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Expert Conference on:
"Nature as a task - practical experiences in the management of protected natural areas"

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Man and
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MAN AND THE BIOSPHERE PROGRAMME

By decision of the
International Co-ordinating Council
of the Programme on Man and the Biosphere,

Mura Drava Danube Transboundary Biosphere Reserve - Croatia

has been designated for inclusion
in the World Network of Biosphere Reserves.

The world's major ecosystem types and landscapes
are represented in this Network, which is devoted to conserving
biological diversity, promoting research and monitoring,
as well as seeking to provide models of sustainable
development in the service of humankind.

Participation in the World Network facilitates cooperation
and exchanges at the regional and international levels.

Irina Bokova

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DIRECTOR-GENERAL
OF UNESCO

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Man and the Biosphere Programme

50 YEARS

MAN AND THE BIOSPHERE PROGRAMME

By decision of the
International Co-ordinating Council
of the Programme on Man and the Biosphere,

Mura-Drava-Danube Transboundary Biosphere Reserve

Austria, Croatia, Hungary, Serbia, Slovenia

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Ponedjeljak, 11. srpnja 2022. / *Monday, 11th July 2022*

Čakovec, Tehnološko-inovacijski centar Međimurje (TICM)

9.30	**Prijava sudionika / *Registration***
10.00	**Pozdravna riječ / *Welcome speech*** ▸ Međimurska priroda – ravnatelj Siniša Golub ▸ Grad Čakovec – gradonačelnica Ljerka Cividini ▸ Međimurska županija – župan Matija Posavec
10.30	**Borba protiv krivolova u zaštićenim područjima - iskustva udruge Biom iz Neretve i Drave / Tackling bird crime in protected areas – experiences of Biom Association in the Neretva and the Drava rivers** Boleslaw Slocinski, mag. geog.; Udruga Biom
10.55	**Upravljanje livadnim staništima i vrstama u Natura 2000 području Goričko / Management of grassland habitats and species in the Natura 2000 site Goričko** Gregor Domanjko; Javni zavod Krajinski park Goričko
11.20	**Ornitološki kamp - vrijedan doprinos upravljanju Parkom prirode Učka / Ornithological camp - a valuable contribution to the management of the Učka Nature Park** Iva Šoštarić, mag. biol. mol.; Udruga Biom
11.45	**Stanka za kavu / *Coffee break***
12.00	**Kako smo stvorili zajednicu aktivnih građana za zaštitu prirode Međimurja? / How did we create a community of active citizens for nature protection activities in Međimurje?** dr. sc. Mihaela Mesarić; Međimurska priroda – Javna ustanova za zaštitu prirode
12.25	**Kako smo otvorili Gradski prozor u prirodu? / How did we open the City Window into the nature?** dr. sc. Biljana Janev Hutinec; Lana Jelić, mag. ekol.; Javna ustanova Maksimir za upravljanje zaštićenim područjima Grada Zagreba
12.50	**Informalno učenje od najboljih / Informal learning from the greatest** mr. sc. Siniša Golub, dr. sc. Mihaela Mesarić; Međimurska priroda – Javna ustanova za zaštitu prirode

13.15	**Stanka za ručak / *Lunch break***
14.15	**Zaštita prirode i sustav zaštite od poplava Međimurja / Nature protection and flood protection system in Međimurje** dr. sc. Sandra Golubić; Međimurska županija, Upravni odjel za prostorno uređenje, gradnju i zaštitu okoliša
14.40	**Značajan napredak u očuvanju i obnovi rijeke Mure u Sloveniji / Significant Progress in Mura River Conservation and Restoration in Slovenia** Anja Cigan, Monika Podgorelec, Aleksander Koren; Zavod Republike Slovenije za varstvo narave
15.05	**Halak és élővilág a határ mentén / Fish and wild life along the border** Imre Simonyai; Municipality of Letenye
15.30	**Stanka za kavu / *Coffee break***
15.45	**Természetvédelmi kutatás-fejlesztés Zala megye területén az Eco Bridge projektben / Conservation research and development in Zala County in the Eco Bridge project** Máté Magyari; Balaton-felvidéki National Park Directorate Ákos Klein PhD; Barn Owl Foundation
16.10	**Invazija u tijeku / Invasion in progress** Lana Jelić, mag. ekol.; dr. sc. Biljana Janev Hutinec; Javna ustanova Maksimir za upravljanje zaštićenim područjima Grada Zagreba
16.35	**Diskusija / *Discussion***
17.00	**Završna riječ / *Closure***

Borba protiv krivolova u zaštićenim područjima - iskustva udruge BIOM s Neretve i Drave

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Sažetak:

Prema podacima Birdlife International u Hrvatskoj se svake godine ilegalno ubije 500.000 ptica, stavljajući Hrvatsku u prvih 10 zemalja na Mediteranu kada je u pitanju ilegalno ubijanje ptica. Neke od crnih točaka ilegalnog ubijanja ptica su delta Neretve i kontinentalni ribnjaci, lokaliteti koji su ujedno i izrazito važna staništa za gniježđenje, zimovanje i odmor strogo zaštićenih vrsta ptica močvarica. Upravo je zato Udruga Biom odabrala baš ove lokacije kao fokus svojih aktivnosti u borbi protiv krivolova ptica.

Od 2013. godine Udruga Biom provodi na delti Neretve monitoring ptica, regularni monitoring krivolova, a provela je i socio-ekonomsko istraživanje percepcija i uzroka krivolova na Neretvi. Potiče također javni sektor – čuvare prirode Javne ustanove Dubrovačko-neretvanske županije i policiju na provođenje izravnih mjera očuvanja prirode u posebnim ornitološkim rezervatima i to kroz organizaciju hvatanja krivolovaca na djelu i organizaciju rušenja ilegalnih čeka u rezervatima. Iskustva iz Neretve prenesena su i na područje rijeke Drave gdje se zimi ilegalno ubijaju guske. Tijekom 2021. godine je srušeno čak 7 čeka koje su služile za ilegalno ubijanje ptica na području ekološke mreže „Dravske akumulacije“.

