyke & Szabo, 2018). These four phases are first introduced to new interns of Willowbrook Wildlife Center at their welcome orientation. A more complete understanding develops as they learn and do the work. The first phase, the rescue phase, involves accepting wild animals into the captive care of the center if they are ill, injured, orphaned, or otherwise in danger. Willowbrook Wildlife Center includes an admissions room, where anyone can bring in wild animals they believe require human intervention to survive. Often times, the people who visit do not have expertise in the field and may bring animals who do not need help. The most common of these incidents occurs when civilians see juvenile animals without a supervising adult. The public at large is not aware that the parent(s) often leave their offspring to hunt or forage, and people may presume that the juveniles have been abandoned. In this scenario, the visitor is asked to return the animals to where they were found. On the other hand, some animals brought to the center arrive, are evaluated by staff, and euthanized when they have little to no chance of survival. However, there are also many other animals that are admitted and proceed to the rehabilitation phase.

During rehabilitation, staffed vets evaluate health status, design treatment plans, provide medications, and perform surgeries and other medically necessary procedures. The exact treatment regimen is unique to the individual’s needs. Other staff members who do not have veterinary licenses will often participate in the care program put forth by the vet. Experienced staff may sometimes have to make medical decisions in the absence of a veterinarian. Some animals don’t have specific medical needs, like in the case of orphaned juveniles. Altricial orphans require housing, feeding, and other forms of species-specific care to raise them until they are of age and able to survive in the wild on their own, but do not require assistance from a vet. At Willowbrook Wildlife Center, interns assist in most hands-on care that do not involve specific medical procedures. Volunteers are given no direct contact with the animals, but are integral to the running of the facility by helping in cleaning enclosures, doing laundry, preparing food, and so on. Some admitted animals will die during the rehabilitation phase, and others will be prepared for release.

Releases happen when rehab animals are deemed fit to survive independently in the wild. The rehab center must survey appropriate release locations. These sites must be in an appropriate habitat with no major threats and with access to foraging or hunting opportunities. For example, waterfowl must be near water, and that water must be safe for them to drink and contain or be near a viable food source. Permits are required for legal releases. Animals are then transported to these locations and given time to move from the enclosures they have been transported in. Once they have moved into the new habitat, rehabilitation personnel return to the center and resume other tasks.

Wildlife rehabilitation centers offer great opportunities for research at all of the three other stages. Statistics can be taken from admissions records that can be used to aid in population studies.

Diseases can be tracked through the patients admitted with those diseases. With the proper licensing, birds can be banded and other species can be tagged and tracked for long-term study. Willowbrook Wildlife Center is located along a major migration path, so opportunities for avian research are particularly abundant. One such study was performed at Willowbrook examining juvenile American robins (*Turdus migratorius*), a species admitted to the center frequently and in abundance. They found that Willowbrook had a 47% release rate of the 699 healthy juvenile robins admitted from 2008 to 2011 (Haynes et al., 2013). Rehabs can also be an integral part of endangered species conservation. A female blanding's turtle (*Emydoidea blandingii*) with an irreparable shell fracture is being kept at Willowbrook Wildlife Center and used in a breeding program for the species.

The process does have its shortcomings. Wildlife rehabilitation practices are lacking an expansive body of research that could establish standardized practices. While the literature is growing, data is difficult to generate. For example, analyses will often compare rehab centers in different locations, thus sampling from different ecosystems, each of which contain a unique combination of species with their own specific care needs and with different kinds of threats in the local environment (Guy et al., 2013). These are not simply made equivalent when attempting comparative research. Additionally, cultural differences and population density in the rehab's locality affect admission rates. Where there is a denser and wider-range human population, humans are more likely to encounter wildlife and bring it to a rehab. Risks of human-related trauma (car accidents, gunshots, and so on) are increased. Also, data reported by the rehab itself may be inconclusive. For example, when a patient is admitted due to trauma, it is up to the staff's best guess as to the original cause of that trauma. Trauma is often reported as of unknown origin. Causes of natural (non-euthanasia) deaths within the facility may also be unknown, and, due to economic constraints, in-depth post-mortem examinations are not typically performed. Overall, limited financial and human resources often prevent wildlife rehabilitation centers from performing at maximum capacity. As a result, post-release monitoring is frequently short-term (<6 months) if at all, and many facilities do not provide comprehensive pre-release medical screenings (Guy et al., 2013). Fortunately, Willowbrook Wildlife Center is able to perform more duties at a larger scale and maintain more permanent, paid staff due to its connection with the DuPage County Forest Preserve, which provides funding as well as access to forest preserve sites that can be used for releases. In contrast, Fox Valley Wildlife Center receives no government funding, has only three paid permanent staff, and relies even more heavily on volunteers and interns (L. Corirossi, personal communication, 2018). As a result, volunteers perform more tasks than at Willowbrook Wildlife Center, where more difficult care tasks such a tube-feeding are left exclusively to more highly-trained staff.

