



# THE INFINITE ABUNDANCE OF LIFE

Our planet's biological diversity is an asset of incalculable value, and is the basic prerequisite for sustaining human life—a fact that was reaffirmed by the international community at the Convention on Biological Diversity (CBD), which took place earlier this year in Japan. May 22, the International Day for Biological Diversity (IBD), was the perfect time for GEO to celebrate the biodiversity of the planet by holding Action Days in 44 countries. Accompanied by budding biologists of all ages, invited experts set off on a quest to document animal and plant species across the world's most diverse ecosystems. Action Day also helped increase the understanding and awareness of biodiversity issues for students around the world.



The Biodiversity Action Days or 'B-Days' are a partnership between GEO International and the Ministries for Environment and for Economic Cooperation and Development of the Federal Republic of Germany. They are guided by the United Nations theme for the 2010 International Year of Biodiversity: Biodiversity for Development and Poverty Alleviation.

Catching spiders with a suction tube. Like these biologists in Italy, thousands of people were out and about in May and June 2010.

## INDIA

11 AND 13.5.10 SIKKIM (KHANGCHENDZONGA NATIONAL PARK, GANGTOK)

A crested serpent eagle (*Spilornis cheela*) balances precariously in the moist mountain air. He's trying to get on with his predatory routine but is being strafed by an aggressive pair of tiny drongoes (*Dicrurus macrocercus*). I would have never noticed this thrilling aerial skirmish if it wasn't for my walking companion, Pema Gyaltzen, who has an uncanny knack for spotting every wild plant at our feet while keeping one eye in the sky.

We are walking from the sacred lake Khechopalri to the town of Yuksom, where Pema heads a volunteer-based NGO called the Khangchendzonga Conservation Committee. The KCC works on issues of local livelihood, eco-tourism and biodiversity protection around the growing tourist influx to Khangchendzonga National Park, on the flanks of the Himalayan massif that straddles this corner of western Sikkim and eastern Nepal.

With the notable exception of myself, our group is an exotic collection of individuals who seem to be on a Latin-name basis with the plants in this fecund area. Apart from Pema, there's Sonam Lepcha, a taxonomist with the Department of Science and Technology; Nima Tashi from the Mountain Institute, an NGO in Gangtok; Neeraj Khera, who works on biodiversity conservation and policy with another NGO, InWent; Vera Scholz of the GTZ; Urbashi Pradhan, who is doing a PhD in environment studies; and Pradip Krishen, who wrote a bestselling guide to the trees of India's leafy capital.

"Look at this," says Pema, plucking a leaf from a shrub. "*Edgeworthia gardineri*. It's used for the handmade paper on which our sacred Buddhist texts are printed."

Paper and plants. Nature and the sacred. Science and its often unintended consequences. When I see a yellow rhododendron bush (*Rhododendron dalhousiae*), I am reminded of a cautionary tale I just read in the 19th-century *Gazetteer of Sikkim*. It's the story of the English botanist Joseph Dalton Hooker's expedition to these

parts in 1849. Hooker is famously the man who first recorded the extraordinary botanical diversity of Sikkim, and who sparked the European craze for ornamental rhododendrons. But the local consequence of his expedition was altogether darker. After he was briefly arrested as a trespasser, the British Empire ordered a punitive expedition and annexed large tracts of what was then the Kingdom of Sikkim.

We stop at a scenic vantage point overlooking Khechopalri. From this perspective, the lake has an uncanny resemblance to a footprint, which is revered as a mark of the goddess Tara or Dolma. It is enclosed by a dense forest, a vision of pristine nature to my urban eyes. Wrong! Pradip clucks at a stripe of elegant conifers interrupting the ring of *Castanopsis hystrix* and *Quercus* draped in orchids and other epiphytes. "Those cypresses are not native, they're *Cryptomeria japonica*!" he bristles.

"Introduced by the forest department," Nima agrees.

And Khechopalri is dying, Pema says. Whether as a consequence of misguided forestry in its watershed or the fact that the fisheries department decided to introduce a population of carp, who soon darkened its once-clear waters. "We discussed cleaning out the fish, but our religious leaders say everything has a life-cycle and if the lake is dying, we must let it go," says Pema.

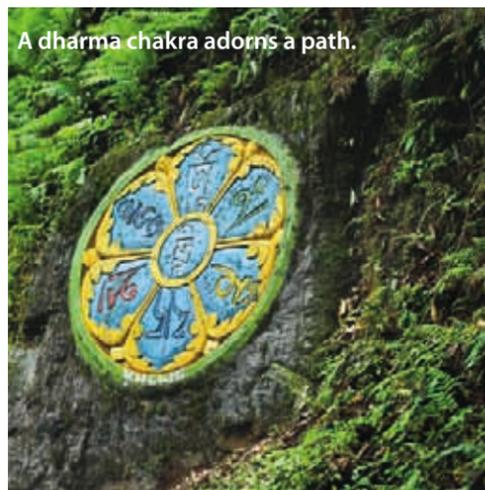
As we walk on through isolated hamlets, we see signs of a more pressing catastrophe. The fields of Larger cardamom, *Amomum subulatum*, the main cash crop in this region, are also dying. The blight has been spreading since 2001. Urbashi, Pema and Sonam argue about the reasons, and there are several hypotheses: from climate change to the decline of the pollinating bumblebee, *Bombus haemorrhoidalis*, to over-reliance on a single high-yielding variety. Sadly, no solution has yet emerged.

