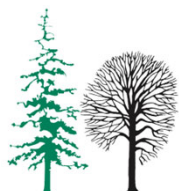


Delavnica o ukrepih proti biotičnim dejavnikom tveganja v gozdovih

10. Seminar in delavnica iz varstva gozdov

6. 6. 2019, Škofja Loka

Andreja Kavčič



GOZDARSKI INŠTITUT SLOVENIJE
SLOVENIAN FORESTRY INSTITUTE

SURE project workshop on biotic risks

Evropski gozdarski inštitut
(European Forest Institute)

2. – 3. april 2019
Češka, Praga



Czech University of Life Sciences Prague
**Faculty of Forestry
and Wood Sciences**

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52 strokovnjakov
18 držav



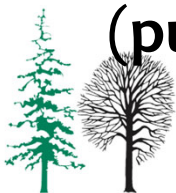
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Projekt SURE

1. Storms
2. Biotic risks (podlubniki, ...)
3. Fires

Projekt **SURE** (EFI)

- **Krizno ukrepanje**
- **Povečati odpornost evropskih gozdov** in se bolj učinkovito odzivati na dejavnike tveganja (**SU**staining and Enhancing Resilience of **E**uropean **F**orests)
→ **ohranjanje »vseh« funkcij gozdov**
- **povezovanje + usposabljanje + razvoj kadrov**
(znanost – operativa – politika)
- **European Forest Risk Facility**
(publikacija – RISKPlatform)



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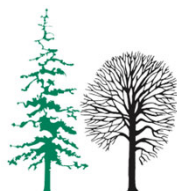
Collect - Connect - Exchange

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SENDAI Framework

Dokument SENDAI Framework for Disaster Risk Reduction (2015–2031)

- Mednarodni sporazum (130 držav)
- **Krizno ukrepanje**
- Zakonodaja in aktivnosti pri upravljanju z dejavniki tveganja morajo temeljiti na **razumevanju tveganja v vseh njegovih dimenzijah** (lastnosti dejavnika tveganja, izpostavljenost okolja, ljudi in njihove lastnine, ...)»Kaj so naši cilji?« (ohranitev dreves + ...)
- Poudarek je na **preprečevanju** motenj in **pripravljenosti** za učinkovitejše soočanje z njimi.



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Orodja kriznega ukrepanja

Projekt SURE → **orodja** in dobre prakse za preprečevanje in ukrepanje proti dejavnikom tveganja v gozdovih:

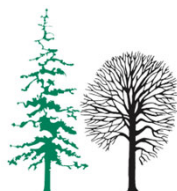
4 FAZE kriznega ukrepanja:

1. preventiva
2. pripravljenost
3. odziv/ukrepanje
4. obnova



3 NIVOJI kriznega ukrepanja:

1. gozdni sestoj (forest management unit)
2. gozdarsko podjetje (forest enterprise)
3. družba / zakonodaja (society / policy)



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1. Pred delavnico

Zbiranje obstoječih orodij in dobrih praks za preprečevanje oz. okrepanje proti biotičnim dejavnikom tveganja v gozdovih (Predloga)

2. Delavnica

- Predavanja o izbranih biotičnih dejavnikih tveganja v Evtropi
- Skupinsko delo
- Predstavitve izbranih orodij in dobrih praks, diskusija
- Potencialna nova orodja in dobre prakse

3. Po delavnici

Pregled in izpopolnjevanje orodij in dobrih praks za preprečevanje oz. okrepanje proti biotičnim dejavnikom tveganja v gozdovih

4. Publikacija / baza podatkov (javno dostopna)

www.riskplatform.org



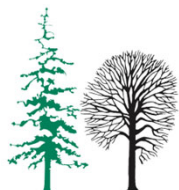
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ORODJE je kakršnakoli aktivnost, ukrep ali pristop, ki **prispeva k preprečevanju ali blaženju** vplivov biotičnih dejavnikov tveganja v gozdovih in **ponuja rešitve** za učinkovito krizno ukrepanje.

