BIODIVERZITETA SLOVENIJE

Izraz BIODIVERZITETA je poslovenjena tujka, ki počasi prihaja v naše uho. Opisuje neverjetno pestrost življenja na Zemlji. To niso samo različne vrste, ki naj bi jih bilo na Zemlji več kot 10 milijonov. To je tudi različnost osebkov vsake izmed njih in osupljiva pestrost življenjskih navad. Biodiverziteta, kakršno poznamo danes, je nastala v procesu, ki traja že več kot 3,5 milijarde let, to je, odkar obstaja življenje na Zemlji. V zadnjih desetletjih opažamo, da se biotska pestrost zmanjšuje — populacije se krčijo, več vrst izumre, kakor jih nastane. Veliko znakov kaže, da smo za upadanje pestrosti pretežno odgovorni ljudje. Biodiverzitete sicer ne bomo uničili, lahko pa jo tako močno spremenimo, da bodo postale razmere za naše življenje precej slabše kakor so danes. Si tega res želimo?

Razstava Biodiverziteta Slovenije je nastala v okviru projekta LIFE NATURAVIVA, Biodiverziteta — umetnost življenja. Projekt izvajamo na Nacionalnem inštitutu za biologijo skupaj s še devetimi partnerji. Glavni cilj projekta je ozaveščanje o pomenu biodiverzitete in o tem, kako zelo smo ljudje od nje odvisni.

Slovenija obsega dobrega 0,01 % kopnega na Zemlji in ima velikosti in geografskemu položaju primeren delež svetovne biodiverzitete. Poznamo okoli 25.000 vrst, verjetno pa na našem ozemlju živi vsaj še enkrat toliko doslej nepoznanih vrst. Zato na eni sami razstavi, naj je še tako obsežna, ni mogoče predstaviti niti vseh rastlin niti vseh ptic ali vseh hroščev, kaj šele celotne biodiverzitete Slovenije.

Pri iskanju fotografij smo upoštevali dve vodili: da bo vsaka fotografija sama po sebi izjemna in že na prvi pogled privlačna, ter da predstavimo čim širši obseg tega, kar biodiverziteta je. Mnogo izjemnih fotografij tako ni prišlo v končni izbor, ker je neka sorodna vrsta ali podoben ekološki proces že predstavljen na drugi fotografiji. Večina fotografij je nastala na slovenskem ozemlju, vendar smo na razstavo uvrstili tudi nekaj vrst, ki so pri nas zelo redke in katerih fotografije so nastale drugod.

BIODIVERSITY OF SLOVENIA

The word BIODIVERSITY is gradually becoming part of the common vernacular. It describes the incredible variety of life on Earth. It does not refer only to different species, which number in more than 10 million on Earth, but also to the variety of specimens of every species and the astounding variety of habits. Biodiversity, as we know it today, originated in a process that has been ongoing for over 3.5 billion years — as long as there is life on Earth. In recent decades, we have noticed that the Earth's biodiversity is declining: populations are shrinking, and more species are becoming extinct than new ones developing. There are many indications that we humans are largely responsible. We will not destroy biodiversity, but we can change it to such an extent that the conditions for our survival will become much harsher than they are today. Do we really want this?

The Biodiversity of Slovenia exhibition was created as part of the project LIFE NATURAVIVA, Biodiversity — Art of Life. The project is carried out by the National Institute of Biology together with nine other partners. The main goal of the project is to raise awareness of the importance of biodiversity and how much we humans depend on it.

Slovenia represents a bit over 0.01% of the Earth's land area, and holds a share of global biodiversity appropriate to its size and geographical location. We know of about 25,000 species, but there are probably just as many unknown species living in Slovenian territory. That is why it is impossible to show the whole biodiversity of Slovenia on merely 80 panels. Even if we would focus only on photos of one group — for example plants, birds or beetles — we would quickly run out of space to present all species.

When looking for photographs, we followed two guidelines. Every photograph had to be remarkable and appealing by itself, and we wanted to present the widest possible scope of what biodiversity represents. Thus, many exceptional photographs did not make it to the final selection, as some related species or similar ecological process had already been presented in another photograph. Most of the photographs were taken in Slovenia, but we also included some photographs that were taken outside the Slovenian territory, because the species are very rare in Slovenia.

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Biodiverziteta – umetnost življenja
Biodiversity – Art of Life
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Julijske Alpe / *Julian Alps* 📷 Dan Briški

Skalnato visokogorje je vabljiv izletniški cilj za turiste, za nekaj trdoživih visokogorskih vrst pa naslov stalnega prebivališča. Velik del Alp je zavarovan pod okriljem Triglavskega narodnega parka. Prvi zametek parka je nastal 1924, leta 1981 je bil razširjen na današnji obseg.

The rocky high mountains are an attractive destination for tourists and a permanent habitat for some hardy alpine species. A large part of the Alps is protected as part of the Triglav National Park. The origin of the national park dates back to 1924, but it was expanded to its present size in 1981.



Beloglavi jastreb / *Griffon vulture* Davorin Tome

Za preživetje vrst so lahko pomembni tudi povezovalni koridorji. Beloglavi jastrebi gnezdijo v italijanskem delu Alp in na Kvarnerskih otokih v Jadranskem morju. Slovenija leži vmes in je preletno območje, ki povezuje obe populaciji.

Connecting corridors may also be important for the survival of species. Griffon vultures nest in the Italian Alps and on the islands of the Kvarner Gulf in the Adriatic Sea. Slovenia lies between the two and is a migratory area connecting both populations.

LIFE NATURAVIVA

Triglavska roža / *Triglav rose* Jože Andrej Mihelič

Biodiverziteta je našla mesto tudi v kulturi. Pripovedka o Zlatorogu in triglavski roži, ki jo je objavil Dragotin Dežman leta 1868, sicer ne opisuje naravnih procesov, opozarja pa na odgovornost, ki jo imamo ljudje do narave in na pomen povezanosti ter soodvisnosti vrst v naravi.

Biodiversity has found its way into culture. The tale of the Goldhorn and the Triglav rose, published by Dragotin Dežman in 1868, does not describe natural processes, but draws attention to the responsibility we have towards nature and the importance of the connection and interdependence of species in nature.



Laški gad / *Asp viper* Polona Gorišek

V Sloveniji živijo tri vrste strupenih kač. Laški gad je med vsemi tremi daleč najredkejši. Naseljuje gorske travnike ob meji z Italijo. Na italijanski strani meje je njegov areal sklenjen vse do Španije.

Three species of poisonous snakes live in Slovenia. The asp viper is the rarest of the three by far. It lives on mountain meadows along the border with Italy. On the other side of the Italian border, its habitat is continuous all the way to Spain.



Alpski kozorog / *Alpine ibex* Dan Briški

Včasih ljudje priznamo, da so bile spremembe, ki smo jih povzročili v naravi, napaka. Takrat iščemo rešitve, da bi razmere povrnili v prejšnje stanje. Kozoroge, denimo, smo iz naših Alp iztrebili že v 17. stoletju, a smo jih leta 1902 naselili nazaj.

