



*Natura 2000*

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ŠUMA ŽUTICA



**Izdavač:**

Javna ustanova za upravljanje zaštićenim područjima i drugim zaštićenim dijelovima prirode na području Zagrebačke županije "Zeleni prsten"

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# Što je Natura 2000?

Natura 2000 jest ekološka mreža sastavljena od područja važnih za očuvanje ugroženih vrsta i stanišnih tipova Europske unije.

Njezin je cilj očuvati ili ponovno uspostaviti povoljno stanje više od tisuću ugroženih i rijetkih vrsta te oko 230 prirodnih i poluprirodnih stanišnih tipova.

Do sada je u tu ekološku mrežu uključeno oko 30 000 područja na gotovo 20 posto EU-ova teritorija, što je čini najvećim sustavom očuvanih područja u svijetu.



# Ekološka mreža RH (Natura 2000)

Ekološka mreža Republike Hrvatske, proglašena Uredbom o ekološkoj mreži (NN 124/2013, NN 105/15), predstavlja područja ekološke mreže Europske unije Natura 2000. Ekološku mrežu RH čine područja očuvanja značajna za ptice – POP (područja značajna za očuvanje i ostvarivanje povoljnog stanja divljih vrsta ptica od interesa za Europsku uniju, kao i njihovih staništa, te područja značajna za očuvanje migratornih vrsta ptica, a osobito močvarna područja od međunarodne važnosti) i područja očuvanja značajna za vrste i stanišne tipove – POVS (područja značajna za očuvanje i ostvarivanje povoljnog stanja drugih divljih vrsta i njihovih staništa, kao i prirodnih stanišnih tipova od interesa za Europsku uniju).

Ekološka mreža Republike Hrvatske obuhvaća 36,67 posto kopnenog teritorija i 16,39 posto obalnog mora, a sastoji se od 571 poligonskog područja očuvanja značajnog za vrste i stanišne tipove, 171 točkastog područja očuvanja značajnog za vrste i stanišne tipove (najvećim dijelom špiljski objekti) te 38 poligonskih područja očuvanja značajnih za ptice.



## Natura 2000 u Zagrebačkoj županiji

Na području Zagrebačke županije unutar Ekološke mreže, odnosno Nature 2000 nalazi se pet međunarodno važnih područja za ptice (POP): Sava kod Hrušcice, Turopolje, Donja Posavina, Pokupski bazen i ribnjaci uz Česmu.

Također, na području Županije su i 23 područja važna za očuvanje staništa i drugih svojstava osim ptica (POVS): Cret Dubravica, Vugrinova špilja, Gornji Hruševac – potok Kravarščica, Klasnići, Medvednica, Česma – šume, Varoški lug, ribnjaci Pisarovina, Sava nizvodno od Hrušcice, Sava uzvodno od Zagreba, Stupnički lug, Žumberak – Samoborsko gorje, Kupa, Odra kod Jagodna, Žutica, ribnjaci Crna Mlaka, Klinča Sela, Sutla, ribnjaci Siščani i Blatnica, Odransko polje, Jastrebarski lugovi, Lonjsko polje i ribnjak Dubrava.

Naturom 2000 u Zagrebačkoj županiji upravlja Javna ustanova za upravljanje zaštićenim područjima i drugim zaštićenim dijelovima prirode na području Zagrebačke županije „Zeleni prsten“, koja je započela s radom sredinom 2008. godine.



## Zašto su nam važna vlažna staništa?

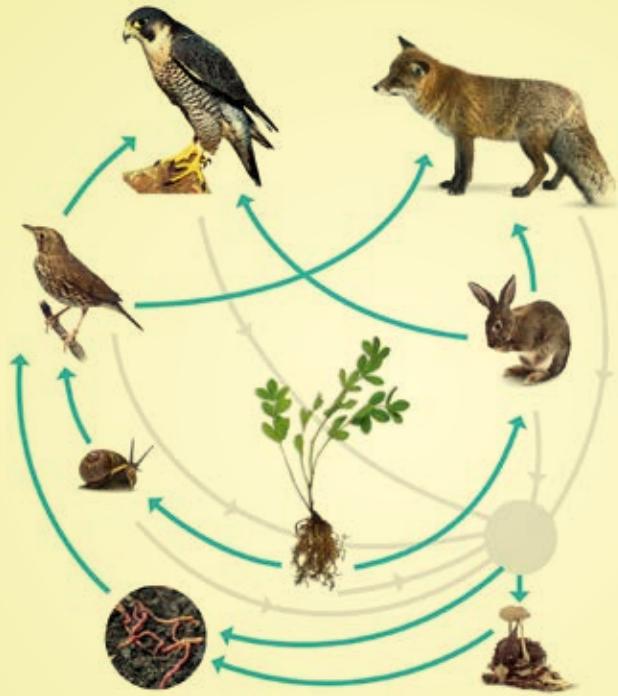
Osim u bioraznolikosti, vrijednost vlažnih staništa je i u kompletnoj regulaciji okoliša, jer predstavljaju rezervoare vode za šire područje, održavaju stabilnost podzemnih voda (prilikom veće količine padalina dio vode prelazi u podzemlje gdje se obnavljaju podzemni vodeni „spremnici“ koji su najveći izvor vode za korištenje), kontroliraju količinu vode u rijekama (sposobne su upiti velike količine vode i time sprečavaju poplave – djeluju kao spužva koja upija višak vode i na taj način štite nizvodne gradove i poljoprivredna područja od poplava), provode prirodno pročišćavanje voda (filtriraju štetne tvari iz vode) te utječu na regulaciju klimatskih prilika (utječu na lokalnu i regionalnu temperaturu, padaline i ostale klimatske procese).

Vlažna staništa jedan su od najbogatijih, ali istodobno jedan od najugroženijih tipova staništa na Zemlji. Procjenjuje se da je od 1900. do danas izgubljeno oko 60 posto močvarnih područja u svijetu te je stoga neophodno voditi brigu o tim staništima i zaštiti ih. Najveće su prijetnje vlažnim staništima isušivanje radi izgradnje, turizam, poljoprivreda (posebno istjecanje pesticida s poljoprivrednih površina), odlaganje otpada te gradnja brana, odvodnih kanala i kanaliziranje vodenih tokova.

# Što su vlažna staništa?

Slatkovodna odnosno vlažna staništa područja su gdje je voda glavni čimbenik koji kontrolira okoliš i s njime povezan biljni i životinjski svijet. Pojavljuju se tamo gdje je razina podzemnih voda blizu površine zemlje ili gdje podzemne vode izbijaju na njezinu površinu te tamo gdje je zemlja prekrivena vodom. Uključuju močvarna i poplavna područja, bare, tresetišta te vodena tijela, bilo prirodna bilo umjetna, stalna ili povremena, s tekućom ili stajaćom vodom.