- Splošno / specifično
- Načrtovanje, gojenje, izkoriščanje gozdov, izobraževanje, zakonodaja, ...
- Lokalno uporabno / globalno uporabno

RITY – a phenology model of *Ips typographus* in Slovenia as a tool for optimization of pheromone trapping
(Nikica Ogris & Andreja Kavčič)



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TOOL COLLECTION FOR CRISIS MANAGEMENT

SURE

SUstaining and Enhancing REsilience of European Forests



A) Tutorship

Institution Logo	Author	Nikica Ogris & Andreja Kavčič	
	Institution	Slovenian Forestry Institute	
	Contributors		
	Contact	nikica.ogris@gozdis.si ; andreja.kavcic@gozdis.si	
	Date / Version	24. 3. 2019 / Version 1.0	
	Type of tool description	☐ General level / Group of tools	☒ Specific level / Case study

B) Basic tool description

1. Title / Name of tool	RITY – a phenology model of <i>Ips typographus</i> in Slovenia as a tool for optimization of pheromone trapping
2. Problem statement / Opportunity	<i>What are the shortcomings within forest risk management that shall be improved with the tool? (Problem)</i> In Slovenia, there is a unified time period (from 1st April to 15th June) in which bark beetle population density is monitored in order to predict bark beetle outbreaks. Due to a very high diversity of ecological conditions across the country, bark beetle development can vary substantially even among nearby locations. As a result, forecasts of bark beetle swarming period and potential outbreaks are not reliable, which leads to untimely management, unforeseen outbreaks and damage in forests. <i>What are the leverage points that can be addressed with the tool? (Opportunity)</i> Reliable forecasting of bark beetle development, onset of swarming, onset of infestation, number of filial and sister broods, and the likelihood of outbreaks by considering specific local ecological conditions.
3. Motivation:	<i>What is the intention and purpose of the tool? What is our intention when we offer this tool?</i> A timely setup of pheromone traps, the right duration of monitoring and timely detection of bark beetle population densities (especially the population of the eight-toothed spruce bark



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Sustaining and Enhancing Resilience of European Forests



C) Risk management components

1. Hazard / Risk agent	<i>What is/are the main natural hazard(s) the tool addresses.</i> Bark beetle (<i>Ips typographus</i>)	
2. Phase	3. Level:	4. Sendai Priorities:
<i>Which phase(s) of the risk management cycle is covered by the tool?</i>	<i>At what level(s) is the tool mainly implemented and applied?</i>	<i>What aspects of the Sendai priorities does the tool cover?</i>
☒ Prevention	☒ Forest /Stand	☒ #1 Understanding disaster risk in all its dimensions (i.e. vulnerability, capacity, exposure of persons and assets, hazard characteristics)
☒ Preparedness	☐ Enterprise	☐ #2 Strengthening disaster risk governance to manage disaster risk at the national, regional and global levels and foster collaboration and partnership
☐ Response	☐ Society/ Policy	☐ #3 Investing in disaster risk reduction for resilience to enhance the economic, social, health and cultural resilience of persons, communities, countries and their assets, as well as the environment
☐ Recovery		☒ #4 Enhancing disaster preparedness for effective response and to "Build Back Better" in recovery, rehabilitation and reconstruction. Anticipation of disaster events and ensuring that capacities are in place.
5. Primary forest management objective(s)		
<i>What is/are the main forest management objectives of the analyzed forest/forest enterprise? (Not the tool) – List management objectives that are at risk of not being achieved or will be negatively impacted by the hazard? (Check boxes and specify)</i>		
☒ Economic:	☒ Ecologic:	☒ Social:
Prevention of forest damage and wood loss caused by bark beetle outbreaks. Prevention of the timber supply chain	Prevention of irreversible disturbances to forest ecosystems. Maintenance of forests as the CO2 sink.	Maintenance of healthy and vigorous forests that positively affect human wellbeing.



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4. Publikacija

www.riskplatform.eu



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SURE project workshop on biotic risks

Predavanja o izbranih biotičnih dejavnikih tveganja v Evropi

Podlubniki (Češka)

- Podlubnike najdemo tudi na listavcih! (*Xylosandrus germanus*, *Taphrorychus bicolor*, ...)