Sometimes we admit that the changes people caused in nature were a mistake. We then look for solutions to restore the previous state. For example, the Alpine ibex became extinct in the Slovenian Alps as early as the 17th century, but was reintroduced in 1902.



Snežnik / *Mt. Snežnik* Davorin Tome

Skoraj 60 % površine Slovenije poraščajo gozdovi. Večinoma so to gospodarski gozdovi, a ponekod je gozdarjenje dovolj zmerno, da so se ohranile zavidljive populacije nekaterih v Evropi ogroženih ali redkih gozdnih vrst.

Forests cover almost 60% of the surface area of Slovenia. Most of them are commercial forests, but forestry is moderate enough in some places to preserve the enviable populations of some endangered or rare forest species in Europe.



Ris / *Eurasian lynx* © Miha Krofel

Ris je ogrožena vrsta. V Sloveniji mu pomagamo preživeti tudi tako, da v gozdove doseljujemo rise iz delov Evrope, kjer jih je še veliko. Ko raziskovalci iščejo vzroke ogroženosti, morajo o vrsti zbrati čim več podatkov, tudi o tem, koliko mladičev imajo in kako za njih skrbijo. Takrat nastanejo takšne fotografije.

The Eurasian lynx is an endangered species. In Slovenia, we help ensure its survival by reintroducing specimens to forests from parts of Europe with abundant population. When researchers look for causes of endangerment, they need to gather as much information as possible, including the number of offspring and how the animals rear their young. That is when photos like this are taken.



Volk / *Grey wolf* Miha Krofel

Slovenci smo v splošnem naklonjeni velikim zverem. Še najslabše mnenje imamo o volkovih. Morda zato, ker so v pravljicah predstavljeni kot zlobneži. V resnici so volkovi nekaj posebnega, zato medvedi, risi ali ljudje s puškami njihove vloge v ekosistemu ne morejo povsem nadomestiti.

Slovenians are generally fond of large animals. We reserve our worst opinion for wolves. Perhaps because they are portrayed as villains in fairy tales. In fact, wolves are something special, and bears, lynxes, or people with guns can't completely supplant their role in the ecosystem.



Rjavi medved / *Brown bear* Marjan Artnak

Rjavi medved sodi med največje zveri na svetu; samci tehtajo do 400 kg. Iz večjega dela Evrope so iztrebljeni, pri nas jih živi okoli 1000. Zaradi velikosti in moči je njegov največji sovražnik človek – seveda le človek s strelnim orožjem.

The brown bear is one of the largest living carnivores in the world, with males weighing up to 400 kg. It is already extinct in most of Europe, but there are approximately 1,000 specimens living in Slovenia. Because of their size and strength, their greatest natural enemy is man — of course, only man armed with a firearm.



Blagajev volčin / *Daphne blagayana* Peter Skoberne

Zaradi različnih prilagoditev na okolje različne vrste naseljujejo različna območja; nekatere vrste so tako pri nas v središču, druge na robu razširjenosti. Blagajev volčin, na primer, raste po celotnem Balkanskem polotoku, v Sloveniji pa se njegov areal konča.

Because of different adaptations to the environment, different species inhabit different areas. Slovenia represents the centre of distribution for some species and the very edge of distribution for others. For example, Daphne blagayana is a species that grows throughout the Balkan Peninsula, but its area of distribution ends in Slovenia.

LIFENATURAVIVA

Lepi čeveljc / *Lady's-slipper orchid* © Jošt Stergaršek

V Sloveniji raste 83 vrst in podvrst orhidej. Zgodnje vrste zacvetijo že v marcu, najpoznejša razpre cvetove oktobra. Rastejo povsod po Sloveniji, od nižin do gorskih pobočij, po suhih, negnojenih travnikih in v redkih gozdovih. Večina je nizkoraslih; lepi čeveljc, ki zraste več kot pol metra visoko, je med večjimi.

There are 83 species and sub-species of orchid growing in Slovenia. Early species flower in March, and the last species flowers in October. They grow throughout Slovenia, from lowlands to mountain slopes, on dry, unfertilised meadows and in sparse forests. Most are characterised by low growth; the lady's slipper orchid, which grows over half a metre in height, is among the largest.

ZELENA NATURA

Pinoža / *Brambling* © Davorin Tome

Pinože so ptice severne Evrope. Vsakih nekaj let, ko jim pozimi zmanjka hrane, v milijonski jati obiščejo Slovenijo, kjer ostanejo več mesecev. Čez dan se po gozdnih tleh hranijo z žirom, vsak večer pa se zgrnejo v majhen del gozda, kjer skupinsko prenočujejo. Nazadnje so tako množično prenočevale pozimi 2019/20 pri zasavskem kraju Polšnik.

The brambling is a bird of Northern Europe. Every few years, when they run out of food in the winter, they visit Slovenia in a flock numbering a million birds and stay for several months. During the day, they feed on acorns on forest ground, and gather every evening in a small part of the forest, where they spend the night as a group. The last time they spent the night in Slovenia en masse was in the winter of 2019/20 near the town of Polšnik in Zasavje.

Alpski kozliček / *Rosalia longicorn* Davorin Tome

Alpski kozliček je eden najbolj očarljivih hroščev pri nas. Od junija do avgusta se samci zbirajo na osončenih bukovih deblih, kjer s posebnimi vonjavami privabljajo samice. Samice jajčeca izležejo v odmirajoči les. Ker ličinke v lesu preživijo več let, je največja grožnja kozličkom prav odstranjevanje odmrlega drevja.

The Rosalia longicorn is one of the most charming beetles in Slovenia. From June to August, males gather on sunny beech trunks, where they attract females with special scents. Females lay their eggs in decaying wood. Because the larvae live in wood for several years, the biggest threat to Rosalia longicorn is the removal of decaying trees.

Orjaški dežnik / *Parasol mushroom* © Davorin Tome

Gobe, tudi največje, so nadzemna plodišča gliv. Večji del organizma je skrit v zemlji v obliki mrežasto prepletenega podgobja. Po tem omrežju poteka tudi živahna komunikacija med drevesi, ki so z glivami intimno povezana. Nekateri zato podgobje imenujejo tudi gozdni internet.

Mushrooms, even the largest ones, are the above-ground fruiting bodies of fungi. Most of the organism, its mycelium, is hidden in the ground, forming interconnected mycorrhizal networks. These networks are used, amongst other things, for lively communication between trees, which are intimately linked with fungi. That is why it is also called a 'wood wide web'.



Črnivka / *Brittlestem* Davorin Tome

Gozdovi so polni gob, ki jih ljudje ne nabiramo za prehrano. Poleg estetskega učinka imajo neprecenljivo vlogo pri razgradnji odmrle organske snovi. Brez razgradnje bi — zaradi nakopičenega listja in odpadlih vej — gozdovi v nekaj letih postali neprehodni.