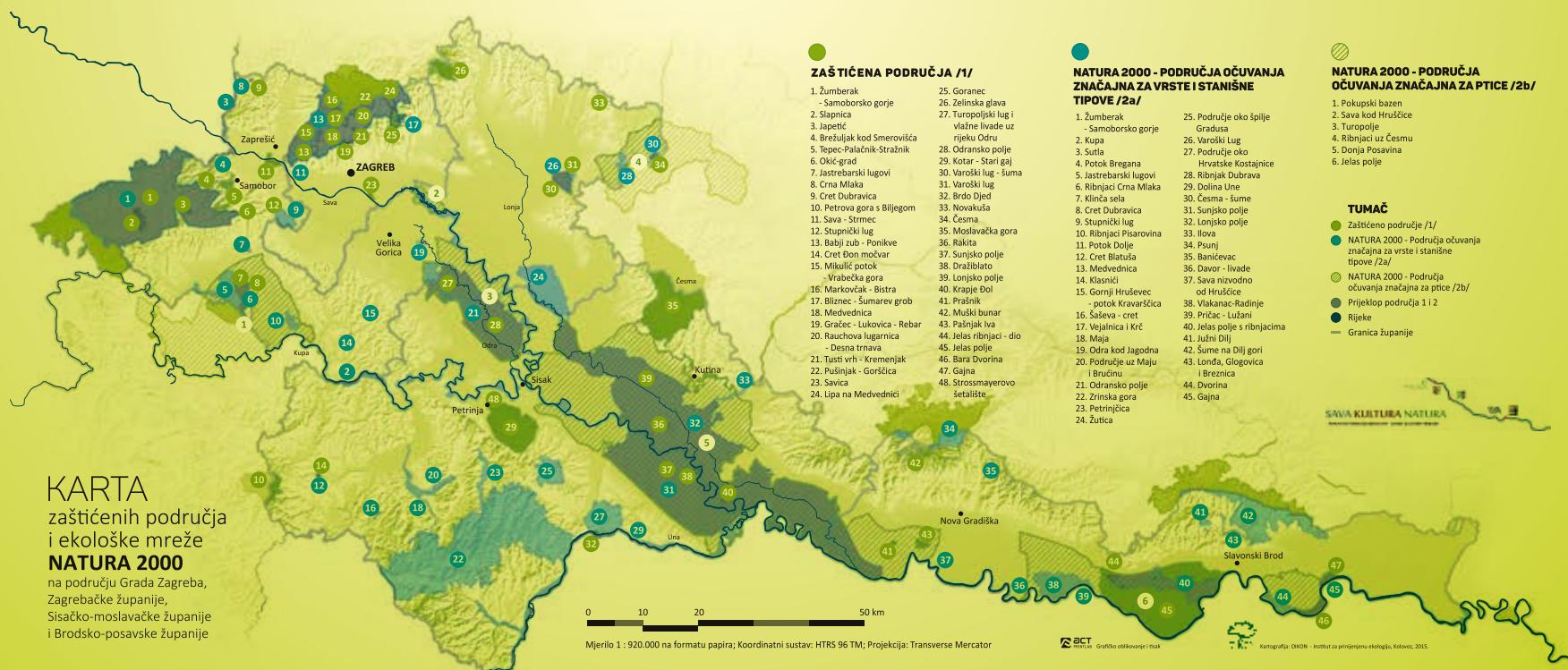
## Živi svijet vlažnih staništa

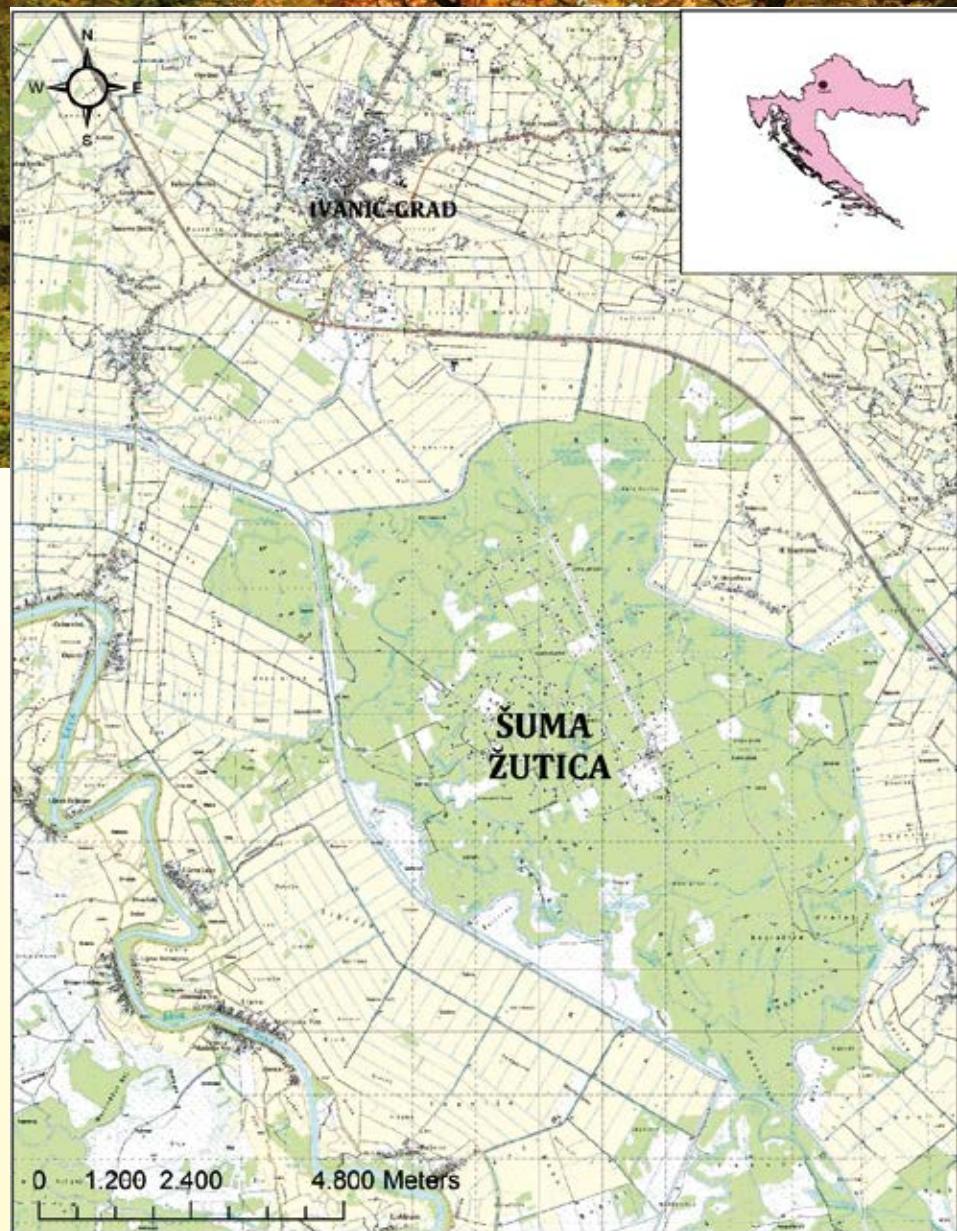
Vlažna staništa jesu staništa velike bioraznolikosti, odnosno nastanjuju ih tisuće raznih biljnih i životinjskih vrsta. To koliko su ona biološki raznolika govori nam podatak da se nalaze na drugome mjestu u svijetu (odmah nakon tropskih kišnih šuma!) jer je uz njih vezano više od 40 posto svih vrsta biljaka i životinja.

Kombinacija plitke vode i velike količine hranjivih tvari idealna je za razvoj organizama koji tvore bazu hranidbene mreže (alge, mikroorganizmi, biljke) te hrane školjke, rakove, kukce, vodozemce i ribe. Mnoge vrste ptica i sisavaca ovise o močvarnim područjima zbog prehrane, vode i zaklona, pogotovo tijekom razmnožavanja i migracija.

# Zaštićena područja uz rijeku Savu

Rijeci Savi svojstvena je iznimna biološka i krajobrazna raznolikost. Njezino porječje sadržava velike površine riječnih močvara i nizinski kompleksi šuma te je jedinstven primjer rijeke s poplavnim nizinama koje su i dalje netaknute te ublažavaju poplave i održavaju biološku raznolikost. Brojna područja uz rijeku Savu zaštićena su Zakonom o zaštiti prirode te Uredbom o ekološkoj mreži (područja očuvanja) značajna za ptice i područja očuvanja značajna za vrste i stanišne tipove.



