



Juniper Forest of Ziarat, Balochistan, Pakistan.
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DNA BARCODING WILD FLORA IN PAKISTAN'S FORESTS

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Preserving voucher specimens and creating a virtual herbarium to understand and protect some of the oldest living trees on the planet.

Balochistan, the largest province of Pakistan, is endowed with a variety of natural forests. Juniper (*Juniperus excelsa*), Pinus (*Pinus gerardiana*), wild Olive (*Olea sp.*) and mangroves are the predominant forest ecosystems of the province. The versatility of life forms in these forests support dynamic ecosystems and provide several important 'ecosystem services' like food, medicines, climate regulation, genetic resources, recreation facilities, etc. Biodiversity conservation, in the face of such benefits, becomes imperative. Comprehensive cataloguing of flora and fauna is, by all means, at the heart of such conservation endeavours.

The Juniper forest of Ziarat, Balochistan, declared a UNESCO Man and Biosphere Reserve, is considered one of the world's largest compact forests of its kind spreading over an area of 100,000 ha. Be-

ing some of the oldest living trees on earth, they are termed "Living Fossils". The Chilgoza (*Pinus gerardiana*), also known as the Chilgoza Pine, on the other hand, are listed as lower risk, near threatened forest. Anthropogenic interferences have further aggravated the situation in this ecosystem and a more focused study about their current status is needed.

Fragmented studies exist attempting to document the associated flora of these forests; however, a more comprehensive approach is needed. The use of DNA barcoding techniques, duly augmented by classical taxonomy, is necessary for the creation of a reference library to inventory, assess, and describe the biodiversity of these forests. To fill this gap, a study was designed to provide a foundation for future biodiversity assessment and conservation efforts.

Funded by Pakistan Agricultural Research Council and Higher Education Commission of Pakistan, our research group at the Balochistan University of Information Technology, Engineering & Management Sciences, Quetta is expecting to barcode and acquire samples of approximately 1,000 wild plant species.

To date, 730 samples of 525 different species have been collected and 29% (150 of 525) have been bar-coded. Besides maintaining voucher specimens, a virtual herbarium will be made available to the global scientific community interested in the flora of these forest ecosystems.

Online:

<https://ibol.org/barcodebulletin/research/dna-barcoding-wild-flora-in-pakistans-forests/>



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