THE COALITION FOR CONSERVATION GENETICS

Message from the Coalition for Conservation Genetics for the CBD Discussion Forum on the Monitoring Framework of the Kunming-Montreal Global Biodiversity Framework

We are Alicia Mastretta-Yanes (CONABIO, Mexico) and Jessica da Silva (SANBI, South Africa), writing on behalf of the Coalition for Conservation Genetics, G-BiKE and other colleagues of a large group of conservation geneticists who provided support at COP-15 on the topic of genetic diversity. We write our post about the indicators for conserving genetic diversity within species, including Headline Indicator A.4 and an additional complementary indicator.

CONTEXT: The GBF's Goal A and Target 4 is supported by a headline indicator - A.4: Proportion of populations within species with an effective population (Ne) size > 500. This threshold is vital for preventing losses of genetic diversity within populations. Genetic diversity is essential for species' populations to be able to adapt to new conditions, climate change, and diseases. Additionally, there is a complementary genetic diversity indicator - Proportion of populations maintained within a species. This indicator is important as diversity among populations maintains a diverse range of options (called evolutionary potential) across a species' distribution.

Recent work has shown that these indicators are feasible. Since 2020 these indicators have been refined via stakeholder consultation, pilot projects, and scientific progress. A recent paper (open access, free to read) highlights how these indicators can be calculated, even in the absence of genetic data https://doi.org/10.1111/conl.12953. A complementary paper (preprint, free to read) explains the indicators in more detail https://ecoevorxiv.org/repository/view/5555/

WHAT'S NEW: In 2022-2023 we applied the above-mentioned methodology to nine countries (Australia, Belgium, Colombia, France, Japan, Mexico, South Africa, Sweden, USA), including megadiverse regions from the Global South. The detailed results of this multinational effort will be published before the end of 2024. Here, we highlight that it was possible to use existing data and resources within countries to calculate the indicators for approximately 100 species per country, totalling >900 species. In less than a year, we assessed around 5,000 populations.

PRELIMINARY RESULTS SUMMARY: Headline indicator- In the pilot project, we found that in 58% of species considered, all populations were below Ne 500 (too small to retain genetic diversity). In 19% of species, all populations were large enough. In the remaining species (23%) only some populations were large enough. Complementary indicator- We also found that most populations were maintained, though 40% of species have lost more than 1 in 10 populations.

These findings highlight that nature is at a critical threshold for maintenance of genetic diversity. Many populations need intervention, management and monitoring to improve their genetic diversity status and allow adaptation in a changing planet.

In summary, genetic diversity indicators are important, scientifically sound, shown to be feasible and highlight a critical state of genetic diversity. Data sources for the indicators can be diverse, including national biodiversity data, existing reports, citizen science, local knowledge, consulting experts, and more, making them adaptable to each country's capacity. The indicators are fairly rapid and also flexible to data quality and quantity. Genetic data/ expertise are not needed. The publications linked above, a forthcoming policy brief, and a publication (in preparation) will explain these messages in more detail.

We and colleagues at the Coalition for Conservation Genetics are also here to help! If you are interested in more information on the indicators https://www.coalitionforconservationgenetics.org/resources-database/have-questions-or-need-translations-related-to-cbd-materials

More on SBSTTA25 topics from the Coalition for Conservation genetics: https://www.coalitionforconservationgenetics.org/sbstta25

Previously produced policy briefs on the topic of genetic diversity can be found in 8 languages here: https://g-bikegenetics.eu/en/multimedia-policy-briefs-pubs/policy-briefs/policy-brief-genetic-diversity-targets-and-indicators-proposed