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PLANT CONSERVATION REPORT 2020:

A review of progress towards the Global Strategy for Plant Conservation 2011-2020

Convention on Biological Diversity

United Nations Decade on Biodiversity 2011-2020

BOTANIC GARDENS CONSERVATION INTERNATIONAL

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A contribution to the fifth edition
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Ian Harvey-Brown

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Box 20: California Plant Rescue: Conserving the endemic and endangered plant diversity of the Golden State.

California Plant Rescue (CaPR) was formed in 2014 to conserve the wild species of California, primarily through *ex situ* conservation. Long before the CaPR consortium was formalized, CaPR partners had been making seed collections of both rare and common species for decades. This approach successfully conserved germplasm of some 30% of plants acknowledged by the state of California to be the rarest in the state (California Native Plant Society [CNPS] rank 1B).

Since 2014, via dedicated effort, collaborative and synergistic action, and concerted focus on rare species, seed bank holdings of the rarest plants in California have been increased by 53%, with a trajectory to securing 75% of the most threatened plant species (CNPS rank 1B) in *ex situ* collections by 2020. Excellent progress has also been made on the species accorded lower rank as at least somewhat less threatened (i.e., ranks 2, 3, 4 of the CNPS rank plant ranking system).

Since CaPR's founding in 2014, partners have also increased capacity; at Rancho Santa Ana Botanic Garden, the flagship partner in CaPR, the seed bank's freezer capacity has been increased by almost 50%, increasing germplasm storage capacity in equal measure.

Quantities permitting, the collaborative makes seeds available for research and restoration and also tests for viability periodically as resources permit. (www.caplantrescue.org/).

Target 8 – issues to consider

Species conservation initiatives traditional favour *in situ* conservation over *ex situ* and countries such as Canada report that species recovery plans rarely include *ex situ* conservation as a measure. However, the increasing loss of habitat and the impacts of climate change mean that not all species can be conserved in their natural environments. Furthermore, genetically representative *ex situ* collections provide an important source of material for research and restoration activities. There is therefore a clear need to maximise genetic diversity in collections as well as increasing the use of such collections Such use needs to be broadened beyond restoration to include species reintroductions, translocation, novel species assemblages and use in agriculture, horticulture and forestry.

Monitoring progress towards this target (as with Target 7) is limited by a lack of information on which species are threatened, so greater focus on Target 2 is urgently required at both national and global levels. In addition, over 20% of seed plant taxa either do not produce seeds that withstand storage conditions well or produce very few seeds. These "exceptional species" need alternative conservation methods, including tissue culture, cryopreservation, or maintenance in living collections.

Box 21: Conserving *Buchanania barberi* a Critically Endangered and Endemic Tree from India

Buchanania barberi Gamble (family Anacardiaceae) is a small evergreen tree (15 meter) endemic to the south Western Ghats of Kerala, India. The Western Ghats is a recognized UNESCO World Heritage site and a biodiversity hotspot. *Buchanania barberi* is known from only two mature individuals with an area of occupancy < 5 km^2 and is categorized as Critically Endangered on IUCN Red List. The species is on the verge of extinction due to low seed production (the majority of its fruits are eaten by birds), no clonal propagation, low natural seed germination, lack of seedling establishment and road expansion and development activities in the area. An *ex situ* conservation project has been initiated funded by The Mohamed Bin Zayed Species Conservation Fund and run by Jawaharlal Nehru Tropical Botanic Garden and Research Institute. As a result, seeds of *B. barberi* have been collected from natural population and propagated in a greenhouse at the institute. The seedlings produced have been distributed to schools and villages to ensure a future for this rare tree.

Case study supplied by: Anurag Dhyani, Division of Conservation Biology Jawaharlal Nehru Tropical Botanic Garden and Research Institute, Thiruvananthapuram, India