Flora Hrvatske

Izrada seminarske radnje

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Seminar:

- stručni do znanstveni rad o flori područja koje se obrađuje tijekom terenske nastave
- 15 h (- 2) (x broj studenata)
- 60 h terena (2 - 3 s vodstvom, 3 - 4 samostalno), uvijet za potpis iz terenske nastave
- predlažem dovršiti terene na vrijeme
- predati radnu verziju na čitanje do 15. rujna 2011., korigirana verzija do 25. rujna 2011. (??)

Literatura:

- **Silobrčić, V. (1989):** Kako sastaviti i objaviti znanstveno djelo. Jugoslavenska medicinska naklada - Jumena, Zagreb, 7-126.

Primjeri (http://hrcak.srce.hr/):

- **Piljac-Kosović L., Pandža M. (2009):** Flora Vrgade i okolnih otočića. Natura Croatica, 18(2): 309-333.
- **Mitić i sur. (2007):** Flora Stupnika i okolice (sjeverozapadna Hrvatska). Natura Croatica, 16(2): 147-169.
- **Tomašević M. (2006):** Novi prilog flori Požeške kotline i okolnoga gorja. Natura Croatica, 15(1-2): 43-60.
- **Jasprica i sur. (2006):** Flora i vegetacija otoka Sveti Andrija, južna Hrvatska. Natura Croatica, 15(1-2): 27-42.

Osnovne sastavnice seminara (rada, elaborata, teze, ...)

1. **Naslov** / Title
2. **Autor(i)** / Author(s)
3. **Adrese autora** / Author(s) address
4. **Sažetak** / Summary
5. **Ključne riječi** / Key words
6. **Uvod** / Introduction
7. **Materijal i metode** / Material & Methods
8. **Rezultati** / Results
9. **Rasprava** / Discussion
10. (**Zaključak**) / (Conclusion)
11. **Literatura** / References
12. (**Zahvale**) / Acknowledgements
13. (**Prilog**, prilozi) / Annexes

Osnovne sastavnice seminara (rada, elaborata, teze, ...)

Naslov:

mora jasno ukazati na sadržaj
mnogi prosuđuju o sadržaju na temelju naslova
pretraživanje prema riječima naslova
....

FLORA AND VEGETATION OF SVETI ANDRIJA ISLAND, SOUTHERN CROATIA

A NEW CONTRIBUTION TO THE FLORA OF THE POŽEGA VALLEY AND THE SURROUNDING MOUNTAINS

THE FLORA OF STUPNIK AND ITS SURROUNDINGS (NORTHWEST CROATIA)

FLORA OF THE ISLAND OF VRGADA AND THE SURROUNDING ISLETS

Osnovne sastavnice seminara (rada, elaborata, teze, ...)

Autor(i):

- puna imena i prezimena autora
- slijed je odraz značaja autora u izradi rada
- obično je prvi autor kontakt osoba (corresponding author), no ne nužno

....

Adrese autora

- povezane s autorom indeksom
- puna adresa dostatna za korespondenciju
- ...

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Osnovne sastavnice seminara (rada, elaborata, teze, ...)

Sažetak / Summary

• značajna sastavnica rada
• najveći broj autora privučenih naslovom čita samo sažetak, te rad odbacuje ili prosuđuje da mu je potreban, te nastavlja čitanje Uvoda
• daje odgovore na pitanja: gdje je rađeno, što je rađeno, kako je rađeno, što su glavni rezultati, što je glavni zaključak(ci)
• rad u malom, čitak i pitak, jasan i za ne-stručnjake
....

Tomašević, M.: A new contribution to the flora of the Požega Valley and the surrounding mountains. Nat. Croat., Vol. 15, No. 1–2, 43–60, 2006, Zagreb.

