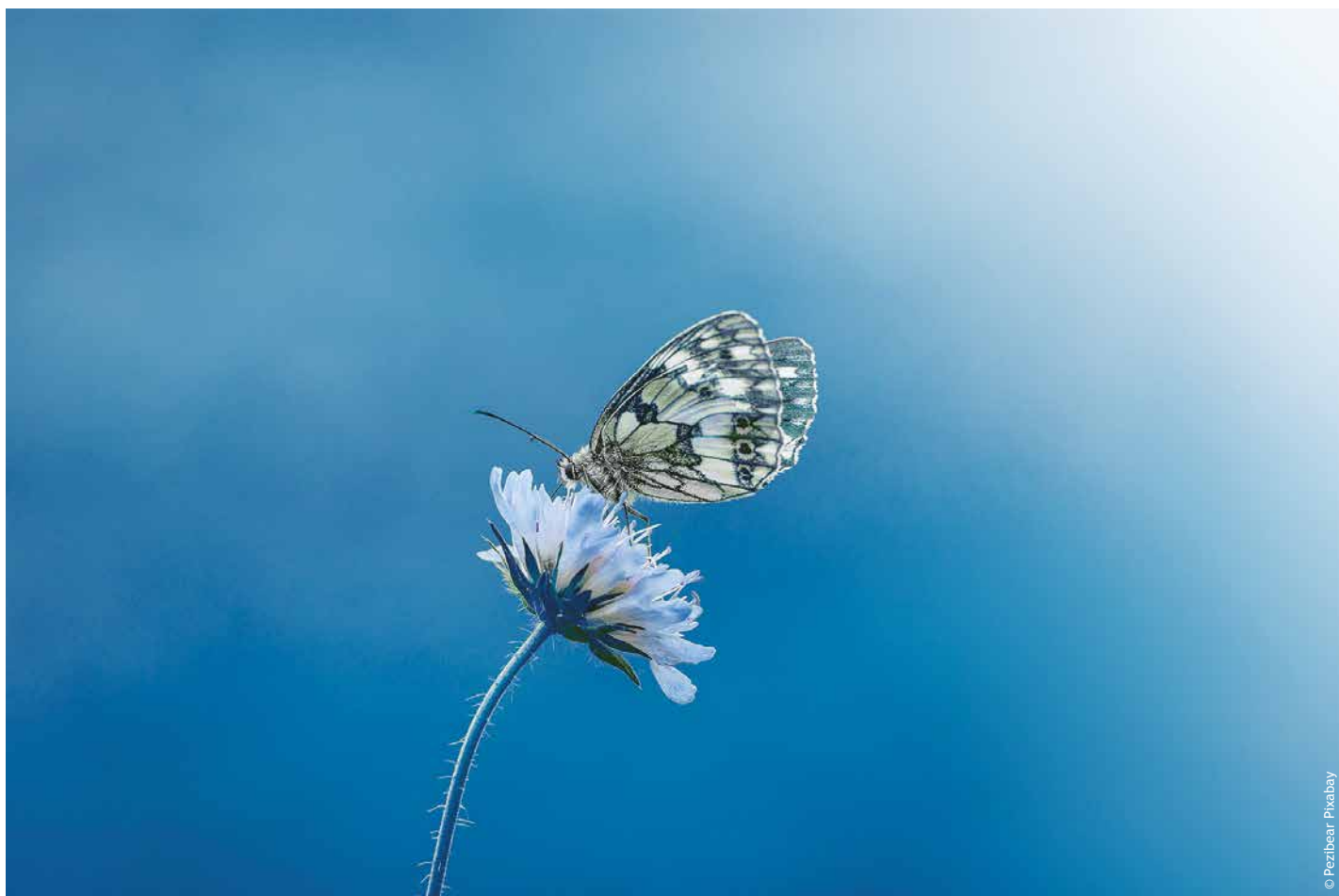


GENETIC ENGINEERING OF WILD SPECIES? IUCN AT A CROSSROADS.



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“Should nature conservationists back genetic engineering of wild species in order to counter the impact of human activity?” This is the question that IUCN members will face at the IUCN Members’ Assembly in Marseille. Resolution 075 up for vote will define “IUCN Principles on Synthetic Biology and Biodiversity Conservation“, which will lay the foundation to develop an IUCN policy on Synthetic Biology for Nature Conservation to be adopted by the next (2024) Members’ Assembly. The IUCN’s position will provide an important signal to the highly contested regulatory and governance discussions currently taking place under the UN’s Convention on Biological Diversity (CBD).



SYNTHETIC BIOLOGY EXTREME GENETIC ENGINEERING

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.

While multibillion dollar interests press ahead with industrial rollout of these technologies, a societal decision is urgently needed on the question of whether humanity should control or prevent the transformations that will be wrought by some of these technologies. The serious inquiry into the ecological risks, ethical, cultural, legal and socio-economic implications that is needed to answer this question has barely just begun. Without proper oversight and safeguards, we risk releasing synthetic organisms, their products and components from the laboratory with unknown potential to disrupt ecosystems, threaten human health and to undermine social economic and cultural rights.

GENE DRIVES ERADICATION ON DEMAND

Gene drives (genetic forcing technology) are one extreme form of synthetic biology. They are particularly alarming because 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.