Udruga Biom vidi ulogu organizacija civilnoga društva kao katalizatora i facilitatora pozitivnih promjena u zaštićenim područjima te kroz partnerstva s upraviteljima zaštićenih područja doprinosi učinkovitijem upravljanju zaštićenim područjima.

Tackling bird crime in protected areas – experiences of Biom Association in the Neretva and the Drava rivers

Author: Boleslaw Slocinski, mag. geog.
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Summary:

Croatia is among the top 10 countries in the Mediterranean for the number of birds that are illegally killed, according to Birdlife International, with 500.000 birds illegally killed each year. The Neretva Delta is an area which is extremely important habitat for nesting, wintering and resting of strictly protected species of wetland birds, but also is one of the worst hotspots for illegal killing of birds. Because of this, the Biom Association decided to concentrate its efforts towards the combat against bird crime in these area. The Biom Association has been conducting regular poaching monitoring, bird monitoring, and conducted a socioeconomic analysis of the perceptions and causes of illegal killing of bids in the Neretva.

Additionally, Biom encourages the police and the Public Institution for Protected Area Management of the Dubrovnik-Neretva County to organize the destruction of illegal hides from the reserves and to organize the catching of poachers in the act in order to implement conservation measures in the designated ornithological reserves. Experiences from the Neretva were also transferred to the area of the Drava River, where geese poaching occurs in winter months. In 2021 as many as 7 poaching hides were removed from Natura 2000 site „Dravske akumulacije“.

Biom Association sees the role of civil society organizations as catalysts and facilitators of positive change in protected areas and it contributes to more effective protected area management through partnerships with protected area managers.

Upravljanje livadnim staništima i vrstama u Natura 2000 području Goričko

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Sažetak:

Goričko leži na sjeveroistoku Slovenije uz granicu s Austrijom i Mađarskom. Od 2003. godine područje je proglašeno Parkom prirode, a od 2004. područjem Natura 2000. S površinom od 462 km^2 drugo je najveće zaštićeno prirodno područje u Sloveniji nakon Nacionalnog parka Triglav.

Goričko je jedan od najbolje očuvanih tradicionalnih poljoprivrednih krajolika u Sloveniji, s brojnim staništima i rijetkim životinjskim i biljnim vrstama. Najtipičnija staništa su ekstenzivno iskorištene livade, voćnjaci i živice. Ipak, površina livada definiranih kao Natura 2000 kvalificirani tip staništa livada (FFH kodovi 6210, 6410 i 6510) drastično se smanjila između 2004. i 2012. godine. Livade nestaju zbog intenziviranja s jedne strane i zarastanja s druge strane. Razlog je promjena u poljoprivredi i napuštanje stočarstva na malim gospodarstvima. Mnogi vlasnici malčiraju svoje livade samo da bi ih sačuvali. Takvim korištenjem vegetacija se promijeni u nekoliko godina te time više ne predstavlja stanište ugroženih vrsta leptiravelikog livadnog plavca (*Phengaris teleius*), zagasitog livadnog plavca (*Phengaris nausithous*) i močvarne riđe (*Euphydryas aurinia*). Uslijed sječe i napuštanja korištenja starih voćaka u voćnjacima značajno se smanjio broj staništa za ćuka (*Otus scops*) i pupavca (*Upupa epops*).

U cilju poboljšanja statusa očuvanosti livadnih staništa i raznih Natura 2000 vrsta, Javna ustanova Park prirode Goričko, koja upravlja područjem Natura 2000 Goričko i Parkom prirode Goričko, u proteklom je desetljeću provodila različite mjere. Obnovljeno je više od 100 ha napuštenih livada. Novoosnovani su i obnovljeni voćnjaci. S vlasnicima livada, voćnjaka, starih stabala i upraviteljima crkava sklopljeni su konzervatorski ugovori za očuvanje ptica, leptira, kornjaša i šišmiša.

Management of grassland habitats and species in the Natura 2000 site Goričko

Author: Gregor Domanjko
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Summary:

Goričko lies in the northeast of Slovenia along the border with Austria and Hungary. Since 2003, the area has been declared as the Goričko Nature Park, and since 2004 as the Natura 2000 site. With an area of 462 km^2, it is the second largest protected nature area in Slovenia after the Triglav National Park.

Goričko area belongs to one of the best-preserved traditional farmlands in Slovenia with numerous habitats and endangered animals and plants. The most typical habitats are extensively used meadows, high-trunk orchards and hedgerows. Nevertheless, the area of meadows defined as Natura 2000 qualifying grassland habitat types (FFH codes 6210, 6410 and 6510) decreased significantly between 2004 and 2012 due to intensification on the one hand and overgrowing with shrubs and invasive alien plant species on the other. The reason is a change in farming and the abandonment of livestock farming on small farms. Many land owners mulch their meadows just to preserve their meadows. With such use, the vegetation changes in a few years so that it no longer represents the habitat of endangered butterfly species such as the Scarce Large blue (*Phengaris teleius*), the Dusky Large blue (*Phengaris nausithous*) and the Marsh Fritillary (*Euphydryas aurinia*). Due to felling and neglecting of the old fruit trees in high-trunk orchards, many habitat trees for the Scops owl (*Otus scops*) and the European Hoopoe (*Upupa epops*) were lost.

In order to improve the conservation status of grassland habitats and various Natura 2000 species, the Goričko Nature Park Public Institution, which manages the Natura 2000 Goričko site and the Goričko Nature Park, has implemented various measures in the past decade. More than 100 ha of abandoned meadows have been restored. New high-trunk orchards have been newly established and the old ones restored. Conservation contracts have been signed with owners of meadows, orchards, habitat trees and church managers for the purpose of conserving birds, butterflies, beetles and bats.