Emerging onto the motor road to Yuksom, we pass some incongruous men

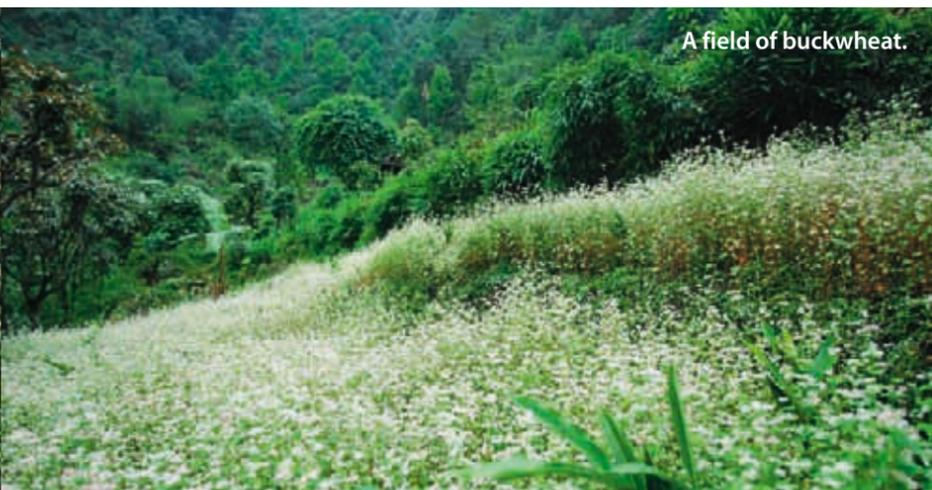
Kathok Lake in Yuksom.



A dharma chakra adorns a path.



A field of buckwheat.



Pema and Nima weigh in.



in suits: surveyors for one of the massive hydroelectric projects that have become the latest gold-rush across India's eastern Himalayas. Pema is proud that the KCC was able to organise a rowdy public hearing in Yuksom that has held off at least one of these mega-dams. For the moment.

Later that evening in Yuksom, the volunteers from KCC give us a rousing presentation on their work in the national park: organising waste collection, implementing a code of eco-tourism practices, developing home-stays as a livelihood option, and a somewhat thrilling tale of intercepting and arresting a pair of Czech pirate entomologists who were collecting moths in the national park.

It sounds like an optimistic coda to the story of Joseph Dalton Hooker, but by now I'm suspicious of happy endings. And even Pema concedes that for all the good work in Yuksom, the real action and money is focused on nearby Pelling, which glories in a rash of multistoreyed hotels and wants nothing to do with KCC or eco-tourism.

Before we leave, we visit Norbugang Park, a magical place layered with significance. It was here that the first king of Sikkim was crowned by three holy abbots in 1641. In the middle of the park, now a protected monument, stands a gigantic cypress tree that has stood here since the coronation at least. It is monumental, and an eco-system in its own right—crowded with ferns and other epiphytes. "It's *Cupressus cashmeriana*, the Kashmir or Bhutan cypress," says Pradip, who seems so moved that I haven't the heart to ask whether it's a native tree or not. 🐞

KAI FRIESE





Almost a work of art: experts trapped bats with a net in Lilienthal, at the Kaiserstuhl massif.

## GERMANY

11–12.6.10 REGION OF FREIBURG, WITH KAISERSTUHL, FELDBERG, RHEINAUEN AND MOOSWALD

GEO Germany has held a tradition of Biodiversity Days for the past 12 years. The GEO Biodiversity Day has actually become a national event, with about 30,000 people participating in 480 self-organised activities in 2010. The magazine supports one event each year, this time in the extreme southwest of Germany and in cooperation with the 'Eco Station' in Freiburg. The slogan was

'The price of nature: why biodiversity pays.' A search for species was conducted in four very different habitats: the sunny slopes of the Kaiserstuhl massif; Feldberg mountain, which touches 1,500m; the wetlands along the upper Rhine; and a mixed forest in Freiburg. Over 2,000 species were identified by 120 experts, among them gems such as the Natterer's bat (*Myotis nattereri*), rarely sighted in

Germany; the endangered Yellow-bellied toad (*Bombina variegata*), protected all over Europe; and the Western green lizard (*Lacerta bilineata*). The highlight was an insect that was last sighted in Germany 43 years ago—at the very same spot, near the Kaiserstuhl. It was also established that the *Cixidia pilatos*, a type of cicada, has not yet vanished from Germany's ecosystem.

