In this issue

From People and Mountains around the world:

Global
- Mountain Protection Paper

Americas
- Andean Heatwave: Chile
- Hotter, Faster Fires: Canada

Africa
- Wildfires in Algeria

Oceania—SE Asia
- Torricelli Mountain Range

Europe
- Narrow Escape: Switzerland
- Apollo Butterfly: Austria

Central Asia—Himalayas
- Pikas & Zokors: Tibetan Plateau
- Hiking in the mountains: Iraq

Scree and Talus

Tools, Publications other Media

Mountain SG Committee
Exceptional winter heat in the Andean mountains of South America surged to 37C, prompting local scientists to warn the worst may be yet to come as human-caused climate disruption and El Niño cause havoc across the region.

The heatwave in the central Chilean Andes is melting the snow below 3,000 metres (9,840ft), which will have knock-on effects for people living in downstream valleys who depend on meltwater during the spring and summer.

August saw the warmest winter day in northern Chile in 72 years, according to Raul Cordero, a climate scientist at the University of Groningen, who said the 37C recorded at the Vicuña Los Pimientos station in the Coquimbo region was caused by a combination of global heating, El Niño and easterly gusts, known by locals as Terral winds that bring hot, dry weather.

South America has suffered one of the warmest January-to-July periods on record. Chile has been among the worst affected countries with fires at the beginning of the year and now extended droughts.

Marcos Andrade, the director of atmospheric physics at the Universidad Mayor de San Andrés in La Paz, said the Andean plateau in Bolivia and Peru had also experienced “unusual” weather since the start of the year.

“At Puno, on the other side of Titicaca Lake, they had their driest January since records began 59 years ago. In May, we had a storm with 20% of the usual annual rainfall,” he said. “The winter has also been unusually warm. We broke temperature records in some parts of the country.”

He expressed concern that worse may follow as the southern hemisphere approaches its summer. “El Niño usually peaks at the end of the year. I don’t think we have seen the full effects yet.”
Today, a record wildfire season has burned vast swathes of Canada and in the eastern regions of the country – and as far as New York – choked major cities with smoke.

As the blazes press into the summer months, biologists are increasingly concerned that threatened and endangered species could be pushed further to the brink as hotter, faster fires reshape the landscape.

“We’re most worried about those species in particular that have really restricted ranges or are living in a specialised habitat, like a small forest patch or a small grassland patch, like the half-moon hairstreak,” says Gráinne McCabe, chief conservation officer of the Wilder Institute. “Those species are going to be most at risk. With a bad fire, we could lose an entire species if they’re only found in one small area.”

Wildfire has long functioned as a restorative mechanism in forest ecosystems. The immense heat of a blaze is often needed to burst open pine cones for seeds to spread.

But across Canada, nearly 700 species are considered at risk, largely the result of human actions on the landscape and within water systems. In recent years, widespread fires pushing into areas unaccustomed to searing blazes have only increased the threat.

“Fires are a part of climate change and habitats like forests are not as resistant to fires as they once were. We’re seeing altered rainfall cycles and warmer, drier conditions that are just leading to more intense and more frequent fires.”

Emily Giles of World Wildlife Fund Canada

“When I see these types of (boreal) fires, I automatically look to threatened species that live in the boreal forest. Wolverines depend on these ecosystems. They’re very elusive animals. They require huge habitats, they’ve got a large range,” says Giles. “If they’re displaced by fire, they will have a hard time competing for a new habitat.” As an apex predator in the forests, the wolverine is a critical – but slowly vanishing – component of a balanced ecosystem.

Giles says that much of the spring fire season has overlapped with the breeding season for many species, presenting a clear danger to newborns. “Adults and healthy individuals can get away. All too often, the babies can’t.”

Canada is at national preparedness level 5, indicating full commitment of national resources is ongoing, demand for resources is extreme, and international resources are being mobilized.

The number of fires is well above average for this time of year, and well above the average for area burned for this time of year. There were 162 net new fire starts, 120 of those attributed to lightning reported over a week in mid August.