Ornitološki kamp - vrijedan doprinos upravljanju Parkom prirode Učka

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Sažetak:

Na području Parka prirode Učka se od 2006. godine provodi edukativno-istraživački Ornitološki kamp u organizaciji Udruge Biom i Javne ustanove Parka. Kamp je pokrenut u svrhu monitoringa ptica metodom prstenovanja, čime se prikupljaju vrijedni podatci o selicama koje koriste okolicu lokve Rovozne kao svoje odmorište na selidbenom putu te o lokalnim gnjezdaricama koje nastanjuju istraživano područje. Rastom interesa javnosti za sudjelovanje u kampu prepoznat je izrazit edukativni potencijal ove aktivnosti te je na edukaciju stavljen poseban naglasak.

Posljednjih se godina uz svakodnevno prstenovanje ptica te edukaciju sudionika o metodi i ulovljenim vrstama provodi i dnevni edukativni program u obliku kratkih predavanja i radionica koje pokrivaju šire teme vezane uz lokalnu bioraznolikost te prirodu i njezinu zaštitu.Tijekom kampa se također periodički provodi akcija restauracije i održavanja lokalnog travnjačkog staništa. Kamp godišnje okuplja preko 100 volontera iz Hrvatske i svijeta te brojne, uglavnom lokalne posjetitelje, kojima pruža priliku da nauče mnogo o ornitofauni i prirodnom bogatstvu Parka prirode Učka te doprinesu prikupljanju podataka potrebnih za njihovu zaštitu.

Ornitološki kamp stoga daje vrijedan doprinos upravljanju Parka prirode Učka. Prikupljeni podatci o pticama omogućavaju praćenje stanja i trendova populacija kako bi se prepoznale eventualne prijetnje na koje je potrebno reagirati, dok se kroz provedbu kampa i vezanih edukativnih aktivnosti ostvaruje suradnja s lokalnom zajednicom, izgrađuje voluntarizam i osvješćuje javnost o važnosti očuvanja prirode.

Ornithological camp - a valuable contribution to the management of the Učka Nature Park

Author: Iva Šoštarić, mag. biol. mol.
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Summary:

Ornithological camp has been conducted in Učka Nature Park since 2006, organized by the Biom Association and the Public Institution of the Park. The camp was launched with the purpose of monitoring birds through bird ringing, which is used to collect valuable data on migrant populations using the surroundings of the Rovozna pond as their stopover site during migration, and on locally breeding species inhabiting the study area. With the increase of public interest in participating in the camp, its distinct educational potential was recognised, and special emphasis was then placed on educational activities.

In recent years, in addition to the daily ringing of birds and education of participants on the method and species caught, a daily educational program is conducted in the form of short lectures and workshops covering broader topics related to local biodiversity, nature and its protection. Restoration and maintenance of the local grassland habitat is also periodically carried out during the camp. The camp annually gathers over 100 Croatian and international volunteers as well as numerous, mostly local visitors, who are given the opportunity to learn a lot about the ornithofauna and natural richness of the Učka Nature Park and to contribute to the collection of data needed for its protection.

The ornithological camp therefore makes a valuable contribution to the management of the Učka Nature Park. The collected data on birds enables monitoring of the state and trends of populations to identify possible threats that need to be responded to, while the implementation of the camp and related educational activities contributes to active cooperation with the local community, building voluntarism and raising public awareness of the importance of nature conservation.

Kako smo stvorili zajednicu aktivnih građana za zaštitu prirode Međimurja?

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Sažetak:

Međimurska priroda – Javna ustanova za zaštitu prirode danas provodi više volonterskih programa i akcija u koje se iz godine u godinu uključuje sve veći broj nastavnika, učenika i građana s područja Međimurske i susjednih županija. Mreža volontera za zaštitu prirode Međimurja kontinuirano raste. Od 15 volontera i 180 volonterskih sati 2013. godine do njih 278 volontera i 2.224 volonterska sata 2021. godine.

Opsežan volonterski program „Zaštita vodozemaca od stradavanja na prometnicama Međimurske županije" Međimurska priroda provodi svake godine tijekom ožujka i travnja na tri crne točke i potezu uz prometnice u duljini 2.000 metara. Od 2013. godine u općini Nedelišće na lokalitetu Črečan, od 2014. godine u općini Selnica na lokalitetu u naselju Selnica, a od 2021. godine i u općini Gornji Mihaljevec na prometnici uz retenciju Dragoslavec. Volonterski program „Čišćenje obale za bregunice" provodi se početkom travnja od 2016. godine na obali rijeke Drave kod Gornjeg Hrašćana. Građani se tijekom lipnja i srpnja uključuju i u praćenja stanja jelenka i to od 2017. godine te lastavica i piljaka od 2021. godine. Kroz programe građanske znanosti sudjeluju u različitim istraživačkim aktivnostima, a Međimurska priroda kontinuirano prikupljanja i dojave građana o nalazima vrsta od interesa te organizira pojedinačne volonterske akcije kao što su izrada kućica za ptice ili postavljanje hotela za kukce.

Osim pojedinaca i obitelji u volonterske programe se uključuju i organizacije civilnog društva te odgojno-obrazovne institucije. To su primarno ekološke udruge Platana Nedelišće, Nobilis Čakovec i WWF Adria te druge udruge građana npr. CeZaM Čakovec. Osnovne i srednje škole također su angažirane, a značajnije su se uključivali nastavnici i učenici iz OŠ Selnica, OŠ Macinec, OŠ Nedelišće, OŠ Gornji Mihaljevec, III. OŠ Čakovec, Srednja škola Čakovec, Gimnazija Josipa Slavenskog Čakovec i Srednja škola Prelog. Profesori i studenti Međimurskog veleučilišta u Čakovcu te Učiteljskog fakulteta – Odsjeka u Čakovcu također se uključuju kako u aktivnosti na terenu tako i na edukacije koje prethode konkretnim akcijama te kroz izradu završnih radova na teme iz zaštite prirode.

How did we create a community of active citizens for nature protection activities in Međimurje?