Forests are full of mushrooms that people don't gather for food. In addition to their aesthetic effects, they play an invaluable role in the decomposition of dead organic matter. Without decomposition, forests would become impassable in a few years because of accumulated leaves and fallen branches.

NATURAVIVA

Rebrenjača / *Hard-fern* Davorin Tome

Praproti so zelo preproste, prastare rastline. Nimajo cvetov in tako tudi ne semen. Razmnožujejo se s trosi, ki nastanejo na spodnji strani listov. Na Zemlji so uspevale, še preden so se po njej razširili dinozavri.

Ferns are very simple, ancient plants. They have neither flowers nor seeds. They reproduce via spores that form on the underside of their leaves. They thrived on Earth even before it was populated by dinosaurs.



Mali cvetič / *Mnium moss* Davorin Tome

Mahovi so prave pionirske rastline. Ker nimajo korenin, se lahko naselijo na povsem goli podlagi. Vse, kar potrebujejo za življenje, dobijo preko listov. Razmnožujejo se s sporofiti, dolgimi, neolistanimi stebelci, ki na gosto porastejo blazinice zelenega mahu.

Mosses are true pioneer plants. Because they have no roots, they can grow on a completely bare ground. They get everything they need to live through their leaves. They reproduce via sporophytes, long, bare stems that grow densely on top of a green moss cushion.



Prašički / *Woodlouse* Davorin Tome

V rastlinskem opadu živi cela vrsta živali, ki drobijo odmrli, odpadli organski drobir na še manjše kose. S tem prispevajo k njegovi učinkoviti razgradnji. Vloga razgradnje v ekosistemih je enako pomembna, kot je vloga fotosinteze. Brez prvega ali drugega procesa bi se življenje ustavilo.

Litterfall is home to many animals that break down this dead, fallen organic detritus into smaller pieces. Thus they contribute to its effective decomposition. The role of decomposition in ecosystems is as important as the role of photosynthesis. Without one or the other, life would stop.



Železna kačica / *Julus millipede* Davorin Tome

Živali med sabo razlikujemo tudi po številu nog. Ptice imajo dve, večina sesalcev štiri, žuželke šest, pajki osem nog. Pestrost narave je poskrbela, da imajo nekatere vrste tudi sto in več nog. To so stonoge: v ekosistemih so strige plenilke, železne kačice pa se hranijo z odpadlim listjem.

We also distinguish animals by the number of their legs. Birds have two, most mammals have four, insects have six, and spiders have eight legs. The diversity of nature has given some species a hundred or more legs. These are Myriapoda. Of these, centipedes have the role of predators in ecosystems, while millipedes feed on detritus.



Rdeča kelihovka / *Carnival candy slime mold* Sanja Behrič

Življenje sluzavk je izjemno zapleteno. Zaradi negibnih trosišč, ki jih razvijejo v času razmnoževanja, so jih nekdaj uvrščali med glive. Ko so kasneje ugotovili, da se iz trosov razvijejo gibljivi plazmodiji, ki plenijo mikroorganizme, so jih uvrstili med enocelične praživali.

The life of slime molds is extremely complex. Because of their immovable fruit body that develops during reproduction, we used to classify them as fungi. When we later found that motile plasmodia develop from spores, which prey on microorganisms, we classified them as single-celled protozoa.

LIFE NATURAVIVA

Davorjevo brezno / *Davor's abyss* Peter Gedei

V Sloveniji je registriranih preko 10.000 podzemnih jam in brezen. Po dosedanjem vedenju v podzemnem svetu živi več kot 1000 pravih jamskih vrst živali. Ker so raziskave v jamah zelo zahtevne, strokovnjaki ocenjujejo, da večina vrst sploh še ni odkritih.

In Slovenia, there are over 10,000 registered underground caves and chasms. To date, we have discovered over 1,000 true cave animal species in them. Because research in caves is very demanding, experts estimate that most species have not yet been discovered at all.



Paščipalec / *Pseudoscorpion* Teo Delić

Jame in brezna dinarskega krasa so domovanje številnim podzemnim vrstam. Pripadajo zelo različnim taksonomskim skupinam, zaradi življenja v večni temi pa imajo vse nekaj skupnih lastnosti; med drugim nimajo pigmenta in nimajo oči.

Caves and chasms of Dinaric Karst are home to many subterranean species. They belong to very diverse taxonomic groups; however, because they live in eternal darkness, they all have some common features. Amongst others, they have neither pigment nor eyes.



Kampodeja / *Campodea* Teo Delić

Kljub temu, da je v jamah popolna tema in kronično pomanjkanje hrane, se nekatere živali gibljejo zgledno hitro. Med njimi so tudi žuželke iz družine kampodeja. Prepoznamo jih po dveh členjenih izrastkih na koncu zadka, ki neredko presegata dolžino telesa.

Despite the complete darkness and constant lack of food in caves, some animals can move at remarkable speeds. Among them are insects of the genus Campodea. They are recognisable by the articulated appendages at their terminal end, which often exceed the length of their body.



Človeška ribica / *Proteus* Arne Hodalič

Ljudem, navajenim sončne toplote in barv, je življenje v večni temi nepredstavljivo. A ko se organizem na jamske razmere prilagodi, v resnici ni tako nemogoče. Velika prednost jamskega okolja pred površinskim je, da so v jamah razmere zelo stabilne. Še najtežje se je prilagoditi na skromne količine hrane.

For people, accustomed to sun's warmth and many colours, life in eternal darkness would be unimaginable. However, it is not as impossible once you adapt to cave conditions. A great advantage of the cave environment over the surface environment is that the conditions in caves are very stable. The most difficult condition to adapt to is the very scarce food.



Goričko / *NE part of Slovenia* Davorin Tome

Skrajno severovzhodni del Slovenije je pokrajina Goričko. Na Goričkem so ohranjene velike površine mozaične kulturne krajine s številnimi raznolikimi življenjskimi prostori in bogato biodiverziteto. Od leta 2003 je to območje z občutljivim ravnovesjem med vplivi človeka in naravnimi procesi zavarovano kot Krajinski park Goričko.

The far north-eastern part of Slovenia is the region of Goričko. Here, a mosaic cultural landscape with many habitats and rich biodiversity is preserved over a large area. Since 2003, this area has been protected as the Goričko Landscape Park with a delicate balance of human interventions and natural processes.



Kozjansko / *E part of Slovenia* Polona Gorišek

Kozjansko je hribovito gričevnata pokrajina, ki ima zaradi ekstenzivnega načina kmetovanja visoko stopnjo ohranjene biodiverzitete. Eden od zaščitnih znakov tega dela Slovenije so visokodebelni sadovnjaki. Od leta 1981 je območje zavarovano kot Kozjanski regijski park.

