

LIFE
for
Mauremys

Dragica Šalamon¹ & Ana Štih Koren² Conservation breeding program for *Mauremys rivulata* as support of wild population in Croatia



Co-funded by
the European Union



Zajedno čuvamo prirodu

Sufinancirano sredstvima Fonda za zaštitu
okoliša i energetske učinkovitost



Javna ustanova za upravljanje zaštićenim
dijelovima prirode Dubrovačko-neretvanske županije.



Balkan stripe-necked terrapin



Mauremys rivulata



Annexes II and IV of HD

Annex II of the Bern Convention

HD Article 17. lists species code 2373
Mauremys rivulata. *Mauremys caspica* is the name of the species as listed in the HD with the Y-CTC mark

EIONET:

- conservation status in Croatia
U2 'unfavourable-bad'
- **Mediterranean** biogeographical region
2013-2018 unfavourable-inadequate



Mauremys rivulata – current knowledge

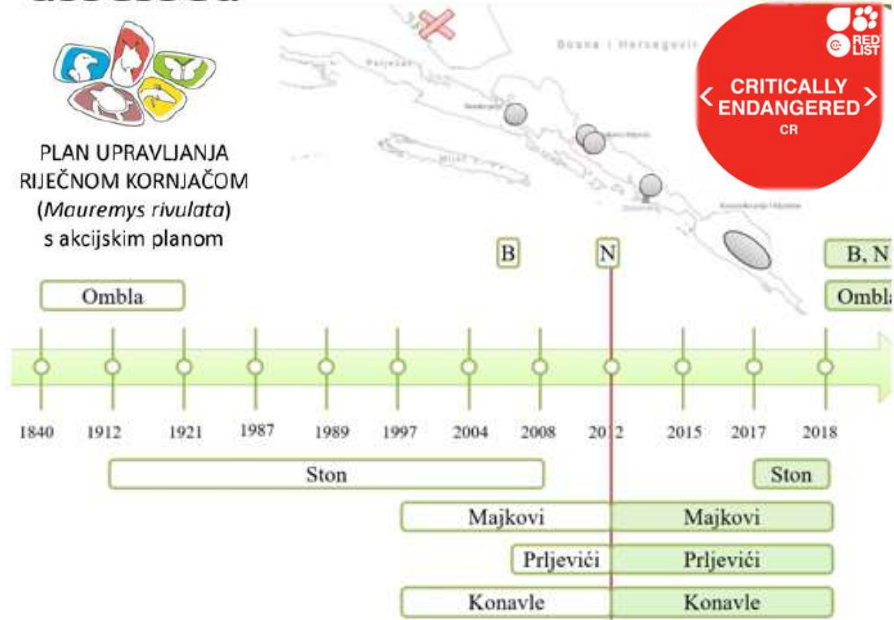
Generation time? Sex determination during development? Multiple nest paternity?

Hibernation requirements? Nesting sites continuity? Female nest philopatry?
Where are the confiscated animals coming from?

Mediterranean argonaut



In Croatia: Located, counted, assessed



EIONET: the Mediterranean biogeographical region 2013-2018 unfavorable-inadequate' (Cyprus and Greece)
IUCN: LC Europe (2004), Globally not estimated, Croatia (2015): EN B1 + 2ab (ii, iii); C1 + 2a (i)



Zajedno čuvamo prirodu
Sufinancirano sredstvima Fonda za zaštitu okoliša i energiju u skladu s...



Državna agencija za okoliš i zaštita prirode
Agencija za zaštitu okoliša i energetske resurse



LIFE for Mauremys

Species PRIORITY – are the individuals in the wild slipping through the cracks?

EU policy

- **Bern convention**, Appendix 2
 - a.k.a. strictly protected species -> 2001

**Y-CTC
mark!!!**

• Habitat directive

- Annex 2 & Annex 4

Is it really?

- Open data on 3* 5y period for some of the EU countries reporting on it

IUCN

- 2004, LC

Europe:

- Currently: re-assessment,
But: NT not possible because:

Local
knowledge,
Species
knowledge

**Generation
time?**

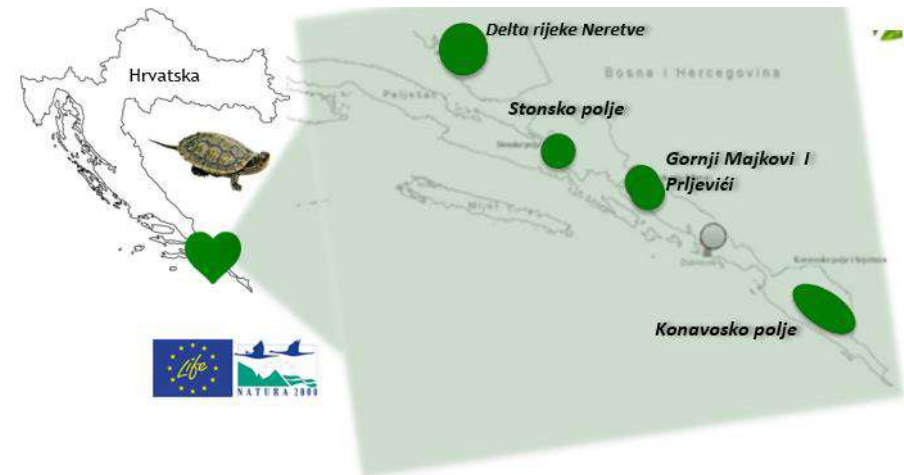
**Estimated
numbers few
generations
before?**