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Summary:

Međimurje Nature - Public Institution for Nature Protection today implements several volunteer programs and actions. The network of volunteers for nature protection activities in Međimurje is continuously growing. From 15 volunteers and 180 volunteer hours in 2013 to 278 and 2,224 volunteer hours in 2021.

Extensive volunteer program "Protection of amphibians from roadkill in Međimurje County" Međimurje Nature conducts every year during March and April on three black spots and a stretch along the roads the length of 2,000 meters in 2021. The volunteer program "Cleaning the river bank for sand martin birds" has been implemented since April 2016 on the Drava river near Gornji Hrašćan. During June and July, citizens are involved in monitoring programs. For the Stag Beatle from 2017 and Barn Swallows and House Martins from 2021. Through citizen science programs, they participate in various research activities. Međimurje Nature collects the findings of species of interest and organizes individual volunteer actions such as setting up birdhouses or installation of hotels for insects.

In addition to individuals and families, volunteer programs also include NGOs and educational institutions. These are primarily environmental NGOs Platana Nedelišće, Nobilis Čakovec, WWF Adria, and other NGOs such as CeZaM Čakovec. Schools were also engaged, and teachers and students from Selnica Primary School, Macinec Primary School, Nedelišće Primary School, Gornji Mihaljevec Primary School, Third Primary School Čakovec, Čakovec High School, Josip Slavenski High School Čakovec and Prelog High School. Professors and students of the Polytechnic of Međimurje in Čakovec and the Faculty of Education - Department of Čakovec are also involved in field activities and education prior to specific filed actions and through the preparation of final papers on topics in nature protection.

Kako smo otvorili Gradski prozor u prirodu?

Autori: dr. sc. Biljana Janev Hutinec; Lana Jelić, mag. ekol.
Naziv institucije: Javna ustanova Maksimir za upravljanje zaštićenim područjima Grada Zagreba, Hrvatska
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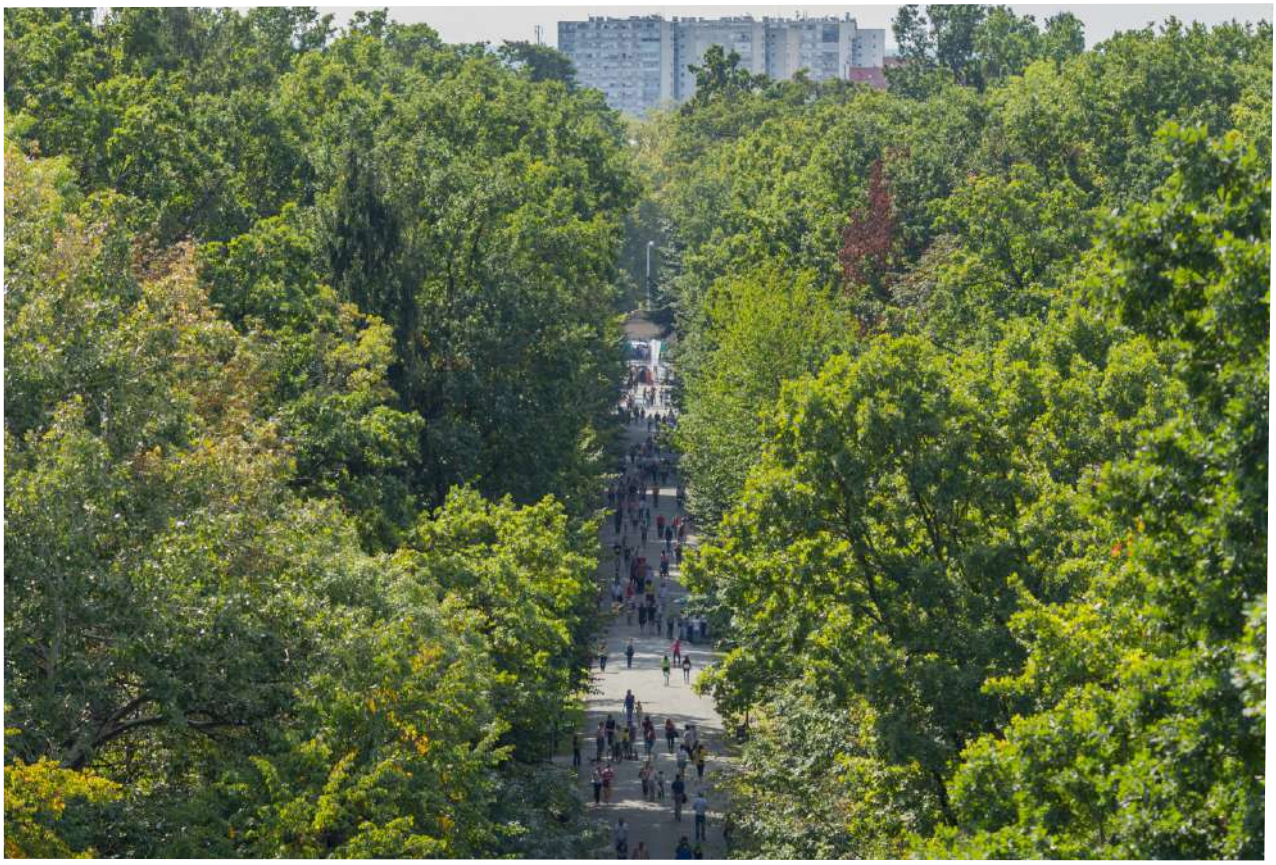
Sažetak:

Zaštita bioraznolikosti u velikim gradovima, očuvanjem, revitalizacijom i stvaranjem mreže raznolikih staništa, od velikog je značaja za zaštitu prirode i poboljšanje kvalitete života gradskog stanovništva. Urbana bioraznolikost ključna je za povezivanje ljudi i prirode i uspješan je obrazovni alat koji kod velikog broja ljudi budi osjećaj odgovornosti o potrebi zaštite prirode. Projektom Gradski prozori u prirodu – unaprjeđenje urbane bioraznolikosti i razvoj zelene infrastrukture stvaraju se preduvjeti uspostavljanja proaktivne i multifunkcionalne mreže zelene infrastrukture kojom se razvija i unapređuje sustav održivog upravljanja prirodom Grada Zagreba.