Kozjansko is a hilly landscape that has a high level of preserved biodiversity due to its extensive farming methods. One of the distinctive features of this part of Slovenia are its tall orchards. Since 1981, this region is protected as the Kozjansko Regional Park.

Zlatovranka / *European roller* Jure Novak

Izumrla vrsta izgine z obličja Zemlje enkrat za vselej. Če je iztrebljena le iz dela areala, se nekoč lahko še vrne. Zlatovranke so bile nekoč v Sloveniji pogoste gnezdilke, od leta 2005 pa veljajo za iztrebljene. Še vedno pa gnezdijo v Avstriji, na Madžarskem, Hrvaškem; torej upanje na povratek še obstaja.

A species that becomes extinct disappears from the face of the Earth forever. But if it becomes extinct in only one part of its area, it may one day return. European rollers were once common nesting birds in Slovenia, but have been considered extinct in Slovenia since 2005. However, they still nest in Austria, Hungary and Croatia, so there is still hope for their return.



Hermelin / *Stoat* Marjan Artnak

Pomemben naravni proces, ki oblikuje združbe v ekosistemih, je plenjenje. Deluje takole: če se plen ne uspe izogniti plenilcu, ga le-ta požre; če plenilcu plena ne uspe ujeti, od lakote pogine. Vse vrste na Zemlji so načelno ali plenilec ali plen.

An important natural process that forms communities in ecosystems is predation. It works like this: if the prey fails to escape the predator, the predator eats it; if the predator fails to catch the prey, the predator dies of starvation. In principle, all species on Earth are either predator or prey.



Zlata minica na malem talinu / *Rose chafer on Lesser meadow-rue* Davorin Tome

Hrošči so glede na število vrst najobsežnejša skupina živali. Med njimi najdemo leteče, takšne, ki živijo na tleh ali vrtajo v les, spet drugi kopljejo po zemlji, nekateri živijo v vodi. Eni so manjši od milimetra, največji so decimetrske dolžine. So vseh barv, nekateri so pisani, tretjim se barve kovinsko prelivajo.

In terms of the number of species, beetles are the largest order of animals. In this order, we can find flying beetles, beetles that live on the ground, wood-boring beetles, beetles that dig through soil, and beetles that live in water. Some are smaller than a millimetre, while the largest are a decimetre in length. They come in all colours, some are multi-coloured, others have shifting metallic colours.



Lastovičar na gorskem glavincu / *Swallowtail on Mountain cornflower* Davorin Tome

Lastovičarji so družina velikih metuljev. Največ vrst živi v tropih; pri nas jih živi pet. Zaradi velikosti in barvnih vzorcev so med bolj opaznimi metulji. Ob vsej lepoti pogosto pozabimo, da moramo ceniti tudi njihovo ekosistemsko vlogo opraševalcev.

Swallowtails are a family of large butterflies. Most species live in the tropics, five of them live in Slovenia; however, they are among the more noticeable butterflies due to their size and colours. With all this beauty, we often forget that we must also appreciate their role of pollinators in ecosystems.

Vrtni čmrlj na navadnem čistecu / *Garden Bumblebee on Common hedgenettle* Davorin Tome

Čmrlji so pomembni opraševalci. Za razliko od medonosnih čebel so dejavni tudi v deževnih in hladnih dneh. Zaradi dolgih jezičkov so eni redkih opraševalcev tistih rastlin, ki imajo medovnike globoko v cvetu. Vrtni čmrlj ima enega najdaljših jezičkov.

Bumblebees are important pollinators. Unlike honey bees, they are also active on rainy and cold days. Due to their long tongues, they are one of the few pollinators of plants that have their nectaries deep inside the flower. The garden bumblebee has one of the longest tongues.

LIFE NATURAVIVA

Bleščeča vinogradnica in listne uši / *European false honeypot ant and Greenfly* Davorin Tome

Številne vrste preživijo na račun vzajemnega sodelovanja z drugimi vrstami. Mravlje, denimo, varujejo listne uši pred plenici, uši pa mravljam pomagajo tako, da jim nudijo sladko mano, ki jo mravlje popijejo. Sodelovanje je koristno za oboje, za mravlje in uši.

Many species survive because of their mutualistic cooperation (mutualism) with other species. For example, ants protect aphids from predators, while aphids help ants survive by providing a sugar-rich liquid called honeydew that ants drink. Thus, both species benefit.



Osasti pajek s kobilico ščebetuljo / *Wasp spider with Grasshopper* Davorin Tome

Svila, s katero pajki predejo mreže, ima super lastnosti. Je močnejša od jekla, hkrati pa elastična in peresno lahka. Predvsem pa je dobro preizkušena. Narava jo je začela razvijati in preizkušati že pred vsaj 400 milijoni let, ko so se pojavili prvi predniki današnjih pajkov.

The silk that spiders use to spin their webs has incredible properties. It is stronger than steel, but also elastic and as light as a feather. Above all, it is well tested. Nature began to develop and test spider silk at least 400 million years ago, when the first ancestors of today's spiders evolved.



Velikonočnica / *Greater pasque flower* Polona Gorišek

V živalskih vrtovih so živali zaprte za varovalno ograjo. Velikonočnica pri nas v prosti naravi raste samo še na štirih miniaturnih lokacijah, okoli katerih je prav tako postavljena varovalna ograja. Ne zato, da velikonočnice ne pobegnejo, temveč da jih ljudje ne pohodijo ali izkopljejo.

In zoos, animals are enclosed behind a protective fence. In Slovenia, the greater pasque flower grows only in four very small locations, which are also surrounded by a protective fence. Not to prevent escape of the greater pasque flower, but to protect it from being trampled by humans or dug up.



Leska / *Common hazel* Davorin Tome

Okoli 95 % rastlin je enodomnih, to pomeni, da imajo na isti rastlini tako moške prašnike kot tudi ženske pestiče. Običajno sta prašnik in pestič skupaj, v istem cvetu, pri leski pa sta ločena. Moški cvetovi so dolge, klobasaste mačice, ženski so drobni brsti z rožnato brazdo pestiča na vrhu.

About 95% of the plants are monoecious, which means that they have both male anthers and female pistils on the same plant. Usually, anthers and pistils are together, in the same flower, but they are separate on the hazel. Male flowers are long and slim catkins, while female flowers are tiny buds with a pink stigma at the top.



Ptujsko polje / *Ptuj region* Davorin Tome

Da prehranimo vedno večje število ljudi, moramo vsaj del hrane pridelati na velikih, sklenjenih kmetijskih površinah. V zadnjem času raziskujemo, kako bi z nekaj prilagoditvami v proizvodnih procesih tudi v takšnih pokrajinah vsaj nekaterim prosto živečim vrstam omogočili preživetje.

To feed a growing number of people, we need to grow at least part of our food on large, continuous agricultural areas. Nowadays, research is being conducted how we can ensure the survival of at least some wild species in such landscapes with a few adaptations in production processes.