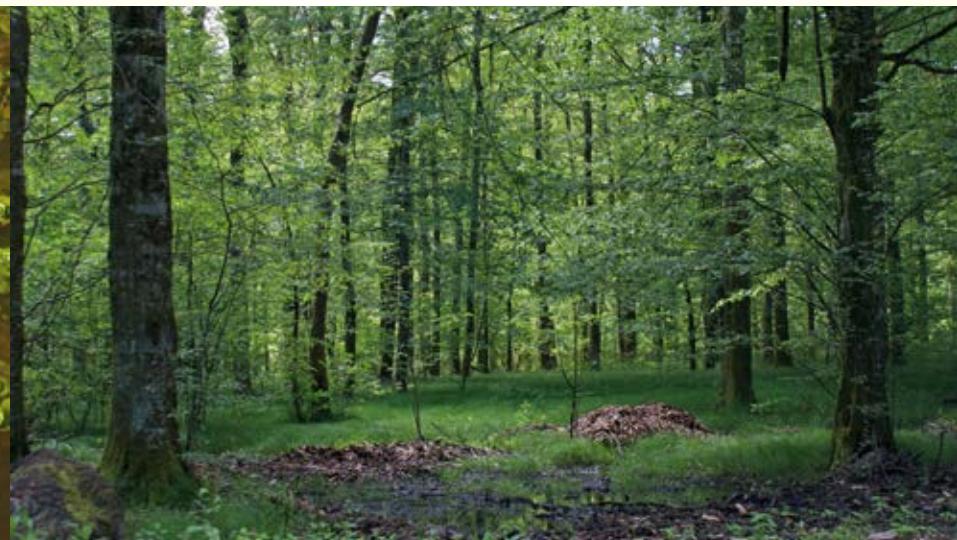


## Šuma Žutica

Žutica je dio Nacionalne ekološke mreže odnosno Europske ekološke mreže Nature 2000 (HR2000465). Prostire se u zoni poplavnog područja Lonjskog polja i spada u nizinske poplavne šume. Žutica jest druga najveća nizinska šuma u Hrvatskoj. Specifična je po tome što je već 40 godina i naftno polje s više od 200 bušotina, a u šumi je unatoč tomu opstao bogat biljni i životinjski svijet karakterističan za močvarne šume sjeverne Hrvatske. Predstavlja kompleksne hrastovih i jasenovih sastojina. Od Zagreba je udaljena tridesetak kilometara i smještena je na području Grada Ivanić-Grada i Općine Križ. Njezina vrijednost ne ogleda se samo u bogatoj biološkoj raznolikosti, već i u činjenici da je Žutica prva retencija na lijevoj obali Save, nizvodno od Zagreba, čija je svrha zaštita Siska i ostalih naselja uz Savu od poplava.

## Vrste i staništa

Poplavno područje šume Žutice karakteriziraju rukavci, kanali, mrtvice, jezerca, koji su pogodno stanište za limnofilne zajednice riba poput piškura (*Misgurnus fossilis*) i crnke (*Umbra krameri*). Žutica je važno stanište velikoga panonskog vodenjaka (*Triturus dobrogicus*), velikog vodenjaka (*Triturus carnifex*), crvenog mukača (*Bombina bombina*), dabra (*Castor fiber*), vidre (*Lutra lutra*) i barske kornjače (*Emys orbicularis*). Druge vrijedne vrste jesu riba karas (*Carassius carassius*) i obalni šaš (*Carex riparia*).



Žutica je ciljno stanište za prirodne eutrofne vode s vegetacijom Hydrocharition ili Magnopotamion (tip 3150), subatlantske i srednjoeuropske hrastove i hrastovo-grabove šume Carpinion betuli (tip 9160) i aluvijalne šume (Alno-Padion, Alnion incanae, Salicion albae – tip 91EO).

# Vrste i staništa



Naziv „Žutica“ najvjerojatnije potječe od naziva grma velike žutilovke (*Genista tinctoria*).

Na južnome odnosno jugozapadnome dijelu šume Žutice nalaze se dva pašnjaka – Gospođica i Behec na kojima se stoka napasa na način na koji se to radilo nekada davno.



Šuma Žutica dom je raznolikome životinjskom svijetu – od onih najmanjih primjeraka do velikih.

## Životinjski svijet



### JELENAK (*Lucanus cervus*)

Jelenak pripada skupini kukaca nazvanoj kornjaši ili tvrdokrilci (Coleoptera), nabrojnijoj skupini životinja na našem planetu koje su naziv dobile po oklopu tvrdome poput kornjačinog. S veličinom do čak osam centimetara, jelenak je jedan od najvećih kukaca Europe. Mužjaci imaju razvijene čeljusti koje sliče jelenskomu rogovlju, dok su kod ženki one znatno manje. Jelenak nastanjuje tople listopadne šume bogate starim i raspadajućim deblima pa je stoga uklanjanje starog i trulog drveća iz šuma glavni razlog njegove ugroženosti.



### VRETEŃCA (*Odonata*)

Vretenca ili vilinski konjici pripadaju redu srednje velikih do velikih kukaca duguljasta tijela, s dva para jednakih ili podjednakih, opnastih, prozirnih krila mrežaste strukture. Njihova prisutnost upućuje na bogatstvo i očuvanost prostora u kojem žive. Svojim velikim očima i vrlo pokretnom glavom vretenca mogu gledati u svim smjerovima i u letu uočiti pljen na udaljenosti od 20 do 40 metara.

# Vodozemci i gmazovi



U europskim razmjerima hrvatsku faunu vodozemaca i gmazova odlikuje velik broj vrsta, a do danas je zabilježeno 20 vrsta vodozemaca i 41 vrsta gmazova. Svi vodozemci i gmazovi zaštićeni su Zakonom o zaštiti prirode.

S obzirom na to da vodozemci imaju vodopropusnu kožu, vrlo su osjetljivi na onečišćenja u okolišu i prvi su pokazatelji zagađenja. U svijetu je zadnjih desetljeća zabilježeno opadanje populacija vodozemaca, a slično je i u Hrvatskoj, iako je stanje još uvijek puno bolje u odnosu na većinu europskih država.

Razlozi ugroženosti vodozemaca su brojni. Na prvom je mjestu uništavanje staništa krčenjem i isušivanjem, zbog čega ona postaju nepogodna za život vodozemaca. Razne kemijske tvari koje ljudi namjerno ili nemamjerno ispuštaju u okoliš, kao što su pesticidi, umjetna gnojiva i razne druge kemikalije, mogu izazvati smrt, bolest, smanjenu uspješnost u razmnožavanju ili poremećaje rasta. Vodozemci su vrlo osjetljivi na male promjene u temperaturi i vlazi. Promjene u globalnim vremenskim ciklusima mogu promijeniti ponašanje i cikluse parenja, utjecati na uspješnost razmnožavanja, smanjiti imunološke funkcije, povećati osjetljivost na kemikalije ili pak dovesti do drastičnih promjena u staništu i gubitka mrjestilišta. Istraživanje herpetofaune šume Žutice proveli su članovi Hrvatskog herpetološkog društva – Hylae, predvođeni voditeljicom istraživanja Senkom Baškierom, u četiri dvodnevna terenska izlaska u razdoblju od ožujka do lipnja 2016. godine. Terensko istraživanje uključilo je sakupljanje podataka o svim vrstama vodozemaca i gmazova pronađenima u vodenim staništima, ali i u kopnenome staništu oko njih. Sveukupno je zabilježeno devet vrsta vodozemaca te šest vrsta gmazova poput močvarne smeđe žabe, crvenog mukača, gatalinke, velikoga dunavskog vodenjaka, barske kornjače, bjelouške i riđovke.

## MOČVARNA SMEĐA ŽABA (Rana arvalis)

Obojenost u plavu boju normalna je pojava u životu mužjaka močvarne smeđe žabe. Krajem zime, odnosno početkom proljeća mužjaci i ženke počinju se okupljati radi parenja. Kako bi privukli ženke, mužjaci postupno mijenjaju boju, iz smeđe-crvenkaste s tamnim pjegama u tamnoljubičastu, a konačno i u nebeskoplavu. Što je plava boja mužjaka savršenija, to će više ženki privući i time si osigurati više potomstva. Mužjaci se ujedno služe glasanjem karakterističnim samo za tu vrstu, čime se partneri prepoznaju.



