

# A nature protection and risk assessment perspective

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Technical report EPA-ENCA network (IG-GMO):

- Gene Drive Organisms: Implications for the Environment and Nature Conservation
- Endorsed by 7 European environmental and nature protection agencies (AUT, CH, DE, FIN, ITA, LTU, MLT)

- R&D project on risk assessment of gene drives including modelling and monitoring (BOKU Vienna, Max-Planck Institute Plön)

- EMBO Reports, DOI: 10.15252/embr.201845760

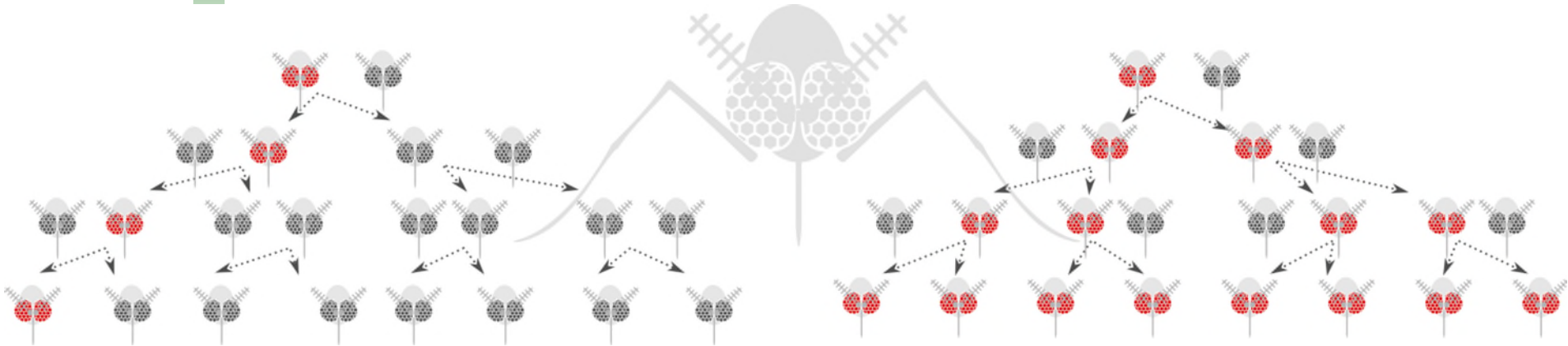
Science & Society



EMBO  
reports

Synthetic gene drive: between continuity and novelty

# GDOs can exceed classical GMO in time and space

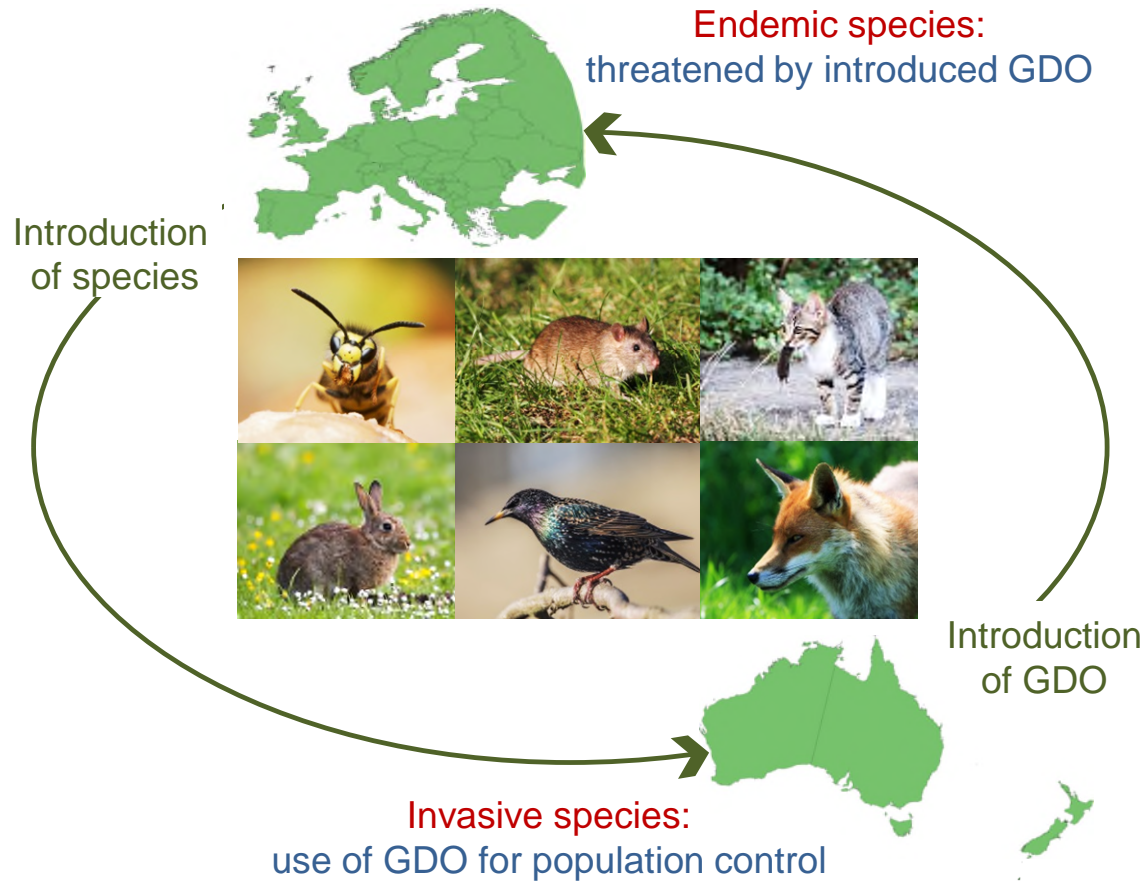


- Paradigm shift: **deliberate spread of the genetic modification**
- In GDOs molecular tools will be active in nature: **laboratory in the field**
- From GM-crops to GDOs that aim to modify **wild living populations in natural habitats**
- New dimension of space: not restricted to agroecosystems
- **Time and space of release can be very long to infinite**

# How to evaluate effects in natural populations mostly outside of managed environments?

- Challenges to Risk assessment and risk management
  - Lack of **data** (e.g. ecological interactions) and **methods** (e.g. modelling) for RA, Lack of suitable comparators,
  - Reversal of gene drives might be unfeasible; Risk management measures unestablished; Monitoring concepts not adapted
- BfN comments on the EFSA study on GDO Insects
  - Environmental risk assessment and management needs further elaboration
  - Basic challenges with the **comparative approach** illustrate the need for further scrutiny
  - Urgent need for concrete definition of *protection goals* and corresponding *limits of concern*

# Aiming at invasive species: GDO might spread back



# Aiming at nature protection



- Will GDO fulfil the aimed **concrete and wider function** in nature protection?
- Are GDO an appropriate tool to nature protection goals? Conceptual and legal challenges.
- GDOs novel features require an assessment beyond mere risks considering a **wider nature conservation and societal perspective**; e.g. on acceptable uncertainties, alternatives and common goals

# Thank you for your attention