Fires are a part of climate change and habitats like forests are not as resistant to fires as they once were. We’re seeing altered rainfall cycles and warmer, drier conditions that are just leading to more intense and more frequent fires.

Emily Giles of World Wildlife Fund Canada
Wildfires in mountainous Kabylie: Algeria

BBC News / AlJazeera / WMO August 2023

Africa

Algeria is no stranger to summer wildfires but since July 2023 a series of wildfires have affected over 30,000 people (6,000 households) across north eastern Algeria, killing at least 34 people and injuring 700.

The most extensive fires, in the mountainous Kabylie region to the east of Algiers, spread to residential areas in the coastal towns of Bejaia and Jijel, fanned by high winds.

The fire has also severely affected livestock and crops, affecting people’s livelihoods and income. The smoke and ash from the fire have led to poor air quality and health problems. The Government has provided tents, water, and other assistance to the displaced people, but many still need shelter, WASH, and healthcare services besides livelihoods assistance.

Extreme heat (temperatures reaching 45–50°C), increasing wind speed, and low humidity are contributing to the spread of the fires.

The outstanding physical features of the Djurdjura National Park (photo right) include the mountain peaks of the Djurdjuran massif of the Grande Kabylie, part of the Tell Atlas Mountains. At a height of 2,308 meters, Lalla Khedidja is one of Algeria’s highest mountains.

The north escarpment face of the massif contains deep valleys, potholes, fissures and gorges, with ancient glacial action having left its mark on a number of the cliff faces. The park watered by springs and streams and has a number of glacial lakes within its boundaries. On the south-eastern slopes of the Djurdjuran massif there are dense Atlas cedar forest groves, while at lower altitudes there are endemic pine and juniper trees.
Oceania

**Torricelli Mountain Range: Papua New Guinea**

*From The Thin Green Line and Tenkile Conservation Alliance*

Our program partner, Tenkile Conservation Alliance, was established in 2001 to save critically endangered Tenkile tree kangaroos.

Today their operations include the protection of Weimang tree kangaroos and the entire **Torricelli Mountain Range** ecosystem in Sandaun Province. This is an area of primary rainforest that covers 143,000 hectares and contains up to 50% of Papua New Guinea’s biodiversity. The Torricellis is home to forty-three villages, each with two rangers who are responsible for patrols and surveys within their respective areas.

**Thin Green Line** recently equipped all 86 rangers in the Torricelli Mountain Range with boots and uniforms, making their jobs safer and more comfortable. We think they look great!

Critically endangered Weimang tree kangaroo: found in only two areas of New Guinea. The lower montane rainforest in the eastern end of the Torricelli Mountain range PNG & Foja Mountains in West Papua.

Elevation: 680 – 1,700 meters above sea level.

A major objective for the Tenkile Conservation Alliance (TCA) is to establish the Torricelli Mountain Range as a Protected Area.

This will provide the legal protection from not only large scale commercial development such as logging and mining but protect species from local impact such as over hunting and harvesting of natural resources.

The approach is one of a “bottom up” approach where resource owners have agreed to establish the protected area, established their own rules and penalties and designated hunting areas from non-hunting areas.

Each village has established a Conservation Area Management Committee who have been trained in natural resource management to manage the protected area accordingly.
Europe

**A narrow (& lucky) escape: Switzerland**

*From BBC news June 2023*

A large rockfall has narrowly missed a Swiss mountain village whose inhabitants were evacuated last May over fears of a landslide. The area had been declared a danger zone of the highest level possible, forcing the closure of two roads and a train line.

The rock and scree missed the empty hamlet of Brienz “by a hair”, local authorities said in a statement.

Rubble from the fallen rocks stood up to 12 metres high and the road was completely buried under the debris, Christian Gartmann, a spokesman for the community, said. “We are working on the assumption that this was not yet the end of it,” he told media.