Projekt je sufinanciran sredstvima Europske unije iz Europskog fonda za regionalni razvoj u sklopu programa Promicanje održivog razvoja prirodne baštine. Uz infrastrukturni dio, posebna se pažnja posvetila izradi novih stručnih podloga koje će olakšati upravljanje kao i pripremi, razvoju i izradi edukativnih programa i materijala, na način koji doprinosi očuvanju urbane bioraznolikosti kao i kulturno-povijesnih vrijednosti.



How did we open the City Window into the nature?

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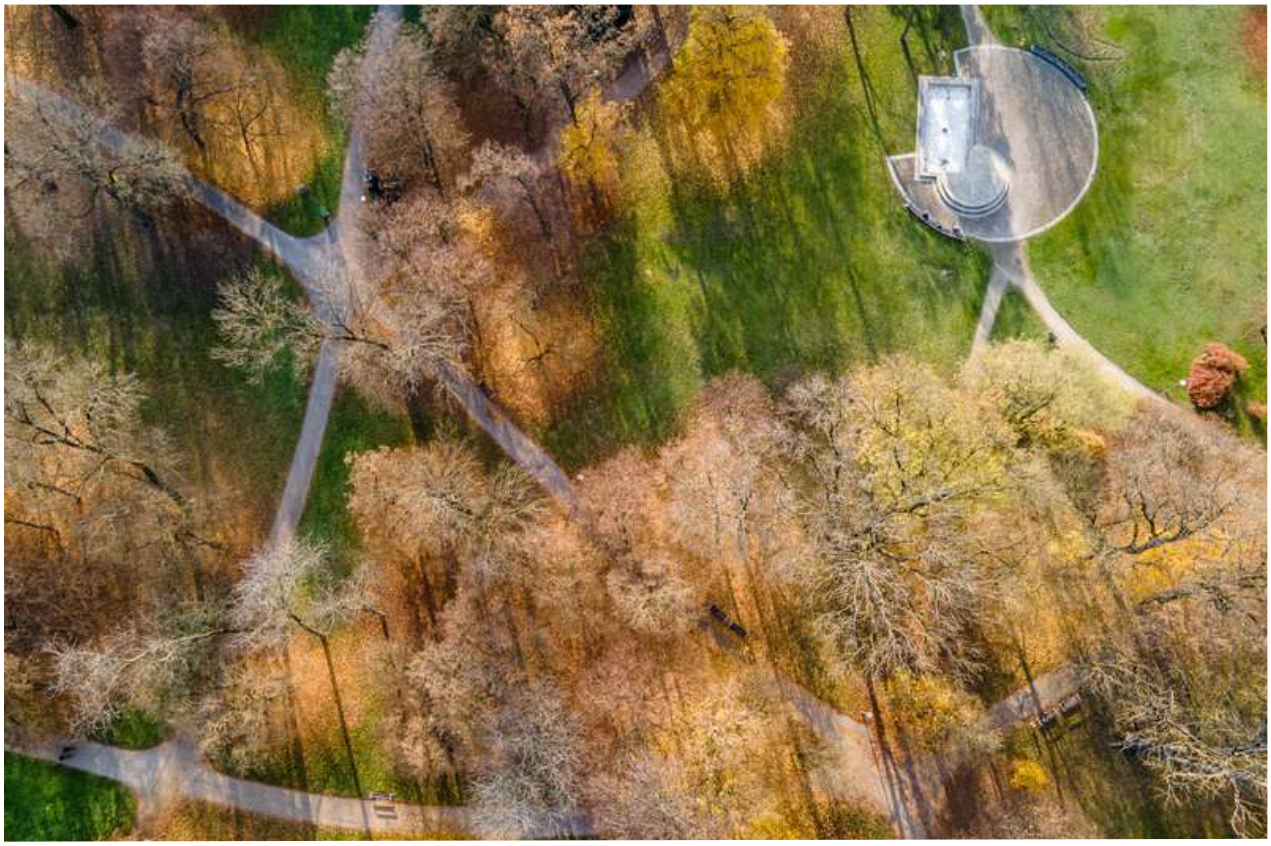
Summary:

Protecting biodiversity in large cities, by preserving, revitalizing and creating networks of diverse habitats, is of great importance for nature protection and improving the quality of life of the urban population. Urban biodiversity is key to connecting people and nature and is a successful educational tool that awakens in many people a sense of responsibility about the need to protect nature. The project City Windows into the Nature - Improving Urban Biodiversity and Development of Green Infrastructure creates the preconditions for establishing a proactive and multifunctional network of green infrastructure which develops and improves the system of sustainable nature management of the City of Zagreb.

The project is co-financed by the European Union from the European Regional Development Fund within the program Promoting Sustainable Development of Natural Heritage. In addition to the infrastructure part, special attention was paid to the development of new professional bases that will facilitate management as well as the preparation, development of educational programs and materials, in a way that contributes to preserving urban biodiversity as well as cultural and historical values.



Informalno učenje od najboljih

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Sažetak:

Informalno učenje (eng. informal learning) je učenje koje rezultira iz dnevnih aktivnosti vezanih uz posao, obitelj ili slobodno vrijeme. Nije organizirano ili strukturirano u smislu ciljeva, vremena ili podrške učenju. Informalno učenje je u većini slučajeva nenamjerno iz perspektive onog koji uči.
Posao pojedinca u zaštiti prirode nije puki posao i ne svodi se na propisanih osam sati radnog vremena. Pravi zaštitar prirode stalno je u pogonu i stalno uočava, povezuje i uči kako bi primjere dobre prakse primijenio u parku koji mu je povjeren na upravljanje. Veliki dio tog učenja događa se upravo informalno prilikom slučajnih susreta učenika i učitelja u najvećim učionicama na svijetu – u nacionalnim parkovima.

