

# Da li вреди učiti R?



Primena i razumevanje statistike kroz upotrebu statističkog softvera u 21. veku su postali preduslov za kvalitetan i uspešan rad. Knjiga Osnove R-a (inovativnost, zanat, jezik) autora doc. dr Dejana Stojanovića će omogućiti čitaocima da kroz brojne relevantne primere brzo i efikasno savladaju osnovne statističkog softvera R kao i analizu podataka u R-u. Knjiga daje sveobuhvatan uvid u R fokusirajući se na praktična rešenja, pokriva metode za manipulaciju i preprocesiranje podataka, nudi kratki kurs iz statističkih metoda i prezentuje elegantne metode za grafički prikaz podataka. Knjigu mogu koristiti nastavnici, istraživači, studenti kao i zaposleni iz najrazličitijih oblasti koji žele da nauče kako da obrade, vizualiziraju, analiziraju podatke i izvuču relevantne i tačne informacije uz pomoć paketa R da osveže ili prošire svoje znanje. Relevantnost knjige se ogleda u činjenici da je tokom poslednjih godina zabeležen izuzetan porast korisnika softvera R, kako u akademskoj zajednici tako i u praksi.

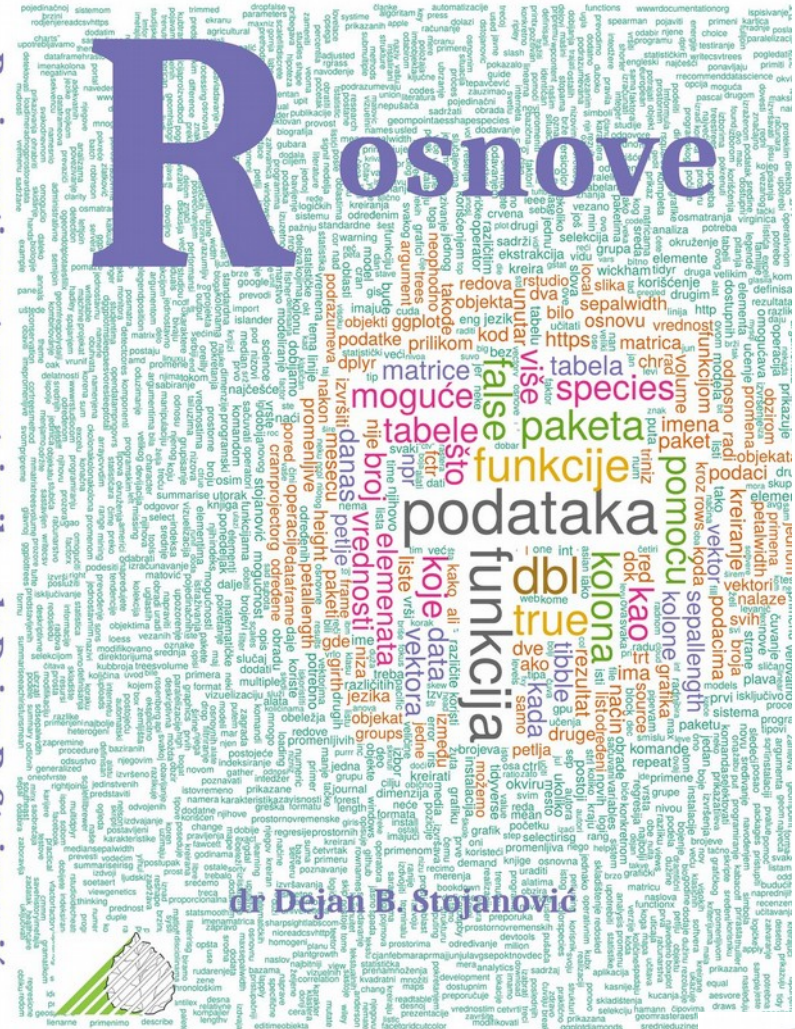
dr Milena Kresoja,  
Prirodno-matematički fakultet,  
Univerzitet u Novom Sadu

Knjiga kolege Stojanovića nam omogućava pristup velikom potencijalu programskog jezika R. Ona nas ohrabruje da se uhvatimo u koštac sa programiranjem, i daje podršku da istrajemo na putu iskoriscenja pogodnosti koje R pruža.

dr Branislav Kovacević,  
Institut za nizisko sumarnstvo i  
životnu sredinu,  
Univerzitet u Novom Sadu

Since R has a very steep learning curve it can be intimidating for a beginner and I saw too many times that potential user of R just couldn't decide to start using R, because there was nobody to help them overcoming initial issues in using R. Books like this are therefore more than welcome, in particular if they are written in a language that readers understand best, in this case in Serbian. Author of the book dr. Dejan B. Stojanović is not just an ecologist, he also studied astrophysics. He is experienced R user and is using R almost on a daily basis. At the same time, he is also lecturing at the University of Novi Sad, therefore he has experience with teaching, which is clearly visible from this book. Book is well written, language is clear and understandable. Author slowly guides the reader through a complex world of R and reader slowly gains capability of being more and more self-sufficient and confident. This book is not only book for the beginners, it is also a book which will be constantly used as a reference for R for experienced users as well.


R - inovativnost, zanat, jezik dr Dejan B. Stojanović



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Forestry

FOLLOWING

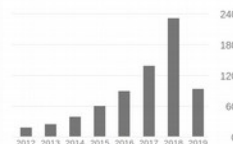
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<input type="checkbox"/> Growth and yield of mixed versus pure stands of Scots pine ( <i>Pinus sylvestris</i> L.) and European beech ( <i>Fagus sylvatica</i> L.) analysed along a productivity gradient through Europe H Pretsch, M Del Rio, C Ammer, A Avdaglic, I Barbell, K Bielak, ... European Journal of Forest Research 134 (5), 927-947	142	2015
<input type="checkbox"/> A synthesis of radial growth patterns preceding tree mortality M Calleret, S Jansen, EMR Robert, L Desoto, T Aakala, JA Antos, ... Global change biology 23 (4), 1675-1690	104	2017
<input type="checkbox"/> Molecular aspects of microcystin-induced hepatotoxicity and hepatocarcinogenesis Z Svirčev, V Balic, M Gantar, M Juković, D Stojanović, M Balic Journal of Environmental Science and Health Part C 28 (1), 39-59	101	2010

