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Genetically engineering wild species - IUCN at crossroads.

Conservationists at the World Conservation Congress join hundreds of scientists and environmental organizations in condemning gene drives

Marseille, France - Thousands of scientists, conservationists, and civil society members are gathered at the World Conservation Union (IUCN) General Assembly this week to negotiate on the most controversial environmental conservation governance policies in its 70 year history. Among the most contentious debates is about new and emerging genetic engineering and the risks this entails to conservation of nature.

Ali Tapsoba, Director of Terre a Vie, a conservation group in Burkina Faso says, "The IUCN must not let synthetic biology devastate Africa's ecology, as the export of GMOs to Africa has done in many countries, including my own, Burkina Faso, in the past. I urge all members of IUCN to help ensure that nature conservation is not put in danger by the premature acceptance of synthetic biology."

The draft [resolution](#) proposes guidelines on how to regulate synthetic biology and on establishing a position on the use of genetic engineering for conservation purposes. This IUCN World Congress is meeting in advance of the upcoming UN Convention on Biological Diversity (CBD) COP in May 2022, which leads the world's debate about new genetic engineering methods such as gene drives, risks assessments and international governance.

"There are obvious ecological risks and concerns regarding genetic modification of wild species," said Dr. Ricarda Steinbrecher, scientific advisor for IUCN member ProNatura. "IUCN should not be endorsing the use of gene drive technology in nature conservation, ahead of understanding its irreversible ecological impacts, ethical and socio-economic consequences. The IUCN must make sure that the precautionary principle is interpreted in the way it was intended, to prevent harm from risky technologies."

"At this moment of biodiversity collapse and climate chaos, we need sustainable and safe conservation measures, not gene drives," said Dana Perls, IUCN member Friends of the Earth Switzerland. "IUCN should support an immediate global moratorium on the environmental release of gene drive organisms."

IUCN delegates will vote on the contested resolution on synthetic biology at the end of the week. Critics denounce the vote as incomplete and inequitable, given the travel and financial challenges which prevented key members from the global south to attend.

Background: On IUCN Resolution 075

Resolution 075, aims to define IUCN principles on synthetic biology and biodiversity conservation, and will serve as the basis for the development of an IUCN position on the issue.

In 2016, IUCN members [i] and non-IUCN civil society organisations [ii] openly criticised the IUCN's attempt to support synthetic biology and gene drives as tools for conservation, and the lack of scientific understanding about the risks and concerns associated with the technologies. The 2016 IUCN resolution was amended and in 2019 mandated that an IUCN appointed task force write the IUCN report "Genetic Frontiers for Conservation" [iii]

What is synthetic biology?

The term synthetic biology refers to the application of biotechnologies that attempt to engineer, redesign, re-edit or synthesize biological systems. There is no clear distinction between genetic engineering methods used in past decades, and newer synthetic biology approaches, including so-called 'genome editing'. Synthetic biology can be applied to cells, organisms or even whole populations. It is mainly being developed for three types of settings 1) 'contained use' settings, 2) open agricultural settings and 3) lately also in non-domesticated, wild populations.

What are Gene Drives?

Gene drives (genetic forcing technology) are one extreme form of synthetic biology. They are designed to genetically engineer, replace or even eradicate a wild population or entire species of animals or plants. A gene drive overrides the rules of inheritance and quickly increases the presence of specific genes or traits in a wild population over just a few generations. Traits selected by humans – such as deliberate infertility or the selection to only produce a single sex - as well as the genetic engineering mechanism itself will be passed on to the offspring at an artificially high rate.

Gene Drive developers propose to use this genetic forcing technology to control, suppress or eradicate wild species that are considered to be agricultural pests, have become invasive species or carry infectious diseases.

[i] IUCN Members Open Letter of Concern (2019): [Letter of concern to IUCN Council Open Letter by Civil Society to IUCN Council on this topic](#)

[ii] Civil Society (2019): [Open Letter to the IUCN Council](#).

[iii] IUCN 2019: [Genetic Frontiers for Conservation. An assessment of synthetic biology and biodiversity conservation](#).

ETC Group 2019: [A review of the evidence for bias and conflict of interest in the IUCN report on synthetic biology and gene drive organisms](#).

Testbiotech 2019: [Testbiotech comment on the IUCN report "Genetic frontiers for conservation, an assessment of synthetic biology and biodiversity conservation](#).

ENSSER 2021: [A critique of the IUCN report 'Genetic Frontiers for Conservation'. An assessment An assessment of synthetic biology and biodiversity conservation' – with regards to its assessment of gene drives](#)