## GATALINKA (Hyla arborea)

Tijelo odrasle jedinke dugo je od tri do pet centimetara. Obično je svjetlozelena, ali prilagođava se okolini, pa je katkada žućkaste, katkada smeđkaste, katkada sivkaste boje. Gatalinke su dobri skakači, a na vršcima prstiju imaju proširenja u obliku jastučića, koja im služe za penjanje i prianjanje uz grmlje i ostalo bilje. Dane obično provodi sjedeći na lišću ili stabljikama drveća, grmlja i druge vegetacije, dok se noću spušta na tlo. Iako malena, naša je najglasnija vrsta žabe.

## CRVENI MUKAČ (Bombina bombina)

Mukači su bezrepe životinje hrapave kože i kratkih nogu, dužine do pet centimetara. Gornja strana tijela im je tamnomaslinaste boje, a donja crne s narančastim mrljama – otrovnim žlijezdama. Suočen s napadačem mukač luči otrovne tvari koje ga čine nejestivim za mnoge vrste. Glasaju se često u zborovima, danju i uvečer, tugaljivim „uup ... uup ... uup“ . Slična je vrsta žuti mukač (Bombina variegata), a postoje i križanci (hibridi) tih dviju vrsta.



## VELIKI DUNAVSKI VODENJAK (Triturus dobrogicus)

Vrlo je sličan velikome planinskom vodenjaku. Tijelo mu je izduženije nego kod ostalih vrsta velikih vodenjaka, smeđe do crvenkasto s tamnim točkama, s repom dužine do 16 cm. U doba parenja mužjaci imaju vrlo visoku nazubljenu krijestu koja može počinjati već na glavi. Nastanjuje nizinska staništa, uglavnom u (poplavnim) dolinama rijeka i riječnih sustava.





## PJEGAVI DAŽDEVNJAK (*Salamandra salamandra*)

Odrasle jedinke pjegavog daždevnjaka mogu narasti između 20 i 25 cm. Tijelo im je crno s intenzivnim žutim mrljama s leđne strane. Na stražnjem dijelu glave imaju otrovne žljezde iz kojih u slučaju opasnosti izlučuju otov kako bi se obranili. Nastanjuju šumska područja na nižim nadmorskim visinama, na mjestima gdje se nalaze razne stajaćice i tekućice poput lokvi i potoka. Pjegavi daždevnjak dugo živi, u divljini može doživjeti i do 20 godina.

## BJELOUŠKA (*Natrix natrix*)

Bjelouška, jedna od naših najčešćih zmija, obično nije duža od 120 cm, ali ponekad može narasti čak i do 200 cm. Na stražnjem dijelu glave ima karakteristične polumjesečaste svijetle mrlje s tamnim obrubom po kojima je i dobila naziv. Gornja strana tijela najčešće je sive boje, no može se naći na maslinastosmeđe, zelenkaste te crne primjerke. Živi u blizini vodenih i vlažnih staništa poput močvara, jezera, lokvi, bara, rijeka i potoka. Brani se ispuštanjem izmeta iz kloake ili glumi da je mrtva.



## RIĐOVKA (*Vipera berus*)

Riđovka je jedna od tri zmije otrovnice u Hrvatskoj te jedina otrovnica koju možemo naći u šumi Žutici. Ima zdepasto tijelo prosječne duljine 50 – 60 cm. Boja joj varira, od potpuno svijetlih primjeraka s izraženom tamnom cik-cak prugom na leđima do potpuno crnih primjeraka kod kojih cik-cak pruga nije vidljiva. Krajem travnja ili početkom svibnja započinje vrijeme njihova parenja, kada mužjaci pokazuju teritorijalno ponašanje, tj. sa svog teritorija pokušavaju otjerati drugog mužjaka. Pučki naziv za takve teritorijalne borbe jest "gujin ples".

## BARSKA KORNJAČA (*Emys orbicularis*)

Barska kornjača jedna je od dvije vrste slatkovodnih kornjača u Hrvatskoj. Vrlo je lako prepoznatljiva zbog žutih točkastih mrlja po crnome tijelu i oklopu. Barska kornjača poluvodena je vrsta, što znači da živi i na kopnu i u vodi te da nastanjuje gotovo sve vrste kopnenih voda i poplavnih područja. Hibernira od studenog do ožujka, uglavnom pod vodom. Može živjeti i do stotinu godina.



# Ribe



## PIŠKUR (*Misgurnus fossilis*)

Naraste od 25 do 30 cm, a najviše do 40 cm. Tijelo je jako izduženo te pokriveno sitnim ljskama i debelim slojem sluzi, zbog čega je vrlo glatko. Na bočnim stranama tijela pruža se široka tamna pruga, a ispod nje uska crna linija. Najčešći tip staništa te vrste jesu kanali za natapanje, ribnjaci, mrtvaje, naplavna močvarna područja i ujezereni dijelovi rijeka, prekriveni muljevitim dnom i obrasli gustom vodenom vegetacijom. U sušnome razdoblju može se potpuno ukopati u dno i prijeći u stanje mirovanja slično ljetnemu snu.

## KARAS (*Carassius carassius*)

Tijelo karasa obojeno je maslinasto do brončano roskasto, trbušni je dio žućkaste ili bjelkaste boje, dok su peraje obično zlatnobrončane ili sivobrončane. Otporan je na ekstremne uvjete kao što su sušna razdoblja, kad se ukopava u mulj, a isto čini i za hladnog, zimskog razdoblja. Preferira stajaće vode, sporotekuće rijeke, vode bogate vegetacijom te se često nalazi u močvarnim područjima, jezerima i barama. Živi uglavnom u vodama u kojima nema ostalih vrsta riba, njihovih potencijalnih napadača.



## CRNKA (*Umbra krameri*)

Crnka ima bočno spljošteno, cilindrično tijelo pokriveno širokim ljskama crvenosmeđe boje, sa svijetložutom prugom koja se proteže duž gornje polovice tijela te s lednom perajom pomaknutom prema stražnjem dijelu tijela. Naseljava močvarna i poplavna staništa gusto zarasla vodenim biljem u kojima su dna prekrivena debelim slojem organskog mulja. U Hrvatskoj je nađena u rukavcima rijeke Drave, rijeci Muri i u graničnoj zoni Lonjskog polja, odnosno na području Žutice.





## VELIKA BIJELA ČAPLJA (Ardea alba)

Velika, elegantna bijela ptica koju u našim krajevima češće opažamo zimi nego ljeti. Visoka je oko 100 cm, s rasponom krila do 170 cm. Gnijezde se na većim kopnenim ili priobalnim močvarama, ušćima rijeka i jezerima čije su obale obrasle bujnim raslinjem. Plijen traže u plitkoj vodi, a kada je preduboka, stoje uz njezin rub, glave i vrata nagnutih prema naprijed, zureći u vodu dok ne ugledaju pljen, a tada polijeću i hvataju ga u letu.



## ORAO ŠTEKAVAC (Haliaeetus albicilla)

Najveći je orao u Europi i najveći grabežljivac među orlovima. Zahvaljujući rasponu krila od dva pa čak do dva i pol metra, satima može jedriti na uzgonu toplijeg zraka. Njegovo najubođitije oružje nije kljun, već oštре kandže na nogama. Plijen traže najčešće iz niskog leta, obrušavaju se i pandžama ga grabe pri površini vode, a katkad ga napadaju i s motrilišta. Gnijezda grade na velikim stablima u aluvijalnim šumama ili močvarama, s jednim do gnijezda po teritoriju. Nacionalna gnijezdeća populacija procjenjuje se na 135 – 155 parova.

## ŠKANJAC (Buteo buteo)

Škanjac je ptica grabiljivica karakteristična po velikim bijelim mrljama na gornjoj strani krila. Obično vreba s uzvišenja u blizini seoskih gospodarstava, a kad ugleda potencijalnu žrtvu, laganim zamasima krila uzima zalet i potom se obrušava.