Co-authors

EDIT














































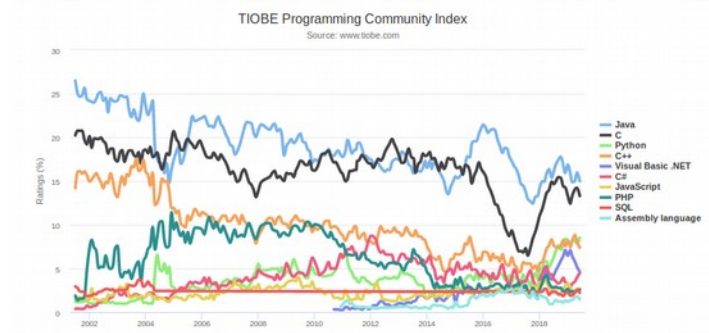
# IEEE i TIOBE rang lista programskih jezika

## Language Types (click to hide)

☒ Web
 ☒ Mobile
 ☒ Enterprise
 ☒ Embedded

Language Rank	Types	Spectrum Ranking
1. Python	   	100.0
2. C++	  	99.7
3. Java	  	97.5
4. C	  	96.7
5. C#	  	89.4
6. PHP		84.9
7. R		82.9
8. JavaScript	 	82.6
9. Go	 	76.4
10. Assembly		74.1
11. Matlab		72.8
12. Scala	 	72.1
13. Ruby	 	71.4
14. HTML		71.2
15. Arduino		69.0
16. Shell		66.1
17. Perl	 	57.4
18. Swift	 	53.9
19. Processing	 	53.1
20. Objective-C	 	50.5

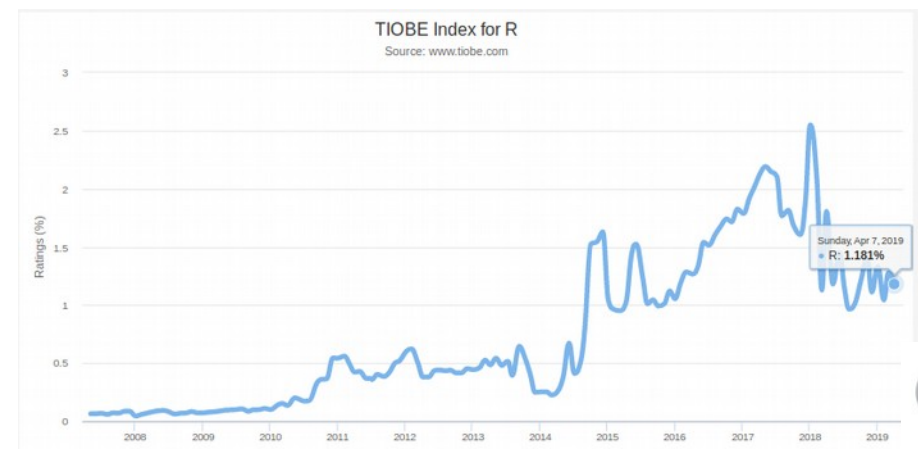
18	17		MATLAB	1.077%	+0.18%
19	13		Visual Basic	1.069%	-0.08%
20	20		PL/SQL	0.929%	+0.08%

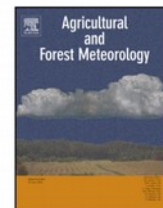


## Other programming languages

The complete top 50 of programming languages is listed below. This overview is published unofficially, because it could be the case that we missed a language. If you have the impression there is a programming language lacking, please notify us at [tpc@tiobe.com](mailto:tpc@tiobe.com). Please also check the [overview of all programming languages](#) that we monitor.

Position	Programming Language	Ratings
21	SAS	0.918%
22	R	0.911%
23	D	0.911%
24	Dart	0.601%





# Prediction of the European beech (*Fagus sylvatica* L.) xeric limit using a regional climate model: An example from southeast Europe

Dejan B. Stojanović<sup>a,\*</sup>, Aleksandra Kržič<sup>b</sup>, Bratislav Matović<sup>a</sup>, Saša Orlović<sup>a</sup>, Anne Duputic<sup>c</sup>, Vladimir Djurdjević<sup>b,d</sup>, Zoran Galić<sup>a</sup>, Srdjan Stojnić<sup>a</sup>

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<sup>b</sup> Republic Hydrometeorological Service of Serbia/SEEVCCC, Kneza Višeslava 66, 11000 Belgrade, Serbia

<sup>c</sup> Centre d'écologie Fonctionnelle et Évolutive – UMR 5175, Campus CNRS, 1919, Route de Mende, 34293 Montpellier Cedex 5, France

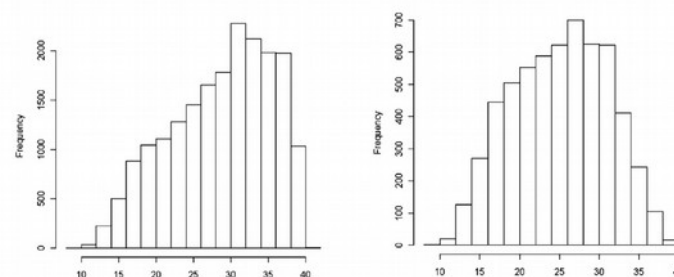
<sup>d</sup> Institute of Meteorology, Faculty of Physics, University of Belgrade, Dobračina 16, 11000 Belgrade, Serbia

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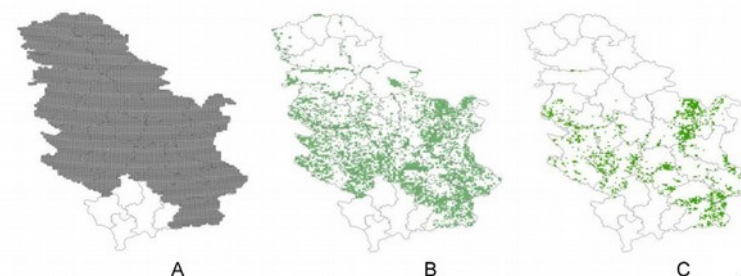
D.B. Stojanović et al. / Agricultural and Forest Meteorology 176 (2013) 94–103

## Appendix D.

Distribution of EQ

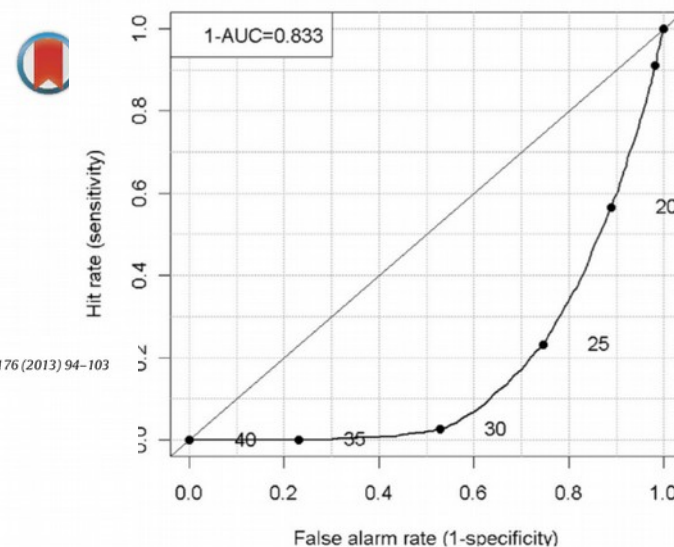


## Appendix B. Additional maps



A – All inventory fields  
B – Inventory fields that contained forests  
C – European beech inventory fields

