

GROWING HOPE FOR PLANTS IN PALESTINE

From vibrant flower carpets amongst ancient olive trees to small, encroached patches of purple petals on hillsides, Palestine's plants are special. And now there's a growing movement to protect them – one that combines the enthusiasm of emerging young plant conservationists and the wisdom of traditional knowledge

Enas Sarahneh



© Ahmad Al Omaid

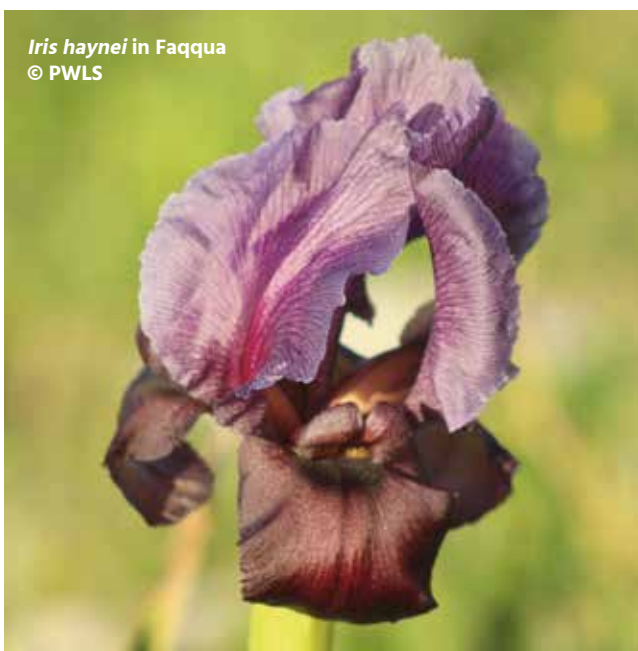
CRITICAL ECOSYSTEM
PARTNERSHIP FUND

*BirdLife and Partners (LPO, DOPPS & BPSSS) are entrusted by CEPF as the Regional Implementation Team for the Mediterranean Biodiversity Hotspot: birdlife.org/cepf-med

Palestine is special. So too are its plant species. Palestine sits at the nexus of three major ecoregions, which has given rise to a great diversity of wildlife. In fact, it has over 2000 plant species, 54 of which are found nowhere else on earth. In terms of its physical geography, Palestine is surrounded by sea and fences and encroached on by human development – much like its endemic plants, which are restricted to small, shrinking and degraded habitats with specific requirements. Add into the mix a rich cultural history that is maintained through traditional knowledge, and it's clear to see how local civil society organisations are key to tackling the threats facing Palestine's plants.

For the first time, BirdLife – through its role as Regional Implementation Team for the Mediterranean Hotspot of the Critical Ecosystem Partnership Fund (CEPF)* – has provided small grants to five civil society organisations in Palestine, to conserve threatened and site-restricted endemic plants and their habitats. Through these projects, the botanical knowledge and skills of scientists and conservationists will be strengthened, and hopefully passed down like the ancient farming knowledge held within its olive groves.

Iris haynei in Faqqua
© PWLS



PWLS team surveying
Iris haynei in Faqqua
village, Palestine
© PWLS

CONSERVATION OF A SYMBOLIC IRIS

In the hills above Marj Ibn Amer, hailed as the most fertile meadow in the Middle East, a beautiful flower *Iris haynei* grows. Found nowhere else in the world except Faqqua village, Palestine, this rare endemic iris hangs on in patchy and fragmented populations and is considered globally threatened. In 2015, *Iris haynei* was declared the national plant of the State of Palestine by the Palestinian Environment Quality Authority, and the Palestine Wildlife Society (PWLS, BirdLife Partner) is making exceptional efforts to save it with support from CEPF. Understanding its distribution and ecological requirements is of paramount importance.

Findings so far are encouraging. Youth from local communities around the village are enthusiastically contributing towards the efforts to save the iris – which faces many threats including overgrazing, pests, localised flower collection, tree plantations and development.

In co-operation with students from different Palestinian universities, PWLS has made a major breakthrough in germinating *Iris haynei* from seeds – using a methodology taught by another CEPF grantee and iris expert from Lebanon's University of Saint Joseph. The processed seeds were planted in three places: the laboratory, the natural distribution areas of *Iris haynei*, and a garden of 0.45 hectares donated by Faqqua village council to be used as a botanical garden for scientific research and as an educational centre.

A photo and painting contest for the children of Faqqua was also announced through the Palestinian Ministry of Education to help generate a sense of ownership and awareness of 'their' special purple flower.



Ancient olive orchards
in Palestine
© Ahmad Al Omari



Iris atrofusca in
Tubas, Palestine
© Anton Khalilieh

LEARNING FROM THE PAST

In Misilyah village, in the north of the West Bank, stand ancient groves of gnarled olive trees surrounded by a vibrant carpet of delicate flowers that, until recently, had never been studied. Some trees are over 800 years old, passed down from generation to generation along with the traditional knowledge of how to care for them, and are considered by Palestinians as a symbolic attachment to their land. It's their agricultural practices – such as organic composting, crop rotation and intercropping – that have allowed the remarkable flora to thrive, according to recent research by the An-najah National University.

