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# Towards common ground in the biodiversity-disease debate

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## **Towards common ground in the biodiversity–disease debate**

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### **Supplementary Information**

#### **Restoration and Biodiversity Augmentation vs Biodiversity Conservation**

Importantly, conservation of systems that are not harming humans and perhaps even protecting them is much less risky than attempting to restore ecosystems that have been damaged or augmenting the biodiversity of non-damaged ecosystems. Many restoration efforts have failed to return ecosystems to their pre-damaged state<sup>2</sup>. Consequently, the diversity of the resulting community could end up at an amplification section of the biodiversity–disease curve. Even if the number of species is returned to the pre-damaged state, if the composition is different, then it might not be as protective as the original naturally assembled community. Additionally, just because biodiversity might serve to reduce parasite abundance does not mean that augmenting the biodiversity of ecosystems results in total disease reduction. It is well established that host biodiversity begets parasite biodiversity (see *Extrapolations beyond collected data* above), and thus there might be a point where the risk of exposure to new parasites from increased biodiversity outweighs any benefit that biodiversity has for reducing the number of parasites per host or risk of human exposure to those parasites. Importantly, changes to ecosystems can directly cause new diseases to emerge and can indirectly facilitate emergence by providing new opportunities for human contact with vectors or wildlife, particularly at newly established habitat edges. Because of the risks and several uncertainties, we suggest that a primary value of biodiversity–disease relationships is to better account for the costs and benefits of conservation, and thus disease prevention might offer a greater benefit to conservation than the benefit conservation currently offers to human health.