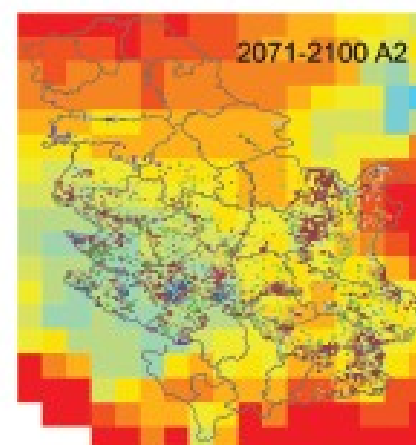
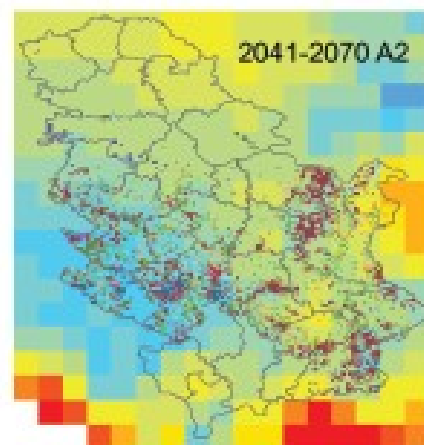
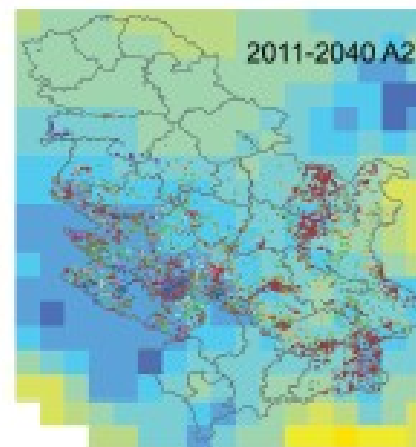
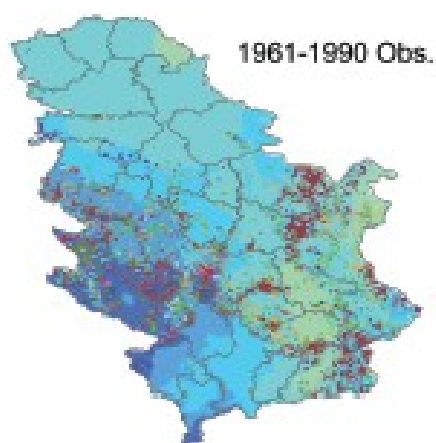
ROC Curve, mean EQ index, all points



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# Future of the Main Important Forest Tree Species in Serbia from the Climate Change Perspective

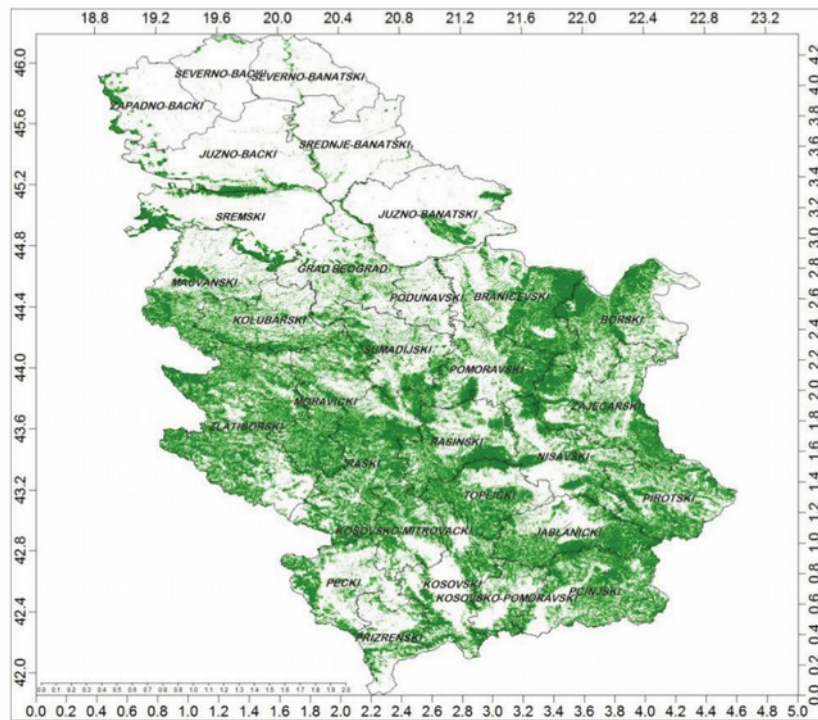
Dejan B. Stojanović <sup>1</sup>✉, Bratislav Matović <sup>1</sup>, Saša Orlović <sup>1</sup>, Aleksandra Kržić <sup>2</sup>,  
Branislav Trudić <sup>1</sup>, Zoran Galić <sup>1</sup>, Srđan Stojnić <sup>1</sup>, Saša Pekeč <sup>1</sup>





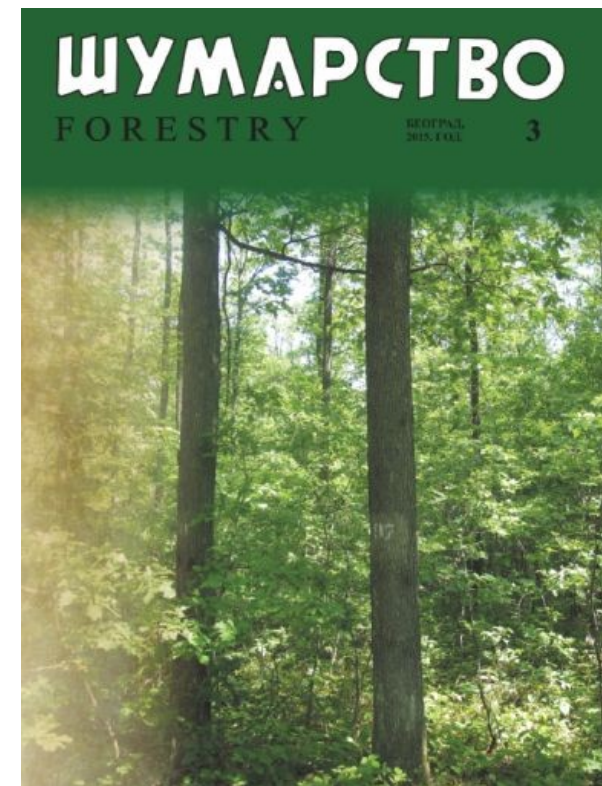
# FOREST COVER CHANGE TRENDS IN THE REPUBLIC OF SERBIA

Dejan B. Stojanović  
Bratislav Matović  
Saša Orlović



Слика 1. Шумски покривач Републике Србије у 2000. години са назначеним управним окрузима

