EarthBeat

<u>Science</u>



Lebanese Maronite Christian Patriarch Patriarch Beshara al-Rai, second right, leads the sermon to commemorate the Feast of the Transfiguration in the Cedars of God forest, in the northeast mountain town of Bcharre, Lebanon, Saturday, Aug. 5, 2023. For Lebanon's Christians, the cedars are sacred, these tough evergreen trees that survive the mountain's harsh snowy winters. (AP/Hassan Ammar)

Kareem Chehayeb

View Author Profile

The Associated Press

View Author Profile

Join the Conversation

Send your thoughts to Letters to the Editor. Learn more

BCHARRE, Lebanon — December 8, 2023 Share on FacebookShare on TwitterEmail to a friendPrint

Majestic cedar trees towered over dozens of Lebanese Christians gathered outside a small mid-19th century chapel hidden in a mountain forest to celebrate the Feast of the Transfiguration, the miracle where Jesus Christ, on a mountaintop, shined with light before his disciples.

The sunset's yellow light coming through the cedar branches bathed the leader of Lebanon's Maronite Church, Patriarch Beshara al-Rai, as he stood at a wooden podium and delivered a sermon. Then the gathering sang hymns in Arabic and the Aramaic language.

For Lebanon's Christians, the cedars are sacred, these tough evergreen trees that survive the mountain's harsh snowy winters. They point out with pride that Lebanon's cedars are mentioned 103 times in the Bible. The trees are a symbol of Lebanon, pictured at the center of the national flag.



Lebanese Maronite Christian Patriarch Beshara al-Rai, second left, leads the sermon to commemorate the Feast of the Transfiguration in the Cedars of God forest, in the northeast mountain town of Bcharre, Lebanon, Saturday, Aug. 5, 2023. Lebanon's Christians point out with pride that Lebanon's cedars are mentioned 103 times in the Bible. (AP/Hassan Ammar)

The iconic trees in the country's north are far from the clashes between Hezbollah militants and Israeli troops along the Lebanon-Israel border in recent weeks against the backdrop of the Israel-Hamas war. The Lebanese government says Israel's use of white phosphorus and other incendiary weapons has burned tens of thousands of olive trees and other crops in the border area, and impoverished Lebanese farmers fear the shells have contaminated their soil.

But the long-term survival of the cedar forests is in doubt for another reason, as rising temperatures due to climate change threaten to wipe out biodiversity and scar one of the country's most iconic heritage sites for its Christians.

Advertisement

The lush Cedars of God Forest, some 2,000 meters (6,560 feet) above sea level near the northern town of Bcharre, is part of a landscape cherished by Christians. The preserve overlooks the Kadisha Valley — Aramaic for "sacred" — where many Christians took refuge from persecution over Lebanon's tumultuous history. One of the world's largest collections of monasteries remains hidden among the thick trees, caves and rocky outcroppings along the deep, 35-kilometer (22-mile) valley.

The United Nations' culture agency UNESCO in 1998 listed both the cedar forest and the valley as World Heritage Sites. They've become popular destinations for hikers and environmentalists from around the world. A growing number of Lebanese of all faiths visit as well, seeking fresh air away from the cities.



People greet Lebanese Maronite Christian Patriarch Beshara al-Rai, center, as he arrives to start the sermon to commemorate the Feast of the Transfiguration in the Cedars of God forest, in the northeast mountain town of Bcharre, Lebanon, Saturday, Aug. 5, 2023. (AP/Hassan Ammar) "People from all religions visit here, not just Christians ... even Muslims and atheists," said Hani Tawk, a Maronite Christian priest, as he showed a crowd of tourists around the Saint Elisha monastery. "But we as Christians, this reminds us of all the saints who lived here, and we come to experience being in this sacred dimension."

Environmentalists and residents say the effects of climate change, exacerbated by government mismanagement, pose a threat to the ecosystem of the valley and the cedar forest.

"Thirty or 40 years from now, it's quite possible to see the Kadisha Valley's biodiversity, which is one of the richest worldwide, become much poorer," Charbel Tawk, an environmental engineer and activist in Bcharre — unrelated to Hani Tawk — told The Associated Press.



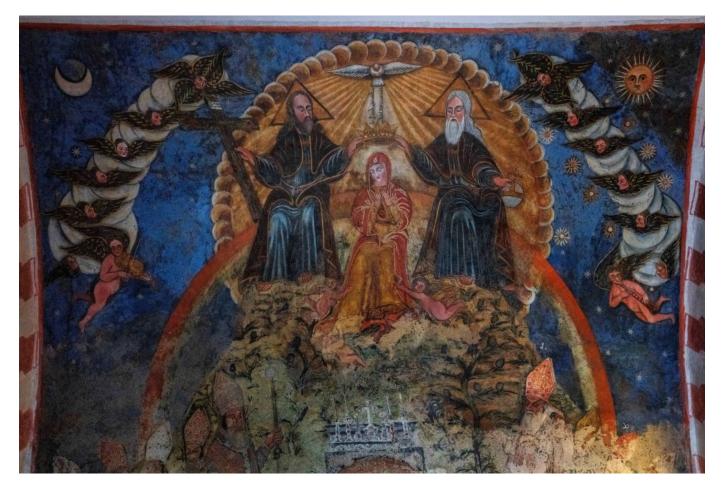
Lebanese priest Hani Tawk, center, gives French tourists a tour of the Saint Elisha monastery, located in the Kadisha Valley, a holy site by Lebanon's Christians, in the northeast mountain town of Bcharre, Lebanon, Saturday, July 22, 2023. (AP/Hassan

Ammar)

Lebanon for years has felt the heat of climate change, with <u>farmers decrying lack of</u> <u>rain</u>, and forest fires wreaking havoc on pine forests north of the country, similar to blazes that scorched forests in neighboring Syria and <u>nearby Greece</u>. Residents across much of the country, struggling with rampant electricity cuts, could barely handle the summer's soaring heat.