SHOULD NATURE CONSERVATION USE THIS DELIBERATE EXTINCTION TECHNOLOGY?

A small group of proponents of synthetic biology active in the IUCN argue that this technology should be harnessed for nature conservation purposes. One example is the project consortium called Genetic Biocontrol of Invasive Rodents (GBIRd), including the IUCN member organisation Island Conservation, which is developing gene drive-equipped mice to be released on islands - ostensibly to eradicate the mice that harm birds.



DISCUSSIONS IN THE IUCN

With IUCN Resolution “WCC-2016-Res-086” adopted at its Members’ Assembly in Hawaii 2016, the IUCN was tasked to develop a policy on Synthetic Biology and Biodiversity Conservation for adoption by 2020. However, both IUCN members¹ and members of civil society organisations² have criticised the way this plan was carried out. They pointed out that there currently is insufficient awareness among IUCN members about the fundamental questions that such an IUCN position would raise. In addition, the IUCN assessment report “Genetic Frontiers for Conservation”³ which was largely drafted by boosters of the technology was criticized to provide an insufficient basis for the vote on such a policy. In its current form, Resolution 6.075, proposed by the IUCN Council, suggests to set up a four-year internal awareness-raising and position-finding process meant to feed into a policy proposal to be adopted at the following IUCN Members Assembly in 2024.

ANALYSIS OF RESOLUTION 075

1) FAILS TO EXPLAIN THE ESSENCE OF THE CURRENT PROBLEM

Resolution 075 proposes to define principles on “Synthetic Biology and Biodiversity Conservation” as guidelines for the development of an IUCN policy. But the text of the resolution fails to formulate the question it should help to answer - and that is the question whether the genetic engineering of wild species should be used for the purpose of nature conservation at all - or under which conditions. There are obvious risks and fundamental conceptual, legal, ethical, ecological and socio-economic questions to answer before IUCN members would be able

to make an informed decision and vote on the matter.

2) DOES NOT MENTION NOR SEEKS TO REMEDY THE UNCOMPLETED MANDATE FROM RES. 6.086

Resolution 075 recognizes the mandate given by Resolution 086 which calls for the IUCN to „examine the organisms, components and products resulting from synthetic biology techniques and the impacts of their production and use, which may be beneficial or detrimental to the conservation and sustainable use of biological diversity and associated social, economic, cultural and ethical considerations“. This mandate was supposed to have been completed by the IUCN assessment report „Genetic Frontiers for Conservation“- until which Resolution 086 obliged the IUCN to refrain from supporting or endorsing research, including field trials, into the use of gene drives for conservation or other purposes. But the report failed to complete the vital task of critically assessing the potential detrimental impacts and associated social, economic, cultural and ethical considerations around gene drive organisms - therefore the mandate cannot be called completed.

3) DOES NOT DEFINE THE POSITION-FINDING PROCESS

The principles defined in the resolution are meant to foster increased understanding of this topic, aid consultations and debate on these new technologies and to support “a broader consensus“ but do not define a process whereby this might be achieved. There is a risk that a narrow self-selecting group of proponents of this technology will once again be handed implementation and exclude critical perspectives.

¹ IUCN Members Open Letter of Concern (2019): [Letter of concern to IUCN Council Open Letter by Civil Society to IUCN Council on this topic](#)

² Civil Society (2019): Open [Letter to the IUCN Council](#).

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](#)

³ IUCN 2019: [Genetic Frontiers for Conservation. An assessment of synthetic biology and biodiversity conservation](#).



RECOMMENDATION:

- Outline the fundamental questions this process is meant to guide.
- Propose appropriate actions on how to fulfil the uncompleted mandate of Res. 6.086 while upholding the obligation to refrain from field trials and releases of gene drive organisms.
- Define the steps on how this process will answer those fundamental questions in an inclusive and trusted way, complete the mandate and lead to a policy draft.

MEET US AT THE IUCN WORLD CONGRESS AND LEARN MORE:

SATURDAY, 4.09.2021 – FRIDAY, 10.09.2021

10.00h – 22.00h CET

→ **EXHIBITION STALL „STOP GENE DRIVES“**

in the IUCN World Congress Exhibition, Neutral zone - Stall A 2

SATURDAY, 04.09. 2021

18.30h – 20.30h CET

→ **PUBLIC EVENT AT THE IUCN WORLD CONGRESS:**

„Ecosystem engineering and species eradication through genetic engineering? Fundamental questions for nature conservation.

On-site only; Hall: H8 - Palais de l'Europe; Room: H8 - 2 Forêt d'Orient

Language: English

MONDAY, 06.09.2021

10.00h – 10.30h CET

→ **PRESS CONFERENCE**

„Genetically engineering ecosystems? - Nature conservation at a crossroads.“

On-site: Room: H9 - B 11 Press Conference Room - Callelongue

Live streamed for accredited journalists and registered participants via

<https://www.iucncongress2020.org/>

Language: Session held in English with interpretation

In IUCN Program:

<https://www.iucncongress2020.org/programme/official-programme/session-52577>

CONTACT

Mareike Imken

imken@saveourseeds.org

mobile: +49 0151-53112969