Autori ovog izlaganja prošli su više od polovice ukupnog broja američkih nacionalnih parkova (trenutno su proglašena 63) te u izlaganju iznose dva primjera tj. slučaja informalnog učenja kroz koji su prošli prilikom posjeta zaštićenim područjima u sastavu američkog National Park Service. Sa svojom institucionalnom tradicijom koja počinje 1916. godine, NPS je jedan od najboljih sustava zaštite prirode na svijetu, a u njemu rade neki od ponajboljih i globalno poznatih pojedinaca. Ujedno, veći broj američkih nacionalnih parkova prepoznat je kroz neki od UNESCO-vih programa, bilo kao svjetska baština ili kao rezervat biosfere.

Iako su posjeti nacionalnim parkovima od strane autora bili namjerni i planirani, susreti s „učiteljima“ su bili sasvim spontani, neplanirani i slučajni. Ti su susreti rezultirali novim znanjima te potvrdom (potkrepom) postojećih znanja autora o određenim sasvim specifičnim temama kad je u pitanju upravljanje zaštićenim područjima prirode.

Informal learning from the greatest

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Summary:

Informal learning is learning which originates from daily activities related to professional work, family or leisure time of individual. This type of learning is not organized or structured in the sense of objectives, time-frame or support to the process. From the perspective of the learner, informal learning is unintentional in majority of learning situations.
Professional working position in management of protected areas is not just another „9AM-to-5PM" job, i.e. it expands more than just eight hours a day or five days a week. A professional with true grit is constantly in action, always perceiving relationships in nature and society, and always learning about new models that can be applied in entrusted protected area. Great portion of that learning is right in the field of informal learning, appearing during unintentional or random encounters of „learners" and „teachers" within greatest classrooms of the world – national parks.

Authors of this presentation has visited more than half of total number of U.S. national parks (63 officially declared at the moment) managed within U.S. National Park Service. With tradition that originates from 1916, NPS is one of the best system of management of protected areas in the world, employing some of the greatest experts in the field of given profession. At the same time, a significant number of U.S. national parks is recognized by UNESCO; either as a World Heritage or as Biosphere Reserve area. Two examples of informal learning are presented here, with authors as learners and NPS staff as teachers.

Although author's visits to the U.S. national parks were intentional, authors have met their „teachers" in totally spontaneous manner, i.e. unplanned and random. This meetings resulted with new knowledge, gained through the process of informal learning, as well with confirmations of author's previous knowledge related to very specific issues within the practice of management of protected areas.

Zaštita prirode i sustav zaštite od poplava Međimurja

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Sažetak:

Gotovo svake godine se na nekom vodotoku bilježe pojave novih ekstremnih vrijednosti, a meteorološki modeli u budućnosti predviđaju još veće promjene. Vodni objekti za zaštitu od štetnog djelovanja voda imaju važnu ulogu u spašavanju života ljudi i imovine, posebno zbog klimatskih promjena. Međutim, godinama ulaganja u hidrotehničke građevine uglavnom podrazumijevaju ulaganja u nasipe i obaloutvrde. Osim ekonomske i društvene štete, poplave mogu imati ozbiljne posljedice za okoliš. Poplave mogu uništiti močvarna i druga područja i smanjiti bioraznolikost.

Međunarodne smjernice i EU direktive s područja zaštite prirode, upravljanja vodama i obrane od poplava naglašavaju važnost cjelovitog pristupa upravljanju vodama. Mjerama poput ponovnog spajanja poplavnih područja i rijeka, revitalizacije meandara i obnove močvarnih područja može se smanjiti ili odgoditi prolazak poplavnog vala nizvodno uz istodobno poboljšanje kvalitete i dostupnosti vode, očuvanje staništa i povećanje razine prilagodbi na klimatske promjene.

Cilj je ovog rada prikazati povezanost zaštite prirode i zaštite voda kako ih utvrđuju međunarodni i europski dokumenti. U radu će se analizirati postojeći sustav obrane od poplava uključujući postupak procjene utjecaja zahvata i prethodne ocjene prihvatljivosti provedenih na području Međimurja. Zaključno će se dati primjer mogućeg koordiniranog prirodnog upravljanja poplavama na razini slivnog područja.

Nature protection and flood protection system in Međimurje

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Summary:

Nearly every year, new extreme values are recorded for a waterway, and meteorological models forecast even greater changes in the future. Flood control structures play an important role in saving lives and property during floods, especially due to climate change issues. However, over the years, investments in flood protection, i.e. the reduction of possible damage caused by the harmful effects of water, mostly implied investments in embankments. In addition to economic and social damage, floods can have serious consequences for the environment. Floods can destroy wetlands and other areas and reduce biodiversity.

International guidelines and EU directives in the area of nature conservation, water management and flood defence emphasize the importance of a comprehensive approach to water management. Measures such as reconnecting rivers and floodplains, revitalising meanders and restoring swamplands may reduce or delay the occurrence of a flood wave downstream along with a simultaneous improvement of the quality and availability of water, habitat protection and increased resilience to climate changes.

The aim of this paper is to show the link between nature conservation and water protection as laid down by international and European documents. It analyses the existing flood defence system, including the impact assessment procedure for the intervention and preliminary appropriate assessment, which were carried out in Međimurje. In the conclusion, an example of a possible coordinated naturallly flood management at the water catchment level is provided.

Significant Progress in Mura River Conservation and Restoration in Slovenia

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Summary:

Mura River riverine ecosystem is the largest preserved floodplain habitat complex in Slovenia, characterized by high biodiversity and a great number of rare habitat types and wildlife species. The area is included in the EU Natura 2000 network, has been designated a UNESCO Biosphere Reserve (2018), and became a part of the UNESCO Mura-Drava-Danube (TBR MDD) 5-country Biosphere Reserve in 2021.