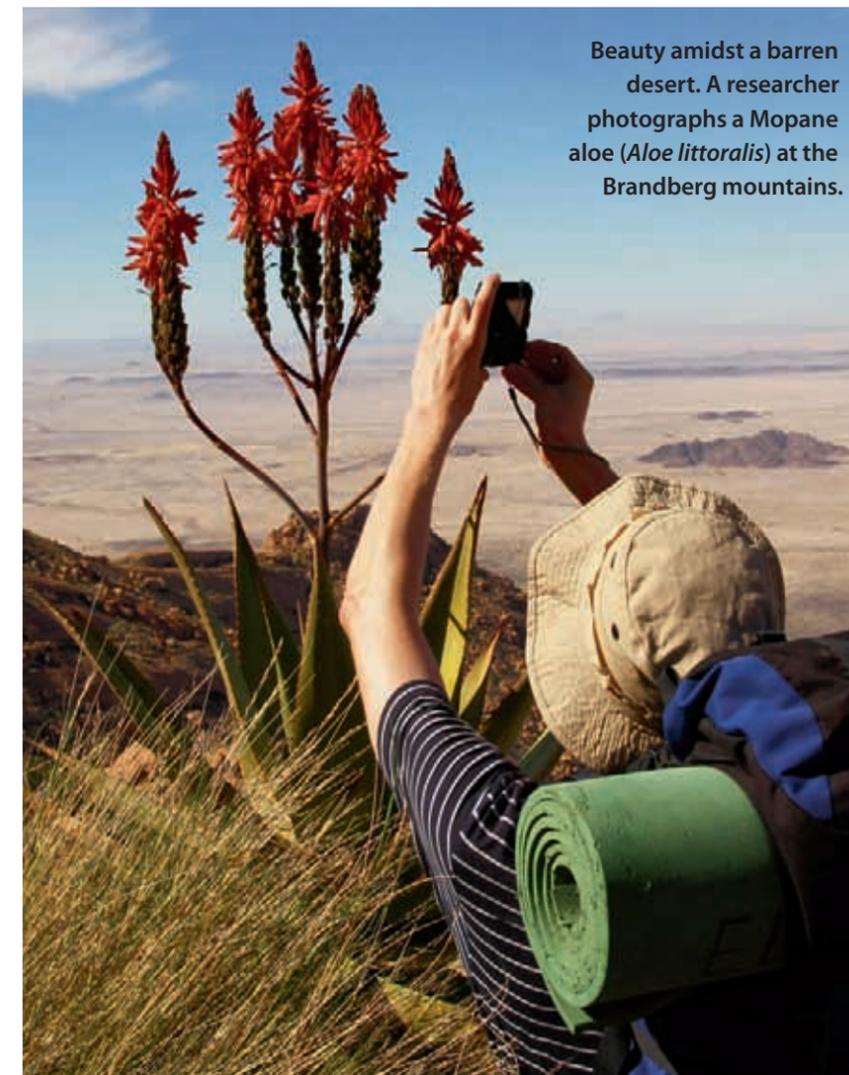
## CROATIA

22.5.10 ZAGREB (MAKSIMIR PARK)

Maksimir Park, Zagreb's green lung: "27 species of mosquitoes live here," says Ana Klobučar, causing her listeners to shudder. But Klobučar, a biologist at the health department, reassures them that the bloodsuckers are decimated by a host of enemies. Five amphibian species, especially the Common toad (*Bufo bufo*), prey on the mosquitoes and their larvae. There are also several species of bats and many species of birds. Maksimir, one of the oldest green spaces in Europe, opened in 1794. It covers 316 hectares of landscaped park with ponds, meadows and forests. The large amount of dead wood provides an ideal environment for arthropods. On Action Day, a biologist from the State Institute for Nature Protection counted 12 spider species that were new to the park. Cavity-nesting birds breed in the dead trunks, one of the reasons why the park has the world's largest population of Middle spotted woodpeckers (*Dendrocopos medius*). In addition to Maksimir, Vanja Ratković, chief editor of GEO Croatia, roped in eight other national parks and 11 nature reserves to offer guided walks.



Tastier than a beetle: a grey heron (*Ardea cinerea*) snaps up a fish.



Beauty amidst a barren desert. A researcher photographs a Mopane aloe (*Aloe littoralis*) at the Brandberg mountains.

## NAMIBIA

7–9.5.10 BRANDBERG MASSIF

Namibia's 'Biodiv team' began its Action Day by climbing the Königstein. The country's highest peak, in the Brandberg mountains, towers 2,573m above the Namib desert. The six-member team climbed to this precise point to hoist a 'Biodiversity 2010' flag. Below, biologists led 100 participants through the high desert plateau, among them Netumbo Nandi-Ndaitwah, Namibia's minister of environment and tourism. The explorers found a large number of grass species, the rare Angolan python (*Python anchietae*), leopard tracks (*Panthera pardus*) and the highly endangered Black rhinoceros (*Diceros bicornis*). And, a herd of springboks (*Antidorcas marsupialis*), zebras and other antelopes—even if they were just Stone Age drawings by hunters! Tilman Lenssen-Erz, an expert on the early history of mankind, described how they once lived. The accommodation also demonstrated how nature conservation and development can work together: the lodges offer eco-safaris, produce handicrafts from natural materials, and train women as solar technicians. Action Day also had an impact in the capital, Windhoek, where a session of parliament was held on biodiversity, along with a conference at which researchers discussed the wealth of species in Brandberg with the minister.



How does this Masai woman benefit from the White stork (*Ciconia ciconia*)? In winter, it flies from Europe to Mount Suswa—and eats the pests in the fields.

## KENYA

15 AND 22.5.10  
NAIROBI, MT SUSWA, LAKE NAIVASHA

The UN's official celebrations on the International Day for Biological Diversity, 22 May, took place in Kenya's capital, Nairobi. Among those present was Ahmed Djoghlaif, executive secretary of the Biodiversity Convention. On the agenda was a marketplace of new ideas aimed at deriving profit from biodiversity through silk, wool or bamboo, or through eco-tourism. In the shantytown of Huruma, international guests learned how people live off the forest: it offers them water, soil to grow flowers, honey and other food, medicinal herbs and seeds for nurseries. The Masai also live in harmony with nature, which was the theme at Mt Suswa. The third location, Lake Naivasha, saw a gathering of 400. Students showed a cross-section of African fauna, from the hippopotamus (*Hippopotamus amphibius*) to zooplankton. 🐛

## NICARAGUA

22.5.10 PARQUE NACIONAL  
VOLCÁN MASAYA

After hiking through the mountainous forest around the volcano, the students reach the spot where Octavio Saldaña laid the coyote traps at night—but the boxes 'only' contain a Common opossum (*Didelphis marsupialis*). Yet Action Day in Nicaragua's largest national park, supported by the ReniBio Network, had other gems: a Mexican burrowing python (*Loxocemus bicolor*) and a Hairy-legged vampire bat (*Diphylla ecaudata*). Both were sighted here for the first time. 🐛



Sailor of the night: a Short-tailed bat (*Carollia perspicillata*).

## BULGARIA

1 AND 22.5.10 DRAGOMAN MARSH, SOFIA (SOUTH PARK)

The five girls from the Sveti Konstantin children's home had never seen binoculars. Now, one by one, they held ornithologist Boris Nikolov's binocs in their hands, and were thrilled to see a close-up of the female Mallard duck (*Anas platyrhynchos*). Holding a containerful of garden snails (*Helix aspersa*), malacologist Ivaylo Dedov from the Central Laboratory of General Ecology was also able to provide some insights. The slime produced by the molluscs is used as an extract by the cosmetics industry. Lessons were held along the city-park's lake. On its banks, students and families could experience what 'urban biodiversity' really means. This was Bulgaria's second Action Day; the first was at Dragoman Marsh in western Bulgaria, where many species were spotted. But even South Park in Sofia has a wealth of species: 65 different kinds of birds, 29 of which are protected and two of which are on Bulgaria's Red List. Amazingly, 16 species of ants were found. Two of them even surprised expert Vera Antonova: the Black-backed meadow ant (*Formica pratensis*), a Red List species, and the Slavemaker ant (*Formica sanguinea*), which actually has slaves. It attacks the nests of other ant species and steals the larvae. Once the kidnapped larvae hatch in the conqueror's nest, they become slaves who keep the foreign ant colony clean. 🐛



*Sarcophagidae* practice fly sex.



Switzerland conducted a national campaign on biodiversity. At the Hörnli, a mountain near Zurich, a Fire salamander (*Salamandra salamandra*) was the local celebrity.

