

THE VETERINARIAN AS A GUARDIAN: ROLE OF VETERINARY PROFESSIONALS IN WILDLIFE RESCUE AND REHABILITATION

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Abstract

Wildlife rescue and rehabilitation is an interdisciplinary endeavor that has grown significantly in scope and scientific rigor over the past two decades. Veterinary professionals occupy a central position in this field, providing critical expertise across the entire continuum of care from emergency triage at the rescue site to clinical management, surgical intervention, behavioral conditioning, and final release assessment. This communication examines the multifaceted responsibilities of veterinarians in wildlife rescue operations, discusses the unique clinical challenges posed by wild species, and highlights the broader significance of wildlife veterinary practice in conservation, zoonotic disease surveillance, and ecosystem health monitoring. A deeper understanding of these roles is essential to fostering well-rounded veterinary graduates equipped for wildlife-centric practice.

Keywords: wildlife medicine, rehabilitation, triage, zoonoses, conservation veterinary medicine, human-wildlife conflict

1. Introduction

The natural world is under unprecedented pressure. Rapid urbanization, habitat fragmentation, climate variability, and increased human-wildlife contact have collectively elevated the incidence of wildlife casualties worldwide. In this context, wildlife rescue and rehabilitation has emerged as a vital safety net — one that demands not only compassion but scientific precision. Veterinary professionals are uniquely positioned to bridge this gap, combining their biomedical knowledge with an understanding of species-specific physiology, behavior, and ecology. Unlike companion animal practice, where patients are relatively tolerant of human interaction, wildlife medicine demands the ability to work with animals that are physiologically stressed by captivity, largely uncooperative with examination, and clinically understudied. The veterinarian's role, therefore, is not merely therapeutic, it is also investigative, adaptive, and deeply conservation-oriented.

2. Field Response and Emergency Triage

The veterinary contribution to wildlife rescue begins at the point of initial contact. When an injured, orphaned, or displaced animal is reported whether a road-accident victim, a bird entangled in netting, or a snake displaced into a residential colony the attending veterinarian must

conduct a rapid field triage. This involves assessing the animal's level of consciousness, hydration status, visible injuries, respiratory pattern, and degree of capture myopathy, all while minimizing stress-induced deterioration. Safe chemical restraint is frequently necessary and requires a sound pharmacological foundation. Drugs such as medetomidine, ketamine, tiletamine-zolazepam, and various opioid combinations must be selected and dosed according to species, estimated body weight, and clinical condition — often without the benefit of prior diagnostics. The ability to make these judgments swiftly and correctly can determine whether an animal survives transport to a rehabilitation facility.

3. Clinical Management in Rehabilitation Settings

Once stabilized, wildlife patients are transferred to rescue centers or zoological facilities where sustained veterinary care can be administered. The clinical challenges here are considerable. Reference ranges for haematology and serum biochemistry are available only for a fraction of wild species, necessitating careful clinical judgment and comparison with closely related taxa. Nutritional requirements, drug metabolism, and anesthetic risk profiles vary

enormously across the animal kingdom. Veterinarians in rehabilitation settings manage an extraordinarily diverse case-load: fractured wings in raptors, shell repairs in chelonians, spinal trauma in primates, ocular injuries in owls, and respiratory infections in rescued pangolins, among many others. Each case calls for species-appropriate analgesia, surgical technique, wound management, and post-operative monitoring. Beyond physical injury, the management of psychological stress, stereotypic behaviour, and social deprivation is equally critical in species with complex social structures or large natural home ranges.

4. Zoonotic Disease Surveillance and One Health

The wildlife veterinarian functions as an important sentinel in the public health network. Many of the most consequential infectious diseases affecting humans including rabies, Nipah virus, highly pathogenic avian influenza, and several coronaviruses have their origins in wildlife reservoirs. During the intake and examination of wild patients, veterinarians are ideally placed to collect biological samples for pathogen screening, contributing to national and global disease surveillance programs. The One Health paradigm, which recognizes the interconnectedness of animal health, human health, and environmental integrity, elevates wildlife veterinary medicine from a niche specialty to a cornerstone discipline. Identifying a novel pathogen in a rehabilitated civet cat or detecting antibiotic-resistant bacteria in a migratory bird has direct implications for human populations and livestock industries downstream. Wildlife veterinarians, through their routine practice, generate data of immense epidemiological value.

5. Pre-Release Assessment and Conservation Impact

The ultimate objective of wildlife rehabilitation is the successful return of individuals to their natural habitat. This requires a rigorous pre-release evaluation conducted by the attending veterinarian, encompassing physical fitness, weight, behavioral normality, predator response, and absence of communicable disease. A premature or poorly assessed release can be detrimental both to the individual animal and to wild conspecific populations, particularly when dealing with endangered species or those with

highly specialized ecological niches. At the population level, veterinary interventions in wildlife rescue contribute to the recovery of threatened species by salvaging injured breeding adults, rehabilitating orphaned young that might otherwise be lost, and generating biological data through health assessments that inform conservation planning. In the case of critically endangered species such as the Great Indian Bustard, gharial, or Red Panda, each individual successfully rehabilitated and released represents a meaningful demographic contribution.

6. Challenges and the Way Forward

Despite its growing importance, wildlife veterinary medicine faces persistent structural challenges. Veterinary curricula in many institutions continue to underrepresent wildlife medicine relative to the breadth of its real-world application. Hands-on exposure to wild species during training remains limited, and wildlife rehabilitation facilities often operate with constrained resources and insufficient staffing. Legal frameworks governing the capture, treatment, and release of wild animals are complex and vary considerably across jurisdictions.

Addressing these challenges requires coordinated effort among veterinary schools, government wildlife agencies, non-governmental organizations, and practising clinicians. The integration of dedicated wildlife medicine rotations into undergraduate programs, the development of national protocols for common rescue scenarios, and the creation of accessible species-specific clinical databases would collectively advance the standard of care. Equally important is the recognition that wildlife veterinary work, though often unpaid or poorly remunerated, constitutes a public good of enormous value.

7. Conclusion

Veterinary professionals are indispensable to the welfare of wild animals and, by extension, to the health of the ecosystems those animals inhabit. The scope of their contribution spans emergency medicine, surgery, pharmacology, behavioral science, epidemiology, and conservation biology a breadth that few other professions can match. As the frequency and complexity of human-wildlife interactions continue to grow, the veterinarian's role in rescue and rehabilitation will only deepen in importance.

For the student of veterinary medicine, engagement with wildlife rescue even in an observational or voluntary capacity offers transformative clinical learning and a profound appreciation of the natural world. The instinct to heal does not end at the clinic door; it extends to every creature that shares this planet with us.

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