The negative effects of past river management practices threaten the riverine ecosystem by causing the loss of important functions such as flood protection, biodiversity, water supply etc. Riverine habitats such as gravel bars, side arms, oxbows, and floodplain forests are disappearing. Thus, two major conservation projects are being implemented in the Mura River Biosphere Reserve at present - Lifeline MDD, which is a five-country project, and NaturaMura, a Slovenian project. NatureMura is a comprehensive restoration project involving activities in the field of water management, forestry, agriculture, and nature interpretation. The main objective is to improve the ecological conditions of 3 habitat types and 12 Natura 2000 species along the Mura River in Slovenia. Two oxbow lakes and a wet meadow were already restored, 20 new ponds were created, floodplain forests are being restored and interpretation of the Natura 2000 Mura is planned.

In the project lifelineMDD the focus is on improving ecological connectivity through cross-sectoral partnership and the implementation of restoration measures in all five countries that are part of the TBR MDD. As a pilot measure in Slovenia, the Mura riverbed was widened during the first part of 2022. A significant part of both projects is a collaboration with partners across various sectors, including nature conservation, forestry and local municipalities, as well as educational institutions and landowners. Thus, an annual awareness-raising event was established, called the Mura Festival, which includes more events in municipalities along the Mura River. The implementation of both projects is an important step toward achieving the UNESCO Mura River Biosphere Reserve's goals for sustainable development.

Halak és élővilág a határ mentén / Fish and wildlife along the border

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Absztrakt / Summary:

Az előadás a Mura folyó, a beömlő patakok, továbbá környékbeli tavakról szól, bemutatva a vizes élőhely élővilágát, jellegét az itt élő halfajokat azok horgászatát a különböző horgászati módszerek bemutatásával.

A folyó szabályozása és annak hatásai a környezetre és az élővilágra. A Mura érintetlen szakaszai és a partvédő kövezett részek összehasonlítása. A beömlő patakok, a tavak (mesterséges pl. kavicsbányászat során létrejövő) a vízgyűjtő területek, a holtágak a folyó áradási területei. A Mura gazdag halállományának bemutatása védett és horgászható szempontok szerint, horgászati módszerek bemutatása az egyes területeken. Problémák, negatív hatások, konfliktusok kezelése a vizek kezelői és a halászok/horgászok között. Környezettudatosság, illetve „jó példa” követése szemléletváltás segítése, támogatása. Tevékenységek a Mura folyón régen és napjainkban (pl. aranymosás, rafting). A halak védelme, a horgászat mint sport és rekreációs tevékenység bemutatása.

Természetvédelmi kutatás-fejlesztés Zala megye területén az Eco Bridge projektben

Szerző: [1]Máté Magyari; [2]Ákos Klein, PhD
Intézmény:[1] Balaton-felvidéki National Park Directorate; [2]Barn Owl Foundation; Hungary
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Absztrakt:

Az Eco Bridge projekt alapelve, hogy a Magyarországot és Horvátországot elválasztó Mura folyó két oldalán az ökoszisztéma, a természeti és táji értékek közösek. Alapvető cél volt, hogy a projekt egyes elemei hatékonyan szolgálják az élőhelyek hosszú távú fennmaradását és outputjai segítségével hozzájáruljon a Natura 2000 területek és a Mura-Dráva-Duna Bioszféra-rezervátum ökológiai állapotának javulásához.
A BfNPI a célok elérése érdekében 7 Zala megyei Natura 2000 terület céldokumentumát készíttette el a projekt során természetvédelmi szakértők bevonásával. Ezek a stratégiai háttéranyagok tartalmazzák a Natura 2000 területek természetvédelmi célkitűzéseit és a szükséges intézkedések meghatározását. A projekt keretében készül el a Miklósfai Mórichelyi-halastavak különleges madárvédelmi terület fenntartási terve is.
Kétéves kutatási program keretében vizsgáltunk két mobilis gerinces állatcsoportot, a halakat és a madarakat. A Mura folyó Zala megyei vízgyűjtőjének 71 mintavételi pontján történt haltani vizsgálat. A kimutatott 47 halfajból 21 faj védett Magyarországon és 17 faj közösségi jelentőségű. A recens halfauna megismerésén túl a természetvédelmi szempontból értékesebb halfajok elterjedésére vonatkozóan is fontos adatokhoz jutottunk.
Madártani kutatásaink 5 Natura 2000 területen, 53 darab 2,5*2,5 km nagyságú UTM négyzetben történtek és 24 költő, vonuló és telelő madárfajra vonatkozóan gyűjtöttünk előfordulási adatokat. A felmérések kiterjedtek a vizsgált madárélőhelyek értékelésére is.
Dél-Zala három városában külön vizsgálat folyt a városi madárélőhelyek feltérképezése és minősítése érdekében. Az erről született, ajánlásokat is tartalmazó tanulmány átadásra kerül az önkormányzatok számára, hogy felhasználhassák a zöldinfrastruktúra-fejlesztés során.
A célterületekre jellemző inváziós növény- és állatfajokról rendelkezésre álló tudásunkra alapozva akciótervet készítettünk azok kezelésére. A meghatározott intézkedések a bioszféra-rezervátum más területein is felhasználhatók.
Gazdálkodók, hatóságok, érdekképviseleti szervek, kutatók és egyéb érintettek részvételével két szakmai műhelytalálkozót szerveztünk a bioszféra-rezervátum Zala megyei területén folyó halgazdálkodás és gyepgazdálkodás témakörében.
A projekt bemutatott outputjai hatékonyan tudnak hasznosulni az állami és civil természetvédelmi menedzsment gyakorlata során.

Conservation research and development in Zala County in the Eco Bridge project

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Summary:

The Eco Bridge project is based on the principle that Hungary and Croatia share ecosystem, natural and landscape values on both sides of the border. A key objective was to ensure that the project's components effectively contribute to the long-term conservation of habitats and that its outputs support the ecological status of Natura 2000 sites and the Mura-Drava-Danube Biosphere Reserve.