Many are now asking why a village should suffer such a fate in Switzerland, where building regulations are strict and risk assessment is a continuous process. But Switzerland’s Alpine regions are especially sensitive to global warming.

As the glaciers shrink, and the permafrost high in the mountains begins to thaw, the rock becomes unstable. Lower down, heavier rainfall linked to global warming causes erosion and slippage, and this is what appears to have happened in Brienz. Forecasts of heavy rain was what prompted the sudden decision to evacuate.

In 2006 huge chunks of rock fell off Switzerland’s famous Eiger, causing the closure of hiking trails and prompting geologists to warn that such events could be expected more often.

In 2017, a massive landslide struck the village of Bondo, also in Graubünden, burying half the village and killing eight people.

Last summer, latest measurements showed that Swiss glaciers had lost more than half their volume in the last 100 years.

**Fluchthorn mountain peak collapses in huge rockslide: Austria**

The peak of mountain Fluchthorn (3,399m) in Tyrol, Austria, was caught on video collapsing in a huge rockslide on June 11.

Helicopters were dispatched after the event to assess the situation, and Thomas Figl, Tyrol’s chief geologist, gave an estimate of at least 100,000 cubic meters of rock to have collapsed from the peak in the rockslide. Figl also said that the most probable cause of the incident, identified during the flight, was thawing permafrost. He stated that

“The ice is melting due to global warming, and that’s what causes the mountains to crumble”, as well as how “The ice is the glue of the mountains, and this glue is slowly being lost”.

Photos: Arnd Wiegmann/AFP/Getty (top) Michael Buholzer/AP
Europe

Apollo butterfly: Austria

The Apollo butterfly (Parnassius apollo) is a stunning and iconic species found in various parts of Europe, including Austria. This large magnificent butterfly can be spotted in alpine regions, particularly in the mountainous areas of the Austrian Alps.

The Apollo butterfly thrives in high-altitude habitats characterized by open meadows, alpine pastures, and rocky slopes. These areas provide the ideal conditions for its larval host plants, which primarily include various species of stonecrops (Sedum spp.) and saxifrages (Saxifraga spp.). These plants not only serve as a food source for the butterfly’s caterpillars but also provide suitable places for oviposition (egg-laying) and shelter.

The rocky terrain and sparse vegetation of alpine habitats create a unique ecological niche that the Apollo butterfly has evolved to exploit.

The Apollo butterfly in Austria faces several significant threats that pose challenges to its conservation and population sustainability.

Habitat loss and degradation are among the most significant threats. Climate change is another major concern for the Apollo butterfly. Rising temperatures and altered precipitation patterns can disrupt the delicate balance of alpine ecosystems.

Overcollection for commercial purposes or private collections can also harm Apollo butterfly populations. Illegal collecting of the species can put additional pressure on already vulnerable populations.

Conservation efforts in Austria aim to address these threats through the establishment of protected areas, habitat restoration projects, monitoring programs, and public awareness campaigns. By addressing these challenges, it is possible to safeguard the Apollo butterfly and ensure its continued presence in the alpine landscapes of Austria for future generations to admire.
From Treehugger & Journal of Animal Ecology June 2023

A new paper reveals another example of the eradication of a keystone species gone wrong. Published in the Journal of Animal Ecology, the authors suggest that eradication measures to protect grasslands in China's Qinghai-Tibetan Plateau are harming the ecosystem.

The eradication policy was introduced in 2000 and calls for the culling of two mountain-dwelling herbivores, the plateau pika and the zokor. The two keystone species are ecosystem engineers because of their modification of and impact on the environment.

China's eradication policy is part of a nationwide initiative called the Returning Grazing Land to Grassland project. The idea behind it is that the rodents cause damage to grasslands by competing with grazing livestock for food, which, they believe, causes soil erosion. Yet the new study explains this isn't the case.

The authors say: "If we look at the grasslands, we will find numerous plant species, and not all animals eat the same plants, so it is crucial to consider the entire food chain rather than killing all the small mammals."

