

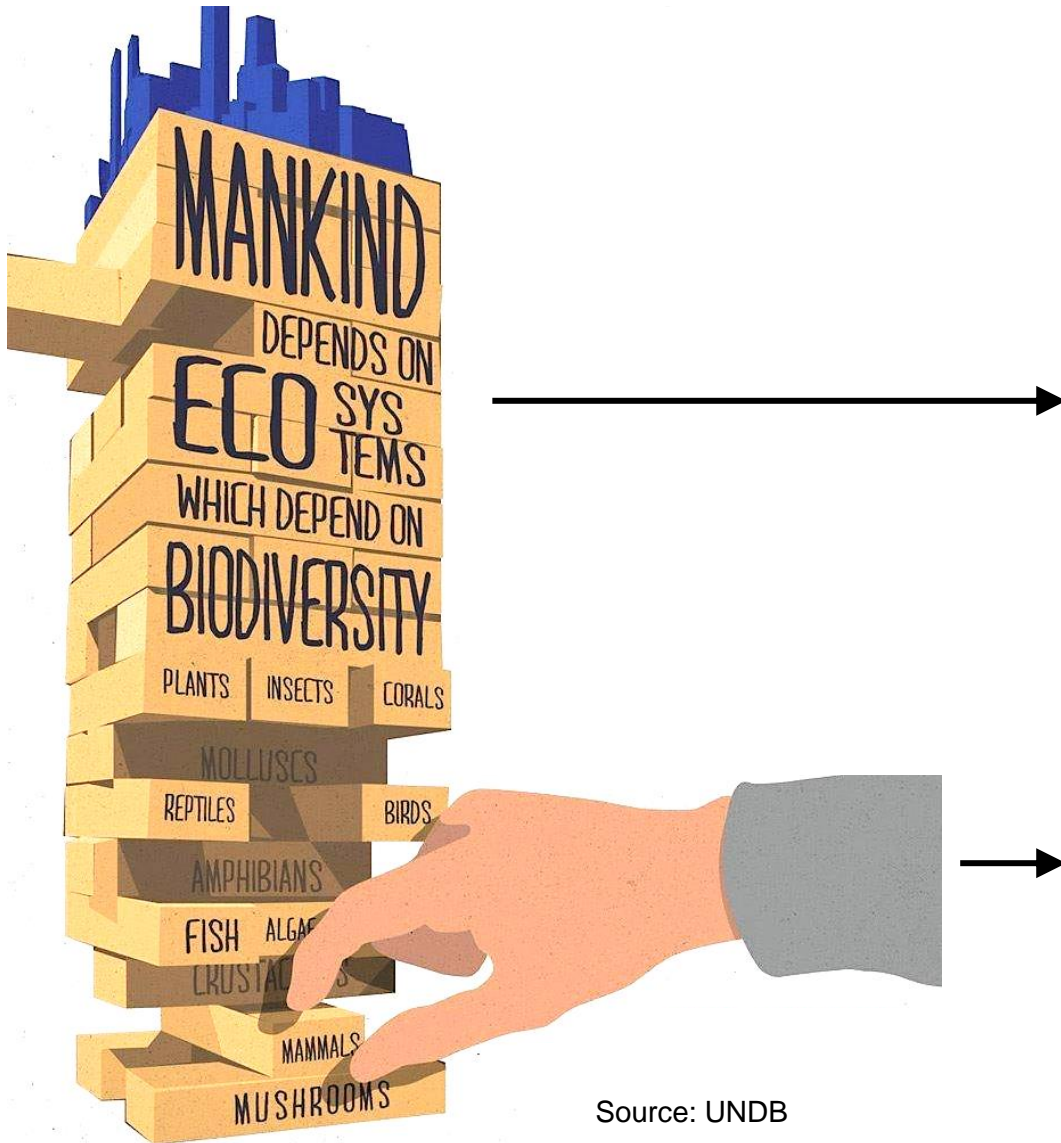
Scaling up biodiversity monitoring with drones