121 taxa of vascular plants are reported as having been discovered in the area of the Požega Valley and the surrounding mountains, the total number of taxa in the area now coming to 1588. The chorological spectrum shows 25% of Eurasian elements, 15.74% consist of widespread plants, 14.74 % South European and 3.72% of the Mediterranean element, 7.19% of the European and 4.59% of the Central European element, and 3.65% of the East European-Pontic floral element. According to life forms, vascular plants were represented in the following numbers: Hemicryptophyta (H) – 711, Therophyta (T) – 383, Geophyta (G) – 162, Phanerophyta (P) – 220, Chamaephyta (CH) – 77 and Hydrophyta (Hy) – 35. The most common families: *Asteraceae* – 146 taxa, *Poaceae* – 125, *Fabaceae* – 102, *Rosaceae* – 76 plant taxa. Some rare and interesting taxa are: *Orlaya grandiflora* (L.) Hoffm., *Senecio thapsoides* DC. subsp. *visianianus* (Papaf ex Vis.) Vandas, *Dianthus giganteus* D'Urv subsp. *croaticus* (Borb.) Tutin, *Scorzonera austriaca* Willd., *Trifolium glomeratum* L., *Cotoneaster integerrimus* Medik, *Spiraea cana* Walld. et Kit., *Iris croatica* I. Horvat et M. Horvat, *Iris variegata* L.

Osnovne sastavnice seminara (rada, elaborata, teze, ...)

Ključne riječi

- definiraju područje biologije na koji se rad odnosi
- upotreba u bazama podataka
- ...

Key words: flora, the Požega Valley, Croatia

Key words: flora, vegetation, Sveti Andrija Island, southern Adriatic, Croatia

Key words: the island of Vrgada, the islets Artina, Obrovanj and Rakita, flora, taxonomy, Croatia

Osnovne sastavnice seminara (rada, elaborata, teze, ...)

Uvod

• uvodi čitatelja u problematiku i potrebi rada
• daje stanje istraženosti
• daje okvire unutar kojih je rad napravljen (prostorne, povijesne, metodološke i dr.)
• pruža podatke o dosadašnjim spoznajama
• vodi k ciljevima rada, tj. **zašto** je rađeno to što je rađeno
• čitatelji često čitaju samo uvodni dio, dobijaju opću informaciju o području rada, mora im biti jasno iako se ne bave botanikom i florom npr.
•...

Osnovne sastavnice seminara (rada, elaborata, teze, ...)

INTRODUCTION

The Požega Valley and the surrounding mountains represent the western border region of East Croatia (Slavonia) towards Central Croatia. The survey region is located in the meso-region of the meso-mountains of the Slavonian river basin, the east Pannonian macroregion in Croatia. (NIKOLIĆ *et al.*, 1998:30, Fig.6), in UTM network, quadrant XL, YL and BR (100 x 100 km).

položaj

In the north, the valley is bordered by the mountains Papuk (952 m) and Krndija (790 m), Mt Psunj (984 m) in the west, higher and separate from the south-eastern part of Požeška gora (618 m) and Dilj gora (495 m). The valley itself is mildly undulating for 40 km in the east-west direction and 15–20 km long in south-north direction (SIĆ, 1975).

geografija

Mt Psunj, Mt Papuk and Mt Krndija are mostly formed of magmatic and metamorphic rocks, somewhat less of Mesozoic limestone and dolomite, while the bordering parts are formed of tertiary sediments. Požeška gora is formed to a lesser degree of magmatic and metamorphic cliffs, mostly of Mesozoic and Tertiary sediments, while Dilj gora is formed of only Tertiary sediments. The bottom of the valley is formed of Quaternary layers (TAKŠIĆ, 1977).

geologija

The western parts of the valley are characterized by a milder and wetter climate while the eastern parts have less precipitation, much warmer summers and colder winters. The average annual temperature in the period 1951–1980 was 10.4° C. The coldest month is January (–1° C) and the warmest July (20.4° C). The annual quantity of precipitation is 794 mm. The southwest part of the valley has 900 mm and Psunj, Papuk and Krndija about 1000 mm of precipitation. On average there are 62 frosty days. The relief structure of the region accounts for the climatic characteristics changing from Eastern Croatia to Central Croatian regimes (THE METEOROLOGICAL AND HYDROLOGICAL SERVICE, 1990).

klima

Osnovne sastavnice seminara (rada, elaborata, teze, ...)