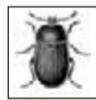
## SWITZERLAND

11–13.6.10 RHEINFELDEN

There are two cities of Rheinfelden on either bank of the river Rhine: one in Switzerland, one in Germany. Participants of the Swiss Biodiversity Day, among them seven school-grades, learned about the river's ecosystem. Rheinfelden celebrated a festival of nature, spearheaded by Naturama, the natural history museum in Canton Aargau. The festival welcomed 1,000 visitors, who filled up not just the hiking trails but also the town hall, where nature conservation associations presented their work. Aquariums and terrariums displayed local fish, reptiles, and even an entire bee colony. Over 24 hours, 60 experts offered 25 excursions, and an estimated 1,000 species were found! Several biological highlights were found right in the centre of town: the rare Four-leaved allseed (*Polycarpon tetraphyllum*), which was discovered in the pavements, and 60 kinds of spiders. Bat fans were delighted by the flight of a colony of Greater mouse-eared bats (*Myotis myotis*) from their roost site. The day in Rheinfelden, conducted GEO-style for the seventh time, was part of a nationwide biodiversity campaign that included 120 talks, nature walks and experiments that drew in 10,000 visitors. 🐛



Even the Rheinfelden city park offered guided tours for the participants.



Seppo Knuuttila counted over nine different fish species. His colleague Essi Keskinen dived in and found mussel species that are new to Finland.



## FINLAND

25–26.5.10 HELSINKI (TÖÖLÖNLAHTI PARK)

“There is no dearth of fish,” says fish-biologist Seppo Knuuttila, holding up a 4lb perch-pike as his boat glides towards the shore. The TV camera team films from among the reeds, as another researcher jumps into the water and pulls the boat to land. The men spread the net on the shore and take inventory: “Zander (*Sander lucioperca*), Carp bream (*Abramis brama*), perch (*Perca fluviatilis*),” they call out, as they release each fish from the net. It’s just one of many such scenes in Helsinki’s Töölönlahti Park. On Action Day, Finland’s GEO team aimed to discover urban biodiversity and highlight its uses—and they succeeded brilliantly. In 24 hours, 50 experts found 935 species in an ecosystem that offers excellent ecological services—walking, jogging, boating, picnicking and air-pollution control. Anglers are permitted to cast nets, and GEO researchers did so, too. Knuuttila found a small fish with black spots: a Sea trout (*Salmo trutta trutta*). It requires a high quality of water, so its existence here means the lake is now richer in oxygen. 

## ECUADOR

15–16.5.10 BOMBOÍZA

Students took adults on a guided tour of the garden at their boarding school in Bomboíza, a village in southeast Ecuador. The fauna and flora, which many indigenous Shuar and Achuar still live with and on, are under threat from mining companies that exploit copper and gold deposits—and from settlers who clear the jungle for farmland or pasture and use chemical fertilisers. In their ‘ethno-botanic’ school garden, 330 Shuar and Achuar children planted 360 useful and medicinal plants from their native villages, such as cultivated vanilla (*Vanilla odorata*) and air potato (*Dioscorea bulbifera*). These served as displays for 50 representatives from ministries, research institutes and journalists on Action Day. The students bring the seedlings back from their native villages, so the school has become a hub of knowledge of ‘old’ plants. Over 90 communities have taken part in the programme. The students showed the visitors some rare beauties: orchid species indigenous to Ecuador, such as *Maxillaria bomboizensis* and *Dodsonia falcata*. 



Biodiversity on sale: a plant market was held on Action Day.



The light trap for moths and other night insects is all set for their arrival en masse.



## FRANCE

21–22.5.10 PARC NATIONAL DU MERCANTOUR

Eyes raised to the sky, hands behind his ears, Daniel Demontoux, an employee at the Mercantour Park, whispers, “Did you hear the *tsiup-tsiup*? A Chiffchaff, *Phylloscopus collybita*.” You strain your ears and close your eyes—but it is no use. How is one to hear a distinct *tsiup* with birds chirping all around? Winter is just beginning to recede from the valleys of the Maritime Alps, but one still has to trudge through snowfields on the slopes. Yet one flap of the wings of one of the vultures soaring above would bring you within reach of the beaches of the Mediterranean. From there, over 600,000 tourists take to the trail every year for the France–Italy border. Today, 200 visitors, assisted by 18 experts, have come to experience the park’s biodiversity. Some are crawling on all fours, among them Jean-Louis Besson: “Bon, we have only covered 50m in the last hour. But see, we’ve already listed 12 species!” 

## VIETNAM

3–6.6.10 PHONG NHA-KE BANG

According to the WWF, there are 200 biodiversity hotspots worldwide. One is Phong Nha-Ke Bang National Park in central Vietnam, which has 113 reptile and 388 bird species. Schoolchildren experienced this abundance: they caught water scorpions (*Nepa cinerea*) and damselflies (*Odonata zygoptera*), and drew pictures of the gibbons (*Nomascus leucogenys siki*) and Stump-tailed macaques (*Macaca arctoides*) that they visited at the animal rescue centre. 



Action Day in Vietnam went underground—to the Bi Ki grotto by boat.



## GREECE

11.5.10 ATHENS (HISTORICAL CENTRE)



Zoologist Martin Gaetlich explains the environment around the Acropolis.

How many species live around the Acropolis? With this question, Christos Tsanakas, chief editor of GEO Greece, was able to arouse enough interest that the ministry of environment agreed to support Action Day. The answer? “500 species live here,” Martin Gaetlich, a zoologist at Athens University, explained to the excursion group and media. The streets and squares around the Acropolis provide a structured terrain: masonry, grassy spaces, gardens, patches of forest, fallow land and riverbeds. The group even found a hoopoe (*Upupa epops*), of which there are supposed to be six to seven pairs in the area, among a small group of Kermes oaks (*Quercus coccifera*). The Common house martin and the Barn swallow (*Delichon urbicum*, *Hirundo rustica*) are more commonly seen in the old city, the Plaka. Or the Common kestrel (*Falco tinnunculus*), which hovers over the Acropolis rock. Here, with some luck, the mythical symbol of the city can still be heard at night, just as it was in ancient times: the Little owl (*Athene noctua*), which once adorned the valuable Athenian tetradrachmon coins. 🐛