Figure 1. Forest cover of Republic of Serbia with indicated administrative districts in a year 2000



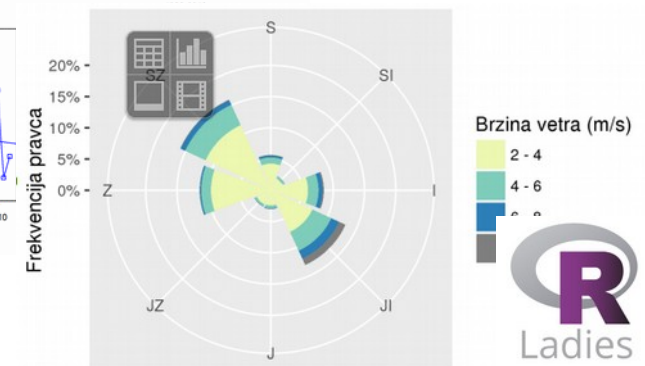
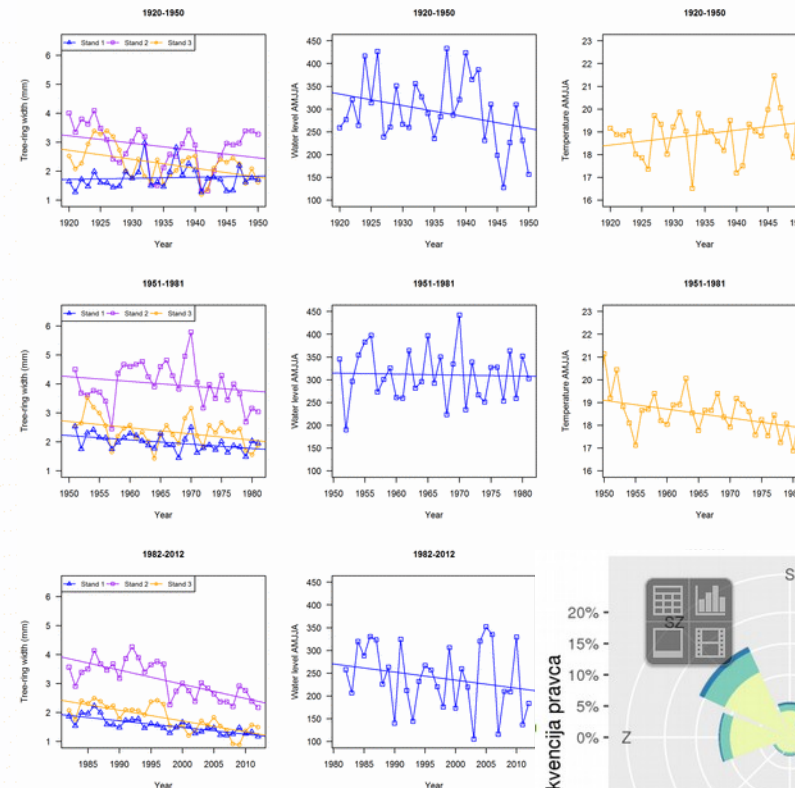
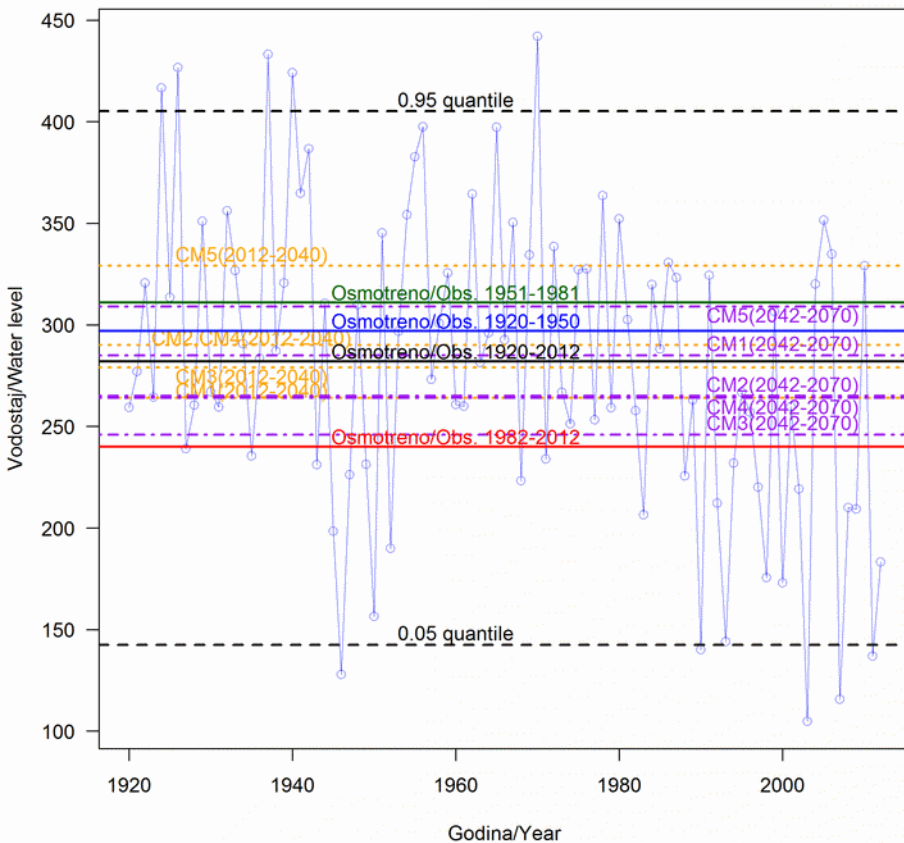
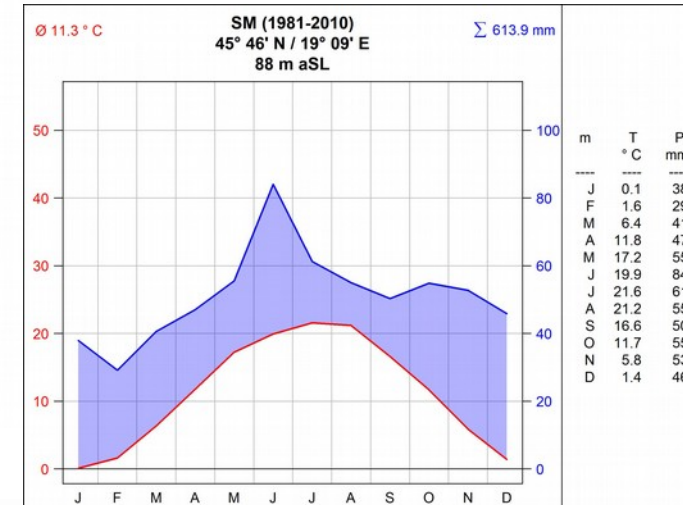
РЕПУБЛИКА СРБИЈА	8.850.414	28,454	0,005	0,004	0,001	6047
АП ВОЈВОДИНА	2.160.456	6,718	0,002	0,005	-0,002	-5123
ЦЕНТРАЛНА СРБИЈА	5.598.291	37,277	0,005	0,003	0,002	
АП КОСОВО И МЕТОХИЈА	1.091.667	27,411	0,005	0,008	-0,002	

