

Comment & Analysis

Murray Rudd considers whether endangered species are simply too expensive to save

“We need to think in triage terms: we do not have the money to save everything”



Some tough choices are looming. Problems such as habitat destruction and climate change are putting increasing numbers of species at risk from extinction, but the truth is that we have a limited capacity to save wildlife. In a recent survey published in the journal *Conservation Biology*, 54 per cent of scientists agreed that there are species we should give up on.

It will be difficult to decide which species we should save and which we should not. We need to think in triage terms, prioritising where to direct our limited resources, because we do not have the knowledge or money to save everything. From an economic perspective, some species may simply be too expensive to save. From a science perspective, our choices can be informed by a focus on genes, species or ecosystems.

Genetic or evolutionary diversity can be used to help prioritise conservation efforts by identifying species that represent diverse branches on the tree of life. Such a focus on genetics can help maintain

more options for future adaptability as environmental change accelerates. With this approach, some species that are genetically very similar could be abandoned as they contribute only marginally to evolutionary capacity.

Lesser spotted species

The Zoological Society of London's EDGE (Evolutionarily Distinct and Globally Endangered) programme focuses on one-of-a-kind species that few people have heard of. For example, one of their focal species is the critically endangered 5ft (1.5m)-long Chinese giant salamander (*Andrias davidianus*). These have evolved almost entirely independently for over 170 million years, but their meat is a delicacy in China and their numbers have declined by over 80 per cent. Other species with close relatives would receive lower priority than giant salamanders when investment decisions are based on genetic uniqueness.

Other conservation strategies focus directly on species most under threat. A decline in a species' abundance is a

clear warning sign here, as is a reduction in its geographic range. Within this strategy, high-profile iconic species are often emphasised. These include those valued as symbols of nature, such as tigers (*Panthera tigris*), or as symbols of nationhood, like the American bald eagle (*Haliaeetus leucocephalus*) or Chinese giant panda (*Ailuropoda melanoleuca*). Saving endangered iconic wildlife may, however, divert resources from others, taking a disproportionate share of the conservation funding pie.

But our triage decisions are rarely simple. Edinburgh Zoo is hoping its recently imported pandas will help to raise funds for wild panda conservation in China, increasing total conservation funding rather than simply taking a slice of the pie.

Protecting whole ecosystems is the focus of many current conservation strategies. By protecting hotspots – terrestrial or aquatic ecosystems such as rainforests and coral reefs that are rich in biological diversity – ecological processes may be maintained, bolstering resilience in the face of emerging threats. These choices also have their consequences. If flyway wetlands for migratory birds or tropical beach nesting grounds for migratory sea turtles are not protected, their survival will be jeopardised.



The protected status of species like this Chinese salamander put a strain on limited budgets

We're reaching a critical point. In fact, some scientists are now willing to consider very active conservation interventions. These include assisted migrations – physically moving species from one region to another to ensure their survival. In the United States, controversial efforts to transplant the endangered stinking cedar tree Florida Torrey (*Torreya taxifolia*) north to the Appalachian Mountains are underway.

Transfer policy

Some have suggested that Britain is an ideal location to receive species displaced from other areas by climate change. Or, for instance, could Canadian polar bears (*Ursus maritimus*) be moved north to the high Arctic as the southern Arctic warms? Most transfers, though, would likely comprise of relatively obscure – but endangered – plants, insects and other invertebrates.

Other scientists maintain we should protect important ecosystems and migration corridors as much as possible, but leave species alone to adapt as best they can as pressures mount. While the triage decisions we make will depend on the scientific criteria we use to prioritise our conservation actions, they will also be influenced greatly by the economic and political situation in the future. Unfortunately for our threatened species, we are living in tough economic times.

Our will to save species depends on how we value nature. Wildlife can amaze and inspire us in our urbanised world. Perhaps we need to consider spending money to drive home wildlife's importance and the perils it's facing.

Stemming the loss is critical and taking the loss seriously is a prerequisite for action.



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WHAT DO YOU THINK?

Should we dig deep into our pockets to try to save endangered species?

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