The authors also look at the poisoning method being used to eradicate the animals and note its adverse effects. They discuss the unintended consequences of the poisoning method, including the development of resistance to poisons by target species and potential harm to non-target species.

Knops and the study's first author, Dr. Wenjin Li from the College of Ecology at Lanzhou University, propose replacing the eradication policy with a nature-based control strategy.

The authors argue that while burrowing mammal populations should not be totally eradicated, they can be controlled with a nature-based strategy that uses natural predators and other environmental factors. An approach like this works in harmony with the environment, not against it.

They suggest the use of nesting spaces for raptors and reducing the over-grazing of livestock on the grasslands. "This allows the grass to grow and keeps the small mammal population at a manageable level, as they prefer shorter vegetation."

A related concept to keystone species, a trophic cascade is an ecological event that involves changes to the structure of an ecosystem resulting from changes to animals or plants at one or more levels of the food chain.

The authors say that the extermination program was not based on studies that considered the full effects of eradicating these burrowing mammals.

It's important to consider the knock-on effects of reducing the small burrowing mammal population. If there are fewer small mammals, there is less food for their natural predators, such as red foxes, steppe polecats, upland buzzards, brown bears and mountain weasels.

Not only will these larger mammals start to look for alternative food sources and increasingly prey on livestock, causing more human-wildlife conflict, but their populations may also decrease.

Zokors are Asiatic burrowing rodents resembling mole-rats. Zokors are native to much of China, Kazakhstan, and Siberian Russia. Zokors use their powerful front claws for digging.

They have small eyes and no external ears. Zokors feed on plant matter such as tubers and seeds. Photo: Animal database
Leon McCarron’s current home is a far cry from the farm he grew up on in Northern Ireland. The author and documentary maker first moved to the semi-autonomous Kurdistan region in northern Iraq in 2016 to report on the war with the terrorist organisation ISIS. But over time, his reason for staying in the country changed. It was when he met Lawin Mohammed, a young Syrian Kurdish man, who asked him to go hiking in the mountains. He said:

‘You shouldn’t leave here just with memories of war, you should see something more beautiful, something else that defines this place’.

There are three provinces out of 18 in Iraq that are under the partial control of the Kurdish regional government. This is an autonomous regional government recognised under the Iraqi Constitution.

For McCarron, Erbil’s attraction is its quick access to the mountains. By car, he can be in the hills within 30 minutes, and within an hour he can be on a trail that starts in the village of Shush.

McCarron’s fascination with nature can be traced back to the many hikes he's done in the region, including in Jerusalem, West Bank and Jordan. He’s also written a book called The Land Beyond about the development of hiking trails in other parts of the Middle East. And now he’s involved in developing the first long-distance walking trail in Iraq.

“A project like that could be really powerful and very well suited for the Kurdistan region in Iraq, because it has these really deep, rich layers of history and culture and faith,” he says. He believes the region would also benefit from tourism’s economic opportunities, because it would help people in the rural mountainous areas regain a sense of pride and ownership of the land after the recent decades of conflict.

McCarron says the idea of bringing tourism to the Kurdistan region through hiking is not new. The idea comes from those who live along the hiking trails. Hospitality is a central part of culture and life all across the Middle East, but particularly in these areas. So in that sense, everyone’s very warmly received. Whenever McCarron spends time in any of the more than 30 villages along the route, the local people say they are excited by the idea of a longer trail to entice tourism.

That’s the only way a trail or a project like this exists — if it’s owned by the local community.

McCarron says one of the biggest challenges they have is getting the locals to accept payment for hosting visitors. ”It just felt anathema to them to take payment for doing what they deemed to be a very human duty of hosting a stranger.”
Scree and Talus

**World’s Oldest Moss may not survive humans** From Treehugger August 2023

A rare moss called Takakia has adapted over hundreds of millions of years to survive the extremes of life on the cliffs of the Tibetan Plateau. Now, a team of researchers who have been studying the moss for nearly a decade says that despite being one of the fastest-evolving species ever studied, Takakia may not be adapting quickly enough to survive climate change. In a study, the authors document how climate change has significantly altered the moss’ habitat within just a few years.

