

Climate change forcing a 'move it or lose it' approach to species conservation?

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What does it take to save a species in the 21st century? The specter of climate change, with predicted losses to biodiversity as high as 35 percent, has some scientists and managers considering taking their conservation strategies on the road.

Managed relocation (MR) is literally the physical relocation of endangered or threatened [species](#) of [plants](#) and [animals](#), by humans, to new, and foreign geographical climes. It addresses the concern that climate shifts may make many species' historical ranges environmentally inhospitable, and that the rapid speed of change and [habitat fragmentation](#) will prevent them from adapting to these new conditions or moving themselves. And while conservationists argue that the practice may not preserve some species, such as the polar bear, relocation is a hotly debated option for others' long-term survival.

Arizona State University environmental ethicist Ben Minteer and [ecologist](#) James P. Collins ask hard questions about the practice, also known as assisted colonization, assisted migration or assisted translocation, in their article "Move it or Lose it" published October 1 in the journal [Ecological Applications](#).

Stress on [native species](#) is just one of the unknowns that come into play with translocation of species. There also remains the more critical question of how to evaluate such management decisions, according to Minteer, an associate professor in ASU's School of Life Sciences and researcher in the Center for Biology and Society, and Collins, a Virginia

G. Ullman Professor of Natural History and the Environment in ASU's School of Life Sciences in the College of Liberal Arts and Sciences.

"New approaches to conservation, such as MR mean the need for a new 'ecological ethics' geared toward problem-solving in ecological research and policy," says Minter. "Beyond asking 'should' we do it, there's the more pragmatic ethical question: what separates a 'good' from a 'bad' MR activity?" In a time of rapid global change, Collins says that "ecologists and biodiversity managers will have to think hard about not only what management actions are possible, but also which ones are acceptable ethically."

Such discussion is as critical as the technical and scientific questions of relocation: the "can we do it and how we do it," the authors state.

Minter points out that while moving species around is nothing new, the [climate change](#) rationale for doing so is. "Looking past creating parks and shielding species from bullets, bulldozers and oil spills in favor of the anticipatory relocation for conservation purposes strikes many as different, in terms of motive and perhaps the extent of the consequences."

Minter and Collins's call to reassess conservation goals in the face of climate change is timely. While the practice has no guarantees of success, managed relocation of species is already being put into practice. The Florida torreya tree is an example, along with the proposed relocation of the Quino Checkerspot butterfly and the Iberian lynx.

Collins says that the real scientific concern with species relocation - voiced by prominent skeptics - is that crossing evolutionary boundaries via managed relocation will produce a number of negative ecological and genetic consequences for species and systems on the receiving end.

How to leap the ethical gulf separating decisions about which species should be moved and "saved" is also critical to the debate. Though some argue that human activity has already played an active role in shifting species and that some populations are "naturally" undergoing range shifts without assistance due to climate change in response to human pressures as well as natural ones.

However, as Minter points out, "There is also the more philosophical objection to the fact that 'we' are doing this, rather than the populations themselves, and that this is therefore another example of human arrogance toward wild species and the environment more generally."

Does the shift to focus on relocation strategies mean that more traditional routes to preserve species, such as species migration corridors that connect forest patches, will become anachronistic?

"Traditional philosophy and policy of conserving species will likely change to reflect a more anticipatory and interventionist mode of thinking," Minter says. "What this spells for conventional norms of ecological preservation is that they may have to give way to a more dynamic and 'novel systems' model rather than historical ones."

In other words, the "metabolism" of conservation will have to speed up to keep in step with climate change, Minter believes.

Some believe that the distraction from the use of traditional protected areas and historical systems models, will also, once managed relocation is legitimized, open the floodgates and that people will start moving species willy nilly around the landscape. "I think that fear is exaggerated, though the precedent that would be set for ecological policy by formally adopting MR, even as a last resort, is indeed a significant issue," says Minter.

"How to formulate new approaches to ecological research and management landscapes in an era of rapid and global environmental change raises original and difficult ethical questions about how to save species and protect landscapes," Collins states. "We can improve the decisions we make by using more collaborative and interdisciplinary approaches to such problem-solving and decision-making."

Provided by Arizona State University

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