Research into the flora and vegetation of the Požega Valley and the surrounding mountains has discussed the phytogeographical position of Slavonia. In this small area the influences of three different floristic regions can be found. The area of the Požega Valley, according to its ground cover, has the characteristics primarily of the Euro-Siberian-North American region, as has the greatest part of Croatia. The low--lying part of the Valley includes the climatic zones of forests of the alliance *Carpinion – betuli illyricum* Ht. 1956. The mountainous areas are regions of the climatic zones of the forest alliance *Aremonio – Fagion* /Ht. 1938/ Török *et al.* 1989, including mixed forests of the association *Abieti – Fagetum »pannonicum«*, Rauš, 1969, prov.

The proximity of the Middle European vegetation province – Pannonian sector and the Mediterranean vegetation region are reflected in the composition of the flora in this region. The eastern parts of the Valley and the whole of Eastern Slavonia are considered a transitional area towards Aralo-Caspian zones of the alliance *Aceri tatarici-Quercion* Zolyomi et Jakucs 1957, in the northeast, or a transitional area towards south-east that is to say towards the zone of submediterranean thermophilic flora and vegetation (the order *Quercetalia pubescentis* Br. – Bl. /1931/ 1937.), and the forest association *Orno – quercetum pubescentis* Klika 38, and the forest association *Quercetum frainetto-cerris* Rudski 1949 (ILIJANIĆ, 1977).

floristička regije i vegetacija

Osnovne sastavnice seminara (rada, elaborata, teze, ...)

Due to the heterogeneousness of the geomorphological, geological and climatic conditions and the specific phytogeographical location, the region is characterized by the richness and heterogeneousness of the vascular flora plant taxa.

Several authors have written on the flora of this region, as well as those quoted in papers by the present author (1998a, b) to which the following names should be added: FRANJIĆ (1993), ŠEGULJA (1998), TOMAŠEVIĆ (1999).

Past floristic surveys of the Požega Valley and the surrounding mountains were not systematic so it is impossible to estimate the exact number of plant taxa from this period, for example PILLER & MITTERPACHER (1783) noted about 140 species, KOMLANEC (1872/73) 661 species, while ILIJANIĆ (1977) brings the list of plant taxa up to 1030, of which 102 taxa have not been confirmed. So far this is the most complete survey of the vascular flora of this region. All earlier floristic data have been included.

stanje istraženosti
povijesni pregled

A floristic survey during 1972–1998 in the area of the Požega Valley and the surrounding mountains confirmed 1467 vascular flora plant taxa. The flora was also analyzed with respect to its floral elements and life forms (TOMAŠEVIĆ, 1972; 1998a: 1998b).

The specific phytogeographic position and the incompleteness of previous surveys led to the need for additional floristic surveys of the region. My intention has been to integrate all these floristic data and from this new synopsis to provide a definition of the phytogeographical characteristics of the flora of the Požega valley and surrounding mountains.

svrha i ciljevi

Further surveys of the flora in the Požega Valley and the surrounding mountains demonstrated the existence of 121 more plant taxa vascular flora that had never before been noted in this area. A list of them is to be found below.

Osnovne sastavnice seminara (rada, elaborata, teze, ...)

Materijal i metode

- potpuna metodologija koja omogućuje provjeru i ponavljanje rezultata
- gdje je točno rađeno (položaj u odnosu na Zagreb, Hr, ...)
- na koliko lokaliteta (xy, karta, ...)
- kada je rađeno (period)
- kako je rađeno (GPS, florne liste, broj terenskih izlazaka, determinacija, ...)
- gdje su podaci (unos u FCD, herbar, ...)
- kako su podaci analizirani i tumačeni (vidi dalje, ...)
- navodi literature za sve metode i postupke
- i dr.
- ....

Osnovne sastavnice seminara (rada, elaborata, teze, ...)

MATERIAL AND METHODS

Floristic research was done in the period 1998–2004 in different plant communities and different habitats throughout the area of the Požega Valley.

kada?

The area investigated and the localities from which rooted species originate are shown on the map (Fig. 1).

gdje?

Along with each species name, the localities are specified according to geographical position and marked by numbers 1– 36 (UTM grid, 10 x 10 km, in brackets).