**Volcano triggered world’s most intense lightning storm** From Science News June 2023

The January 2022 eruption of an underwater volcano in Tonga produced the most extreme lightning storm ever recorded. The giant, electrically charged ash plume of Hunga Tonga-Hunga Ha’apai (right) spawned nearly 200,000 lightning flashes, researchers reported in Geophysical Research Letters.

**Anniversary of the two French national parks La Vanoise and Les Écrins** From Alparc July 2023

The La Vanoise and Les Écrins national parks celebrate their 60th and 50th anniversaries this year. Founded in 1963, La Vanoise is the oldest French national park. This anniversary will be celebrated in the form of events and meetings throughout the year. In Les Écrins, on the 27 March, around 150 current and former elected representatives, technical partners, and staff celebrated in Vallouise.

**’it’s only one stick’** From Queensland Parks & Wildlife Service August 2023

When hiking through a national park, it may seem harmless to pick up a stick from the bush and use it as a walking aid. But rangers say the sticks are used by the little creatures [and plants] of the national park, the echidnas burrowing underneath it … insects, lizards, birds, fungi and moss.

**Extreme heat & weather (around the world)** July 2023 Guardian
Aerial shooting of feral horses in Australian Alps The Guardian August 2023

A government plan to allow aerial shooting of feral horses in the Kosciuszko NP has been welcomed by environmental advocacy groups that say endangered species need urgent help, even if “no one likes to see animals killed”.

The state’s environment minister stated aerial shooting could be added to a suite of measures being used to control the surging feral horse population under proposed changes to the park’s management plan.

Giant frescos on side of Swiss mountain ABC News July 2023

On mountain slopes in the Swiss village of Villars-sur-Ollon, an artist has used biodegradable paint to create two giant frescoes of children sketching how they see the vast world around them. The frescoes, which are painted directly on the grass and can last days depending on weather conditions, show a young boy and girl tracing squiggly lines on sketchpads to depict mountains, trees, stars and the moon.

Swiss-French artist Saype said his frescoes — which at around 3,000 square metres can be seen from the mountaintop and nearby pastures — symbolise the need to reject uniformity and embrace different perspectives.

Mountain tree lines moving uphill From The Guardian August 2023

Scientists from the Southern University of Science and Technology in Shenzhen, China, used remote sensing to map the highest points of patches of tree coverage on mountains. They found that 70% of mountain treelines had moved uphill between 2000 and 2010.

On average, treelines moved upwards by 1.2 metres a year, but the shift was greatest in tropical regions, with an average increase in elevation of 3.1 metres a year – and in all regions they found the rate of change was accelerating.

In total, the researchers tracked almost 1m km (620,000 miles) of treeline across 243 mountain regions around the world.

Protests in the French Alps June 2023 From CNN News

Protesters clashed with police in the Maurienne Valley, south east France, as they demonstrated against a tunnel being built through the base of the Alpine range that separates France and Italy. Days later the French government dissolved the Les Soulèvements de la Terre collective claiming their actions were violent and led to material damage.

Supporters say it will greatly ease freight road traffic but opponents say the ecological damage risks being devastating and that springs are already starting to dry up due to the works. The areas affected by the construction project are already experiencing a reduction in the flow of water as a result of climate change.

French Italian Alps Border Landslide August 2023 From Euronews.com

Regional authorities in Savoie said "boulders with a total volume of 700 cubic metres" slammed into a protective barrier along the road that leads to the Mont-Cenis pass into Italy’s Susa valley. According to the French railway operator, the landslide forced the suspension of all cross-border trains on the Chambéry-Turin line.

The cause of the rockfall is being investigated.

There has been high temperatures in the recent weeks followed by heavy rain in the area at the weekend.
From IUCN WCPA

IUCN WCPA, working in partnership with WWF, The Nature Conservancy, as well as IUCN CEESP, and supported by the GEF, has produced a freely available guide to achieving Target 3 or the “30x30 target” of the Global Biodiversity Framework and effectively and equitably conserving at least 30 per cent of the Earth by 2030.

