

# Mapping Species Knowledge—the value of data and digital infrastructure to address the extinction crisis

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The wealth of species in our planet is critical for our survival. However, we are losing species at a rate equivalent to a mass extinction event. During the last century, vertebrate extinction has been about 100 times higher than what would be expected during stable geological periods. Design of species conservation strategies and policies directly rely on accessible information, such as species demography, genetics, habitat, threats, and legislation. Biodiversity databases are expanding, and new ones are emerging, but despite the technological advances on digital infrastructure we are still struggling to map the available information for each of the described species. However, such an endeavour will allow managers and policy makers to improve their decision process. The Species-Index is an initiative driven by both the Species360 Conservation Science Alliance and the CPop at the University of Southern Denmark, with the aim to develop partnerships to map information, generate development platforms, workflow systems, and storage between open biodiversity repositories. We have developed the concept based on the Species-Index on Demography from 22 data repositories and the Zoological Information Management System (ZIMS). We started by indexing demographic information because of the immediate need to address species recovery strategies highly depends on births and death data to gain a deeper understanding of population dynamics, e.g., to assess species extinction risk or for the establishment of sustainable harvesting quotas for species trade. We found that ZIMS can provide a unique source of demographic knowledge to fill data gaps. As a result, we are developing routines on SDU ABACUS (<https://escience.sdu.dk/>) 2.0 Supercomputer to estimate demographic measures that can be used by conservation scientist and policymakers, with a significant focus on fighting the illegal wildlife trade.

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