All plant species defined in these researches can be found in the herbarium which has was deposited in the Town Museum in Požega in 1995.

Hb

As well as indigenous plant taxa the paper also records also adventitious and cultivated plants. This register also the includes plant species *Datura inoxia* Miller recorded by FRANJIĆ in 1993.

Taxa are determined according to standard keys for determination (TUTIN *et al.*, 1964–1980; JOSIFOVIĆ *et al.*, 1971–1976; DOMAC, 1973; TRINAJSTIĆ, 1974–1986, HORVATIĆ & TRINAJSTIĆ, 1973).

determinacija

Osnovne sastavnice seminara (rada, elaborata, teze, ...)

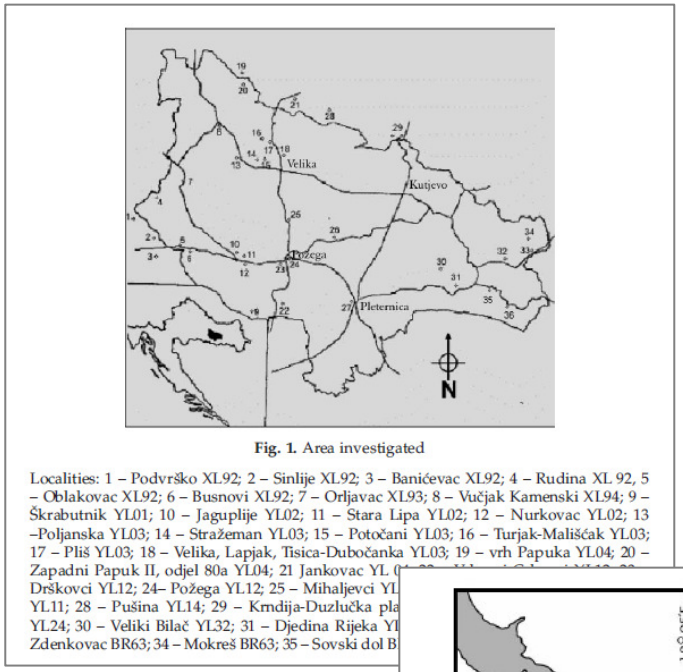
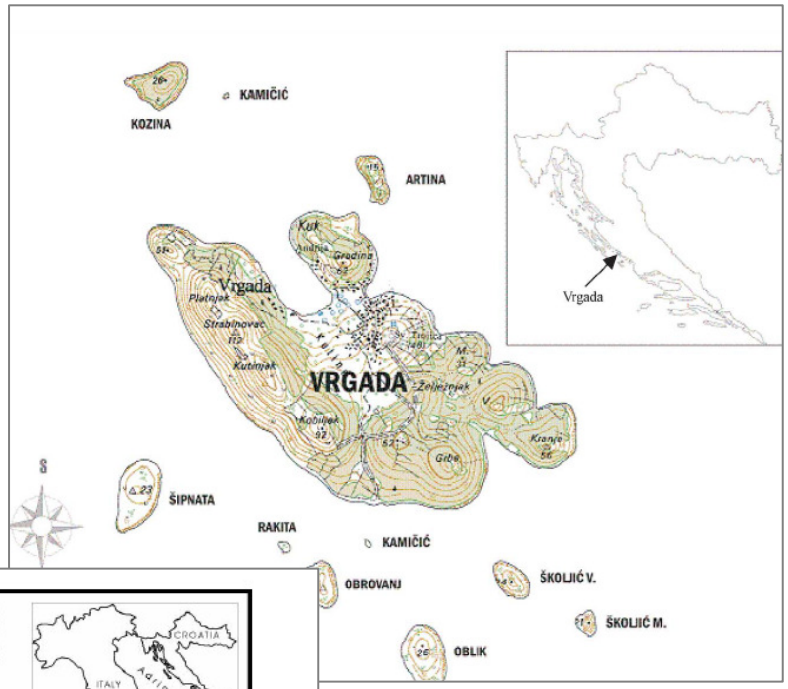