Temperatures have been above 30 degrees Celsius (86 degrees Fahrenheit) in Bcharre, not uncommon along Lebanon's coastal cities but unusual for the mountainous northern town.

Nuns in the medieval Qannoubin Monastery, perched on the side of a hill in the Kadisha Valley, fanned themselves and drank water in the shade of the monastery's courtyard. They reminisced about when they could sleep comfortably on summer nights without needing much electricity.



A Christian mural inside the Qannoubine Monastery, hidden deep in the scenic Kadisha Valley, a holy site for Lebanon's Maronite Christians, in the northeast mountain town of Bcharre, Lebanon, Saturday, July 22, 2023. (AP/Hassan Ammar)

Already, there are worrying signs of the impact on the cedars and Kadisha.

Warmer temperatures have brought larger colonies of aphids that feed on the bark of cedar trees and leave a secretion that can cause mold, Charbel Tawk said. Bees normally remove the secretion, but they have become less active. Aphids and other pests also are lasting longer in the season and reach higher altitudes because of warmer weather.

Such pests threaten to stunt or damage cedar growth.

Tawk worries that if temperatures continue to change like this, cedars at lower altitudes might not be able to survive. Fires are becoming more of a potential danger.



Lebanese priest Hani Tawk, center, prays with French tourists and his family next to a cross with a statue of a crucified Jesus Christ outside the Saint Elisha monastery in the Kadisha Valley, a holy site by Lebanon's Christians, in the northeast mountain town of Bcharre, Lebanon, Saturday, July 22, 2023. (AP/Hassan Ammar)

Cedar trees usually grow at an altitude from 700 up to 1,800 meters above sea level. Tawk's organization has planted some 200,000 cedars over the years at higher altitudes and in areas where they were not present. Some 180,000 survived.

"Is it climate change or whatever it is happening in nature that these cedars are able to survive at 2,100 to 2,400 meters?" Tawk asked, while checking on a grove of cedars on a remote hilltop.

Local priests and environmental activists have urged Lebanon's government to work with universities to do a wide-ranging study on temperature changes and the impact on biodiversity.



Agricultural engineer Charbel Tawk looks after a cedar tree as part of a forestation initiative 2,400 meters above sea level, in the northeast mountain town of Bcharre, Lebanon, Saturday, July 22, 2023. (AP/Hassan Ammar)

But Lebanon has been in the throes of a <u>crippling economic crisis</u> for years. State coffers are dried up, and many of the country's top experts are rapidly seeking work opportunities abroad.

"There is nothing today called the state ... The relevant ministries, even with the best intentions, don't have the financial capabilities anymore," Bcharre Mayor Freddy Keyrouz said. He said he and mayors of nearby towns have asked residents to help with conservation initiatives and Lebanese diaspora abroad to help with funding.

The Maronite Church has strict rules to protect the Cedars of God forest, including keeping development out of it. Kiosks, tourist shops and a large parking lot have been set far away from the forest.



Workers install a censor on a Lebanese cedar tree that alerts authorities of potential forest fires in the Cedars of God forest, in the northeast mountain town of Bcharre, Lebanon, Saturday, Aug. 5, 2023. (AP/Hassan Ammar)

"We don't allow anything that is combustible to be brought into the sacred forest," said Charbel Makhlouf, a priest at Bcharre's Saint Saba Cathedral.

The Friends of the Cedar Forest Committee, to which Tawk belongs, has been looking after the cedar trees for almost three decades, with the church's support. It has installed sensors on cedar trees to measure temperature, wind, and humidity, watching for worsening conditions that could risk forest fires.

Below the forest in the Kadisha Valley, Tawk points to other concerns.

In particular, the spread of cypress trees threatens to crowd out other species, "breaking this equilibrium that we had in the valley," he said.

"We've seen them increase and tower over other species, whether it's taking sunlight, wind, or expanding their roots," he said. "It will impact other plants, birds, insects, and all the reptile species down there."



People sit and reflect as the sun sets over the scenic Kadisha Valley, a holy landmark for Lebanon's Maronite Christians, in the northeast mountain town of Steps to protect the valley have actually hurt its biodiversity by removing human practices that had been beneficial, Tawk said.

In the past, herders grazing their goats and other livestock in the valley helped prevent the spread of invasive species. Their grazing also reduced fire hazards, as did local families collecting deadwood to burn in the winter.

But residents left the valley when it became a heritage site and the Lebanese government implemented strict regulations. Few live there now other than a handful of priests and nuns.

"Trees have overtaken places where people lived and farmed," Tawk said. "Now a fire could move from one end of the valley to the other."

Sitting in a cave near the Qannoubine Monastery, Fr. Hani Tawk listened to the variety of birds chirping in the valley. He said he believes in the community's faith and awareness of nature, engrained since their ancestors took refuge here.

"When you violate that tree, you're intruding on a long history, and possibly the future of your children," he said.