Rumena pastirica / *Yellow wagtail* Davorin Tome

Njive z monokulturami so včasih nekoliko podobne močvirskim ali stepskim ekosistemom, zato jih nekatere travniške vrste izberejo za nadomestni habitat. Pri tem moramo paziti, da ne postanejo pasti. Posegi z mehanizacijo lahko zmotijo razmnoževanje in vrste ostanejo brez potomcev.

Fields with monocultures are sometimes somewhat similar to wetland or steppe ecosystems, so some meadow species choose them as an alternative habitat. In such situation, we must be careful that such habitats do not become traps. Mechanised practices can disrupt reproduction, leaving species without their offspring.



Plavica / *Cornflower* © Peter Skoberne

Plavica je prosto rastoča rastlina, ki je z razvojem poljedelstva našla novo priložnost za preživetje na njivah, zasejanih z žiti. Z novimi tehnikami čiščenja žitnih semen in bolj učinkovitimi herbicidi smo plavico z njiv že domala izkoreninili, v prosti naravi pa je tudi skoraj ni več.

The cornflower is a wild plant that has, with the development of agriculture, found a new opportunity to survive in fields sown with cereals. With new cereal seed cleaning techniques and more effective herbicides, we have practically eradicated them from fields, and they are almost non-existent in nature as well.



Ribez / *Currant* Davorin Tome

Domače sorte kulturnih rastlin so običajno na lokalno okolje najbolje prilagojene, zato je pomembno, da jih ohranjamo v čim večjem številu. Pomembno pa je tudi, da ne izgubimo njihovih prosto rastočih sorodnikov za primer, če bo potrebno DNK kulturnih rastlin kdaj oplemenititi s kakšno izgubljeno lastnostjo.

Domestic varieties of cultivated plants usually have the best adaptations to the local environment, so it is important to preserve as many of them as possible. However, it is also important not to lose their wild relatives if we have to reintroduce a lost trait to the DNA of cultivated plants by selective breeding.



Drežniška koza / *Slovenian autochtone goat breed* Davorin Tome

Tudi pasme domačih živali imajo svoj enkraten DNK zapis in so prav tako pomemben del biodiverzitete, ki ga moramo ohranjati. Drežniška koza je edina slovenska avtohtona pasma koze. Živali so različno obarvane, od rjave do bele in tudi črne.

Domestic animal breeds also have their own unique DNA and are therefore also an important part of biodiversity that we need to preserve. The Drežnica goat is the only Slovenian autochthonous breed of goat. The animals have different colours, from brown to white and black.



Ljubljansko barje / *Ljubljana moors* Davorin Tome

Mokrišče je lahko jezero, reka, močvirje, morska plitvina in vse drugo, kjer je voda vsaj občasno nad ali tik pod površino tal. Ljubljansko barje je značilna kulturna krajina, a zaradi pogostih poplav in visoke ravni podtalnice je tudi mokrišče. Od leta 2008 je zavarovano kot Krajinski park Ljubljansko barje.

A wetland can be a lake, river, swamp, shallow sea and anything else where the water is at least occasionally above or just below ground level. The Ljubljana Moors are a typical cultural landscape, but are also a wetland because of frequent floods and high groundwater levels. Since 2008, this area is protected as the Ljubljansko barje Nature Park.

Močvirska logarica / *Snake's-head fritillary* Davorin Tome

Rastline, ki zacvetijo na travnikih zgodaj spomladi, si lahko privoščijo nizko rast, saj je vsa vegetacija okoli njih še polegla od zime. Cvetlice, ki jim časovno sledijo, morajo zrasti visoke, da v gneči razraslega travnika dobijo dovolj svetlobe za fotosintezo in da jih opraševalci opazijo. Ali pa morajo za preživetje imeti kakšno povsem drugačno strategijo.

Plants that flower on meadows in early spring can afford to be low growing, as all surrounding vegetation is still low because of winter. The flowers that follow them during the season must grow tall to get enough light for photosynthesis in the crowded meadow and to be noticed by pollinators. Alternatively, they have to adopt a completely different strategy to survive.



Jantarica na kukavičji lučci / *Amber snail on Ragged-robin* Davorin Tome

Značilnost polžev je, da njihovo življenje poteka zelo počasi — kakor da se jim v življenju nikamor ne mudi. Kljub počasnosti pa so pri premagovanju ovir presenetljivo spretni. Vsekakor so evolucijsko uspešna živalska skupina, saj jih po številu in pestrosti vrst prekašajo le žuželke.

One characteristic of snails is that their life is very slow — as if they live their life at their own pace. Despite being slow, they are surprisingly adept at overcoming obstacles. In evolutionary terms, they are certainly a successful group of animals, as they are surpassed in terms of the number and variety of species only by insects.



Zelena rega / *European tree frog* Davorin Tome

Glasno regljanje, ki se sliši okoli mnogih slovenskih dvorišč, je pogosto oglašanje naše najmanjše, a najglasnejše dvoživke — zelene rege. Zvočna komunikacija žab je pomembna za vzpostavljanje teritorijev in iskanje partnerjev, je pa le eden od mnogih načinov komunikacije v naravi.

The loud croaking that can be heard in many Slovenian backyards is often the sound of Slovenia's smallest but loudest amphibian — the European tree frog. The auditory communication of frogs is important for establishing territories and finding mates, but is only one of the many ways of communication in nature.



Temna šaševka / *Adriatic marbled bush-cricket* Davorin Tome

Le malo je pri nas tako redkih vrst, kot je kobilica temna šaševka. Na vsem svetu jih živi le okoli 5000, od tega več kot polovica na dobrih 40 ha mokrotnih travnikov severno od Iga na Ljubljanskem barju. Večino časa se skrivajo med visokimi steblikami trav, zato jih lažje slišimo, kakor vidimo.

There are few species as rare in Slovenia as the Adriatic marbled bush-cricket. There are only around 5,000 specimens living in the world, of which more than half live on about 40 hectares of wet meadows north of Ig on the Ljubljana Moors. Most of the time they hide among the tall stalks of grass and are easier to hear than to see.



Japonski dresnik / *Asian knotweed* © Davorin Tome

Japonski dresnik je pri nas tujerodna vrsta. V tekmi z drugimi rastlinami je izjemno uspešen. Rečna obrežja preraste tako hitro in tako na gosto, da v njegovi družbi ne uspeva nič drugega. S tem povzroča biodiverziteti, predvsem domorodnim obrečnim vrstam, ki tam rastejo tradicionalno, precej škode.

The Japanese knotweed is a non-native species. It has an extremely high competitive ability. It overgrows river banks so quickly and so densely that it prevents any other growths. By doing so, it significantly harms biodiversity, especially native riparian species that traditionally grew in such locations.