Fig. 1. Area investigated

Localities: 1 – Podvrško XL92; 2 – Sinlije XL92; 3 – Banićevac XL92; 4 – Rudina XL 92, 5 – Oblakovac XL92; 6 – Busnovi XL92; 7 – Orljavac XL93; 8 – Vučjak Kamenski XL94; 9 – Škrabutnik YL01; 10 – Jaguplije YL02; 11 – Stara Lipa YL02; 12 – Nurkovac YL02; 13 –Poljanska YL03; 14 – Stražeman YL03; 15 – Potočani YL03; 16 – Turjak-Mališćak YL03; 17 – Pliš YL03; 18 – Velika, Lapjak, Tisica-Dubočanka YL03; 19 – vrh Papuka YL04; 20 – Zapadni Papuk II, odjel 80a YL04; 21 Jankovac YL
Drškovci YL12; 24– Požega YL12; 25 – Mihaljevci YL
YL11; 28 – Pušina YL14; 29 – Krndija-Duzlučka pla
YL24; 30 – Veliki Bilač YL32; 31 – Djedina Rijeka YL
Zdenkovac BR63; 34 – Mokreš BR63; 35 – Sovski dol B



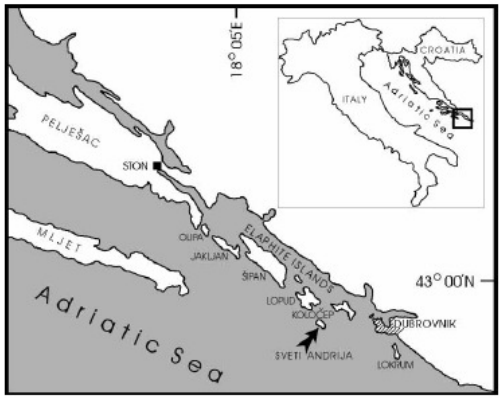


Fig. 1. Geographical position of Sveti Andrija Island, southern Adriatic

Osnovne sastavnice seminara (rada, elaborata, teze, ...)

The nomenclature of species and families is coordinated with the *Flora Croatica, Index Florae Croaticae* (NIKOLIĆ (ed.) 1994; 1997; 2000) and *Flora Europaea* (TUTIN *et al.*, 1964–1980).

nomenklatura

The list of the flora is formed in the context of higher systematic categories according to the alphabetic order of families, genera and within them the alphabetic order of species and subspecies. The names of the species are followed by habitat and list of localities of surveyed area, life forms are printed bold, and floral elements are marked by numbers. Life forms have been analysed according to HORVAT (1949) and ŠEGULJA (1977) and are marked as follows:

popis flore

Ch – Chamaephyta,
G – Geophyta,
H – Hemicryptophyta,
P – Phanerophyta
T – Therophyta
Hy – Hydrophyta.

životni oblici

Osnovne sastavnice seminara (rada, elaborata, teze, ...)

Chorological classification (classification by floral elements) is after HORVATIĆ *et al.* (1967–1968), and ŠEGULJA (1977), and those species not listed here after TUTIN *et al.* (1964–1980), HORVATIĆ & TRINAJSTIĆ (1973), TRINAJSTIĆ (1974–1986), JOSIFOVIĆ *et al.* (1971–1976), and floral elements are determined. The analysis of the floral elements and life forms has given a certain picture of the phytogeographic characteristics of the flora of the Požega Valley. Numbers printed in bold stand for the following floristic elements:

florni elementi

1. Mediterranean floral element
2. Illyrian-Balkan floral element
3. South European floral element
4. Atlantic floral element
5. East European-Pontic floral element
6. Southeast European floral element
7. Central European floral element
8. European floral element
9. Pannonian floral element
10. Eurasian floral element
11. Circum-Holarctic floral element
12. Widespread plants
13. Cultivated and adventitious plants

To make the phytogeographic analysis more complete floral element and life form analysis figures were taken from the article (TOMAŠEVIĆ, 1998 b) and complemented with facts from the register of plant taxa.

The analysis of the life forms was compared with results of the analysis of the life forms of some adjacent areas.

The analysis took into consideration endangered plant taxa according to the Red Book of the Vascular Flora of Croatia (NIKOLIĆ & TOPIĆ, 2005).

ugroženost

The register of plants indicates the threat status if a certain plant taxa is in one of these categories.