## DABAR (*Castor fiber*)

Dabar je najveći glodavac sjeverne polutke. Masivne i zdepaste je građe, izvrstan plivač i ronilac, što mu omogućava građa tijela. Prepoznatljiv je po snažnim prednjim zubima pomoću kojih za samo nekoliko sati može presjeći drvo promjera 25 cm. U sklopu projekta Šumarskog fakulteta u Zagrebu „Dabar u Hrvatskoj“ od 1996. do 1998. iz Njemačke u šumu Žuticu naseljeno je 47 dabrova. U Hrvatskoj je danas od 2500 do 3000 jedinki, a isto toliko ih se iz Hrvatske proširilo na susjedne zemlje (Sloveniju, Bosni i Hercegovinu i Mađarsku, pa čak i Austriju).



## EUROPSKA VIDRA (*Lutra lutra*)

Vidra je poluvodena životinja iz porodice kuna koja se prepoznaće po dugome vitkom tijelu, kratkim nogama te dugom repu.

Živi u gotovo svim tipovima površinskih kopnenih voda i močvarnih staništa.

Uglavnom je aktivna noću, dok preko dana leži u brlogu pod zemljom ili u skloništu iznad zemlje.

Sisavci

# O projektu

Javna ustanova Zeleni prsten Zagrebačke županije dio je Mreže SavaParks, koja se razvija kroz projekt "Jačanje zaštite rijeke Save i njenih poplavnih površina", a koji provodi Javna ustanova Park prirode Lonjsko polje u suradnji s njemačkom zakladom EuroNatur i Hrvatskim društvom za zaštitu ptica i prirode. Projekt traje od 1. siječnja 2014. do 31. prosinca 2016., a financiraju ga njemačka zaklada Euronatur, Europska komisija, zaklada Aage V. Jensen, zaklada Michael Otto Stiftung te organizacija Wetlands International. Unutar Mreže djeluju predstavnici zaštićenih područja, kao i predstavnici raznih ustanova i udruga za zaštitu prirode iz Slovenije, Hrvatske, Bosne i Hercegovine te Srbije. Cilj Mreže SavaParks prekogranično je povezivanje zaštićenih područja kako bi se održivim upravljanjem sačuvalo prirodno i kulturno naslijeđe uz rijeku Savu. U sklopu Mreže SavaParks Javna ustanova je 2015. prijavila projekt "Miraculous Forest Žutica", koji zaklada Euronatur sufinancira iznosom od 5500,00 €.

Naziv projekta: Miraculous Forest Žutica / Čudesna šuma Žutica

Opći cilj: Doprinijeti jačanju zaštite poplavnih područja uz rijeku Savu.

Svrha projekta / specifični cilj: Promicati važnost i zaštitu poplavnog područja šume Žutice kao područja ključnog za zaštitu biološke raznolikosti te unaprijediti i podići razinu obrazovanja i svijesti javnosti o biološkoj i krajobraznoj raznolikosti tog područja

Aktivnosti:

- Istraživanje herpetofaune šume Žutice
- Izrada brošura, promotivnih razglednica, pamučnih torbi i karata istraživanog područja
- Edukativna predavanja i radionice s učenicima osnovnih škola s područja Ivanić-Grada, Kloštar-Ivanića i Križa
- Završna promocija projekta s izložbom fotografija šume Žutice

Trajanje: studeni 2015. – kolovoz 2016.

Ukupna vrijednost projekta: 8170,00 €

Ovaj edukativno-promotivni materijal rezultat je projekta „Čudesna šuma Žutica“ koji je uz sufinanciranje provela JU Zeleni prsten.

**euronatur**



MICHAEL  
OTTO  
STIFTUNG

**AAGE V. JENSEN**  
CHARITY FOUNDATION





This educational and promotional material is a result of the "Miraculous Forest Zutica" project implemented by the JU Zeleni prsten with the help of co-financing.

Total project value: € 8,170.00

Duración: Noviembre 2015 - Agosto 2016

- Research of herpetofauna of the Žutica forest
  - Preparation of brochures, promotional postcards, cotton bags and a map of the research area
  - Educational lectures and workshops with elementary school students from the area of Ivanic-Grad, Klostari Ivanic and Križ
  - Final promotion of the project via the exhibition of photographs of the Žutica forest

**Project name:** Miraculous Forest Zutica / Cudesa Šuma Zutica  
**General objective:** Contributing to forest protection along the Sava River  
**Project objective:** Promote the importance and protection of floodplains as the key area for the protection of biodiversity and to improve the public level of education and awareness about biological and landscape diversity of this area

Public institution "Zeleni prsten" (Green Ring) of the Zagreb County is a part of the Savaparks Network, which is developed through the project "Fostering the protection of the Sava River and its floodplains", implemented by the Lonjsko polje Nature Park Public Foundation EuroNature and Croatian Society for the Protection of Birds and Nature. The project shall last from 1/12/2014 to 31/12/2016 and it is financed by German foundation EuroNatur, the European Commission, Aga V. Jenseen foundation, Michael Otto Stiftung foundation and Wetlands International organization. The network includes representatives of protected areas, as well as the representatives of various institutions and associations for nature conservation from Slovenia, Croatia, Bosnia and Herzegovina and Serbia. The objective of Savaparks Network is cross-border linking of protected areas in order to preserve the natural and cultural heritage along the Sava River through sustainable management of these areas.

# About the project

# Mammals

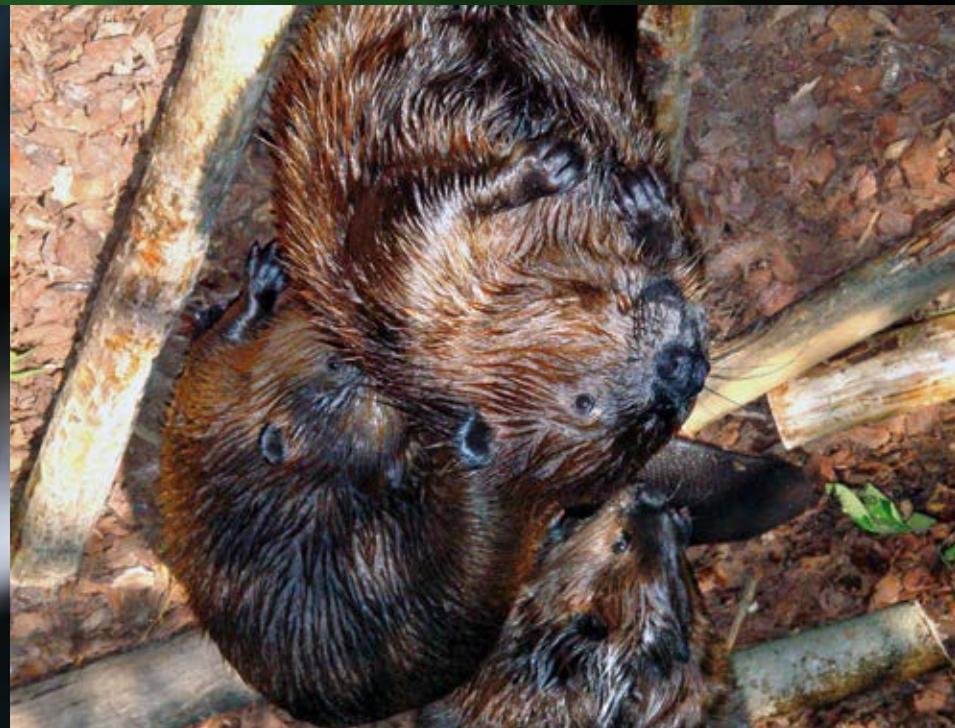
The Eurasian otter is a semi-aquatic animal from the family Mustelidae that is recognizable for its long slender body, short legs and a long tail. It lives in almost all types of inland surface waters and wetland habitats. It is mostly active at night, while during the day it lies in its hole underground or in the shelter above ground.