## ITALY

22–23.5.10 PARCO NAZIONALE D’ABRUZZO, PARCO NAZIONALE FORESTE CASENTINESI, PARCO DELLE ALPI MARITTIME

The wolves are back. Their numbers, down to barely 100 in the early 1970s, have increased tenfold and reclaimed the Apennine. The roughly 1,500km-long ridge, stretching from the southern tip of Italy up to the Alps on the Riviera, forms a green corridor that is unique in Europe. Wild cats (*Felis silvestris*), lynxes (*Lynx lynx*) and owls (*Bubo bubo*) are also resettling on these mountain ranges. The Foreste Casentinesi National Park, on the border between Tuscany and Emilia-Romagna, is an unspoiled reserve. Saint Francis of Assisi retreated here to be alone with creation. On Biodiversity Day, things were much livelier: a dozen experts and 100 adults and children assembled “on the trail of wolves.” The trail extends to two other ranges: the Parco Nazionale d’Abruzzo and the Parco delle Alpi Marittime. Here, too, dozens of experts and about 100 visitors followed the call of GEO Italy. The inventory from the three sites listed several mountainous species, among them the Dinky skipper (*Erynnis tages*) in the Abruzzo region. In the Maritime Alps, young Bearded vultures (*Gypaetus barbatus*) bred in captivity were released. Three different newt species were found in a pond in the Foreste Casentinesi: the Italian crested newt (*Triturus carnifex*), the Alpine newt (*T. alpestris*) and the Smooth newt (*T. vulgaris*). The wolves weren’t sighted this time—but in the scrubby grass near a delicate Grape hyacinth (*Scilla sp.*), forest ranger Angelo Salvaguardi found a fresh, huge pile of wolf droppings, consisting largely of wild boar hide. 🐛



To increase the numbers of Bearded vultures (*Gypaetus barbatus*) in the Maritime Alps, young vultures were placed in artificial nests and fed by rangers over the following weeks.

Inspecting the trap at Kalkalpen: Erich Weigand examines an aquatic insect.



## AUSTRIA

29.5.10 SIX NATIONAL PARKS—HOHE TAUERN, GESÄUSE, KALKALPEN, DONAU-AUEN, THAYATAL, NEUSIEDLER SEE-SEEWINKEL

If one had to choose a world champion of all the Action Days in 2010, it could well be Austria. All six national parks in the country simultaneously began a species hunt on 29 May 2010, making it the largest field research campaign in Europe. Two hundred scientists, among them lichenologists, ornithologists and experts on spiders, cicadas and bugs, managed to identify 3,000 species of butterflies and moths. There were 2,000 visitors to the mountains, valleys, meadows, forests, wetlands, rivers and lakes. And there were some special moments: a Golden eagle (*Aquila chrysaetos*) circling majestically above the hikers in Hohe Tauern National Park. Finding, in the same location, a very rare mushroom, the Conifer woodtuft (*Kuehneromyces lignicola*). Or the pictures taken with photo traps of Europe’s largest predatory cat, the lynx (*Lynx lynx*), at Kalkalpen National Park. At the Thaya river, a Black stork (*Ciconia nigra*) spiralled up, and the researchers were able to find all four Austrian species of vipers (*Colubridae*). In the Danube wetlands, fishery biologists presented their project of resettling the European mudminnow (*Umbra krameri*)—once extinct in this habitat—in the river. At the Neusiedler Lake, botanical rarities such as Pepperwort (*Lepidium cartilagineum*) and orchids (*Orchis palustris*) stole the limelight. The rich bird life is also a huge draw here: a million overnight stays a year are due to tourists who travel to the region to visit Neusiedler See-Seewinkel National Park. The local economy thus benefits enormously from biodiversity. 🐛

## TURKEY

23.5.10 ISTANBUL AREA (FOREST AT THE ÖMERLI RESERVOIR)

“*Cytinus hypocistis!*” Professor Adnan Erdağ parts the bushes to reveal a plant with fleshy shoots and glowing, orange scale leaves—the ‘Rape of Cistus,’ a parasite that attaches itself to the roots of rockroses (*Cistus salviifolius*, *C. creticus*) to draw its nutrients from there. The professor is in the forested area of Ömerli, 55km from Istanbul, now threatened by urbanisation despite being a protected wetland area. The nearby reservoir meets about 40 per cent of Istanbul’s drinking-water requirements. And it is here, of all places, that a Formula 1 racetrack has been built. Piles of discarded workmen’s clothing and plastic parts lie about: the 12-million-strong metropolis is spreading at the cost of nature. This is what GEO Turkey wanted to draw attention to, to illustrate how the mix of species changes due to human influence. Within roughly 4km<sup>2</sup>, 240 species were identified. In addition to birds, reptiles, insects, spiders, molluscs, fungi and flowering plants, there were also 20 moss varieties. But many species that were found here earlier can no longer be traced. 🐛



Passing beauty: a rockrose (*Cistus creticus*) is visited by a Burnet moth (*Zygaenidae*).



## PERU

7.5.10 CAJAMARCA, 11.5.10 LAMAS, 14.5.10 PIURA

Peru is one of the few countries in the world whose population actively uses so many plant varieties: 4,400 species are still used for medicinal purposes or food. Therefore, Biodiversity Day focused on useful plants in three different habitats. In the uplands, Cajamarca, home to the small Tara tree (*Cesalpinia spinosa*) from whose fruits tanning agents are derived, 180 people took part in Action Day. In the Amazonas region, 170 people gathered in Lamas, where the nuts of the Sacha inchi plant (*Plukenetia volubilis*) are harvested, from which valuable oil containing Omega-3 fatty acids is obtained. And in Piura, on the coast, 200 people gathered in the name of the Algarrobo tree (*Prosopis alba*), which provides wood and sweet fruits that can be made into syrup.



The farmers of Lamas show off the Sacha inchi plant—and their traditional costumes.



Action in the valley: a Common redstart (*Phoenicurus phoenicurus*) is ringed; GEO's Tomáš Protiva is interviewed; a bird-spotter behind the zoom lens.