The following species were formerly noted incorrectly as *Pulsatilla vulgaris* and *Himanthoglossum hircinum*, and should be *Pulsatilla grandis* Wender (NIKOLIĆ, 1994) and *Himanthoglossum adriaticum* H. Baumann (HRŠAK, 2000).

Osnovne sastavnice seminara (rada, elaborata, teze, ...)

Rezultati

- što je točno radom utvrđeno
- potpuni podaci sa svim detaljima (tablice, liste)
- rezultati statističke obrade (udjeli, postotci, grafikoni)
- obično najsuhoparniji dio rada
- ....

RESULTS

List of species

PTERIDOPHYTA

FILICOPSIDA

Aspleniaceae

Asplenium ceterach L. (H, South European-Mediterranean)

Asplenium onopteris L. (H, Circum-Mediterranean)

SPERMATOPHYTA

GYMNOSPERMAE

Cupressaceae

Cupressus sempervirens L. (P, Cult. & adv.).

Juniperus phoenicea L. (P, Circum-Mediterranean)

Ephedraceae

Ephedra fragilis Desf. subsp. *campylopoda* (C. A. Meyer) Asch. & Graeb. (Ch, East--Mediterranean)

Pinaceae

Pinus halepensis Miller (P, Circum-Mediterranean)

Pinus pinea L. (P, Circum-Mediterranean)

u florističkim radovima, obično popis vrsta s pratećim podacima (ž.o., alohtonost, ugroženost, ili dr.)

Osnovne sastavnice seminara (rada, elaborata, teze, ...)

Tab. 1. Number of taxa (species and lower units) on the southern Adriatic islands

Island	Surface area (km^2)	Altitude (m)	Taxa	Genera	Families	References
Mljet	101	514	716	363	87	REGULA-BEVILACQUA & ILIJANIĆ 1984; TRINAJSTIĆ 1985, 1995b
Šipan	15.8	243	617	326	82	M. HEĆIMOVIĆ 1981
Lopud	4.63	216	429	277	76	M. & S. HEĆIMOVIĆ 1986; TRINAJSTIĆ & JASPRICA 1998
Koločep	2.4	125	444	299	80	M. & S. HEĆIMOVIĆ 1987
Daksa	0.59	24	225	169	66	M. & S. HEĆIMOVIĆ 1989
Lokrum	0.72	91	400	259	71	S. HEĆIMOVIĆ 1982
Mrkan	0.28	65	179	150	58	S. HEĆIMOVIĆ 1982
Bobara	0.075	45	86	78	35	S. HEĆIMOVIĆ 1982
Supetar	0.039	8	39	36	19	JASPRICA & KOVAČIĆ 2002
Sveti Andrija	**0.053**	**57**	**160**	**134**	**61**	**This study**

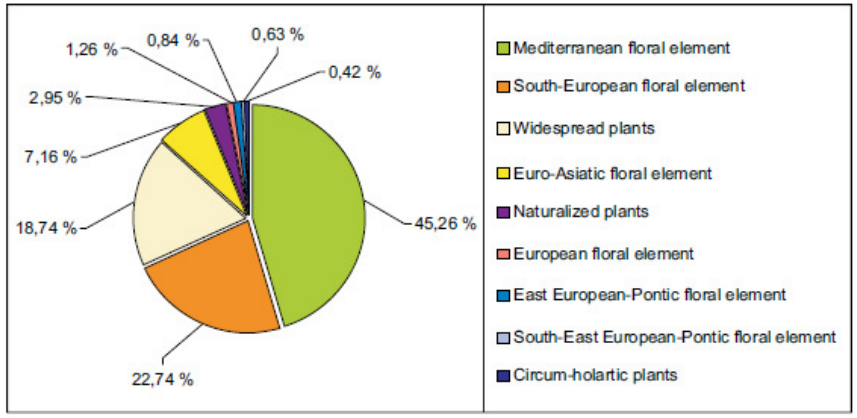


Fig. 2. Spectrum of floral elements in the flora of the islands

Tab. 2. Life forms (%)