The editorial team consulted widely in preparation of the guide, including discussions among WCPA specialist groups and task forces, NGOs providing assistance in implementation, and IP&LC (Indigenous Peoples and local community) groups. You can find it on 30x30 solutions, an online toolkit which is itself a collaborative effort of many of the same partners, and adding the High Ambition Coalition for Nature and People.

From WCPA Mountain Specialist Group Land Journal: Special Issue "Perspectives on Mountain Conservation". The published version is titled A Decision-Support Tool to Augment Global Mountain Protection and Conservation, including a Case Study from Western Himalaya and can be found here: Mountain Paper Land Journal

From GMBA Newsletter August 2023 To help you remain up-to-date with literature, we now release monthly lists of new publications for download. These lists can be filtered, for instance by units of analysis using our mountain inventory, by taxonomic group, or by ecological research field. Access the download page (including release notes)

download page

eco.mont - Journal on Protected Mountain Areas Research and Management, Vol. 15 / No. 2  founded as a joint initiative of the Alpine Network of Protected Areas (ALPARC), the International Scientific Committee on Research in the Alps (ISCAR), the Austrian Academy of Sciences and the University of Innsbruck. The current issue covers a wide range of topics concerning protected areas globally. Geographically, the articles cover protected areas in the Alps, the Himalayas, Southern Siberia and the Italian island of Sardinia.

Water, ice, society, and ecosystems in the Hindu Kush Himalaya - An Outlook From ICIMOD
The "Water, ice, society, and ecosystems in the Hindu Kush Himalaya (HI-WISE)" report draws on recent scientific advances to map for the first time the links between the cryosphere, water, biodiversity, and society in the region, charting the impacts of rapid changes in glaciers and snow on people and nature.

A short film about the Australian alpine peatlands by Stephen Curtain As Stephen says of the film: ‘The alpine peatlands are the ‘kidneys’ of the Murray-Darling Basin. They clean and slowly release water in alpine Country for Country’s sake, not to mention the immeasurable value of water downstream for so many purposes. How we manage hard impacts on this fragile, slow-to-recover landscape is the opportunity before us.’ You can watch the film here.

From Connectivity Conservation Specialist Group “As a direct countermeasure to fragmentation, connectivity conservation provides the “glue” to enable the natural system to function and maintain resilience over time”. We are excited to share the final results from a collaboration between The World Bank and the Center for Large Landscape Conservation: Lessons learned in planning and implementing corridors and connectivity conservation, a guidance note available here.

From EWS Biodiversity and domestic grazing in the mountains (wilderness-society.org)
EUROPARC TransParcNet meeting about natural disasters and crossborder cooperation has been really interesting. Report and presentations are now available: TransParcNet Meeting 2023 - EUROPARC Federation

Canadian Mountain Network Knowledge Sharing Summit 25-28 September 2023

From ABC News Webcam captures spectacular images of Kilauea volcano eruption in Hawaii June 2023 Watch here

Looking for Mountain Research and many other excellent tools and publications? The Mountain Update has only a very tiny selection!

Try Global Mountain Biodiversity Assessment (GMBA), Mountain Research Initiative, ICIMOD and Mountain Partnership—to mention a just few great sources of mountain information!
While Mountain Network members can choose not to be WCPA members and still be involved and receive the Mountain UPDATE, the WCPA Chair, and Mountain Specialist Group Executive and would like to encourage all to become WCPA members. This helps to secure good governance and management of the WCPA and the Mountains Group and enlightens all members to the wider activities of the WCPA.

To learn more about WCPA membership go to: WCPA Get Involved
For any relevant mountain protected area news, please email me (Gill) on peopleinnature@bigpond.com

I look forward to hearing from you soon!

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Editor: Gillian Anderson peopleinnature@bigpond.com