## CZECH REPUBLIC

5.6.10 PRAGUE (PROKOP VALLEY)

Just behind the last row of high-rises on the southwestern fringes of Prague, the wilderness begins. It is recapturing what had been vanquished over 200 years, with five limestone quarries and a gauge railway cutting through the heart of Prokop valley. Today, the gorge is green again and is largely a protected area, and GEO invited the families, schoolchildren and nature-lovers here. Five groups roamed the valley and discovered typical grasses such as *Stipa pennata* and *Festuca rupicola*. Of the 136 bird species found in Prague, 60 are residents of the valley. The sounds of the Common chiffchaff (*Phylloscopus collybita*) and the Common redstart (*Phoenicurus phoenicurus*) were heard, while the Bank vole (*Clethrionomys glareolus*) only showed its droppings. Sighting the Old world swallowtail (*Papilio machaon*), the largest butterfly in the Czech Republic, was a treat. Biodiversity Day was also used to prepare three nature trails in the conservation area to sensitise the residents of Prague about the treasures of the valley, which include the strictly protected leek (*Allium strictum*), a relic from the Ice Age, used by the first Slavs as a spice.

## HUNGARY

22.5.10 SZÉNÁS HILLS (DUNA IPOLY NATIONAL PARK)

North of Budapest, the mountains of Duna Ipoly National Park give way to the Szénás Hills. Here, in the village of Nagykovácsi, elementary school students are now experts in local biodiversity. On Action Day, scientists from the Hungarian Natural History Museum taught them about the great biodiversity on the green slopes of the national park and the shores of Békás Lake, where experts played birdcalls and put up a net. Bat researchers came out at night and insectologists put up light traps. Diverse species from marshes, lakes, fields, forests, slopes and mountains all put in an appearance: the European pond turtle (*Emys orbicularis*), Smooth newt (*Lissotriton vulgaris*), European greenfinch (*Carduelis chloris*), Blue tit (*Parus caeruleus*) and Tortured tortella moss (*Tortella tortuosa*).



Class time: biologist Laszlo Peregovits explains to students how insect traps work.

## LATVIA

22.5.10 RIGA (BIŠUMUIŽA, KENGARAGS, BOLDERAJA)



One student's find: a Black slug (*Arion ater*).

The adult experts counted close to 200 species of higher plants, lichens, fungi, insects and birds. But even the children were in top form, finding ten mussel and snail species in just 5 minutes—elementary school students from the capital city, Riga, did all the hard work. As soon as biologist Digna Pilāte gave the signal, they swarmed along the shores of the Daugava with petri dishes in hand, digging up the sludge on the riverbank. One of their finds was a Zebra mussel (*Dreissena polymorpha*), a bio-indicator of the methylmercury concentration in the water. Researchers at the Museum of Natural History in Riga, which offered the nature walks in collaboration with GEO, initiated them into more secrets. For instance, how the sap of the Greater plantain (*Plantago major*) could be helpful against the bites of mosquitoes that suddenly attacked the group in Bišumuiža Park. And how the Antlion (*Myrmeleon formicarius*) constructs conical pits in sand, buries itself at the bottom and waits for its prey, which will slip right in front of its jaw pincers. Prey that falls over the edge is showered with sand to hasten the slide.

## CAMEROON

12.5.10 MT CAMEROON (BAKINGILI)

Thick vines hang from the trees of the Bakingili forest at Mt Cameroon. The guide grabs one and cuts it in two: clear water streams out, which the members of the botany group sample. It's tasty. Later, experts and politicians are astonished by a 12-year-old, who identifies six snail species and gives a talk on them in front of 200 guests and TV cameras.



Snail-expert Duk Tchoundjeu sniffs at tree bark that heals wounds.



## ALGERIA

22.5.10 ALGIERS (BOTANICAL GARDEN)

Biodiversity everywhere: employees of the ministry of environment.



In the Jardin d'Essai du Hamma in Algiers, the country's largest botanical garden, is a school for environmental education where the Algerian Action Day was held. Ornithology workshops, puppet shows, painting competitions, discussions, films and a quiz: the teachers provided a multimedia perspective of biodiversity. They also pitched in with their charges: in the afternoon, a group of girl guides and boy scouts planted tree species that, while endemic to the region, had virtually been forgotten. This is hoped to attract even more visitors to the garden, which was founded in 1832 and re-opened in 2009 after extensive renovation.

## LITHUANIA

29.5.10 VILNIUS (RUDNINKU BOMBING RANGE)

The Russian air force dropped training bombs on these 20,000 hectares until the end of the 1980s. The site, in the Vilnius region, is now a recreational area. A trail is being built to show how nature is able to reassert itself. On Action Day, a discussion took place between scientists, students and nature enthusiasts on the shape the trail should take.

## ESTONIA

14–15.5.10 TARTU (TÄHTVERE DENDROPARK)

The people of Tartu refer to the Emajõgi, which flows through the Tähtvere Dendropark, as 'Mother River.' Youthful expertise congregated here when students from 33 schools went on a species hunt, guided by an equal number of experts. They learned many things. For instance, that the fox is a scavenger, and its disappearance results in an increase in pathogens and consequently a greater danger of infection for humans.

## TUNISIA

22–23.5.10 EIGHT NATIONAL PARKS

Eight national parks, regional students, a biodiversity rally with biologists in each park—and a joint finish. That was the concept of Tunisia's Action Day. The excursions of the students in the conservation areas near their homes resulted in a film, screened during the final presentation at the Zaghouan National Park centre, about 50km south of Tunis. It showed the fun that the young naturalists had. Of course, the full diversity of Tunisian flora and fauna was also on display.