Prof. Stefano Mintchev
D-USYS, Environmental Robotics Lab



Credits: Gottardo Pestalozzi

Playing a dangerous game with biodiversity

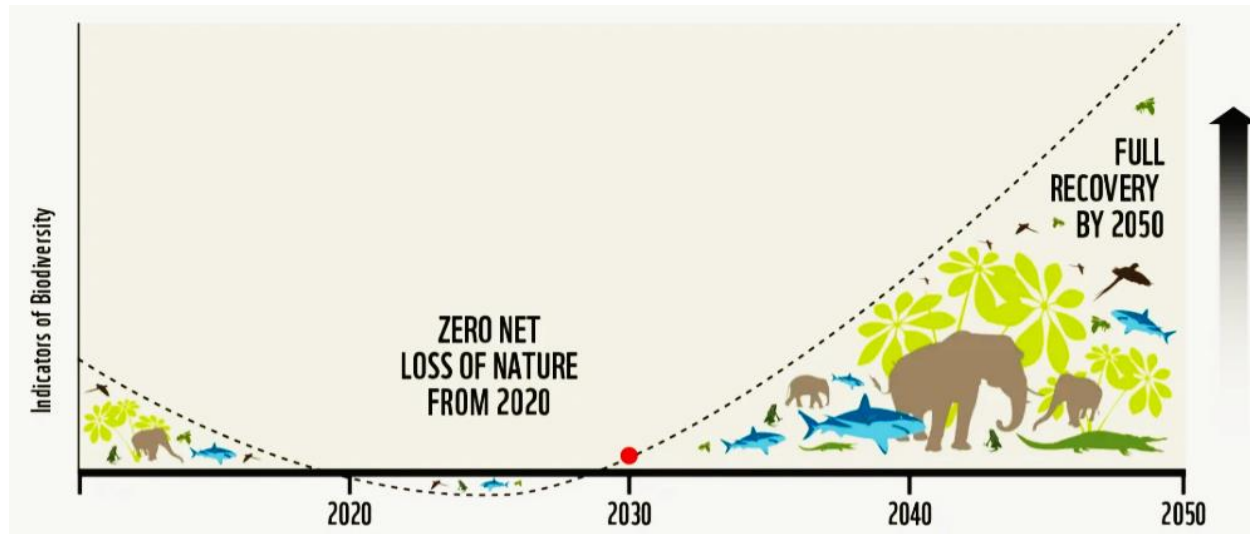


- Over **50% of the world's GDP**, around 44 \$trn, is **dependent on nature** and its services (WEF 2021).
- Biodiversity loss is the **3rd most severe risk factor** for corporate profits (WEF 2022).

Around **1 million species already face extinction**, many within decades (IPBES 2019).

Source: UNDB

Getting serious about biodiversity



Source: wbcasd

Net positive by 2030

How can we measure success?



