Statement on genetic diversity in CBD, dated December 22, 2020

In the context of the Convention on Biological Diversity post-2020 Framework, and towards a mutual aim of conserving all biodiversity, we the "Conservation Genetic Coalition"[1] make the following statements regarding genetic diversity in this Framework. We invite Parties to use the following wordings in their interventions and comments to the CBD. If Parties would like assistance in drafting genetic diversity language in their comments, please write to linda.laikre@popgen.su.se or shoban@mortonarb.org or cristiano.vernesi@fmach.it or gernot.segelbacher@wildlife.uni-freiburg.de

[1]an alliance of genetic working groups within IUCN, the Society for Conservation Biology, and GEO BON, along with the G-BiKE network

- Genetic diversity, a basic pillar of all biodiversity, must be maintained to enable all species to adapt to environmental change, ensure resilient ecosystems, support other levels of biodiversity, and benefit people. Genetic diversity within populations is also a first barrier against new diseases and invasive pests. Overlooking genetic diversity will reduce adaptation, increase extinctions, destabilize ecosystems, and harm human well-being and economic development.
- Genetic diversity post-2020 requires increased ambition and specificity in Goals, Milestones, Targets and indicators to ensure sufficient future action, monitoring and reporting (Diaz et al 2020 Science; Laikre et al 2020 Science; IUCN post 2020 Taskforce).
- The genetic diversity Goal should be "set at the highest ambition level (e.g., above 90% of genetic diversity maintained within and among populations of species)" to maintain resilience for nature and people (Diaz et al 2020 Science).
- The current draft framework has no Target or 2030 Milestone for genetic diversity, which is inadequate. Each element of Goal A should have a Milestone and at least one corresponding Target to ensure reporting and tracking (see below).
- Indicators for genetic diversity (CBD/SBSTTA/24/3Add.1) are improving but require clarification and supplementation. The Conservation Genetic Coalition is developing comprehensive guidance for these indicators and will support countries in using and reporting on them.
- A Headline indicator for within population genetic diversity is essential. Indicator A.0.5 should be kept, but modified to ensure maintenance of sufficient levels of genetic diversity among *and* within populations to secure adaptability and resilience to changing climate, new diseases, and other pressures.
- Indicator A.1.1.47 is feasible and vital, and should be raised to a Component Indicator

- An indicator on monitoring genetic diversity using DNA methods is needed to motivate and guide management, and would support countries' capacity development.

***New text suggestions for genetic diversity* in highlighted (gray) and bold italics** with comments in brackets with purple text, relating to the Annex of document CBD/SBSTTA/24/3Add.1. **These recommendations are scientifically based and are presented in several recent peer reviewed publications. A policy brief on the importance of genetic diversity is available here from the G-BIKE network translated in more than 25 languages. For clarifications/ questions, contacts to experts across the world, etc please write to linda.laikre@popgen.su.se or shoban@mortonarb.org or cristiano.vernesi@fmach.it or gernot.segelbacher@wildlife.uni-freiburg.de**

2050 Goals, milestones and Targets	Headline Indicators	Components of the Goals and Targets	Component indicators	Complementary indicators
Goal A: The area, connectivity and integrity of natural ecosystems increased by at least [X%] supporting healthy and resilient populations of all species while reducing the number of species that are threatened by [X%] and maintaining ***[95%] of* genetic diversity *for wild and domesticated populations, and restore conditions* ensuring evolutionary adaptive potential*** **2030 Milestones:** (i) The area, connectivity and integrity of natural systems increased by at least [5%]. (ii) The number of species that are threatened is reduced by [X%] and the abundance of species has increased on average by [X%] **(iii) *The proportion of populations sufficiently large to maintain genetic diversity** has increased [by xx%], and the proportion of genetically distinct populations maintained is [xx%]***	… A.0.5 The proportion of populations maintained within species ***A.0.X The proportion of populations/breeds within species with a genetically effective population size > 500.*** **[Simpler wording for A.0.X:]*The proportion of populations within species sufficiently large to maintain genetic diversity*******	A.5. Maintain genetic diversity	A.1.7. The proportion of populations maintained within species (A.0.5) by species group ***A.1.X The proportion of populations/breeds within species with a genetically effective population size > 500 (A.0.X) by species group*** **[Simpler wording for A.1.X:] *The proportion of populations maintained at genetically safe sizes** (A.0.X) by species group***	A.1.1.47. The number of populations (or breeds) within species with an effective population size > 500 compared to the number < 500** **[This should be elevated to Headline indicator – A.0.X. or added to A.0.5]** A.1.1.48. Genetic scorecard for wild species ***A.1.1.XX* [Component or Complementary Indicator]: *The number of populations in which genetic diversity is being monitored using DNA-based methods***

[New Target or add text to T3 or T7:] ***By 2030, genetic diversity of wild and domestic populations is maintained, managed, and monitored at levels ensuring [X%] of population genetic diversity [in perpetuity].***	***A.0. A.0.5. and A.0.X above***	***X.1 or 3.03 Populations are maintained, with large size to maintain genetic diversity, and genetic diversity is monitored and managed***	***A.1.7. and A.1.X above***	

**** conditions include: large population sizes, baseline numbers and geographic range of populations, and targeted management of genetic diversity such as translocations and reintroductions***

***** "sufficiently large" a.k.a. "genetically safe size" means that the genetically effective population size, Ne, of the population is >500. This typically equates to a number of mature individuals >5,000 for most taxonomic groups***

References

Díaz et al 2020 in Science: https://science.sciencemag.org/content/370/6515/411
Laikre et al 2020 in Science: https://science.sciencemag.org/content/367/6482/1083.2
Hoban et al 2020 in Biological Conservation: https://www.sciencedirect.com/science/article/pii/S0006320720307126