## EUROASIAN OTTER (*Lutra lutra*)



The Eurasian beaver is the largest rodent of the northern hemisphere. It is of massive and stocky build, it is a great swimmer and diver, which is facilitated by its body build. It is recognizable for its strong front teeth which can chew through wood 25 cm in diameter in only a few hours. As a part of a project of the Faculty of Forestry of Zagreb „Beaver in Croatia“ 47 beavers were moved from Germany to the Žutica forest in the period from 1996 to 1998. Today, there are about 2.500 to 3.000 of them in Croatia, and the same amount spread from Croatia to neighboring countries (Slovenia, Bosnia and Herzegovina and Hungary, even Austria).

## EUROASIAN BEAVER (*Castor fiber*)



**WHITE-TAILED EAGLE** (*Haliaeetus albicilla*)

It is the largest eagle in Europe and the largest raptor among eagles. Due to its wingspan which is 2 and even up to 2.5 m, it can soar for hours on warm air lift. Its most lethal weapon is not its beak but the sharp talons on its legs. It usually looks for prey flying low, diving in and grabbing it with its talons at water surface and sometimes they also attack from their station. They build nests on big trees in alluvial forests or swamps, with 1-3 nests per territory. The national nesting population is estimated at 135 - 155 pairs.

**COMMON BUZZARD** (*Buteo buteo*)

The common buzzard is a bird of prey characteristic for its large white spots on the upper side of the wings. It usually preys from elevated points close to farms and when it spots its potential prey it gathers speed with slow wing movements and then plummets.



**GREAT EGRET** (*Ardea alba*)

A large, elegant, white bird, which, in our region, is seen more often during winter than summer. It is about 100 cm tall, with up to 170 cm wingspan. They nest in larger tree stumps or coastal wetlands, river mouths and lakes with coasts covered in rich vegetation. They look for prey in shallow water and when it is too deep, they stand on the verge with the head and neck leaning forward, staring at water until they spot their prey and then they fly up and catch it in flight.



Birds

# EUROPEAN WEATHERFISH (*Misgurnus fossilis*)

The European mudminnow (*Umbra krameri*) can grow up to 25 – 30 cm, and 40 cm at most. Its body is very elongated and covered in tiny scales and a thick layer of slime that makes it very slippery. Along the sides of the body runs a wide dark stripe and under it there is a thin black line. The most common type of habitat of this species are water irrigation canals, fish ponds, oxbow ponds, alluvial marsh areas and lacustrine parts of rivers covered with muddy floors and overgrown in thick aquatic vegetation. During drought season it can bury itself completely into the floor and enter into a state of light dormancy during summer aestivation.

The European mudminnow has a laterally flat cylindrical body covered in scales of reddish brown colour with a light yellow stripe running along the upper half of the body and with a dorsal fin transposed towards the back part of the body. The European mudminnow inhabits wetland and floodplain habitats, overgrown in dense aquatic vegetation with floors covered by a thick layer of organic mud. In Croatia, it can be found in the backwaters of the River Drava, River Mur and the fringes of Lonjsko Polje, i.e. the area of Zutica.

into a state of light dormancy during summer (aestivation).

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EUROPEAN MUDMINNOW (Umbras krameri)



**CRUCIAN CARP** (*Carrasius carassius*)

The body of the crucian carp is olive to bronze in colour, the belly is yellowish or whitish while the fins are usually golden-bronze or grey-bronze. It is resistent to extreme conditions such as drought periods, when it buries itself into the silt and it does the same thing in the cold, winter period. It prefers stagnant waters, slow-flowing rivers, waters rich in vegetation and it is often found in wetlands, lakes and ponds. It mostly lives in waters where there are no other fish species, their potential predators.





## EUROPEAN POND TERRAPIN (*Emys orbicularis*)

The European pond terrapin is one of the two species of freshwater turtles in Croatia. It is very easily recognized due to yellow spots on the black body and shell. The European pond terrapin is a semi-aquatic species, meaning that it lives both on land and in the water and its habits almost all kinds of inland waters and floodplains. It hibernates from November to March, mostly under water. It can live for as long as a hundred years.



The common European adder is one of three venomous snakes in Croatia and the only venomous snake found in the Žutica forest. It has a thick body with the average length of 50-60 cm. It varies in colour from completely light specimens with a prominent dark zigzag stripe on the back to completely black specimens in which the zigzag stripe is not visible. At the end of April or beginning of May, their mating season starts when males show territorial behaviour, i.e. they will try to chase away other males from their territory.

## COMMON EUROPEAN ADDER (*Vipera berus*)



The grass snake, one of our most common snakes, is usually not longer than 120 cm, but can sometimes grow as long as 200 cm. On the back of its head it has characteristic half-moon light spots with a dark ring which gave it its name. The upper side of the body is most commonly grey in colour but olive-brown, greenish and black specimens can also be found. It lives close to aquatic and wet habitats, such as marshes, lakes, pools, ponds, rivers and streams. Its defence is to leak excrement from its cloaca or feign death.

## GRASS SNAKE (*Natrix natrix*)



## FIRE SALAMANDER (*Salamandra salamandra*)

The body is black with intensely yellow spots on the upper side. On the back of the head the salamander has poison glands from which it leaks poison in case of danger for the purpose of defence. Its habits forests at lower altitudes, where there are various stagnant and flowing waters such as pools and streams. The fire salamander has a long lifespan; in the wild it can live for as long as 20 years.



## EUROPEAN TREE FROG (*Hyla arborea*)

The body of an adult frog is 3-5 cm long. Usually, in it is light green but it adapts to the environment, so sometimes it is yellowish, sometimes brownish and sometimes greyish in colour. European tree frogs are good jumpers and sometimes they have enlargements in the form of discs, which at the tips of their toes they have serrations to grip stems of trees, bushes and other vegetation. Days are spent sitting on leaves or stems of trees, bushes and other vegetation, coming down to the ground at night. Although small, this is our loudest frog.



## MOOR FROG (*Rana arvalis*)

Blue coloration is a normal occurrence in the lives of males of the moor frog. At the end of winter, i.e. the beginning of spring, males and females start gathering to mate. In order to attract females, males gradually change colour from reddish-brown with dark spots to dark purple and finally sky blue. The more perfect the blue coloration of the male is, the more females he will attract thus securing larger progeny. Males also use calls characteristic only of this species



## EUROPEAN FIRE-BELLED TOAD (Bombina bombina)

**EUROPEAN FIRE-BELLIED TOAD** (*Bombina bombina*)  
species.



DANUBE CRESTED NEWT (*Triturus dobrogicus*)

It is very similar to the talian crested newt. Its body is more elongated than in other species of Iberian crested newts, brown to reddish with dark spots and up to 16 cm long tail. In mating season males have a very tall jagged crest that can start at the head. They inhabit lowland habitats, mostly in floodplains of rivers and river

systems.

those two species.

to recognize partners.

Compared to Europe, Croatian fauna of amphibians and reptiles is characterized by a great number of species. To date, 20 species of amphibians and 41 species of reptiles have been recorded. All amphibians and reptiles are protected by the Nature Protection Act. Since amphibians have skin permeable to water they are very sensitive to environmental pollution. In recent decades there has been a decline in amphibian population. In Croatia, although their populations around the globe, and similarly in Croatia, although their status is still much better than in most European countries.

The reasons for the threatened status of amphibians are many. First of all, there is the destruction of their habitats by clearing and draining, making them unfavourable for the life of amphibians. Various chemicals substances that people intentionally or unintentionally drain into the environment such as pesticides, artificial fertilizers and various other chemicals may cause death, disease, decrease reproduction capabilities or growth impairments. Amphibians are extremely sensitive to small changes in temperature and humidity. Changes in global weather cycles may change the behaviour and cycles of mating, affect the success of reproduction, decrease immuneological functions, increase sensitivity to chemicals or lead to drastic changes in the habitat or loss of hatching ground.

