



Sihek parents on Palmyra Atoll in the Pacific Ocean

What is assisted migration?

THE GUAM KINGFISHER – ALSO KNOWN as the sihek – has been extinct in the wild since 1988 but was successfully introduced to Palmyra Atoll last year. However, they aren't native to the island (which is roughly one-third

of the way between Hawaii and American Samoa). With the invasive brown tree snake responsible for their decline still at large on Guam, the most feasible way to restore them to the wild was by moving them to an entirely new home. Though the project is young, it's a high-profile example of a controversial conservation technique known as assisted migration.

Assisted migration is the process of moving a species outside of its native range – usually because that range is

Calculated risks are favourable to extinctions

too depleted for long-term survival as a result of climate change, fragmentation or invasive species. Occasionally, it's done to benefit the recipient ecosystem, such as the introduction of Aldabra giant tortoises to an islet off Mauritius to manage plant populations after the Mauritius giant tortoise became extinct.

For some conservationists, the reluctance to suggest assisted migration is automatic. It's considered by some to be "the ultimate meddling", says Sarah Dalrymple, a member of the

England Species Reintroduction Taskforce. But she points out that "humans have been moving things for millennia". As habitat and climate crises worsen, she believes migration can be vital for the right species and it's our "ethical responsibility to explore all options".

The method will always confer risk, however. Despite conservationists working with robust assessments, some believe the threats associated with invasion, including resource scarcity and disease transmission, are too unpredictable. Introducing the American red squirrel to Newfoundland, for example, may have diminished native red crossbill populations because of greater food competition.

Donal Smith of Monash University, Australia, agrees that "there's a level of certainty we may demand but never get" when ensuring assisted migration is as low risk as possible. But for species where other strategies have been exhausted or are non-starters, he maintains that calculated risks are favourable to extinctions. This has happened before: it was considered too late for ex situ care to be appropriate for

the Christmas Island pipistrelle, a small Australian bat that ultimately went extinct in 2009. This question of risk has been self-perpetuating: as there have been so few well-documented outcomes, there is a lack of strong evidence of assisted migration's long-term impacts. In turn, this knowledge gap makes it even harder for scientists to take the risk when needed.

Even if it's decided to be the best approach, assisted migration faces a number of socio-political hurdles too. Funding is a major concern and partial cause for the knowledge gap. It's a massive commitment to study the multi-generational outcomes of both the species and ecosystems and requires backing that's not always available in conservation. There is also the question of who foots the bill if something goes wrong.

Equally, there's little policy or law dealing with assisted migration, and those invested in local land, such as farmers and

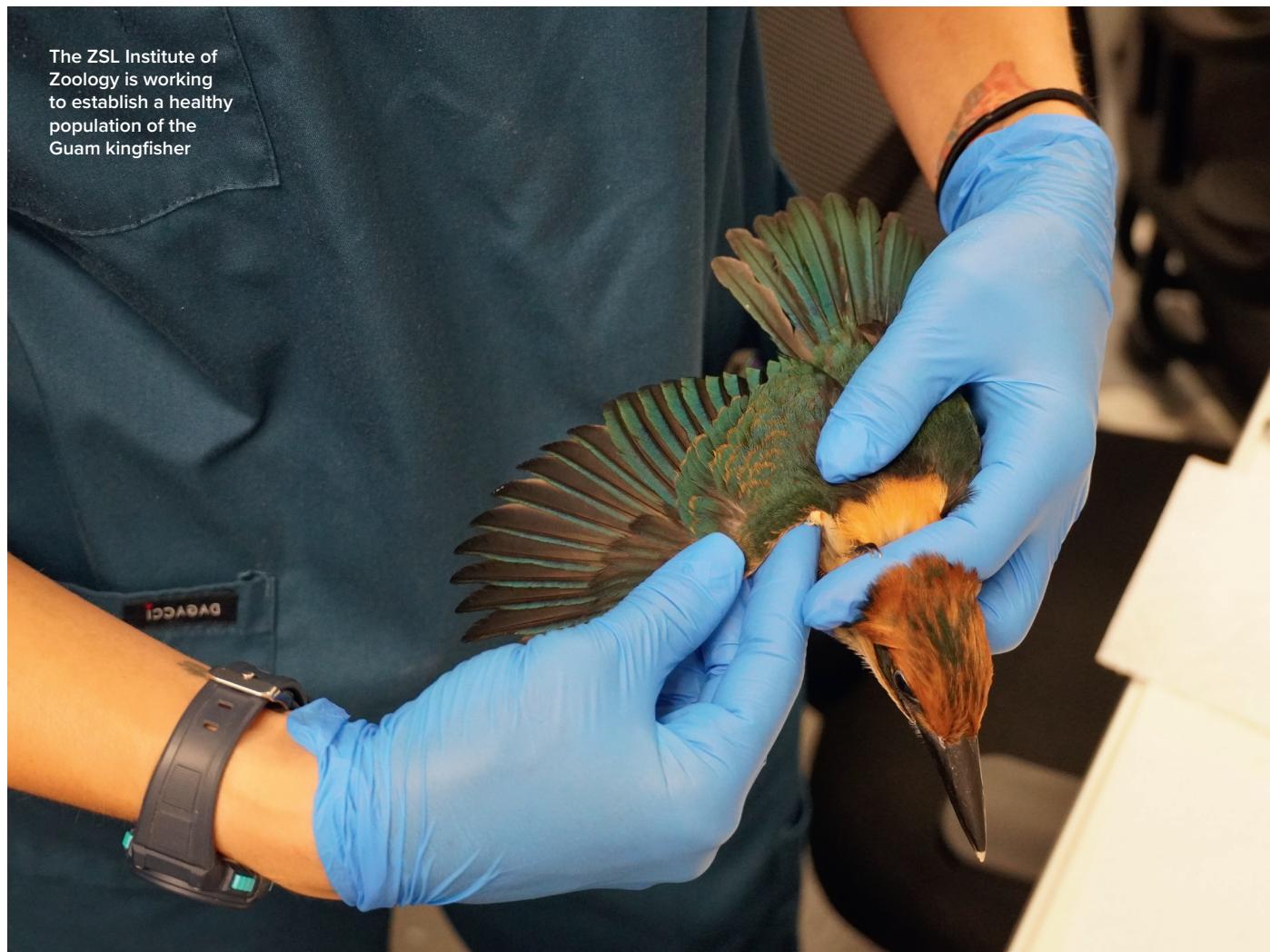
residents, are often justifiably concerned about its impact.

Attitudes are slowly shifting though and Dalrymple has recently been contracted to write an assisted migration framework for Natural England. This high-profile acknowledgement of the strategy signals that it's time to consider all options.

Although it won't be right for many species, the reality is "people are doing translocations with quite innocuous things all the time", according to Dalrymple. Most assisted migrations happen just tens of miles outside of the indigenous range and often with plant or invertebrate species people don't notice, yet are essential to thriving ecosystems. With careful conversation and comprehensive policy, assisted migration could change the game for wildlife, as it has for the Florida torreya tree and western swamp turtle – and now the Guam kingfisher. **Annaliese Smith**

"Who foots the bill if something goes wrong?"

The ZSL Institute of Zoology is working to establish a healthy population of the Guam kingfisher



Brown tree snakes on Guam ate kingfishers and their eggs