## HONDURAS

21.5.10 CATCAMAS, GUALACO

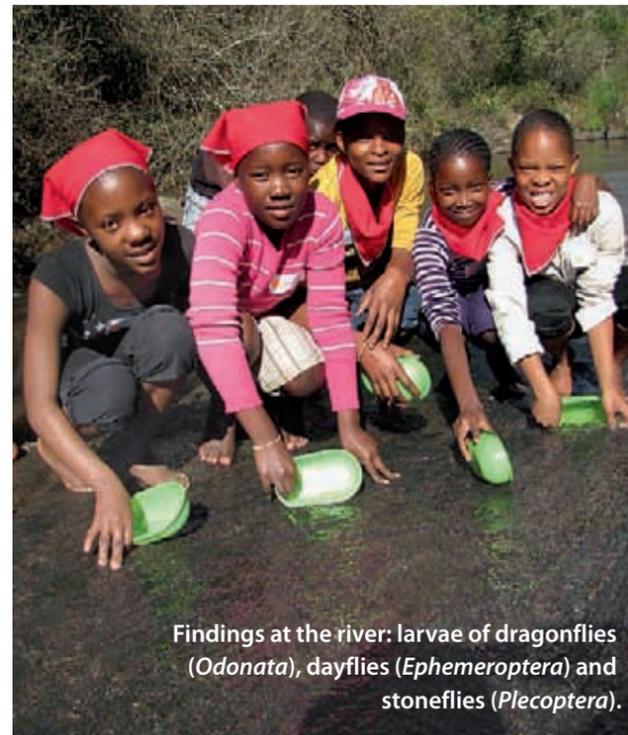
Catcamas and Gualaco are villages in the Honduran department of Olancho and communities that are attempting to run an ecological economy in the tropical forests of Central America. Conservationists and researchers discussed the best strategies to adopt. The experts visited the Fincas Las Orquidias, where a farmer, Isidro Zuniga, is growing eco-orchids, and embarked on a species hunt. Their best sightings included birds: the Blue-crowned motmot (*Momotus momota*) and White-breasted wood-wren (*Henicorhina leucosticte*).



A typical sight: the Monkey ladder vine (*Entada gigas*).

## SOUTH AFRICA

20–25.5.10 KWAZULU-NATAL (UMGENI VALLEY)



Findings at the river: larvae of dragonflies (*Odonata*), dayflies (*Ephemeroptera*) and stoneflies (*Plecoptera*).

In a first step, WESSA, the nature conservation association, taught 31 teachers how to help young people understand biodiversity. Those from the Hawkstone Elementary School alone discovered 147 species of insects, birds and plants in just a few hours. On the main public day, 500 villagers took part. One of the instructors explained the concept of biodiversity in Zulu: "*Impilo enhlobo nhlobo*"—'different forms of life.' This immediately made things clearer to all.

## INDONESIA

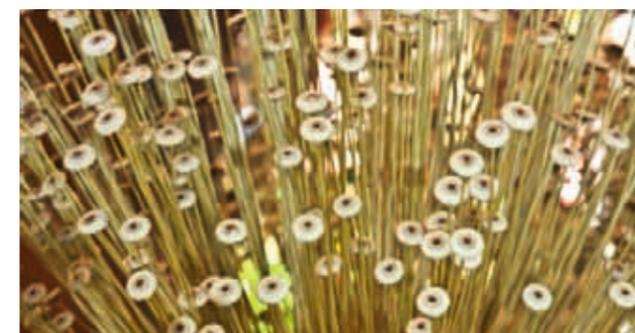
8.5.10 MENUA SADAP (BETUNG KERIHUN PARK)

Menua Sadap is a village of the Dayak Iban people, located near Putussibau in Betung Kerihun National Park, in the Kapuas Hulu district of West Kalimantan, one of the four Indonesian provinces on Borneo. It isn't just the region's names that are varied but also its species, often under threat due to forest clearing. Several were found by 40 students during Action Day in Menua Sadap: centipedes as long as palms, big spiders, shells, fish, mighty ferns and tubers, leaves and berries. The Dayak Iban showed the potential use of the finds: pounding lime from river shells, weaving baskets from vines, pressing textile dyes from roots. Or as food: Soro mahseer (*Tor tambra*) in bamboo, banana flower and Rotang palm (*Calamus tenuis*) is one of their favourite dishes.

## BRAZIL

22.5.10 CERRADO (PADRE BERNARDO), 15 ZOOS AND GARDENS

The Brazilians decided not to focus on the Amazon rainforest but on the Cerrado, the barren highlands in the centre of the country. These form the world's largest agricultural frontier: soya, sugarcane, millet, maize and rice are under industrial cultivation on the cleared, burned and ploughed fields, using vast quantities of fertiliser and diesel. "A species-rich biotope is being destroyed," says Jussara Goyano, chief editor of GEO Brazil, "but hardly anyone knows it." She attempted to change this by appealing to the senses. At Padre Bernardo, about 80km north of Brasilia, local woman dished up delicacies made from regional plants for the Institute for Agrarian Reform: Pequi (*Caryocar brasiliense*), Macaúba (*Acrocomia aculeata*) and Babaçu (*Attalea speciosa*). Also impressive were



The Mexican sunflower (*Tithonia diversifolia*, top) is a sight for sore eyes in the Cerrado. The Brazilians call the Paepalanthus plant (above) the 'little shower' for its inflorescence appears to shoot out like jets of water.

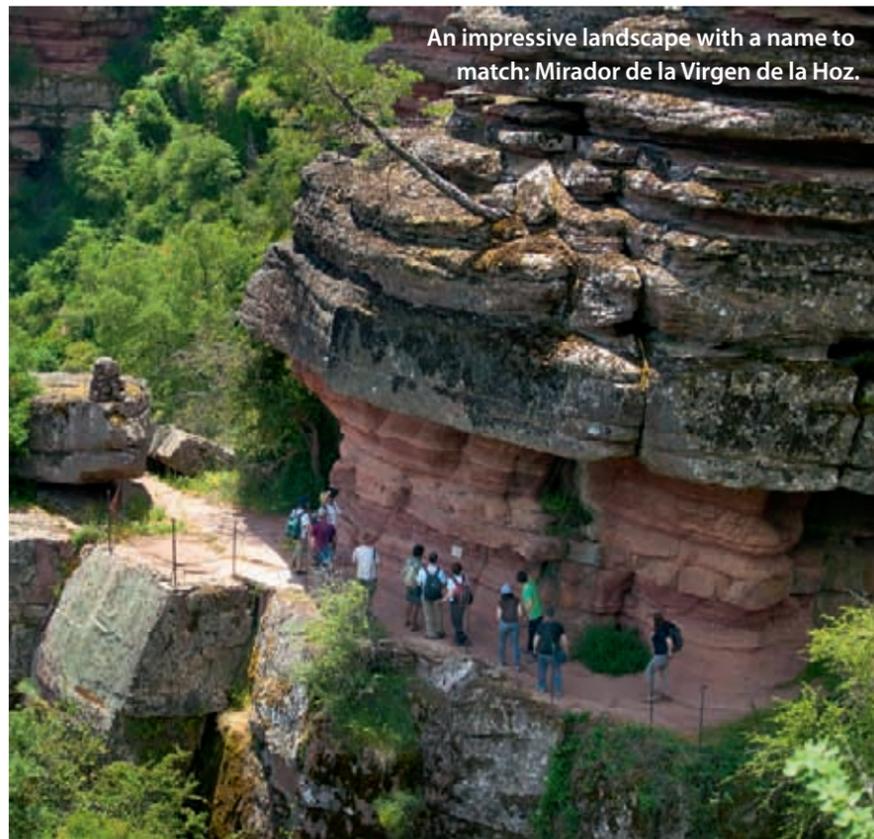
the species found, like the Bate-caixa (*Palicourea sp.*), an evergreen shrub with yellow-red and orange flowers. Or the Daisy tree (*Montanoa bipinnatifida*), whose large white flowers smell of cookies. Other activities took place across 15 zoos and parks, where students participated in games and competitions about Brazilian species. In the city of Manaus in the state of Amazonas, experts took 300 children—many from the city's slums, the *favelas*—on a guided tour of the botanical gardens.