UDK: 582.633.2(497.113 Srem)

Izvorni naučni rad *Original scientific paper*

## PRIRAST I VITALNOST HRASTA LUŽNJAKA U SREMU SA ASPEKTA PROMENE VODOSTAJA SAVE

Dejan Stojanović<sup>1</sup>, Tom Levanič<sup>2</sup>, Bratislav Matović<sup>1</sup>, Jasna Plavšić<sup>3</sup>





# Growth decrease and mortality of oak floodplain forests as a response to change of water regime and climate

D. B. Stojanović, T. Levanič, B. Matović & S. Orlović

European Journal of Forest Research

ISSN 1612-4669

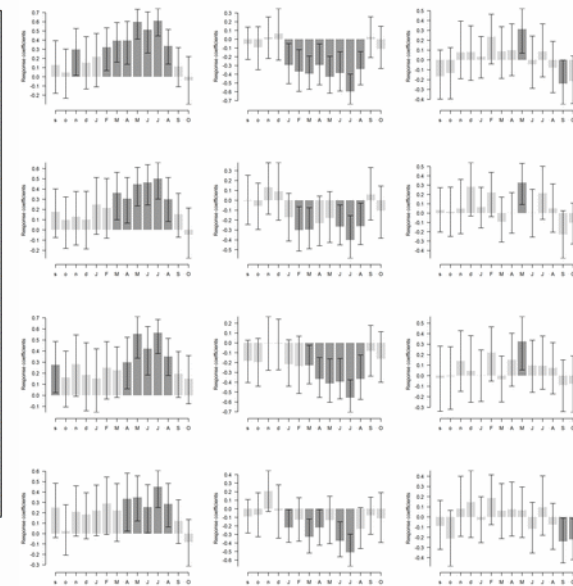
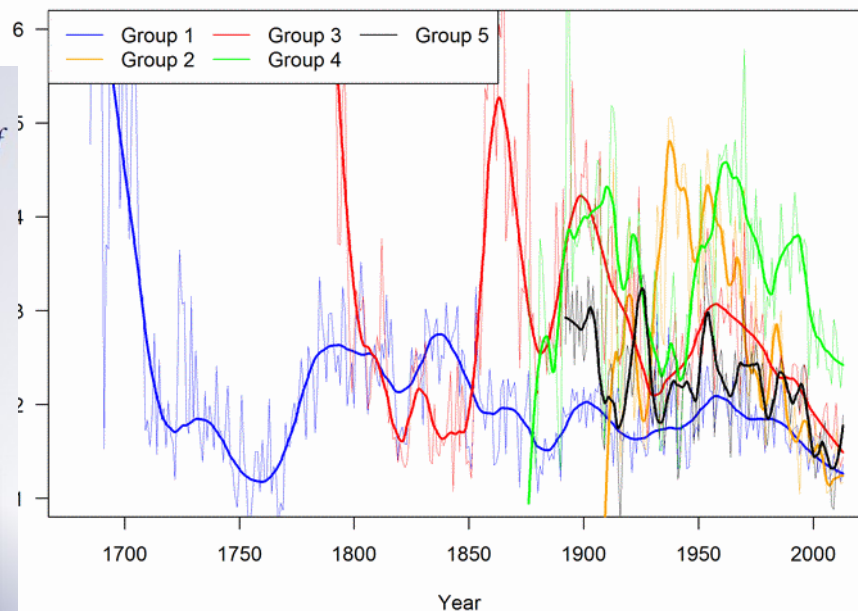
Eur J Forest Res  
DOI 10.1007/s10342-015-0871-5