Jesenov krasnik in brezov krasnik (Ukrajina)

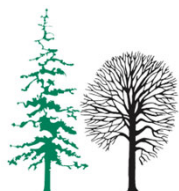
- Prenos z lesom za kurjavo – osveščanje!

Borova ogorčica (Francija)

- SILVALERT – aplikacija za sporočanje poškodb v gozdovih
- Daljinsko zaznavanje

Hrastov sprevodni prelec (Velika Britanija)

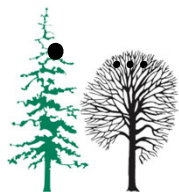
- Spremljanje navzočnosti, ukrepi, osveščanje



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Predstavitve izbranih orodij in dobrih praks, diskusija

- RITY – Fenološki model *Ips typographus* v Sloveniji kot orodje za optimizacijo spremljanja podlubnikov s feromonskimi vabami.
- Učinkovita javna gozdarska služba (E-FPS)
- ProSilva
- Informacijski sistem za podlubnike
- BokaeMon-App, BokaeMan-App
- Spremljanje glavnih gozdnih ŠO
- Poročanje, diagnosticiranje in prognoze o pojavu gozdnih škodljivcev in bolezni (IDP)
- Pogozdovanje poškodovanih območij
- Fenologija rojenja gozdnih škodljivcev
- SILVALERT



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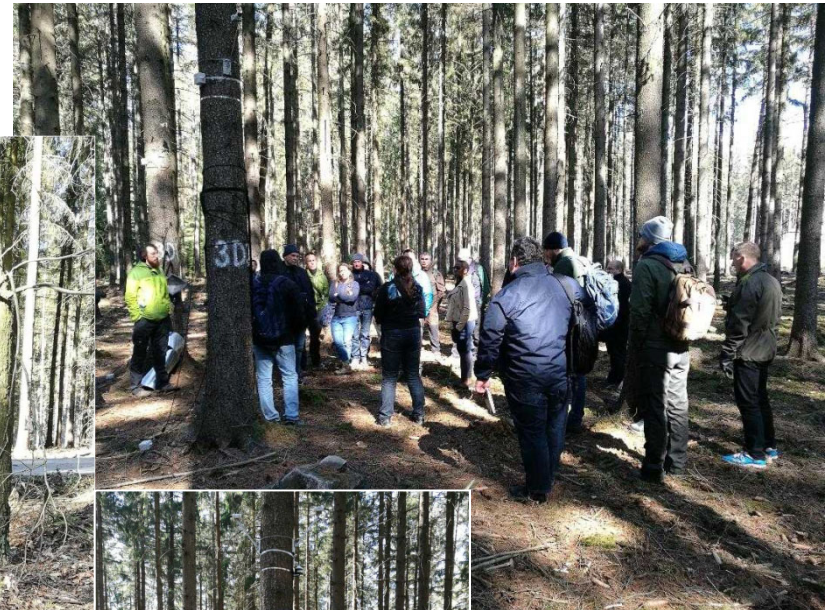


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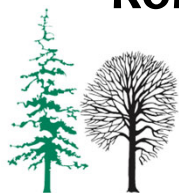
Ekскурzija pred delavnico

- Monitoring abiotičnih dejavnikov v sestoju
- Iskanje žarišč podlubnikov s psi

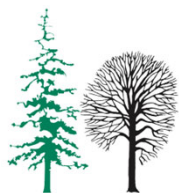


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- Vplivi na gozd **presegajo propadanje dreves** → krizno ukrepanje.
- **Preventiva in pripravljenost.**
- Pomembno je **povezovanje in izmenjava** znanja, izkušenj in dobrih praks.
- **Ni najboljšega načina!**
- Prilagoditev mehanizmov kriznega ukrepanja obstoječim možnostim (pravni okvirji, sredstva, ...):
»Kaj želimo?« → »**Kaj lahko** storimo?«
- **Vključevanje interesnih skupin.**
- **Komunikacija** kot pomembno orodje.



HVALA ZA VAŠO POZORNOST!



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