

VETERINARY ROLE IN WILDLIFE RESCUE AND REHABILITATION

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Abstract

Wildlife rescue and rehabilitation have become vital components of modern conservation efforts in response to increasing human-induced pressures such as habitat loss, climate change, pollution, and human-wildlife conflict. Wild animals that are injured, orphaned, displaced, or diseased require timely and specialized care to improve their chances of survival and successful return to their natural habitats. Veterinarians play a key and multifaceted role in this process, extending beyond routine clinical care. Their responsibilities include emergency treatment, disease diagnosis, medical and surgical management, rehabilitation support, and participation in disease monitoring and conservation programs. Wildlife veterinary practice demands not only clinical expertise but also a sound understanding of ecology and animal behavior, along with strong ethical responsibility. This article highlights the diverse roles of veterinarians in wildlife rescue and rehabilitation, along with the challenges they face and their crucial contribution to biodiversity conservation and ecosystem health.

Keywords

Wildlife rescue; Rehabilitation; Veterinary medicine; Conservation; Zoonosis; Biodiversity; Animal welfare; Ecosystem health

Introduction

The relationship between humans and wildlife has undergone profound transformations over the past century, largely driven by rapid urbanization, industrial development, deforestation, and agricultural expansion. These activities have resulted in extensive habitat loss and fragmentation, compelling wildlife to exist in closer proximity to human populations. Consequently, the incidence of injured, orphaned, and displaced wild animals has increased markedly. Common causes of wildlife morbidity and mortality include road traffic accidents, electrocution from power infrastructure, poisoning, illegal hunting, and environmental contamination. Wildlife rescue and rehabilitation have emerged as essential interventions to address these challenges by providing immediate care and facilitating the recovery and eventual release of affected animals into their natural habitats. However, unlike domestic species, wildlife presents unique challenges due to its vast diversity in anatomical structure, physiological functioning, and behavioral patterns. Effective management therefore requires not only sound clinical expertise but also a comprehensive understanding of ecology, species-specific requirements, and conservation principles. Veterinarians play a central role in wildlife rescue and rehabilitation, acting as key professionals responsible for

ensuring appropriate medical care while minimizing human interference to preserve natural behaviors. Beyond individual animal treatment, their contributions extend to broader conservation efforts, including disease surveillance, population health management, and the promotion of ecological sustainability.

Scope of Wildlife Rescue and Rehabilitation

Wildlife rescue involves the safe capture and transport of animals that are injured, sick, or in distress. Rehabilitation, on the other hand, focuses on medical treatment, recovery, and eventual release of the animal into its natural habitat. The ultimate goal is to restore the animal's physical and behavioral capabilities to a level that ensures survival in the wild. The scope of wildlife rehabilitation extends across a wide range of species, including mammals, birds, reptiles, amphibians, and occasionally marine animals. Each group presents unique challenges. For example, birds require intact flight capabilities, reptiles depend heavily on environmental conditions for physiological functioning, and mammals often require complex behavioral rehabilitation. Veterinary involvement is essential at every stage of this process—from initial rescue to post-release monitoring. Without proper veterinary care, many rescued animals

would not survive or would fail to adapt upon release.

Role of Veterinarians in Wildlife Rescue Emergency Response and Stabilization

Veterinarians often act as first responders in wildlife emergencies. Rapid assessment and stabilization are crucial to prevent further deterioration of the animal's condition. Initial evaluation includes checking vital parameters such as heart rate, respiratory rate, body temperature, and hydration status. Common emergency conditions include trauma from vehicular accidents, fractures, hemorrhage, burns, and shock. Immediate interventions may involve fluid therapy, wound management, fracture stabilization, and administration of analgesics. Stress reduction is a key consideration, as excessive handling can exacerbate the animal's condition or even lead to death. In many cases, veterinarians must make quick decisions under challenging field conditions with limited resources. Their ability to prioritize treatment and stabilize the animal significantly influences survival outcomes.

Clinical Diagnosis and Medical Management

Following stabilization, a thorough clinical examination is conducted to identify underlying injuries or diseases. Diagnostic tools such as radiography, ultrasonography, hematology, and microbiological testing are commonly employed. Wildlife species exhibit significant variations in anatomy and physiology, making diagnosis more complex than in domestic animals. Additionally, limited species-specific data on drug pharmacokinetics and disease patterns necessitate careful judgment and experience. Medical management includes treatment of infections, parasitic infestations, metabolic disorders, and toxicities. Veterinarians must also consider zoonotic risks and implement appropriate biosecurity measures to prevent disease transmission.