ONLINE FIRST

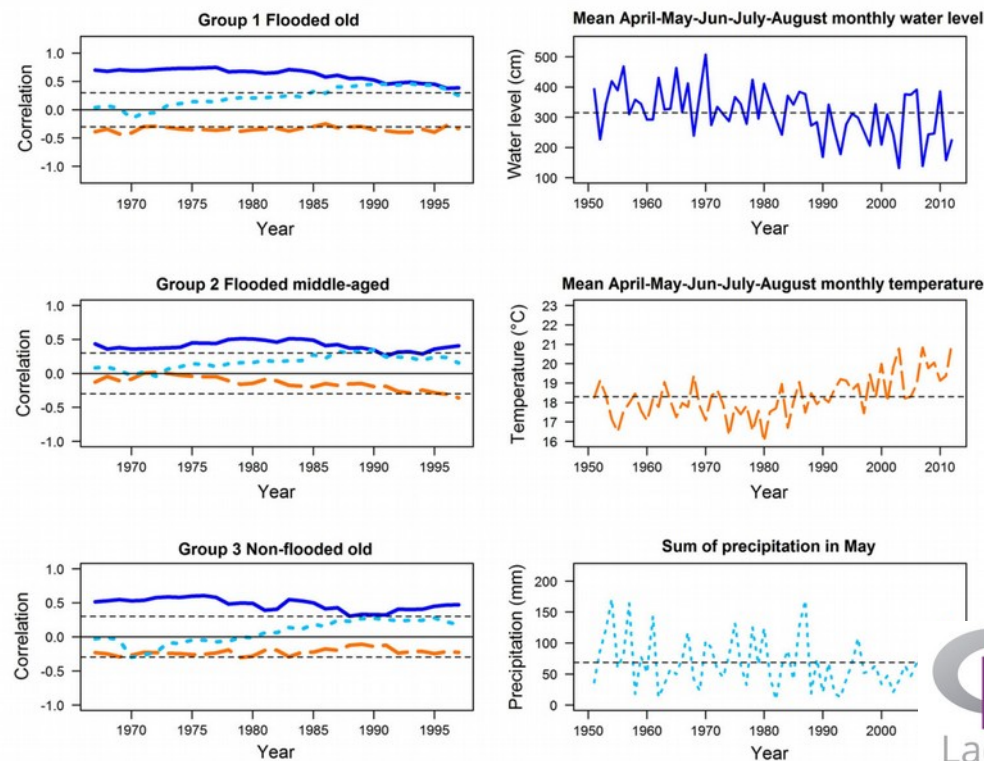
Springer

## Yearly tree-ring width



Eur J Forest Res

**Fig. 5** Running correlation (31 years window) for the radial growth of the five groups of trees and three environmental factors (dark blue, solid line—Sava River water level; light blue, point line—precipitation; orange, long dash line—temperature; dashed horizontal line—significance level for  $p < 0.05$ ;  $n = 31$ )—left side of the panel and environmental variable time series for the five tree groups on the right side of the panel. (Color figure online)

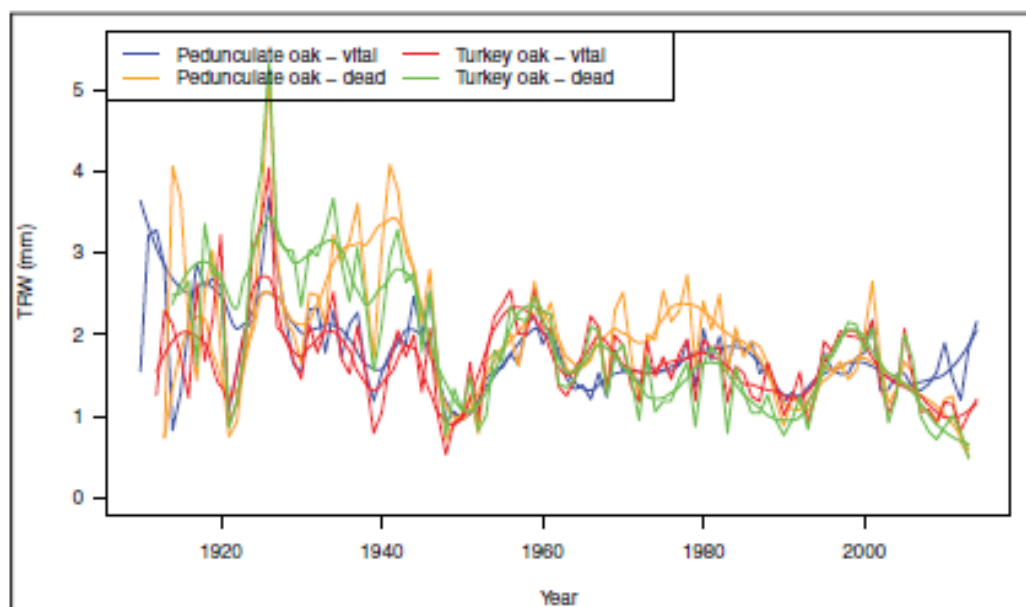


Ladies

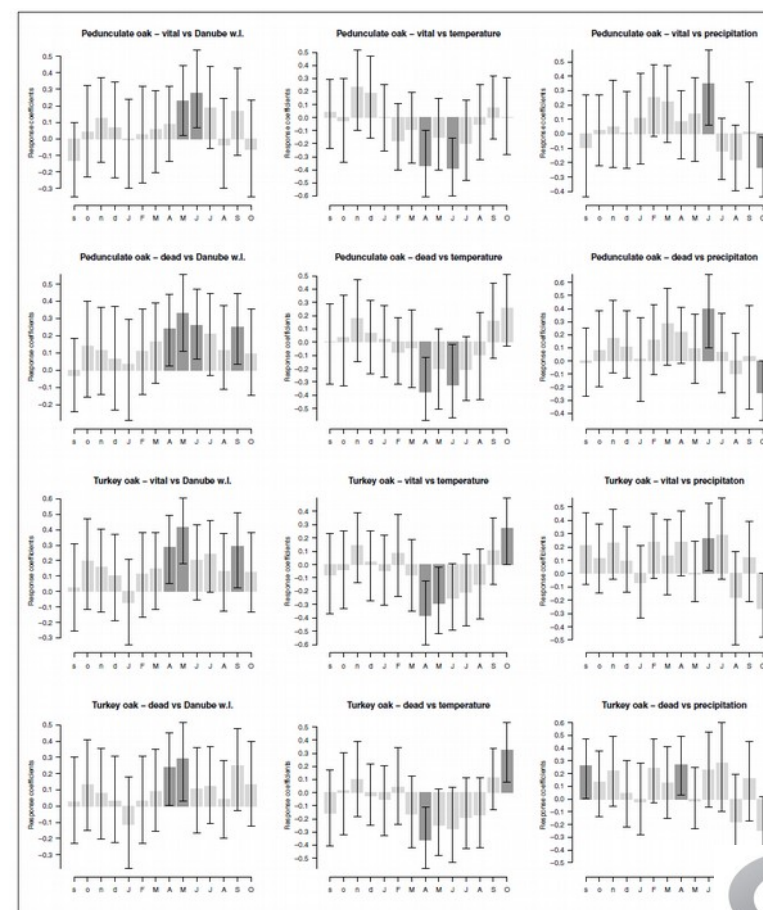
Research paper

# Climate change impact on a mixed lowland oak stand in Serbia

Dejan Stojanović<sup>1\*</sup>; Tom Levanič<sup>2</sup>; Bratislav Matović<sup>1</sup>; Andres Bravo-Oviedo<sup>3</sup>



**Figure 1 -** Mean tree-ring width chronologies (thin lines) of the four tree groups (pedunculate and Turkey oak, vital and dead trees) at the Branjevina stand. Spline curves (thick lines) describe the low frequency growth trend. Each tree-ring width chronology is based on 10 trees.

