

A preliminary investigation of the endoparasitic load among cattle near Pobitora Wildlife Sanctuary, Assam, Northeastern India

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Wildlife conservation efforts often overlook the potential impact of parasites on wildlife populations. The emergence of novel diseases has become a growing concern in recent years, particularly at the interface between livestock and wildlife. Assessing parasitic prevalence through faecal surveys is crucial in livestock and wildlife management. The present study investigates the prevalence of gastrointestinal parasites in co-grazing cattle near Pobitora Wildlife Sanctuary in Assam. We collected 122 faecal samples between March 2018 and May 2018 from cattle of different age groups and sexes and analysed them using flotation and sedimentation techniques for the presence of parasites. We found that 72.95% of the tested samples were positive for gastrointestinal parasites. The identified parasites included eight different helminth species and one coccidian species. Among them, *Amphistome* sp. was the most prevalent (54.09%), followed by *Eimeria* sp. (9.83%) and *Fasciola gigantica* (7.37%). The present study provides critical information and has crucial conservation implications as Pobitora Wildlife Sanctuary houses other mega-herbivores, including greater one-horned rhinoceros and water buffalo.

Keywords: Co-grazing, gastrointestinal parasites, greater one-horned rhinoceros, megaherbivores, Pobitora Wildlife Sanctuary, wildlife-livestock interface.

well-being, causing temporary or permanent declines in wildlife populations^{1,4,5}.

Due to the advancements in agriculture and livestock farming resulting in the expansion of such landscapes, there has been a more pronounced interaction between humans, domesticated animals, and native wildlife. This proximity facilitates the spread of infectious agents and parasites into new hosts, resulting in new ecological niches in the disease transmission chain⁶. Livestock can act as density reservoir hosts for parasites of wildlife, leading to higher parasite abundance within wildlife⁷. It has also been established that wildlife in proximity to domestic animals is more susceptible to parasitism⁸.

Wild animals under free-range conditions are susceptible to almost all diseases, particularly helminth infection. Various endoparasitic infections in co-grazing cattle or other domestic herbivores lead to the spread of helminthic infections to wild herbivores in protected areas⁹. Parasites can affect host survival and reproduction directly through various pathological effects and indirectly by reducing the host's immunity and affecting the physical condition¹⁰. While there are several records on the impact of parasitic infection in domesticated animals, research is scarce concerning the transmission of such infections to free-ranging wild animals sharing the common grazing habitat^{9,11–13}. Apart from the wildlife, there is also a risk of zoonosis, reported in parasites such as *Trichostrongylus* sp., which primarily infects herbivores like cattle, sheep, goats, and other ruminants, as well as pigs, horses, and poultry. The human infection rate of *Trichostrongylus* sp.