LIFE4mauremys

photo: Udruga HYL A

“Space for nature”
 “Protecting our species”



- SCI HR2000947
- SCI HR2000555
- SCI HR2000946

- SCI HR5000031

- SCI HR2001364



Zajedno čuvamo prirodu
 Sufinansirano sredstvima Fonda za zaštitu okoliša i energetske učinkovitosti

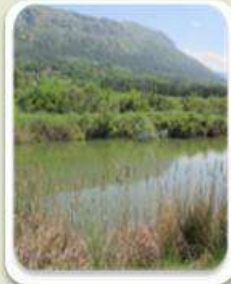


Državna agencija za okoliš i zaštita prirode
 Republički zavod za zaštitu prirode



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Mauremys rivulata - threats



Stonsko
polje
(6*)

Majkovi,
Prljevići
~130

Konavosko
polje
~ 400

Neretva
delta
?

Threats:

- Area of occupancy low, localized drastic reduction in pop.size,
- Habitat quality loss (Mediterranean ponds and temporary water flows)
- Urbanisation
- IAS and problematic native species
- Bycatch and incidental killing
- Agricultural activities
- Abandonment of management/use of agricultural land/water
- Abstractions of groundwater
- Earthquake



In line with the National Management Plan with action plan for the species



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NATURA 2000



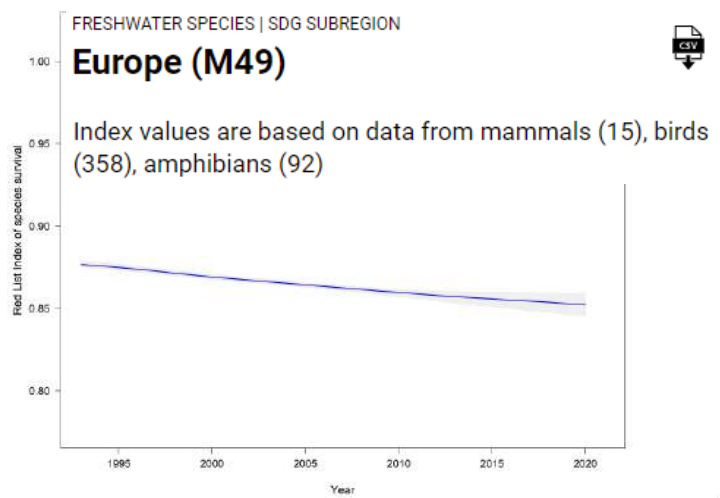
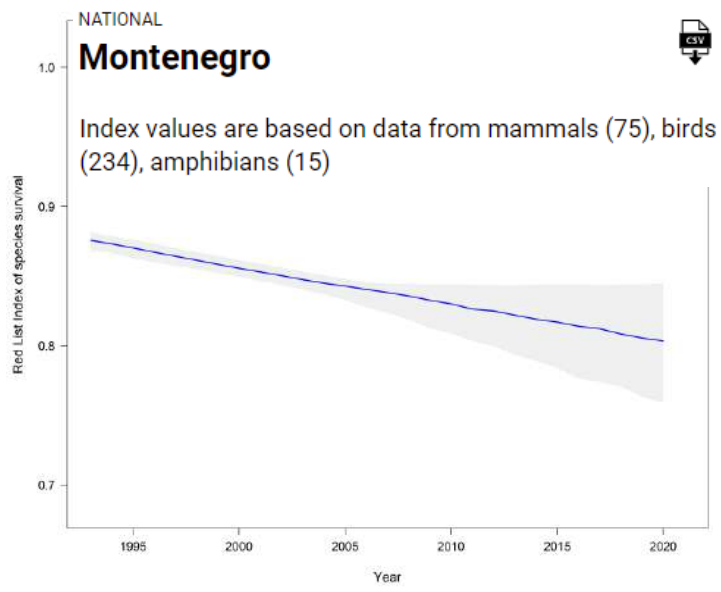
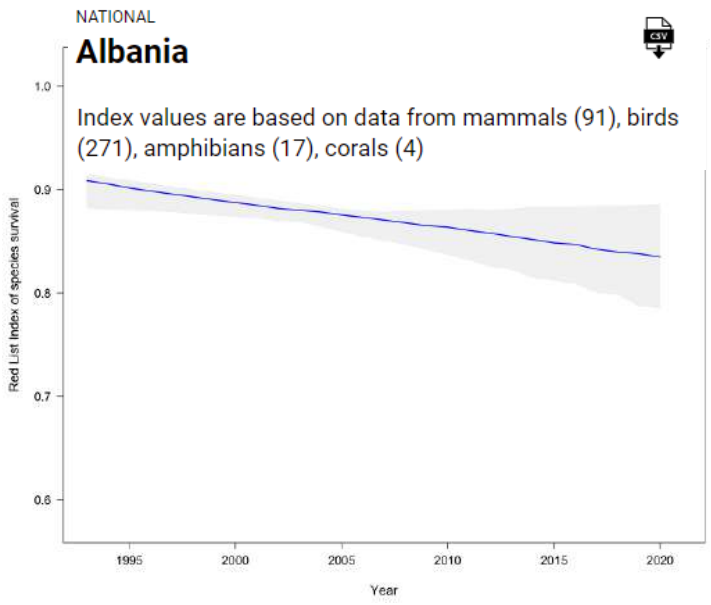
Zajedno čuvamo prirodu
Sufinancirano sredstvima Fonda za zaštitu
okoliša i energetske učinkovitosti