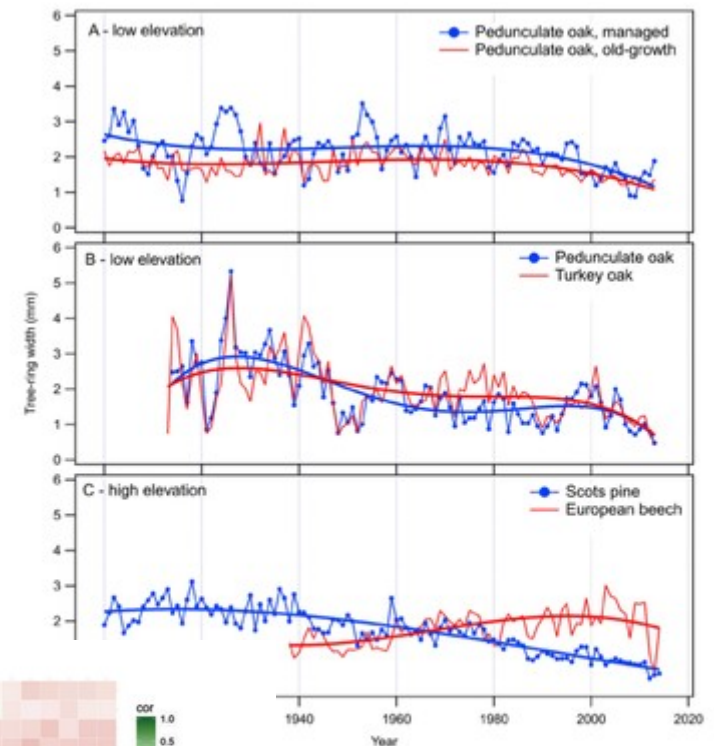
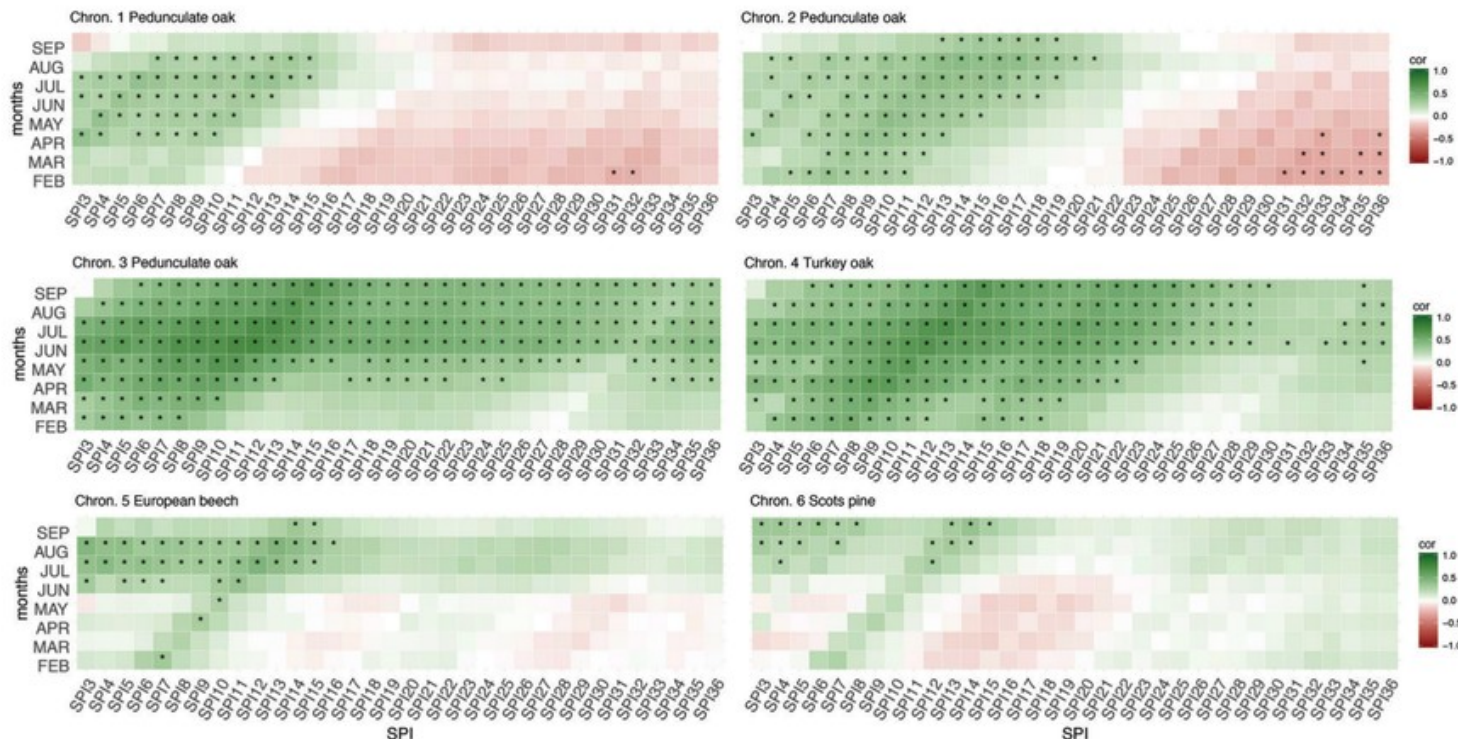


**Figure 5 -** Bootstrapped Pearson's correlation between tree-ring width residuals and Danube water level (left), air temperature (middle) precipitation (right) at the Sombor station in the period 1961-2010 for the four groups of trees (top-bottom): (i) pedunculate oak dead, (ii) pedunculate oak vital, (iii) Turkey oak vital and (iv) Turkey oak dead. Months marked by small letters are from the year of growth and capital letters represents the year of the growth. Dark colour represents significant correlation at  $p < 0.05$  ( $n = 60$ )



*Dejan B. Stojanović, Tom Levanič\*, Bratislav Matović,  
Stefan Stjepanović, Saša Orlović*

## Growth response of different tree species (oaks, beech and pine) from SE Europe to precipitation over time



tree-ring width chronologies of Euro-oak, pedunculate oak and Scots pine at low elevation (A and B) and one high elevating different growth patterns

Fig. 6. Heatmaps of bootstrapped correlations between SPI-3 to SPI-36 for six tree-ring width chronologies; the legend shows correlation coefficients (green – positive correlations; red – negative); stars represent statistically significant correlations





## EuMIXFOR empirical forest mensuration and ring width data from pure and mixed stands of Scots pine (*Pinus sylvestris* L.) and European beech (*Fagus sylvatica* L.) through Europe

