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A way of life melting away

FOR centuries, Swiss farmers have sent their cattle, goats and sheep up the mountains to graze in warmer months before bringing them back down at the start of autumn.

Devised in the Middle Ages to save precious grass in the valleys for winter stock, the tradition of “summering” has so transformed the countryside into a patchwork of forests and pastures that maintaining its appearance was written into the Swiss Constitution as an essential role of agriculture.

It has also knitted together essential threads of the country’s modern identity: alpine cheeses, hiking trails that crisscross summer pastures, cowbells echoing off the mountainsides.

In December, the United Nations heritage agency Unesco added the Swiss tradition to its exalted “intangible cultural heritage” list.

But climate change threatens to scramble those traditions. Warming temperatures, glacier loss, less snow and an earlier snow melt are forcing farmers across Switzerland to adapt.

Not all are feeling the changes in the same way in a country where the Alps create many microclimates. Some are enjoying bigger yields on summer pastures, allowing them to extend their alpine seasons. Others are being forced by more frequent and intense droughts to descend with their herds earlier.

The more evident the effect on the Swiss, the more potential trouble it spells for all of Europe.

Switzerland has long been considered Europe’s water tower, the place where deep winter snows would accumulate and gently melt through the warmer months, augmenting the trickling runoff from thick glaciers that helped sustain many of Europe’s rivers and its ways of life for centuries.

Today, the Alps are warming about twice as fast as the global average, according to the Intergovernmental Panel on Climate Change. In the past two years alone, Swiss glaciers have lost 10% of their water volume – as much as melted in the three decades from 1960 to 1990.

The government is trying to address the changes and preserve Swiss alpine traditions, including with large infrastructure projects to take water to the top of mountains for animals grazing in the summer months.

For now, the traditions, while strained in places, continue. After three days of scrambling over rocky mountainsides and zigzagging stone steps, the first sheep in a giant herd of nearly 700 burst into view at the end of their “summering” last fall.

As a crowd of spectators cheered, some of the sheep pranced. Others stopped dead in their tracks and had to be coaxed along by herders in matching plaid shirts and leather cowboy hats, adorned with wildflowers and feathers.

The sheep had been living wild for more than three months – wandering around a high, vast wilderness penned in by glaciers. Their only contact with humanity had been the visits of a single shepherd, Fabrice Gex, who says he loses more than 13kg a season walking the territory to check on them.

“With climate change, our vegetation period is longer,” Gex, 49, said, standing in the ancient stone pen where the sheep are corralled at the end of their trek. “So the sheep can stay longer.”

The tradition of alpine pasturing, or “transhumance,” spreads all across the Alps, including Austria, Italy and Germany.

Nearly half of Switzerland’s livestock farms send their goats, sheep and cows up to summer pastures, according to the last thorough study done by government scientists, in 2014.

More than 80% of alpine farm income

A team from ETH Zurich, a research university, use orange dye for an annual measuring of surface melt at the Rhone Glacier, which has retreated since 2007 by about a third of a mile. (Below) Sheep cross a mountain plateau in the vicinity of the glacier in Switzerland. — ©2024 The New York Times Company



“When the climate is changing, you need flexibility.”

Manuel Schneider

comes from government subsidies – many for keeping the pastureland clear of encroaching trees, which are nudging uphill with warmer temperatures.

That makes Switzerland a rare country that does not embrace tree cover as a solution to climate change.

“It would be all bushes and forest if we weren’t here,” said Andrea Herger, herding cows past an inn for hikers and into her family’s milking barn halfway up a mountain near Isenthal.

“It wouldn’t be that open, beautiful landscapes for hiking.”

Her husband, Josef Herger, is the third generation in his family to run their alpine summer farm, which is reached by a private cable car. They bring up seven cows from their own farm and 33 cows from neighbours, who pay them in cows’

milk that the couple uses to make cheese. Farther west, near L’Eivaz, the Mottier family pushes 45 cows along what they call a “mountain train”, following the newly sprouting grass to a summit of 2,030m and then back down to nibble on the second growth of grasses. Starting in May, they make five trips, stopping at three levels.

Near the peak, Benoit Mottier, 24, climbed onto a limestone outcrop, decorated with the initials of idling shepherds and the years they carved them. The oldest he can find was left in the 1700s by someone with his initials – BM.

He is the fifth generation in his family to take cows there.

The Mottiers are one of 70 families in the area who make a traditional Swiss cheese called L’Eivaz. They follow strict rules – slowly heating fresh milk in a giant copper cauldron over a fire of spruce wood. After the cheese is pressed, they take it down to a local cooperative, where it is aged and sold.

L’Eivaz can be made only on the local mountainsides for six months of the year. The tradition is so important, children from local farming families can leave school on summer vacation weeks early to help out.

“At the beginning of the season, we are

happy to begin,” said Isabelle Mottier, Benoit’s mother. “At the end of the season, we are happy it’s ending.”

“For us, it’s a life of cycles,” she said.

The Mottier summer farm gets water from a spring. Droughts in recent years have forced the family to adapt.

“A cow drinks 80 to 100 litres of water a day,” Isabelle Mottier explained. “We have more than 40 cows. We need an enormous quantity of water.”

In 2015, during a heat wave, the spring ran dry. Three years later, another heat wave and drought hit. And then again in 2022.

During the droughts, the Swiss army delivered water to alpine pastures using helicopters. The Mottiers, however, had no tanks to store it.

So they have installed a solar-powered pump to draw water from a lower spring, and have purchased a large water bladder to store snowmelt early in the season.

The situation is expected to get worse as the glaciers retreat. The country’s biggest glaciers, including the Aletsch and Rhône, are projected to shrink by at least 68% by the end of the century.

In anticipation, the Swiss government has quadrupled funding for alpine water projects. In 2022, it approved 40.

Near the village of Jaun, a construction crew was laying pipes to deliver electricity and water from a new cistern to six local farms. In 2022, some families brought their herds of cows down the mountain a month early because of the drought and heat.

In other regions, warmer temperatures are making fields more productive, said Manuel Schneider, a scientist with Agroscope, the Swiss government’s national research institute, who is leading a five-year study on biodiversity and alpine pasture yields.

That variability, however, can occur even on a single mountain, he said.

Farmers with mobile milking stations can take advantage of this “small-scale heterogeneity” by taking their cows – and their milking machines – to less dry areas. “When the climate is changing, you need flexibility,” Schneider said. — ©2024 The New York Times Company

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