BfNPI developed supplementary documents for 7 Natura 2000 sites in Zala County with the involvement of conservation experts. These strategic background documents set conservation objectives and establish conservation measures for Natura 2000 sites. The project will also develop a Natura 2000 management plan for a Special Protection Area under Bird Directive (HUBF10001).

Two groups of motile vertebrates, fish and birds, were studied in a two-year research programme. Ichthyological surveys were carried out at 71 sampling points in the Mura river basin in Zala County. Of the 47 fish species detected, 21 species are protected in Hungary and 17 species are under community interest. In addition to the knowledge of the recent fish fauna, important data on the distribution of fish species of higher conservation value were obtained.
Ornithological surveys were carried out in the network of 53 UTM squares (2.5*2.5 km) in 5 Natura 2000 sites and we collected occurrence data for 24 breeding, migratory and wintering bird species. The surveys included an interpretation of the bird habitats surveyed.
In three towns of South Zala, a study was carried out to map and qualify urban bird habitats. The resulting study, which includes recommendations, will be
handed over to the municipalities for use in the development of green infrastructure.

Based on our knowledge of typical local invasive plant and animal species, we have prepared an action plan for their management. The measures identified can be used in other areas of the Biosphere Reserve.
We organized two workshops with farmers, authorities, stakeholders, researchers and other interested parties on fish and grassland management in the local part of the Biosphere Reserve.
The presented outputs of the project can be effectively used in the practice of public and non-governmental nature conservation management.

Invazija u tijeku

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Sažetak:

Invazivne strane vrste (ISV) predstavljaju jednu od glavnih prijetnji za bioraznolikost, pogotovo u gradovima koji su upravo središta njihovog širenja. Javna ustanova Maksimir velik dio svoje pažnje usmjerava na borbu protiv ISV-a. U zaštićenim područjima Grada Zagreba do sada je zabilježeno više od 70 ISV-a. Od 23 ISV koje izazivaju zabrinutost u Uniji i nalaze se na crnom popisu Republike Hrvatske, u zaštićenim područjima grada Zagreba do sada ih je zabilježeno čak 7: bezribica (*Pseudorasbora parva*), sunčanica (*Lepomis gibbosus*), nutrija (*Myocastor coypus*), crvenouha kornjača (*Trachemys scripta*), pajasen (*Ailanthus altissima*), žlijezdasti nedirak (*Impatiens glandulifera*) i ciganско perje (*Asclepias syriaca*).

Aktivnosti koje javna ustanova Maksimir provodi u borbi protiv ISV-a su: edukacija kroz predavanja, publikacije, terenske nastave i volonterske akcije; testiranje raznih metoda uklanjanja, redovito intenzivno uklanjanje na dijelu područja, istraživanja rasprostranjenosti te izrada strateških planova za upravljanje IAS.

Invasion in progress

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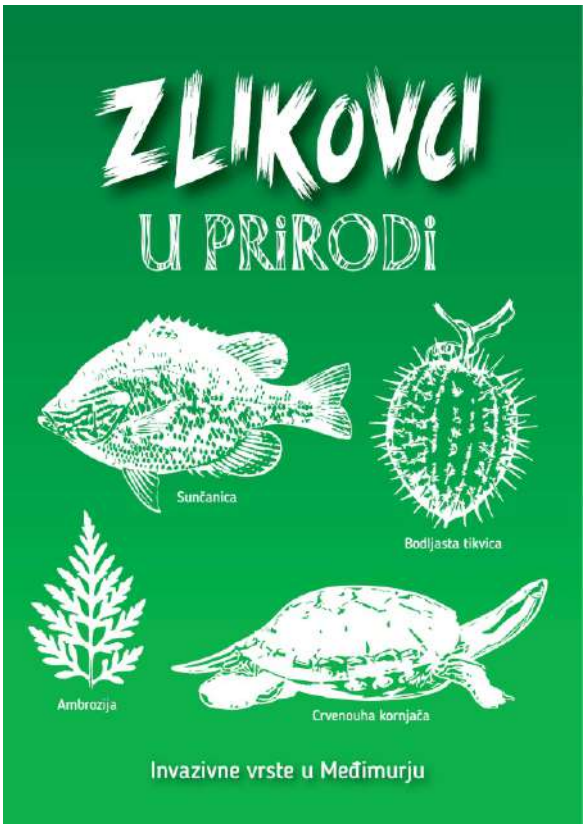
Summary:

Invasive alien species (IAS) pose one of the main threats to biodiversity, especially in cities that are the centers of their spread. The Public Institution Maksimir focuses on the fight against invasive alien species. More than 70 IAS have been recorded in the protected areas of the City of Zagreb so far. 23 IAS of Union's concern are present in Croatia and are on the black list of the Republic of Croatia. In protected areas of the City of Zagreb so far has been recorded 7 species from that list: stone moroko (*Pseudorasbora parva*), pumpkinseed (*Lepomis gibbosus*), nutria (*Myocastor coypus*), slider turtle (*Trachemys scripta*), heaven tree (*Ailanthus altissima*), himalayan balsam (*Impatiens glandulifera*) i common milkweed (*Asclepias syriaca*).

Activities carried out by the public institution Maksimir in the fight against IAS are: education through lectures, publications, field classes and volunteering actions; testing of various removal methods, regular intensive removal in part of the area, research distribution and development of strategic plans for the management of IAS.



Stručni skup na temu:

„Priroda kao zadaća – praktična iskustva

u upravljanju zaštićenim prirodnim područjima“

Expert Conference on:

"Nature as a task - practical experiences

in the management of protected natural areas"

PRIRODA

MEĐIMURSKA ZAŠTIĆENA

ECO BRIDGE

Ovaj Stručni skup održan je uz sudjelovanje stručnjaka iz Mađarske, Slovenije i Hrvatske.
This Expert Conference was held with the participation of experts from Hungary, Slovenia and Croatia.