A research of the herpetofauna of forest Zutica was conducted by the members of the Croatian Herpetological Society Hyia, led by the head of research Senka Baškićera, in four two-day field trips in the period from March to June 2016. The field research included collecting data on all species of amphibians and reptiles found in aquatic habitats but also the terrestrial habitats around them. A total of 9 species of amphibians and 6 species of reptiles have been recorded, such as the moor frog, European newt, European pond terrapin, grass snake and the common European adder.

## Ampibians and reptiles



## Animal life

The Zutica forest is a home to diverse animal life – from the smallest species to the big ones.



### DRAGONFLIES (*Odonata*)

Dragonflies or damselflies are an order of medium-size to large insects with elongated bodies with two pairs of identical or almost identical membranous, transparent, reticular wings. Their presence points to the opulence and conservation of the space they inhabit. With their large eyes and very mobile head in flight at a distance of 20 to 40 metres.

The stag beetle belongs to a group of insects called beetles (*Coleoptera*), the most numerous group of beetles in Europe. The mandibles in males are eight centimetres in size, stag beetle is one of the largest insects in Europe. The mandibles are so developed that they resemble the horns of a stag, while in females they are considerably smaller. The stag beetles live in warm deciduous forests rich in old and rotten trees from trunks, so elimination of old and decomposing tree trunks, so why it is threatened.



### STAG BEETLE (*Lucanus cervus*)



The name "Zutica" most probably originated from the name of a bush, dyer's greenweed (*Genista tinctoria*). In the south, i.e. south-west part of forest Zutica there are two pastures - "Gospodica" and "Behec" where cattle grazes as it was done in ancient times.



Species and  
habitats

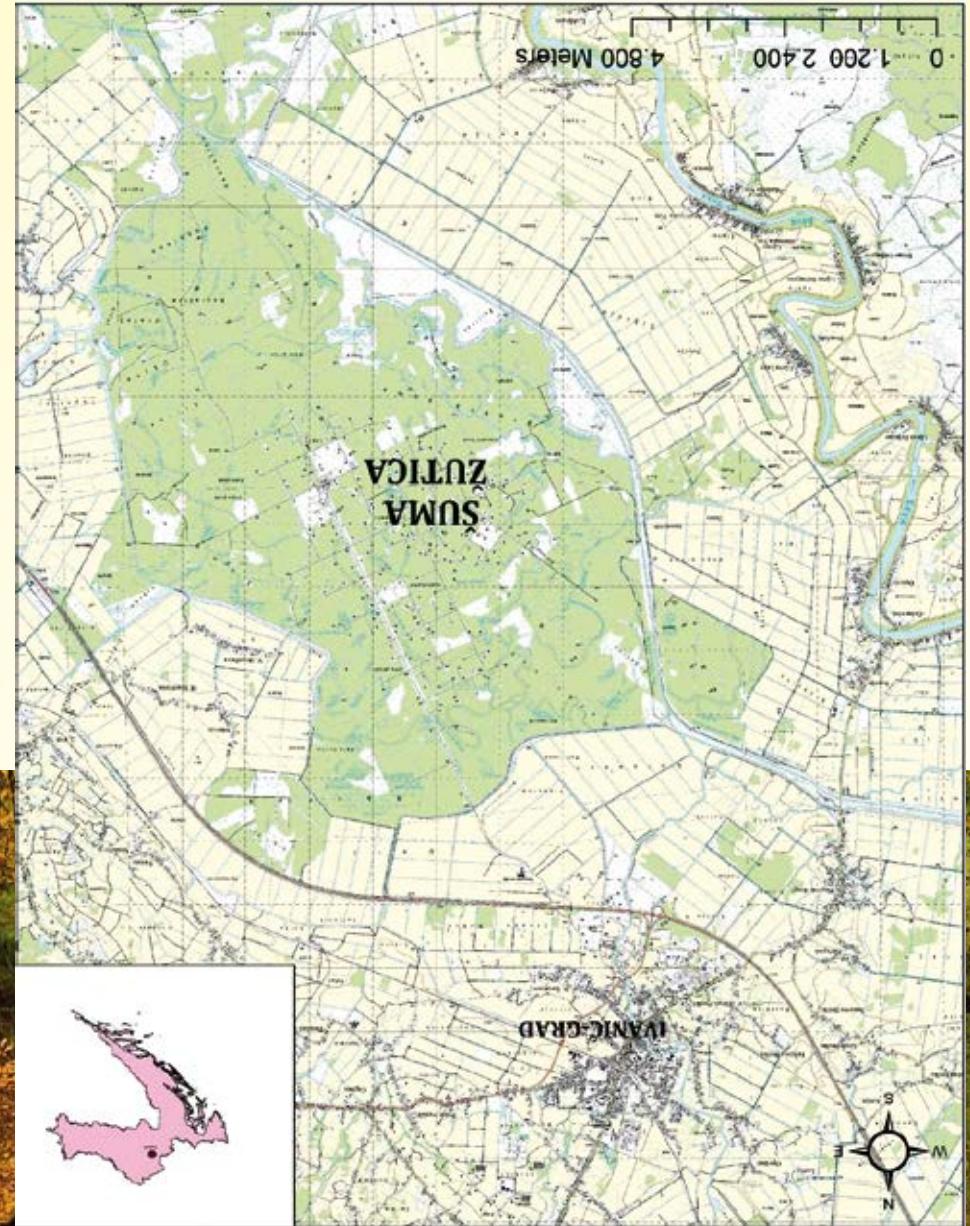
## Species and habitats

Floodplains of the Zutica forest are characteristic for its backwaters, channels, oxbow lakes, small lakes, which are suitable habitats for limnophilic communities of fish such as the European weather loach (*Misgurnus fossilis*) and European mudminnow (*Lymnaea krameri*). Zutica is an important habitat for the Danube crested newt (*Triturus dobrogicus*), Italian crested newt (*Triturus carnifex*), European fire-bellied toad (*Bombina bombina*), Eurasian beaver (Castor fiber), Eurasian otter (*Lutra lutra*) and the European pond terrapin (*Emydura orbicularis*). Other important species are the crucian carp (*Carrasius carassius*) fish and the greater pond sedge (*Carex riparia*).

Zutica is the target habitat for natural eutrophic waters well as alluvial forests (Alno-Padion, Alnion incanae, oak-hornbeam forests *Carpinion betuli* (type 9160) as (type 3150), subatlantic and central European oak and with Hydrocharition or Magnopotamion vegetation (type 3150).