## SPAIN

### 22.5.10 ALTO TAJO NATURE RESERVE

Alto Tajo Nature Reserve, 200km northeast of Madrid, could also be called the land of predatory birds. It is home to 18 pairs of Golden eagles (*Aquila chrysaetos*), the rare Bonelli's eagle (*Hieraaetus fasciatus*), Booted eagles (*Hieraaetus pennatus*), Egyptian eagles (*Neophron percnopterus*) and Griffon vultures (*Gyps fulvus*), which circled over the group of exploring ornithologists on Biodiversity Day. The reserve's scientists identified 203 species, among them 12 species of orchids. Almost a quarter of all Iberian flora grows in Alto Tajo, one of the reasons that the reserve is a favoured destination for nature-lovers. The park administration plans to augment its ecotourism offerings, which will also benefit the roughly 40 municipalities in the region. New hotels or restaurants will be sources of income for the locals, as will guided nature walks.



An impressive landscape with a name to match: Mirador de la Virgen de la Hoz.



Species greetings from the Martinsky Forest: Blackcap (*Sylvia atricapilla*); Wood mouse (*Apodemus sylvaticus*); and the Hairy vetch (*Vicia villosa*).

## SLOVAKIA

### 3.6.10 BRATISLAVA REGION (MARTINSKY FOREST)

Peter Fedor, from the department of conservation biology at Comenius University, informs the group of 60 students right at the outset that a forest has many layers. It is a 3D system. Those who want to understand it should use modern methods—and anticipate an exciting task. Photodetectors on tree stems make it possible to even look inside the bark. In its furrows, tiny organisms find refuge and food. Some species of thrips (*Thysanoptera*) feed on microscopic fungi. And things are no less interesting underground. Entomologist Martina Doričová took samples and set up traps. Using a binocular loupe, she found centipedes (*Chilopoda*), millipedes (*Diplopoda*), springtails (*Collembola*), Two-pronged bristletails (*Diplura*) and mites (*Acarina*), driving the species count up to 200.

## RUSSIA

### 21.5.10 KEDROWAJA PAD SANCTUARY

“Snake! Snake!” The cry startles the students crawling through the grass on all fours searching for insects. But the all-clear signal comes just as quickly. “Calm down, kids. It is only slightly poisonous!” Nadescha Christoforowa, professor of biology at Vladivostok University, only needs to lift her eyes briefly from the buttercup (*Ranunculus*) in her hand to instantly identify the reptile. It is a Mamushi snake (*Ancistrodon blomhoffi*). Christoforowa identifies three more snakes on Action Day in the Kedrowaja Pad sanctuary. This was the site chosen by GEO Russia and WWF for a nature walk, located in the far-flung reaches of Eastern Russia, a region that is 9 hours by plane and another 2 by car from Moscow. Kedrowaja Pad is a 60km-long strip of forest lying between the Japanese Sea and the border to China, and is home to a biological rarity: the last 37 surviving Amur leopards (*Panthera pardus orientalis*) in the world. The students and local journalists don't get to see them face-to-face, but they are impressed by the photos of the leopards taken with



Species-hunting in leopard country: Vladivostok University students analyse the forest floor using grid squares.

the delayed action release cameras of the WWF. The big cat, which is threatened by extinction, captivates everyone, especially on GEO's Action Day for Biodiversity. Students from a nearby village present a play on the shy predator in the lead-up to the species hunt. And the bakery creates a special cake called 'Land of Leopards' for the B-Day celebrations.



In the villages of the Lama forest, biodiversity is just an arm's length away.

## BENIN

### 4.6.10 DAHOMEY GAP (LAMA FOREST)

Species-rich jungles are also being cleared in Africa, for instance in Benin. The biodiversity of the Lama forest was scrutinised, an area that has become an oasis of biodiversity surrounded by farmlands. Many highly endangered species in Benin are able to survive in this sanctuary, like the Giant pangolin (*Manis gigantea*) and the Red-bellied monkey (*Cercopithecus erythrogaster*). And even trees such as the Butter tree (*Pentadesma butyracea*), which the group planted in the forest. The yellowish butter obtained from its nuts is very popular in local cuisine. Equally important are the medicinal plants: they are used by traditional healers to treat patients, and they are also a base for modern medicines.

## PHILIPPINES

### 4-22.5.10 NEGROS OCCIDENTAL PROVINCE (NORTHERN NEGROS NATURAL PARK, SAGAY CITY, CAUAYAN)



Dive instructor with a Giant clam (*Tridacna gigas*) at Danjugan Island. Detailed reports on the Action Days mentioned here and in all other countries are available at [www.biodiversity-day.info](http://www.biodiversity-day.info).

**OTHER COUNTRIES:** DENMARK, POLAND, ROMANIA, CANADA, LIECHTENSTEIN, LUXEMBURG, THE NETHERLANDS, PORTUGAL, SAUDI ARABIA, SINGAPORE. **PARTNERS:** GTZ, BFN, CBD-SEC., UNEP. **COORDINATION:** GEOMEDIA GBR.