Cerknica / *Central part of Slovenia* Jošt Stergaršek

S skoraj 30.000 km vodotokov ima Slovenija veliko bogastvo celinskih voda, ki jih naseljuje zavidljivo število vodnih vrst. Imamo nekaj sto ekološko zelo raznolikih jezer, od presihajočih, umetnih, jamskih, nižinskih do alpskih. Širše območje Cerkniškega jezera je od leta 2002 zavarovano kot Notranjski regijski park.

With almost 30,000 km of watercourses, Slovenia has very rich inland waters, inhabited by a remarkable number of aquatic species. There are about 100 ecologically very diverse lakes in Slovenia, from intermittent, artificial, cave, lowland to alpine lakes. The wider area of Lake Cerknica has been protected as the Notranjska Regional Park since 2002.



Vidra / *Eurasian otter* Davorin Tome

Nekaj vrst sesalcev je naselilo reke, potoke in jezera. Na življenje v vodi niso prilagojeni tako dobro kot kiti ali delfini, ki morja in oceanov nikoli ne zapustijo. Vidre, čeprav spretne plavalke, za razmnoževanje še vedno potrebujejo tudi primerno kopensko okolje.

Several species of mammals have inhabited the rivers and lakes. They are not as well adapted to water as whales or dolphins, which never leave the sea and oceans. Otters, although skilled swimmers, still need a suitable land environment for reproduction.



Soška postrv / *Marble trout* Arne Hodalič

Soška postrv je endemit jadranskega povodja. Živi v rekah od severne Italije do Črne gore. V Soči in pritokih jo ogroža križanje s potočnimi postrvmi. V nekaj odmaknjenih pritokih so jo biologi in ribiči osamili od drugih postrvjih vrst in s tem zagotovili čisto linijo Soške postrvi v naravnem okolju.

The marble trout is endemic to the rivers of the Adriatic basin. It lives in rivers from Northern Italy to Montenegro. In Soča and its tributaries, it is threatened by hybridisation with river trout. In some remote sections of the river, biologists and fishermen isolated it from other trout species, thus ensuring a pure population in the natural environment.



Planinski pupek / *Alpine newt* Davorin Tome

Pupke uvrščamo med dvoživke, ker imajo dvojno življenje. Ličinke živijo v vodi in dihajo s škrgami, ko zrastejo v odrasle osebke, škrge izginejo in s pljuči dihajo zrak. A vsako pomlad se odrasli vrnejo v vodo, kjer samice odložijo jajca, iz katerih se izvali nov rod ličink.

Newts are classified as amphibians because they have a double life. The larvae live in water and breathe with their gills; when they mature into adults, the gills disappear and they breathe air through their lungs. But every spring, adults return to water, where females lay eggs from which a new generation of larvae hatches.

LIFENATURAVIVA

Plavček / *Moor frog* Davorin Tome

Rjave žabe so gozdne samotarke. Zgodaj spomladi pa se iz širokega zaledja vse hkrati odpravijo v mlake, kjer se jih na mrestenju zbere tudi po več tisoč. Tudi plavčki sodijo med rjave žabe — modri postanejo le za kakšen teden dni, v času razmnoževanja.

Brown frogs are solitary animals living in forests. In early spring, frogs from wide areas simultaneously head to ponds, where many thousands gather for spawning. The moor frog also belongs to the group of brown frogs — they turns blue for about a week during breeding.



Ovratniški plavač / *Water beetle* Davorin Tome

Ob spoznanjih, da je v naravi vse povezano z vsem, mokrišča, ki so med ljudmi dolgo veljala za nebodigatreba pokrajino, ponovno dobivajo veljavo, ki jim gre. A stoletja zgrešene miselnosti so pustila posledice. Vodni hrošč ovratniški plavač, na primer, je danes v Sloveniji znan le z dveh lokacij iz okolice Mure.

With the realisation that everything is connected in nature, wetlands, which have long been considered an unwanted land among people, are regaining the importance they deserve. But centuries of misguided mind-sets have left their impact. The water beetle, for example, is found in Slovenia today only at two locations, at the oxbow lake near Mura.



Travniški škratec / *Azure damselfly* Marjan Artnak

Kačji pastirji so zelo številčna in zelo starodavna živalska skupina. Nad mokrišči so letali še pred dinozavri, po obliki se od takrat do zdaj niso bistveno spremenili. To kaže, da so dobro prilagojeni na okolje, kjer živijo. V Sloveniji živi 72 vrst.

Odonata (dragonflies and damselflies) are a very large and very ancient order of animals. They flew over wetlands before dinosaurs evolved, and have not significantly changed their shape since then. This indicates that they are well adapted to the environment in which they live. There are 72 species of dragonflies and damselflies in Slovenia.

LIFE NATURAVIVA

Navadni koščak / *Stone crayfish* Davorin Tome

V gozdnem potoku se stikata ekosistem gozda in ekosistem celinske vode. V čistih, hitro tekočih, osenčenih potokih živijo za ped veliki raki. Čez dan se večinoma skrivajo pod kamni, bolj dejavni so ponoči. Če je treba, pot iz enega dela potoka v drugega prehodijo tudi po kopnem.

A forest stream is where the ecosystems of forest and inland waters meet. About 10-cm-long crayfish live in clean, fast-flowing, shaded streams. During the day they mostly hide under rocks, but are more active at night. If necessary, they walk from one part of the stream to another over land.

Migetalkar / *Ciliate* Davorin Tome

Svet enoceličarjev je vsaj tako bogat, kot je svet živali in rastlin, le poznamo ga bistveno slabše. Enoceličarji se večinoma razmnožujejo nespolno, z delitvijo celice na dve novi. Proces, rečemo mu tudi binarna fizija, traja nekaj minut.

The world of single-celled organisms is at least as rich as the world of animals and plants, but we are not as familiar with it. Single-celled organisms generally reproduce asexually, with a cell divides into two. This process, also called binary fission, takes a few minutes.

LIFE NATURAVIVA

Vodna zlatica / *Water crowfoot* Davorin Tome

Vrste iz rodu zlatic imajo zelo različne življenjske navade. Večina je kopenskih, nekatere pa živijo tudi pod vodo. Nad gladino poženejo le za zlatice značilne cvetove, da jih lahko oprašijo leteče žuželke.

Species from the water crowfoot genus have very diverse habits. Most grow on land, but some also live underwater. Only their characteristic flowers grow above the water surface, so that they can be pollinated by flying insects.

LIFENATURAVIVA

Piran / *SW part of Slovenia* Tihomir Makovec

Slovensko morje ni veliko, a je presenetljivo pestro poseljeno s prosto živečimi vrstami. Značilno floro in favno najdemo tudi v zaledju morja, na Krasu in v Istri. Pestro je tudi življenje na prehodu med morjem in kopnim. Velik del naše obale pa je precej urbaniziran.

The Slovenian sea is not large, but it is surprisingly diversely populated with wild species. Typical flora and fauna can also be found in the hinterland, on Karst and in Istria. Life in the transition area between land and sea is also diverse, but most of Slovenian coastline is quite urbanised.

