



Biodiversity loss: prevention is cheaper than cure

A proactive approach to biodiversity loss – where conservation of a species starts *before* it becomes endangered – could save millions of euros compared to the cost of recovering a population already in serious decline, according to new research.

Conservation usually involves restoring populations to previous numbers with reactive measures, such as captive breeding programmes, relocation or predator control. However, proactive steps to preserve habitat, such as setting up conservation areas or banning property development, can prevent a vulnerable species from ever reaching critical status.

The study urges policy makers to consider proactive, rather than reactive, conservation as a cost-effective way to meet biodiversity targets under the EU Habitat Directive¹. The proactive approach is usually less popular with policy makers than ecologists. However, this is because the costs are often perceived to outweigh the visible benefits. Weighing up the costs of proactive versus reactive conservation is a key component of *The Economics of Ecosystems and Biodiversity* (TEEB)² project, a global, independent study into the economics of biodiversity, co-funded by the European Commission.

In the new research, scientists developed a hypothetical model to compare the costs of proactive and reactive conservation of a species. They applied the model to a real life example, the Common Hamster in the Mannheim region of Germany.

Intensive farming and changes in land use in the 1990s led to the rapid depletion of the Common Hamster, now a “strictly protected” species under the EU Habitats Directive. Relocation projects and a breeding programme were introduced in 2001, alongside a scheme to compensate farmers for lost earnings in return for making their land into suitable habitat for the species.

The scientists calculated the cost of maintaining these reactive measures throughout the conservation programme (2001-2010). They then compared the results to the cost that would have been incurred in keeping the population at a constant level from the start of the early 1980s, when records indicate that the species first started to decline. The cost of the proactive approach is mainly derived from lost income through preserving the habitat, rather than allowing it to be developed for economic purposes. The scientists called these “opportunity costs” which will increase with the size of the habitat area and with time, as the commercial value of the land grows.

The study found that although the opportunity costs in the proactive scenario were incurred over a longer period of time than the conservation costs in the reactive scenario, they were still significantly lower overall. An estimated €17.2 million could have been saved if the proactive approach had been used instead of the reactive response that was actually taken. According to the researchers, this is likely to be an under-estimate and the real figure may be as high as €36.4 million.

The general model used in this study can be applied to any scenario or species, and its outcome may vary from case to case, in terms of which conservation approach it suggests is the most cost-effective. The model’s use could also be extended to include many different species to reflect the complexity of a real ecosystem.

1. See: http://ec.europa.eu/environment/nature/legislation/habitatsdirective/index_en.htm

2. See: <http://teebweb.org/>

Source: Drechsler, M., Eppink, F.V. & Wätzold, F. (2011). Does proactive biodiversity conservation save costs? *Biodiversity Conservation*. 20: 1045-1055.

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