Island	T	H	P	Ch	G	Hy
Mljet	45.3	19.87	11.92	11.26	10.59	0.83
Šipan	46	25	11	7	11	–
Lopud	45.67	23.42	13.12	10.3	7.49	–
Koločep	46.4	20.95	14.41	11.04	6.98	0.22
Daksa	41.33	19.11	17.33	11.56	10.67	–
Lokrum*	42	25	13	8	12	–
Sveti Andrija	**36.4**	**25.31**	**18.18**	**12.98**	**6.49**	**0.64**

T – therophytes, H – hemicryptophytes, P – phanerophytes, Ch – chamaephytes, G – geophytes, Hy – hydrophytes. * Data for Lokrum Island includes those for the Mrkan and Bobara islands.

Tab. 3. A list of families with more than 20 species from the total flora of the Požega Valley

Family	Number of species and subspecies	% of total taxa 1588
1. Asteraceae	146	9,19
2. Poaceae	125	7,87
3. Fabaceae	102	6,42
4. Rosaceae	76	4,76
5. Lamiaceae	69	4,35
6. Brassicaceae	65	4,09
7. Scrophulariaceae	64	4,03
7. Apiaceae	60	3,78
8. Caryophylaceae	59	3,72
9. Cichoriaceae	52	3,27
10. Liliaceae	50	3,15
11. Ranunculaceae	49	3,09
12. Cyperaceae	46	2,89
13. Orchidaceae	37	2,33
14. Rubiaceae	26	1,64
15. Boraginaceae	23	1,45

Osnovne sastavnice seminara (rada, elaborata, teze, ...)

Rezultati za seminar trebaju sadržavati minimalno:

- popis flore po porodicama
- porodice abecednim slijedom (odvojeno na razini podrazreda)
- unutar porodica popis vrsta po abecedi
- uz vrste oznake lokaliteta na kojima su nađene i drugi podaci koji se koriste u analizi
- analiza udjela porodica
- analiza udjela ugroženih svojti prema http://hirc.botanic.hr/fcd/CrvenaKnjiga/
- analiza udjela invazivnih svojti prema http://hirc.botanic.hr/fcd/InvazivneVrste/
- analiza udjela zaštićenih svojti prema http://hirc.botanic.hr/fcd/
- ....

Osnovne sastavnice seminara (rada, elaborata, teze, ...)

Rasprava

- najsloženiji i najzahtjevniji dio rada!
- kritičko razmatranje Rezultata
- dovođenje u vezu s objavljenim podacima drugih autora
- biološko tumačenje značenja nalaza i Rezultata
- naglašavanje odstupanja u odnosu na očekivano/poznato
- uz Uvod, najviše citata literature i drugih izvora podataka
- vodi postupno u zaključak
- zaključak je uglavnom posljednji dio Rasprave
- ....

Osnovne sastavnice seminara (rada, elaborata, teze, ...)

Analysis of the complete flora of the region shows that the greatest role among plant life is played by plants of the Eurasian floral element (397 or 25.00 %), then by widespread plant species (250 or 15.74 %) and the plants of the European (114 or 7.18 %) as well as of the Central European floral element (73 or 4.59 %).

These data show that in the phytogeographical aspect the Požega Valley and surrounding mountains belong to the Euro-Siberian – North American region. A rather important share in the flora of this region is taken by plants of the South European floral element (234 or 14,74 %) and Mediterranean plants (59 or 3,72 %). Plant taxa of the South European and Mediterranean floral elements grow mostly in dry grassland, rocky ground, forest edges and hedges on southern slopes and thermophilic habitats and favourable local climatic conditions and protected areas due to articulation of the relief. There are 58 or 3.65 % plant species of the Aralo-Caspian region. Other floral elements are much less represented.