With a small grant from CEPF, a phenomenal 275 plants species from 48 families were recorded in the groves. Realising the importance of the exceptional diversity, the research team also organised a workshop in the village to raise farmers' awareness of the importance of their traditional practices, and encourage them to maintain them.

Such a scenic traditional landscape also attracts many tourists to the area, which could have a damaging effect on the groves if not appropriately managed. Thankfully, the primary results of the research have succeeded in qualifying Misilyah village municipality for another fund that will establish an ecological park in the village. This will encourage ecotourism in this sensitive region and raise local communities awareness of its rich biodiversity.

THE IRIS THE SHEEP WON'T EAT

When conservationist Dr Anton Khalilieh came upon a rare flower in bloom in the North Eastern Slopes of Palestine (a Key Biodiversity Area or KBA), he immediately video-called his colleague. "This is paradise," he said, moving his phone from left to right to show the beautiful scenery filled with patches of *Iris atrofusca*. "We have to do something about it." Although the elegant, rich purple flowers were scattered throughout this area, the challenges threatening their existence are persistent. Found almost exclusively within Palestine, their fragile population cannot withstand further degradation, habitat loss and exploitation by people.

Dr Khalilieh is the Executive Director of the Nature Palestine Society (NPS), a three-year-old NGO aiming to research, conserve and educate people about biodiversity and the environment in Palestine, and has received a CEPF grant for its work. Very little was known about *Iris atrofusca* in Palestine, so a survey was needed. The NPS team wandered around 1400 hectares and, surprisingly, discovered an area of about 180 hectares that contained over 7800 iris flowers. Two rare colour variations – yellow and white – were also found within the masses of typical purple irises.

During the survey, the team met a shepherd wandering with his 300 sheep and cows, who had fallen in love with the iris after he noticed that his sheep did not eat it. He worked hard to conserve it in the wild and helped the team to figure out its distribution.

A botanical garden for the iris was established as an in-situ conservation site on 0.5 hectares, out of 1.4 hectares donated by the Ministry of Agriculture and the Environment Quality Authority within the KBA. Here, 120 clones of *Iris atrofusca* were planted in 2021.

Five plant micro-reserves will also be established in three schools within the KBA, in co-operation with school environmental clubs in Tammun town, and a large iris mural is being painted to help raise awareness.



Surveying
plant biodiversity
in Bethlehem
© Mohammad
Najjrah



Iris lortetii data
collection in Nablus,
Palestine
© Rana Jamous

AN EMERGING GENERATION OF BOTANISTS FROM PALESTINE

Scientific research is not only important for understanding the abundance of species in an area and the threats they face, but is also essential for training the next generation of conservationists. This is very true for Bethlehem University, which has trained young researchers in plant identification, distribution analysis, conservation and other skills to help encourage more young people to work in the field of botany. This was part of a CEPF-granted project to survey Al Mahkrour (the latest green area of Bethlehem city) and the garden of the Palestine Museum of Natural History.

More than 361 plant species, spread over 1.2 hectares, were recorded within the museum's garden. The team also established a botanical garden, and a management plan is being drawn up to conserve threatened and rare species.

The museum is also an attractive site for tourists, so the university is working to make it an ecotourism site, raising awareness among students and visitors about the plants within the botanical garden and their conservation – which will link to cultural heritage and traditional knowledge.

PLANT MICRO-RESERVES: VITAL PATCHES FOR PLANT CONSERVATION

Finally, we move to Nablus, where the status of a third endemic iris, *Iris lortetii*, is being assessed by the Biodiversity & Environment Research Centre (BERC), through identifying and mapping its locations and collecting samples to study its DNA.

BERC's assessment showed that flora in Nablus is facing various threats, including overgrazing, land use conversion, quarries and urban development. In response, the team established six plant micro-reserves to conserve the iris and other flora. Plant micro-reserves are a recent conservation approach for the Middle East to conserve pockets of high endemism that fall outside networks of protected areas. Here, they are on public land owned by the Ministry of Agriculture in Mount Ebal, in public gardens governed by the village council, and on private land owned by local communities who believe in the importance of conserving this remarkable flower.

Reflecting the cultural attachment to olive trees mentioned earlier, one of the requirements to obtain a building permit in Palestine is to inform the Environment Quality Authority (EQA) if there are any olive trees that would be uprooted. BERC is working on creating a similar regulation for irises, which will help in conserving all threatened plant species, and ensure that EQA transfers threatened plants to one of the micro-reserves in the area.

According to Dr Issa Musa Albaradeiya, Director General of Environmental Resources, EQA Palestine, this work is doing a great job of promoting awareness among government decision-makers and the community on the value of traditional practices and the role of ecotourism in protecting nature. He says: "The support provided by BirdLife International and CEPF to Palestine has strengthened the capacities of civil society organisations in the conservation of Key Biodiversity Areas. Findings are significant and will help set priorities for conserving sites of high natural and cultural values." ■