

## **////Title: Saving Primates: We Need to Act Before It's Too Late**

### **////Stand-first:**

Nonhuman primates (prosimians, monkeys, and apes) are our closest biological relatives, and they offer critical insights into our evolution, biology and behaviour. Yet, unsustainable human activities are now the major force driving these animals to extinction. Primatologists Dr Alejandro Estrada and Dr Paul A. Garber, based at the National Autonomous University of Mexico and at the University of Illinois-Urbana, respectively want to bring attention to the multiple factors affecting the primate extinction crisis worldwide. They also strive to encourage sustainable solutions that will allow primates to survive in their natural habitats into the foreseeable future.

### **////Body text:**

With 504 different species, primates are one of the largest groups of mammals, distributed in Central and South America, Africa, Madagascar and Asia. However, about two-thirds of all primate species live in just four countries – Brazil, Madagascar, Indonesia and the Democratic Republic of the Congo. Unsurprisingly, these countries represent high-priority areas for primate conservation.

Using data from the International Union for Conservation of Nature, Drs Alejandro Estrada and Paul Garber estimated that at present, over 60% of primate species face possible extinction due to human activities. This situation is particularly serious in Madagascar, where almost 90% of species are currently threatened. Considering the large number of species affected, Drs Estrada and Garber warn that extinctions are inevitable if effective measures are not implemented immediately.

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Drs Estrada and Garber together with their colleagues identified loss of habitat as the major force driving primates to extinction. Global market demands for soy, palm oil, hardwood and other tropical products have resulted in rapid and widespread deforestation and fragmentation of vital primate land. To further complicate life for these animals, they also have to face hunting and the illegal trade of primates as pets and body parts, along with emerging threats, such as climate change and contact with human diseases.

By looking at forecasts showing the predicted expansion of agricultural land by the end of the century, the research team found that farmland will cover almost 70% of the area currently inhabited by primates, affecting 75% of primate species worldwide. Dr Estrada and Dr Garber emphasise that new policies are urgently needed to divert agricultural expansion to areas where it will have the least impact on current primate populations.

In the short-term, some primates are resilient when facing certain types of large-scale habitat loss. Orangutans, for example, can survive temporarily, in selectively logged forests, and baboons and macaques are so versatile they can live in urban areas along side humans. However, it is imperative that this is not seen as a long-term and sustainable solution. Contact with humans and domestic animals leads to the transmission of parasites and infectious diseases that can wipe out entire primate populations.

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Without deep-rooted changes in human behaviour, nonhuman primate populations will continue to decline over the next few years, with many species becoming extinct. Primates may be iconic across many human cultures and religions, but Drs Estrada and Garber believe that not even their natural

charisma is enough to protect them from the threat of human abuse and population decline over the coming decades.

In most cases, when species go extinct, the problem is not lack of knowledge or lack of warning from the scientific community. Instead, it stems from political uncertainty and policies that favour short-term economic or political gain over long-term sustainability. Dr Estrada, Dr Garber and their colleagues believe that effective conservation measures to protect primates require a major revolution in education, respect for the natural environment, and citizen action. To alleviate the pressure on primate habitats, industrialized nations must reduce their demand for tropical hardwood, palm oil, soy and rubber, among other products, while at the same time demanding sustainable practices.

Both local people and governments need to understand that they can benefit much more in the long term if they protect primate populations and their habitats, rather than opting for short-term economic gain and environmental destruction. Unsurprisingly, there is no one-size-fits-all solution, and finding the most appropriate answer for individual countries, regions, and primate species will take time, commitment, and financial support. While in some places ecotourism may be the way to go, in other areas low-intensity farming may be the most suitable option.

One of the most popular and successful conservation methods has been the creation of protected areas and national parks. However, Drs Estrada and Garber feel that prohibiting the use of large tracts of land as the only conservation tool, may contribute to local poverty by denying people access to the resources they need.

Drs Estrada and Garber suggest that a program of sustainable land-sharing could be an important complimentary option, although this may not work for every species of primate. Forests are one of the few assets that rural communities have in the tropics, and finding a way to ensure their sustainable use may help poor families move out of poverty. Land-sharing involves adopting both conservation and farming procedures and may be suitable for primates that require a relatively small range or can survive in minimally disturbed habitats.

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According to Dr Estrada and Dr Garber, another way to address conservation needs is to use new technologies to monitor primate vulnerability. This involves taking advantage of global communications systems, satellites and drones to assess primate habitats and population status. Combining this approach with the latest molecular and genetic testing, it is now possible to measure population size and structure, as well as gain information about inbreeding and diets for wild primates with minimal intervention.

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So far, we have failed to protect primates and their habitats, and we are now at a crucial tipping point. However, we can only succeed if policies address the social, cultural, and economic needs of local human communities, and protect and sustain natural environments that are the basis of primate conservation.

Despite the impending extinction crisis many primate species face, Dr Estrada and Dr Garber still believe that protecting our closest living biological relatives is not a lost cause, and they remain optimistic that the human pressures that have caused primate population decline can be reversed. However, they stress that action needs to be taken now. Otherwise, these human-induced pressures will continue to harm primates and their habitats, and will inevitably result in their extinction.

Dr Estrada and Dr Garber's solution for solving this problem involve the joint action of academics, government agencies, NGOs, businesses and the public at large, to promote and encourage the implementation of urgent and effective conservation policies at home and in countries that harbour primates. This is certainly not an easy task, as these policies need to reflect the needs of local human communities as well as the requirements of primate species and their habitats, but this may be our last opportunity to reduce human threats to primates, tropical forests, and our natural world

As our closest biological relatives, nonhuman primates are crucial to understanding ourselves and our humanity, and now we need a massive global effort to save them from extinction.

### **Meet the Researchers**

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This SciPod is a summary of the paper 'Impending extinction crisis of the world's primates: Why primates matter', from Science Advances. <https://doi.org/10.1126/sciadv.1600946>

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