Critically endangered tree gets frisky in 'desperate' attempt for survival

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"For a long time eucalypt experts haven't known if this is a species or not, even though it is sitting in suburban Sydney, in the Hills District. This tree was found in one of the most densely developed areas of Australia and we still hadn't figured it out.

"It shows you that even on our own doorstep we have things left to be resolved. Our work now shows this tree should be provided with a formal scientific name, and we will be working on this next. Every described species needs a trait to identify its distinctiveness, and in this case genetic data has been a powerful tool to help with this."

In addition to using DNA genomic sequencing to identify that this is a distinct species, researchers used it to investigate genetic variability in the species, allowing them to choose the best cultivated seedlings to help save the species.

"Genetic data can help us to distinguish whether what we are looking at is a distinct species or just the result of hybridization," Dr. Wilson says.

"We also need to look at how prevalent and important hybridization is in a species. In this case we found many of our cultivated seedlings were the result of hybridization between the rare 'Cattai' eucalypt and nearby eucalypts.

"Eucalypts are notorious for being promiscuous and will readily receive pollen from other eucalypt species. They are certainly often not choosy when it comes to mating."

Results from the study were used to help with the translocation of genetically "pure" and healthy cultivated seedlings to nearby suitable habitat.

Researchers found there were only 14 populations of the eucalypt in the Sydney area, with just 700 individuals left in the wild.

The critically endangered eucalypt is restricted to a
conserving species," she says.

"The Institute's work on population genomics has provided valuable insights into evolutionary processes to improve management practices and strategies and save a number of threatened plant species.

"Having knowledge of these evolutionary processes is important for their conservation so we must continue our research efforts to protect our environment for generations to come."


Provided by Australian Institute of Botanical Science

Dr. Wilson says hybridization is a natural phenomenon important with species evolution.

"Plant species can connect and gene share which sometimes gives them evolutionary boost to overcome some challenging environments," he says.

"In the animal world it's a bit rarer but in plants, hybridization is less inhibited between closely related species."

Chief Executive of Royal Botanic Gardens and Doman Trust and the Australian Institute of Botanical Science, Denise Ora, says the collaborative work shows just how vital the Institute's conservation efforts are.

"These are plants right in front of our noses and yet we still have so much work to do if it means