ZOO
Zagreb



IUCN Red List Index (RLI)



Mauremys rivulata- conservation of the umbrella species of the Mediterranean wetlands in Dubrovnik-Neretva County

LIFE for Mauremys

01/10/22 - 30/09/26

Project total cost: **2.131.407,11 EUR**

60% EC co-financing

EU- CINEA: 1.278.844,26 EUR

The Environmental Protection and Energy Efficiency Fund:

267.731,00 EUR

1 University of Zagreb
Faculty of Agriculture

Public institution Zoological Garden of Zagreb
Hrvatske vode

2 Association Hyla
Public institution for management of protected parts
of nature in Dubrovnik-Neretva County



EAZA Annual Conference 2023: European Species Initiative workshop, Saturday 16th of September



The *Mauremys rivulata* conservation breeding LIFE project

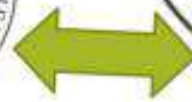
the most common direct ties of the Association Hyla naturally aggregated



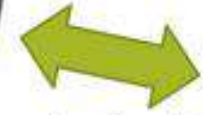
nesting sites and predators
breeding programme for population reinforcement



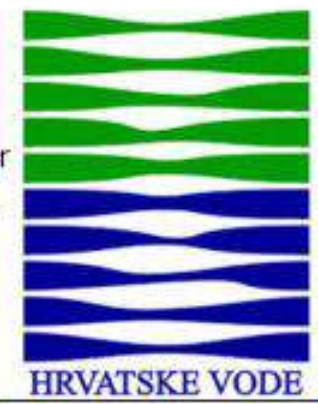
The Public Institution for the Management of Protected Natural Areas of Dubrovnik-Neretva County : four Natura 2000 sites, engaging the local community and creating a volunteer program



genetic and breeding expertise, fishing by-catch mortality, invasive alien species, and invasive agricultural practices



national authority for water management, improving Mediterranean wetland habitats quality



EAZA Conservation forum 2022: Collaborating for conservation

EAZA Annual Conference 2023: European Species Initiative workshop, Saturday 16th of September 13:45 – 15:45



EXPECTED OUTCOMES of LIFE for Mauremys



- 
1. Nesting sites protected
 2. Nesting sites protected
 3. species requirement for habitats - Formalized
 4. IAS occupied area reduced
 5. Fishtraps bycatch free turtle species

Run a breeding program

40 hatchlings

Soft release in Ston

558 -> 598 -> 638
(+7% -> +14%)



Mauremys as the umbrella species for the healthy Mediterranean wetlands

- private land conservation contract(s)
- Volunteer program
- Pond keeper program
- turtle-friendly land management and agricultural practices at minimum of 6 nesting sites to have at least 10m2 of nesting site area per population

Zoo institution – important strategic partner in working with natural habitats, populations and people



After LIFE

- **Catalytic:**
- **Spatial:** Montenegro, Albania, Greece, Cyprus...
- **Thematic?:** *E. orbicularis*, *E. trinarcis*, *M. leprosa*...
- **Societal:** private land conservation, volunteer program, Mediterranean wetland days...
- **Innovation:**
- turtle friendly agriculture for landowners agrotechnical measures
- Bycatch free fyke nets

- Impacting policy
- Impacting society
- Tapping into existing organizational frameworks (... EAZA...?)



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LIFE for Mauremys and



- Impacting policy
 - Society
- Tapping into existing organizational frameworks

And so it doesn't take them 18 years until impact



To provide institutions the tools to

- optimize animal population status
- breeding results and welfare,
- required for reintroduction and reinforcement projects where natural populations require it



LIFE for Mauremys and EAZA

- Registry of animals
- Studbook
- Population genetics research
- New genomic tools for population management
- Conservation breeding plan
- Veterinary, husbandry and breeding protocols
- Best practice guidelines for species
 - experience and knowledge on the captive husbandry questionable- not a lot of current holder institutions or pet owners
- DNA bank
- Cryopreservation if required in the future



Experts..
Frameworks..



<https://life4mauremys.agr.hr/>



LIFE4mauremys

photo: Goran Šafarek



Thank you!



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Županijska uprava za koprivničko-bilogorski
regijski razvoj i održivi regionalni razvoj



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