

# Wild tulips need love, too: Research highlights ignored 'plight' of spring symbol

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In the days of cable TV, melancholy commercials pleading for donations to help save big animals on the brink of extinction—such as elephants, polar bears, gorillas, and pandas—landed on screens across the United

States.

But advertisements to raise awareness and funding for the study of plants, such as the wild [tulip](#), were either nonexistent or unmemorable.

Wild tulips are threatened by climate change, and funding for research is hard to come by. Livestock overgrazing, mining, urbanization, fluctuating rain patterns, and "opportunistic collection" of flowers and bulbs have all damaged the species' ecosystems.

The diverse tulip colors typically seen in the spring have been bred for many years for large gardens, according to the Missouri Botanical Garden. The beginning of tulip cultivation can be traced back to the Ottoman Empire centuries ago, which regarded the flower as a status symbol.

Brett Wilson, a Ph.D. candidate at University of Cambridge studying the evolution of wild tulips, is merging his research to guide future conservation efforts that can hopefully prevent more wild tulips from going extinct. A workshop with many international experts, including Wilson, began May 10 in Bishkek, Kyrgyzstan, with the goal of assessing tulip species across Central Asia.

## **Addressing 'plant blindness'**

People and organizations shouldn't allocate fewer resources toward big and fluffy endangered animals; protecting wildlife is just as important as protecting plants, Wilson said. But it's [high time](#) that everyone recognized the significance of tulips, as well as any other wild plants.

"One of the things that we talk a lot about in conservation is plant blindness, which is the focus on animals and specifically sort of large animals that are fluffy and that we can sort of relate a bit more to,"

Wilson said.

In the last two decades, efforts to classify trees and large flowers for conservation have significantly increased. But Wilson said tulips, and small plants in general, continue to be overlooked.

"They (tulips) are also quite small, they're not extremely showy, you'll see them for a short time of the year."

Wilson said he believes that despite the grim predictions for the future of tulips, all hope is not lost.

## **A hotspot for tulip diversity**

Wilson and a team of researchers made several excursions to the Central Asian countries of Kyrgyzstan and Tajikistan—wild tulip biodiversity hotspots—before the onset of the COVID pandemic to collect information and try to combat plant blindness. And Wilson was able to return to the region this spring.

Wilson said he chose Central Asia after recognizing it as a place that many people don't have on their radar as important.

Although tulips do grow in many mountainous areas of Eurasia, the Central Asian mountain range is a region particularly vulnerable to the dangers of climate change, Wilson said.

"Our results were both surprising and depressing," Wilson wrote in a blog post detailing the trip.

With six months left to go as a Ph.D student, Wilson is nearing the end of a slow by mighty mission: to truly represent wild tulips, specifically species in Central Asia, on the International Union for Conservation of

Nature's Red List for the first time.

Created in 1964, the red list guides [scientific research](#) by assessing animal, fungus and plant species' extinction risks. To date, the IUCN has assessed more than 142,500 species and aims to reach 160,000 species to paint a more accurate picture of biodiversity health today.

It is estimated that there are between 76 and 90 wild tulip species, according to Wilson's research.

## **Wild plants are vital for new cures, medicine and food**

While all plants are crucial to a healthy planet and serve as a vital source of food and medicine, scientists have recently discovered that [wild plants](#) are even more helpful than human-bred commercial crops.

Wilson said it's become increasingly apparent that domesticated tulips, and other plants not bred in the wild, are less genetically diverse.

Genetic diversity is important because it allows plants to evolve and become more resistant to disease, he added.

"If we're losing a species, then we're losing things we don't really know exist yet," Wilson said. "A lot of our medicines come from plants, and we still are discovering new things all the time ... so there's a real push to protect as much as we can. We're working on this one plant, but it's helping protect the environment as a whole as well."

Wilson published a study March 27, 2021, in the peer-reviewed *Biodiversity and Conservation* journal, which outlined the direness of tulips' fate

## Severe plight of tulips isn't hopeless

If ignored, climate scenario models in the report highlight the "severe plight of tulips even under best case climate scenarios." For example, temperature changes can upend seasonal triggers that tulips and other plants rely on for timing.

Even with regional by-laws to protect tulips commercial collectors continue to exacerbate the threat. Climate scenario models can be misleading, particularly in underreported areas. Nonetheless, the report stresses a need for further study and IUCN classification, and wild tulips are known to survive harsh landscapes, clinging to the ledges of remote mountains.

"Although the results seem extremely negative, modeling simplifies the true picture and tulips may be more resilient than we think," Wilson wrote. "So, all is not lost!"

## Research where to buy plants and avoid harm

Wilson's research found that species may be able to migrate if and when a tulip's location becomes unsuitable due to [climate change](#). He said other suitable homes for tulips could emerge, but that relocation initiatives can potentially cause more harm and requires an extensive amount of further study.

If unsuccessful, migration could lead to further genetic fragmentation and ultimately stunt conservation efforts.

To avoid purchasing plants that have been dug from the wild, the Missouri Botanical Garden, whose researchers have worked with Wilson to study tulips in Central Asia, recommend buyers look for nursery-

propagated certification.

Now that stakeholders have met, there's a lengthy review process, at least six months, to become a part of IUCN's database.

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