Rogata babica / *Tentacled blenny* Tihomir Makovec

V naravi imajo še tako nenavadne stvaritve, kot na primer izrastki na glavi babice, svoj pomen; včasih pri obrambi, včasih pri skrivanju, včasih pri razkazovanju ali bahanju. Vse, kar omogoča več in boljše potomce, se ohrani. Kakšne od teh posebnosti pa so morda samo znak, da trenutno ni v bližini nikogar, ki bi takšno ekstravaganco kaznoval.

In nature, even the most unusual creations — such as growths on a blenny's head — have their significance. Sometimes for defence, sometimes for hiding, and sometimes for showing off or bragging. Everything that ensures more and better offspring is preserved. Some creations are just an indication that there is currently no one in the vicinity that would punish such extravagance.



Polž gološkrgar / *Sea slug (Flabellina ischitana)* Tihomir Makovec

V našem morju živi več kot 140 vrst »golih« morskih polžev. Večina je pisanih ali kričeče obarvanih. Ne samo, da so vsi po vrsti lepi, potapljači vedo povedati, da se za nekatere vrste celo zdi, kot da so vsakič, ko jih ujamejo v fotografski objektiv, lepši, saj so z vsakega zornega kota videti drugačni.

There are over 140 species of sea slugs living in the Slovenian sea. Most of them are multi-coloured or brightly colourful. Not only are they all beautiful, divers say that some species look even more beautiful every time they are caught on camera — because they look different from every angle.

LIFE NATURAVIVA

Bodičasti kačjerep / *Common brittle star* 📷 Tihomir Makovec

Na morskem dnu ni cvetočih rož in vetrov, ki bi jih zibale. Namesto njih se v velikem številu zbirajo živali, ponekod korale, drugod morske vetrnice, na muljastem dnu Tržaškega zaliva pa kačjerepi, ki se prepuščajo dinamiki morskih tokov.

On the seabed, there are no flowering plants and winds to sway them. Instead, animals gather in large numbers, corals in some places, sea anemones in others, and brittle stars on the muddy sea bed of the Gulf of Trieste, swaying in the motion of sea currents.



Velika pliskavka / *Bottlenose dolphin* Tilen Genov (Morigenos)

Radi se pohvalimo, da je biodiverziteta Slovenije v evropskem vrhu. To je res, kljub temu, da narava ne pozna državnih meja. V našem morju je okoli 190 velikih pliskavk, a redno zahajajo tudi v italijanski in hrvaški del Jadranskega morja.

We like to boast that Slovenia's biodiversity is among the highest in Europe. This is true, even though nature knows no national borders. There are about 190 bottlenose dolphins in the Slovenian sea, but they also regularly visit the Italian and Croatian parts of the Adriatic Sea.

Marogasta rakovica / *Marbles rock crab* Davorin Tome

Življenje je naselilo vse kotičke Zemlje. Nekatere vrste živijo v zraku, druge na kopnem, tretje v vodi, četrte so mojstrice izkoriščanja mejnih območij. Takšen je tudi bibavični pas, ozka, premikajoča se linija med kopnim in morjem.

Life found its way to all corners of the Earth. Some species live in the air, others on land, some in water, and some have mastered the transitional area. One such area is the intertidal zone, a narrow, shifting zone between land and sea.

LIFE NATURAVIVA

Veliki škržad na deblu jagodičnice / *Great cicada on trunk of Strawberry tree* Davorin Tome

»Metamorfoza« je naraven pojav preobrazbe ličinke v odraslo žival. Pri nekaterih žuželkah odrasle leteče živali nastanejo iz ličink, ki so več let živele v vodi ali zakopane globoko v prsti. Pri škržadih zadnje dejanje spremembe traja manj kot eno uro, zgodi se ponoči.

"Metamorphosis" is the natural process of transformation of a larva into an adult animal. In some insects, adult flying animals develop from larvae that have lived in water or buried deep in soil for many years. In cicadas, the last step of change lasts less than an hour and occurs at night.

ZELENATURAVIVA

Navadna bogomoljka / *European mantis* Davorin Tome

Prosto živeče vrste se ves čas prilagajajo na spemembe. V starih naravoslovnih knjigah so avtorji pisali, da so bogomolke značilne za primorski del Slovenije. Zaradi podnebnih sprememb se njihov areal širi; danes ni nič nenavadnega, če jih srečamo tudi na Gorenjskem.

Wildlife is constantly adapting to change. In old natural history books, the authors wrote that the mantis is typical of the coastal region of Slovenia. Because of climate change, their area is expanding. Today, it is not unusual to see a mantis in Gorenjska.

Progasti gož / *Four-lined snake* Davorin Tome

Progasti gož je naša najdaljša kača. Zraste več kot dva metra v dolžino in je ljudem povsem nenevaren. Kulturna krajina slovenske Istre je najbolj severni del njegovega areala. Na meji razširjenosti so vrste praviloma redke, maloštevilne in zelo občutljive na spremembe okolja.

The four-lined snake is the longest snake in Slovenia. It grows more than two meters in length and is completely harmless to humans. The cultural landscape of Slovenian Istria is the northernmost part of its distribution. At the border of their areas of distribution, species are generally rare, few in number, and very sensitive to changes in the environment.



Polojnik / *Black-winged stilt* Davorin Tome

Ena najmočnejših vezi v živalskem svetu je med starši in potomci. Starši zelo zavzeto skrbijo, da mladiči dorastejo v odrasle, samostojne organizme, ki bodo nadaljevali njihovo poslanstvo. Pestrost narave pa se kaže tudi v tem, da številne vrste za svoje potomce sploh ne skrbijo, a so kljub temu uspešne.

One of the strongest bonds in the animal kingdom is the bond between parents and their offspring. Parents attentively rear their offspring to ensure that they grow into adult, independent organisms that will continue their mission. The diversity of nature is also reflected in the fact that many species do not care for their offspring at all, but are nevertheless successful.



Ljubljana / *Central part of Slovenia* Davorin Tome

Z naraščanjem človeške populacije se širi tudi površina naselij. In ker narava vedno najde pot, so se tudi v naselja priselile nekatere prosto živeče vrste. Ljubljana velja za "zeleno mesto". Med drugim zato, ker v njej najdejo svoje bivališče tudi nekatere ogrožene živalske in rastlinske vrste.

As the human population increases, so does the area of human settlements. And because nature always finds a way, some wild species have moved to human settlements. Ljubljana is characterised as a "green city". One of the reasons for this is that some endangered animal and plant species also found their habitat in Ljubljana.



Domači vrabec / *House sparrow* Davorin Tome

Že Darwin je zapisal, da je bistvo preživetja v naravi in razvoja vrst v tekmovanju med osebki iste vrste. Tekmujejo za hrano, vodo, prostor, spolne partnerje. Uspešnejši tekmeci imajo več uspešnih potomcev in s tem večji vpliv na prihodnje življenje vrste.