Michael Heym<sup>1</sup> · Ricardo Ruiz-Peinado<sup>2,3</sup> · Miren Del Río<sup>2,3</sup> · Kamil Bielak<sup>4</sup> · David I. Forrester<sup>5</sup> · Gerald Dirnberger<sup>6</sup> · Ignacio Barbeito<sup>7</sup> · Gediminas Brazaitis<sup>8</sup> · Indrė Ruškytė<sup>8</sup> · Lluís Coll<sup>9</sup> · Marek Fabrika<sup>10</sup> · Lars Drössler<sup>11</sup> · Magnus Löf<sup>11</sup> · Hubert Sterba<sup>6</sup> · Václav Hurt<sup>12</sup> · Viktor Kurylyak<sup>13</sup> · Fabio Lombardi<sup>14</sup> · Dejan Stojanović<sup>15</sup> · Jan Den Ouden<sup>16</sup> · Renzo Motta<sup>17</sup> · Maciej Pach<sup>18</sup> · Jerzy Skrzyszewski<sup>18</sup> · Quentin Ponette<sup>19</sup> · Géraud De Streel<sup>19</sup> · Vit Sramek<sup>20</sup> · Tomáš Čihák<sup>21</sup> · Tzvetan M. Zlatanov<sup>22</sup> · Admir Avdagic<sup>23</sup> · Christian Ammer<sup>24</sup> · Kris Verheyen<sup>25</sup> · Buraczek Włodzimierz<sup>4</sup> · Andrés Bravo-Oviedo<sup>2,3</sup> · Hans Pri

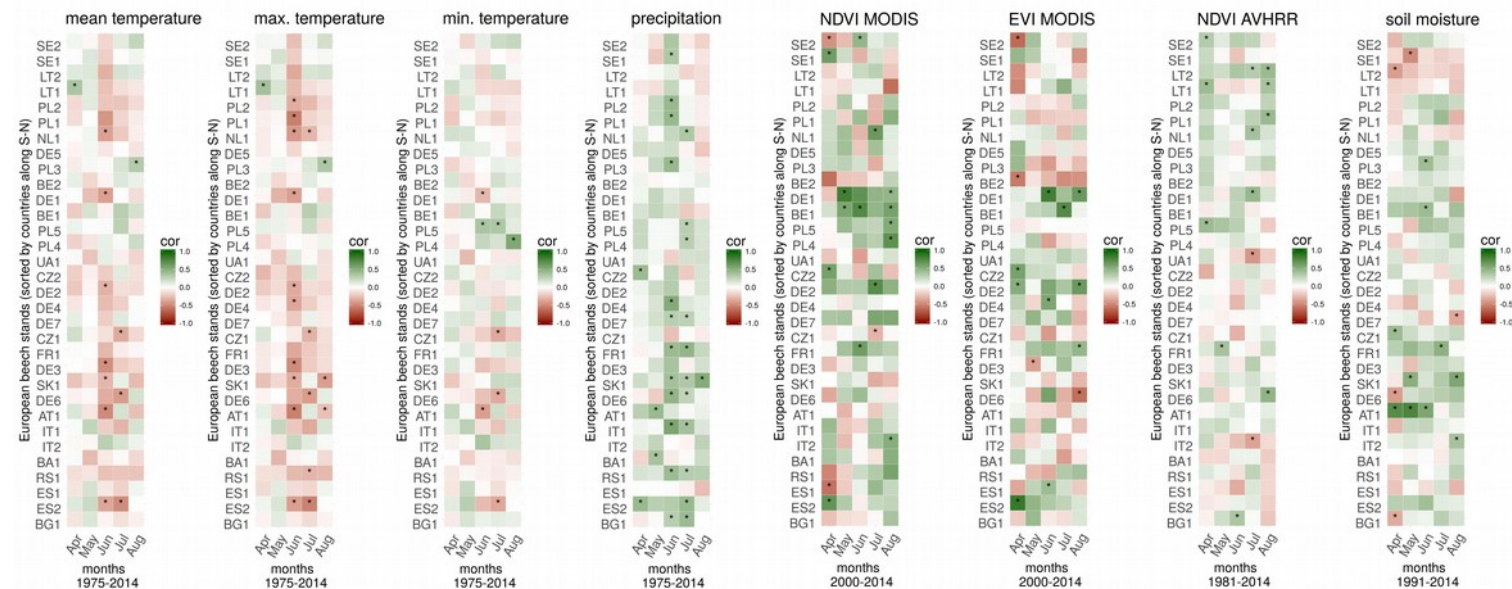
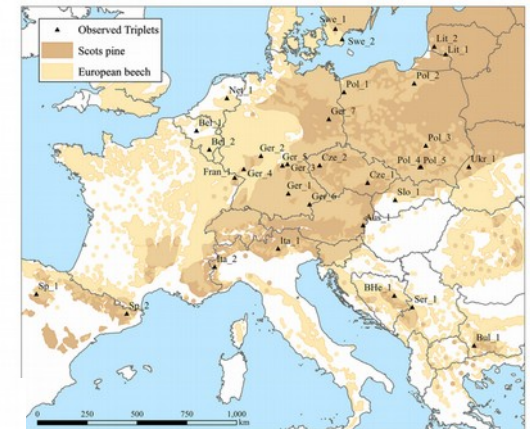
Eur J Forest Res  
DOI 10.1007/s10342-015-0900-4

ORIGINAL PAPER



## Growth and yield of mixed versus pure stands of Scots pine (*Pinus sylvestris* L.) and European beech (*Fagus sylvatica* L.) analysed along a productivity gradient through Europe

H. Pretsch<sup>1</sup> · M. del Río<sup>2</sup> · Ch. Ammer<sup>3</sup> · A. Avdagic<sup>4</sup> · I. Barbeito<sup>5</sup> · K. Bielak<sup>6</sup> · G. Brazaitis<sup>7</sup> · L. Coll<sup>8</sup> · G. Dirnberger<sup>9</sup> · L. Drössler<sup>10</sup> · M. Fabrika<sup>11</sup> · D. I. Forrester<sup>12</sup> · K. Godvod<sup>7</sup> · M. Heym<sup>1</sup> · V. Hurt<sup>13</sup> · V. Kurylyak<sup>14</sup> · M. Löf<sup>10</sup> · F. Lombardi<sup>15</sup> · B. Matović<sup>16</sup> · F. Mohren<sup>17</sup> · R. Motta<sup>18</sup> · J. den Ouden<sup>17</sup> · M. Pach<sup>19</sup> · Q. Ponette<sup>20</sup> · G. Schütze<sup>1</sup> · J. Schweig<sup>1</sup> · J. Skrzyszewski<sup>19</sup> · V. Sramek<sup>21</sup> · H. Sterba<sup>9</sup> · D. Stojanović<sup>16</sup> · M. Svoboda<sup>22</sup> · M. Vanhellemont<sup>23</sup> · K. Verheyen<sup>23</sup> · K. Wellhausen<sup>1</sup> · T. Zlatanov<sup>24</sup> · A. Bravo-Oviedo<sup>2</sup>





# Zaključak

- R za istraživanje i razvoj – DA
- R u akademskim krugovima – DA
- R za izrada komercijalnih aplikacija – NE (GPL2 licensing)

# Hvala na pažnji



Ladies