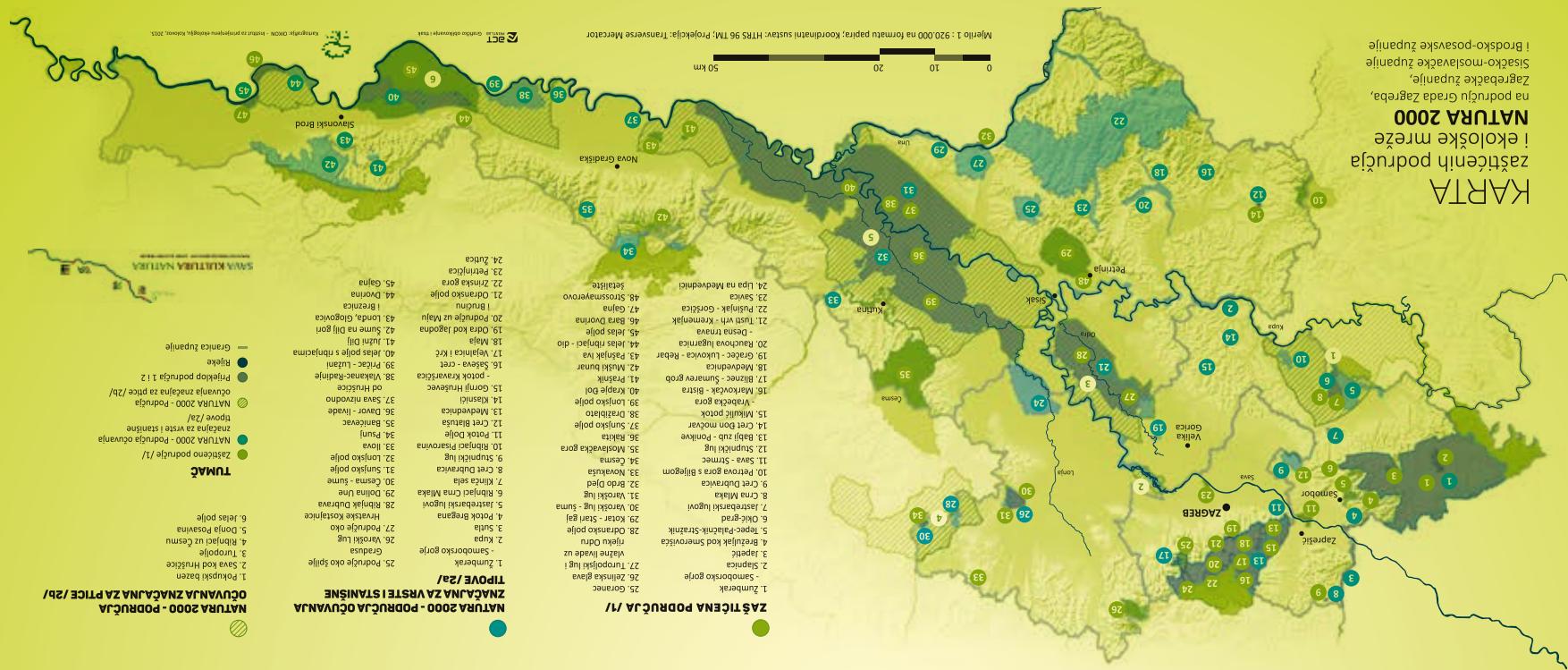


Zutica is a part of the National ecological network, i.e. European ecological network Natura 2000 (HR2000465). It stretches in the zone of the floodplain Lonjsko polje and belongs to lowland flooded forests. Zutica is specific due to the fact that it has been an oil field for 40 years with over 200 oil-wells, and in spite of that rich flora and fauna characteristic of swamp forests in north Croatia was preserved. It represents approximately 30 kilometres away from Zagreb and it is located on the territory of the Town of Vranić-Grad and Križevci stands. It is approximately 30 kilometres away from Zagreb and it is located on the territory of the Town of Vranić-Grad and Križevci. Its value lies not only in rich biodiversity but also in the fact that Zutica is the first retention on the left bank of the Sava River downstream of Zagreb whose purpose is to protect Sisak and other urban areas along the Sava from floods.



Zutica forest

\*A map has been made within the project "The Sava River floodplains - culture meets nature" financed by EU funds and co-financed by the funds of the Office for Cooperation with NGOs of the Government of the Republic of Croatia.



The River Šava is characterized by exceptional biological diversity. Its basin contains large surfaces of riverine wetlands and a lowland forest complex, as well as a unique example of a river with floodplains that are still intact and alleviate floods and maintain biodiversity. Many areas along the Šava River are protected pursuant to the Nature Protection Act and the Regulation on Ecological Network (Special Protection Areas for Birds and Special Areas of Conservation for species and habitat types).

Protected areas along the Sava River

Wetland habitats are habitats of great biodiversity; they are populated by thousands of different plant and animal species. How rich in biodiversity they are is evident from the fact that they are in the 2nd place in the world (directly following tropical rainforests) since more than 40% of all plant and animal species are associated with them.

A combination of shallow water and plenty of nutrients is ideal for the development of organisms forming the basis of the food web (algae, microorganisms, plants) feeding shellfish, insects, amphibians and fish. Many types of birds and mammals depend on swamp areas for food, water and shelter, especially during reproduction and migration.

## Organisms in Wetland habitats



## What are wetland habitats?



Freshwater, i.e. wetland, habitats are areas where water is the main factor controlling the environment and the related flora and fauna. They occur where the level of groundwater is close or surging to the earth's surface and where land is covered by water.

They include areas of marsh and floodplains, fen, peatland and bodies of water, whether natural or artificial, permanent or temporary, with flowing or static water.

## Why are wetland habitats important to us?

Apart from biodiversity, the value of wetland habitats also lies in the complete regulation of the environment since they represent reservoirs of water for a wider area, they maintain the stability of groundwater (in case of a great amount of precipitation a part of the water travels underground where underground water reservoirs are repleted, serving as the largest source of water), they control the amount of water in rivers (they can absorb large quantities of water thus preventing floods – they act as a sponge absorbing excess water and consequently protecting downriver towns and agricultural areas from floods), they act as natural water filters (filtering harmful substances from the water), they have an impact on the regulation of climatic conditions (they affect the local and regional temperature, precipitation and other climatic processes).

Wetland habitats are one of the richest, but at the same time one of the most threatened, types of habitats on Earth. It is estimated that from 1900 to the present day about 60% of wetlands were lost globally and therefore the protection of these habitats is necessary. The greatest threat to wetlands are reclamations for development purposes, tourism, agriculture (especially pesticide runoff from agricultural land), waste disposal and the erection of dams, drainage canals and the channeling of water courses.

Natura 2000 in the County of Zagreb

On the territory of the County of Zagreb, Ecological Network, i.e. Natura 2000, includes five Special Protection Areas of international importance (SPAs): Sava at Hruščica, Turopolje, Donja Posavina, Pokupski bazen and fish ponds next to Česma.

Also, the territory of the County includes 23 Special Areas of Conservation for habitats and species other than birds (SACs): Cret Dubravica, Vugriнова Špilja, Goruji Hruščica - Kravarščica creek, Klasici, Medvednica, Česma - forests, Varoški lug, Pisarovina Fish Ponds, Šava downstream of Hruščica, Šava upstream from Zagreb, Stupnički lug, Žumberak Samoborsko gorje, Kupa, Dra at Jagodno, Žutica, Crna Mlaka Fish Ponds, Klinča Šela, Šutla, Šiščani and Blatnica Fish Ponds, Odransko polje, Jastrebarski lugovi, Lonjsko polje and Dubrava Fish Pond.

In the County of Zagreb, Natura 2000 is governed by the Public Institution for the management of protected areas and other protected parts of nature at the Zagreb County level "Zeleni prsten", which started its operation in mid 2008.



The ecological network of the Republic of Croatia, proclaimed by the Regulation on ecological network (Official Gazette 124/2013, OG 105/15), represents the areas of the ecological network of the European Union Natura 2000. The ecological network of the Republic of Croatia consists of special protection areas of importance for birds – SPAs (areas essential for the maintenance or restoration, at a favourable conservation status, of wild bird species of Community importance, a favourable conservation status, of wild bird species and habitats essential for the conservation of international importance, especially wetlands of international importance) and special areas of conservation of importance for species and habitat types – SACs (areas essential for the maintenance and restoration, at a favourable status, of other wild species and their habitats, as well as natural habitat types of Community interest). The ecological network of the Republic of Croatia covers 36.67% of land and 16.39% of coastal sea, and it consists of 571 polygon Special Areas of Conservation for species and habitat types, 171 Point Polygon Special Areas of Conservation for species and habitat types (largely caves) and 38 polygon Special Protection Areas for birds.

## Ecological network of the Republic of Croatia (Natura 2000)

# What is Natura 2000?

Natura 2000 is an ecological network comprised of areas essential for the conservation of threatened species and habitat types of the European Union. Its objective is to conserve or re-establish a favourable status for over a thousand threatened and rare species and about 230 natural and semi-natural habitat types. Presently, this ecological network includes about 30,000 sites on almost 20% of the EU territory, making it the largest system of protected areas in the world.



This educational and promotional material is a result of the "Miraculous Forest Zutica" project implemented by the JU Zeleni prsten with the help of co-financing.

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ZUTICA FOREST  
/ *Natura 2000*