Human intervention may have behavioral effects on admitted animals. While, occasionally, a non-releasable permanent resident of the center can be used as a "foster parent" for orphaned juveniles, there is typically no same-species adult present while human handlers provide care to young wildlife. The early period of an animal's life can be incredibly formative and, for some species, behavior is learned from or shaped by parental care. Lacking intraspecies interaction with adults might affect that individual's behavior for life. Wildlife centers do make an effort to minimize this by providing artificial simulation of adults. At Willowbrook, orphaned mallards and wood ducks are given duck stuffed animals in their enclosures. Some raptors may be given mirrors. Covering up these enclosures to minimize visual consumption of human bodies during infancy may help as well, while also reducing the stress of being near predators (humans).

Human viewing of wildlife triggers predatory associations in the animal being viewed, typically invoking a fight or flight response. Being under these stresses can distract them from other kinds of behavior such as foraging, resting, breeding, and conspecific social interaction (Knight, 2009). This can be observed in birds under the care of Wildlife Rehabilitation Center. Individuals that display particularly high reactivity to humans may refuse to take food from handlers or eat on their own, putting them at higher risk of mortality during their stay at the center. These animals are

then force-fed, an act that requires much more direct handling, causing even more stress on the animal. It is a lose-lose situation that these individuals must exhibit human avoidance in order to be successfully released, but may survive better while under the facility's care if they have low stress around human handlers. It is unknown the exact impacts that this stress has on the health of animals under rehabilitators' care, or of their behavior after release.

However, human handling also poses the opposite risk. It is possible that an animal may grow habituated or attracted to humans because of the proximity to humans and the care provided. Habituation occurs when an individual's response to a stimulus diminishes as a result of the frequent repetition of that stimulus (Knight, 2009). In this case, that stimulus is human presence, including both active handling and passive viewing. An animal who develops a tolerance towards human presence, by means of habituation, may cease to perform predator-avoidance behavior, reducing their survivability in the wild. The covering of enclosures to cut off visual contact is one strategy used by rehabilitation centers to mitigate this habituation. Rehab handlers are also not permitted to "baby talk," cuddle, hug, or otherwise handle the animal in any way that is not necessary to their care.

An animal may also become attracted to humans. In this context of wildlife management, attraction is "the strengthening of an animal's behavior because of positive reinforcement, and implies movement towards the [reinforced] stimuli" (Whittaker & Knight, 1998). Food is a frequent and motivating reinforcer, and the feeding of patients is inherent to the rehabilitation process. Humans become providers of food, and rehabilitators must take caution to prevent the stimulus of human presence to not be reinforced by the provisioning of food. For many animals, a handler can remove the animal from its enclosure, place food in the enclosure, and return the animal to the enclosure. This prevents a direct association with human hands and the arrival of food. However, some species do require hand-feeding. The most frequently fed animals at Willowbrook Wildlife Center are young birds, who may need to be fed as often as every 20-30 minutes. Repeated hand-feeding of hatchlings, nestlings, and fledglings poses a risk of attraction through unintended positive reinforcement: human presence equals food reward. Rehabbers may have special protocol for species at high-risk of attraction, in particular those that experience an imprinting stage, and will use visual shields between the humans and the animals they are feeding. An example from Willowbrook is of four blue jays (*Cyanocitta cristata*) that were fed only by handlers wearing a beekeeper's mask so that the nestlings would not see a human face during feeding. As they aged out of their imprinting period, the beekeeper's mask was removed from feeding.

The goal of any rehab is to release as many admitted patients as possible to the wild, but if staff evaluates an individual and decides it cannot be safely returned to the wild, whether that is because it cannot survive on its own or because it may pose a threat to humans, it is then deemed nonreleasable. Primary reasons for non release are disability, habituation, and attraction. Willowbrook is home to a number of nonreleasable permanent residents. Disabled animals include a one-eyed great horned owl and a blind bobcat, both unable to hunt on their own. Some habituated and attracted animals residing at Willowbrook include a blue jay, who early imprinted on humans due to improper care, and a woodchuck, habituated and attracted to humans from being kept as a pet before being confiscated by the US Fish and Wildlife Service. When an animal becomes nonreleasable, rehabilitators are faced with three options: house the animal at their facility, transfer the animal at another facility, or euthanize the animal. Nonreleasable animals do get euthanized when no facility is able to take them. Some animals are so lucky as to be transferred to AZA (Association of Zoos and Aquariums)-certified zoos, such as one of the grizzly bears at Brookfield Zoo in Illinois, where habituation to humans makes resident animals much easier to handle and reduces their stress of being viewed by the public. These animals may also sometimes become ambassadors and assist in wildlife education and outreach with the public. Willowbrook Wildlife Center is home to several ambassador owls and raptors. However, these are limited opportunities, and housing wildlife requires vast resources, and many animals are not so lucky.

Wildlife rehabilitation involves complicated and precise management. Its very nature requires a level of human intervention that may impact animal behavior to an unknown degree. However, the care provided also offers benefits to conservation and research efforts. More research on rehabilitation practices and animal behavior is needed to fine-tune care of animals and, hopefully, further increase the rate of survival for these animals post-release.

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