Finance for Biodiversity
Guide on biodiversity measurement approaches

2nd edition



Beyond the Carbon Footprint: Biodiversity is the (Near) Future of ESG

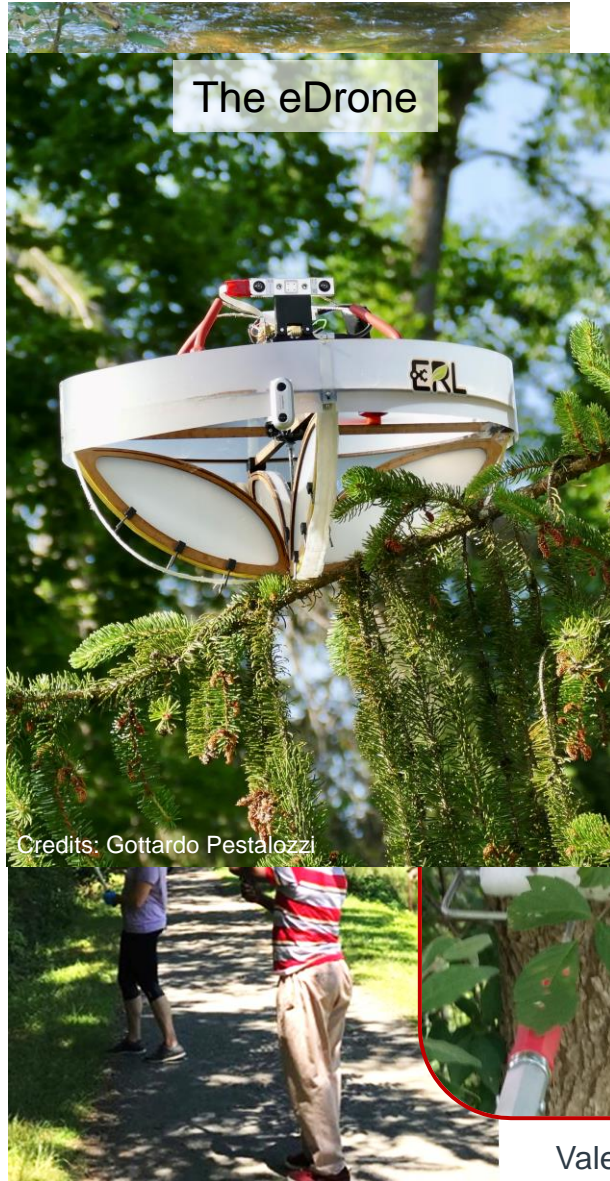
Published on 20 May 2022

Schneider
Electric

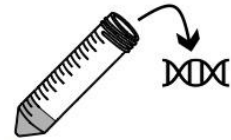


Solving the daunting challenge of measuring biodiversity

Collection of samples



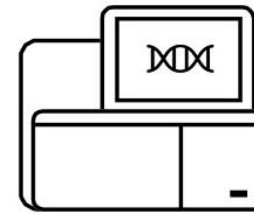
DNA extraction



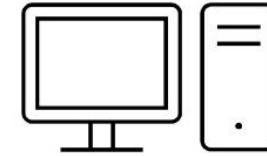
DNA amplification



Sequencing



Bioinformatics



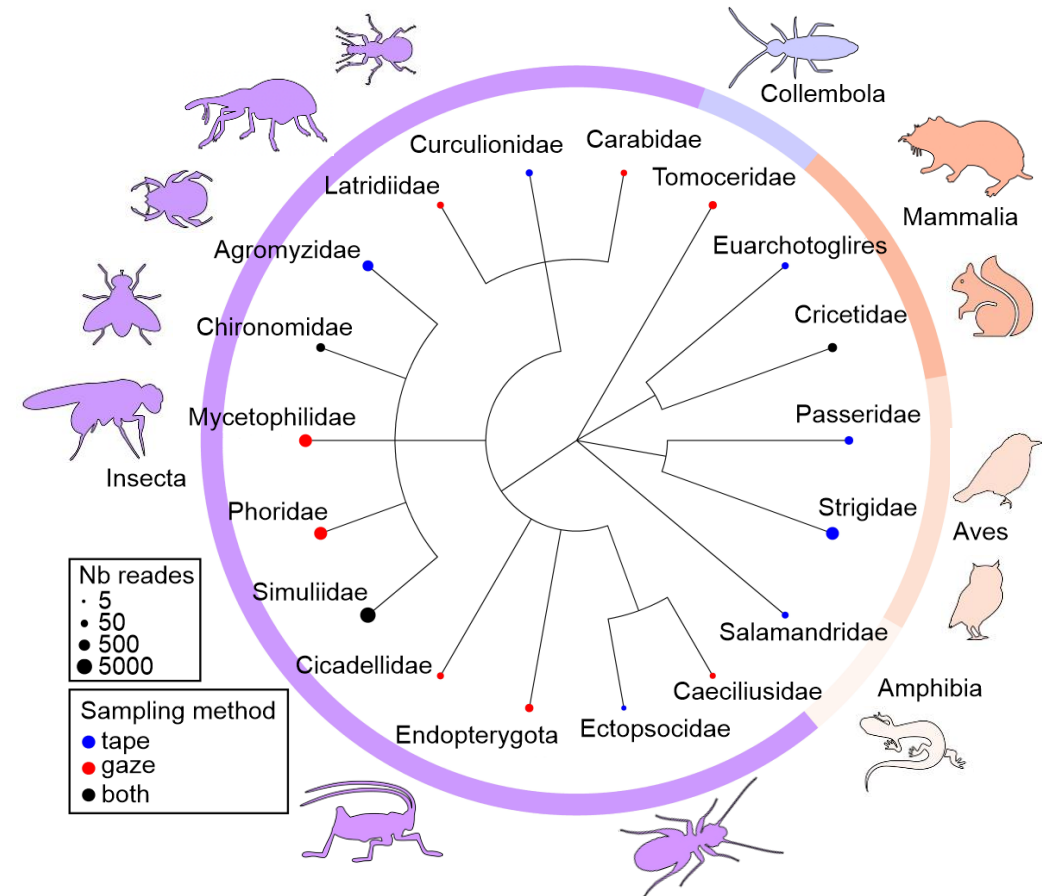
Results



The eDrone



Aucone et al., Sci. Robotics, Under Review



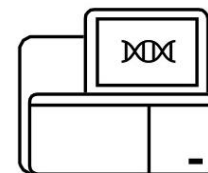
eDNA survey



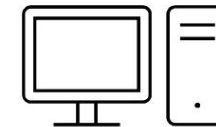
DNA extraction



DNA amplification



Sequencing



Bioinformatics

Results

XPRIZE Rainforest Challenge

XPRIZE Rainforest is a global, five-year competition in which the winning team will **survey the most biodiversity** contained in **100 hectares of tropical rainforest in 24 hours** and produce the most impactful real time insights within 48 hours.



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Meet me at stand **D09**

Thank you for your attention!

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