Darwin wrote that the essence of survival in nature and the development of species is in competition between specimens of the same species. They compete for food, water, space, and mates. More successful competitors have more successful offspring and thus a greater impact on the future life of the species.



Beloprsi jež / *White-bellied hedgehog* Davorin Tome

Naselja so ekosistem, ki ga je ustvaril človek za človeka. To pa ne pomeni, da v človeških naseljih ne živijo tudi druge vrste. Nekatere so bolj dejavne ponoči, ko se življenje ljudi upočasni.

Settlements are an ecosystem created by people for people. However, this does not mean that other species do not live in them. Some species are more active at night when human activity slows.



Navadna krvenka / *Purple loosestrife* ⓒ Davorin Tome

Niti sanja se nam ne, koliko prosto živečih vrst išče svojo priložnost za preživetje v naseljih. Za tiste, ki jim uspe, slej ko prej izvemo, saj sčasoma oblikujejo stabilno mestno populacijo. Večini naselitev ne uspe, kvečjemu životarijo kje za robom pločnika. A tudi ti poizkusi so pomemben del biodiverzitete.

We have no idea how many wild species are looking for their chance to survive in settlements. We find out about the successful ones sooner or later, as they eventually form a stable urban population. Most species fail and at best scrape by somewhere behind the edge of a pavement. But such attempts are still an important part of biodiversity.



Lišaja žlebnata parmelia in navadni rumenček / *Shield lichen and Common orange lichen* © Davorin Tome

Še posebej tesna oblika sodelovanja med vrstami se razvije v primeru, ko dve živita skupaj v istem telesu, kot je to pri lišajih. Ta oblika sožitja glive in alge preživi v zelo skromnih razmerah, zato jih najdemo povsod. Tudi v naseljih, če zrak ni preveč onesnažen.

A particularly close form of cooperation between species is when two species live together in the same body, as in the case of lichens. This type of coexistence of fungi and algae survives in very modest conditions, so they are found everywhere. Even in settlements if the air is not too polluted.

Čemaž / *Wild garlic* Davorin Tome

Brez hrane ljudje ne preživimo, vsa naša hrana pa izhaja iz biodiverzitete. Veliko je gojene, ki jo pridelamo na kmetijah, pomemben del pa še vedno naberemo ali ulovimo v prosti naravi.

We humans do not survive without food and all our food comes from biodiversity. Much of our food is cultivated and grown on farms, while a significant part is still harvested or caught in the wild.



Bukov gozd / *Beech forest* Davorin Tome

Brez kisika v zraku ljudje ne preživimo. Biodiverziteta skrbi, da kisika v atmosferi nikoli ne zmanjka, čeprav ga ves čas trošimo. Kisika ne sproščajo samo drevesa in rože, okoli polovico ga sprostijo enocelične alge iz oceanov.

We humans cannot survive without oxygen in the air. Biodiversity ensures that oxygen in the atmosphere never runs out, even though we consume it all the time. Oxygen is produced not only by trees and flowers — about half of it is released by single-celled algae from the oceans.



Gozdni potok Šumnik / *Forest stream* Davorin Tome

Brez čiste pitne vode ljudje ne preživimo. Star pregovor pravi, da se voda očisti, ko steče preko sedmih kamnov. A vode v potokih ne čistijo kamni, očistijo jo drobni organizmi, ki živijo na površini kamnov in med njimi — torej, vodo očisti biodiverziteta.

Human cannot survive without clean, drinking water. An old proverb says that water becomes pure when it flows over seven stones. But water in streams is not purified by stones; it is purified by small organisms that live attached to the stones and between them — in other words, water is purified by biodiversity.

LIFE NATURAVIVA

Kostanj, lešnik, žir in želod / *Chestnuts, Hazelnuts, Beechnuts and Acorns*. © Davorin Tome

Jesen je čas obilja v naravi. Nekatere gozdne plodove tradicionalno nabiramo tudi ljudje. Pri tem se moramo zavedati, da se z njimi hranijo tudi številne prosto živeče živali, ki jim je to edina hrana in življenjsko pomembna zaloga za zimo.

Autumn is a time of abundance in nature. Some forest produce is also traditionally harvested by humans. However, we must remember that many wild animals feed on such produce, which is their only source of food and vital supply for the winter.



Nad dolino Trente / *Over the Trenta valley* Aleš Zdešar

Biodiverziteta nas oskrbuje s številnimi storitvami, katerih vrednosti ne moremo izmeriti v denarju: pogled na lepo pokrajino, počitek v senci dreves, kolesarjenje med travniki, ki jih obletavajo metulji. Neprecenljivo je tudi srečanje z medvedom. V tistem trenutku nas morda res preplavi adrenalin, a dogodka nikoli ne pozabimo.

Biodiversity supplies us with many products whose value cannot be measured in money. For example, a view of a beautiful landscape, resting in the shade of trees, cycling among the meadows surrounded by butterflies. Encountering a bear is also a priceless moment. On the spot, adrenaline might be coursing through our veins, but we will never forget such a moment.



Krušne plesni / *Molds on bread* Davorin Tome

Jezni smo, kadar nam v omari splesni kruh. Naslednjič, ko to opazite, se spomnite, da so plesni vrhunski razgrajevalci organskih snovi. Brez plesni bi se že davno utopili v odpadkih, ki jih proizvajamo mi in ostala biosfera.

We might get angry when bread becomes moldy in our cupboard. The next time you notice mold, remember that mold are the best decomposers of organic matter. Without mold, we would have long ago drowned in the waste produced by us and the rest of the biosphere.



Zaraščanje / *Succession* Davorin Tome

Biodiverziteta ima izjemno moč popravljanja, a za svoje delo potrebuje čas. Karkoli smo in bomo ljudje zgradili, spremenili, biodiverziteta bo vse nekoč vrnila v prvotno stanje. Tudi naši najbolj nepremišljeni posegi v okolje imajo zaradi tega omejen čas trajanja. Hvala, biodiverziteta!

Biodiversity has tremendous corrective power, but requires time for its work. Whatever humans have and will build or change, biodiversity will one day return everything to its original condition. Therefore, even our most reckless interventions in the environment have a limited duration. Thank you, biodiversity!



Hrana predelana z biodiverziteto / *Food processed by biodiversity* Davorin Tome

Naša priljubljena hrana pogosto nastane ali se ohranja s pomočjo naravnih procesov — alkoholno vrenje, kisanje, vzhajanje testa s kvasovkami, fermentiranje čaja in sojine omake, zorenje in plesnenje sirov. To je le del storitev, ki nam jih nudi biodiverziteta.

Many of our favourite foods are made or preserved through natural processes — alcoholic fermentation, pickling, rising yeast dough, fermenting tea and soy sauce, cheese ripening and marbling. These are just some of the things that biodiversity does for us.