Surgical Intervention

Surgical procedures are often required in wildlife cases, particularly for fracture repair, wound debridement, and removal of foreign bodies. Wildlife surgery presents unique challenges, including differences in anatomical structures, sensitivity to anesthesia, and difficulties in post-operative care. Anesthesia protocols must be carefully selected to minimize

stress and ensure safety. Post-surgical management involves monitoring recovery, preventing infections, and ensuring that the animal regains full functional ability. Successful surgical outcomes are critical for release. For instance, a bird with a poorly healed wing fracture may never regain flight capability, rendering it unsuitable for release.

Rehabilitation Process

Physical Rehabilitation

Physical rehabilitation focuses on restoring strength, mobility, and coordination. Animals are gradually encouraged to perform natural activities, such as flying, climbing, or swimming, depending on their species. Enclosures designed to simulate natural environments play an important role in rehabilitation. These spaces allow animals to regain physical fitness while minimizing human interaction.

Behavioral Conditioning

Behavioral rehabilitation is essential to ensure survival in the wild. Animals must retain or relearn natural behaviors such as foraging, hunting, predator avoidance, and social interactions.

Minimizing human contact is critical, especially for young animals, to prevent imprinting or habituation. Animals that become accustomed to humans may face difficulties in the wild and pose risks to themselves and others.

Nutritional Management

Proper nutrition is a cornerstone of successful rehabilitation. Veterinarians design diets that meet the specific nutritional requirements of each species and mimic their natural feeding habits. Malnutrition is a common issue in rescued wildlife, particularly in orphaned animals. Gradual dietary adjustments are necessary to restore health and prepare the animal for independent feeding after release.

Criteria for Release

Before release, animals must meet specific criteria, including complete physical recovery, ability to perform natural behaviors, and absence of disease. Veterinarians play a key role in assessing readiness for release.

Release strategies may vary depending on the species and condition of the animal. Soft release (gradual acclimatization) or hard release (immediate release) methods are chosen based on individual circumstances.

Role in Conservation and Ecosystem Health

Disease Surveillance and Monitoring

Veterinarians contribute to monitoring wildlife diseases, which is crucial for conservation and public health. Wildlife populations can serve as reservoirs for pathogens that may affect domestic animals and humans.

Early detection of disease outbreaks allows for timely intervention and prevention of widespread impacts. Surveillance programs often involve collaboration with government agencies and research institutions.

Zoonotic Disease Management

Many wildlife species harbor zoonotic pathogens. Veterinarians implement strict biosecurity protocols to protect handlers and prevent disease transmission.

Their role in managing zoonoses is particularly important in the context of emerging infectious diseases, which often originate from wildlife.

Contribution to Conservation Programs

Veterinarians are actively involved in conservation initiatives such as captive breeding, translocation, and reintroduction programs. Their expertise ensures the health and genetic viability of populations. They also contribute to research on wildlife health, providing valuable data that inform conservation strategies and policy decisions.

Ethical and Legal Considerations

Wildlife veterinary practice is governed by ethical principles that prioritize animal welfare and ecological integrity. Veterinarians must balance the needs of individual animals with broader conservation goals. Legal frameworks regulate wildlife rescue and rehabilitation activities. Compliance with these regulations is essential to ensure ethical and responsible practice. Euthanasia may be considered in cases where recovery is not possible, and the animal is suffering. Such decisions require careful evaluation and professional judgment.

Challenges in Wildlife Veterinary Practice

Wildlife veterinarians face numerous challenges, including:

- Limited infrastructure and specialized facilities
- Insufficient funding and resources
- Lack of species-specific medical data
- Risks associated with handling wild animals
- Emotional stress associated with treating severely injured animals

Despite these challenges, their commitment and expertise continue to drive successful wildlife rescue efforts.

Importance of Public Awareness and Community Participation

Public involvement is crucial in wildlife rescue. Timely reporting of injured animals, avoidance of unnecessary interference, and support for conservation initiatives can significantly improve outcomes.

Veterinarians often engage in awareness programs to educate communities about wildlife protection and responsible behavior.

Future Pros

Advancements in veterinary medicine, including improved diagnostic tools, telemedicine, and research, are enhancing wildlife care. Increased collaboration among veterinarians, conservationists, and policymakers is essential for addressing emerging challenges. Training programs in wildlife medicine and increased funding for rehabilitation centers will further strengthen the field.

Conclusion

Veterinarians play an indispensable role in wildlife rescue and rehabilitation, contributing to both animal welfare and conservation. Their expertise ensures that injured and distressed animals receive appropriate care and have the opportunity to return to their natural habitats. As environmental challenges continue to intensify, the importance of veterinary involvement in wildlife conservation will only grow. Strengthening veterinary infrastructure, promoting research, and increasing public awareness are vital for sustaining wildlife populations and preserving ecological balance.

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