This combination of flora in the area is conditioned not only by present conditions but also by conditions in previous geological eras. That is why plants that are remains from ancient eras can be found here as well as newcomers (neophytes). In the group of cultivated and adventitious plants (254 or 15.99 %) there are numerous neophyte species. Some of them are grown because they are important for nutrition, decoration or for industry for instance *Solanum tuberosum, Zea mays, Nicotiana tabacum,* originating from South America. Many weeds and ruderal plants have been transferred in the same way, such as, to mention only some of the species transferred from North America,: *Conyza canadensis, Erigeron annuus, Solidago canadensis, Solidago gigantea, Ambrosia artemisiifolia, Xantium italicum, Helianthus tuberosus, Phytolacca americana, Panicum capillare, Amaranthus retroflexus* while *Galinsoga parvi-*

tumačenje udjela flornih elemenata

definiranje pripadnosti floristočkoj regiji

utjecaj geološke prošlosti na sastav flore

itd.

Osnovne sastavnice seminara (rada, elaborata, teze, ...)

NIKOLIĆ, 2007) were also earlier known as neophytes and invasive species in the flora of Croatia: such as *Ambrosia artemisiifolia*, *Galinsoga parviflora*, *Solidago gigantea* (e.g. TRINAJSTIĆ, 1984; ŠOŠTARIĆ & MARKOVIĆ, 1998), and *Conyza canadensis* (MILOVIĆ, 2004). From the 1960s findings of *Bidens frondosa* along the entire length of river Sava were recorded (MARKOVIĆ, 1970). For the Lučko area *Asclepias syriaca* was mentioned by MARKOVIĆ-GOSPODARIĆ (1965). In the 1970s, *Reynoutria japonica* started to expand, and spread quickly alongside the Sava River (TRINAJSTIĆ *et al.*, 1994). *Chamomilla suaveolens* was known from the middle of the 20th century from Gorski kotar and the Lika region, from where it later spread to Hrvatsko Zagorje and more recently to Turopolje (MARKOVIĆ & LUKAČ, 1993). As inventory and monitoring of invasive alien taxa is necessary for real knowledge about their impact on the indigenous flora and biodiversity of Croatia (cf. MITIĆ *et al.*, 2006), these data will contribute to initial information for future IAS studies.

ktirički osvrt na invazivne vrste

According to the new Red Book of Vascular Plants of Croatia (NIKOLIĆ & TOPIĆ, 2005) *Lilium martagon*, *Alopecurus geniculatus*, *Carex vesicaria* and *Glyceria fluitans* are species faced with high extinction risk and indicate the significance of the studied area.

osvrt na ugrožene vrste i značenje

In comparison of number of species per km^2, with some other floristically researched continental areas in Croatia (cf. STANČIĆ, 1994; ŠOŠTARIĆ & MARKOVIĆ, 1998; ALEGRO *et al.*, 2006), we can conclude that the floristic diversity of the research area is relatively high, probably mostly because of the habitat diversity and human impact. Namely, in the past, the vegetation of the studied area was oak-hornbeam and beech forests with stabile and smaller number of species (ŠOŠTARIĆ, 2004), but anthropogenic activities changed such habitats and caused increasing number of plant taxa adapted to new habitats, as has been shown for some other continental areas in Croatia (e. g. ALEGRO *et al.*, 2006).

komentar utjecaja drugih čimbenika na sastav flore

Osnovne sastavnice seminara (rada, elaborata, teze, ...)

Rasprava za seminar treba sadržavati

- komentar svih sastavnica Rezultata (analiza udjela porodica,
- ugroženih svojti, invazivnih svojti, zaštićenih svojti)
- zaključak o “bogatstvu” područja, potrebi poznavanja urbane flore i sl.
- zaključak izdvojen ili integriran u raspravu prema nahođenju
- ....

CONCLUSIONS

1. Sveti Andrija Island has 160 vascular plant taxa, included into 134 genera and 61 families. The total number of taxa represents about 3% of the Croatian vascular flora.
2. The flora has a Mediterranean character. It is dominated by plants with a Mediterranean floral element (46.2%) and the life-forms are dominated by therophytes (36.4%).
3. The island has six Illyrian-Adriatic endemic plants. Four plant communities were determined: *Querco ilicis-Pinetum halepensis, Posidonietum oceanicae, Limonietum anfracti* and *Lavateretum arboreae*.

Osnovne sastavnice seminara (rada, elaborata, teze, ...)

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- citiranje prema naputku časopisa Natura Croatica

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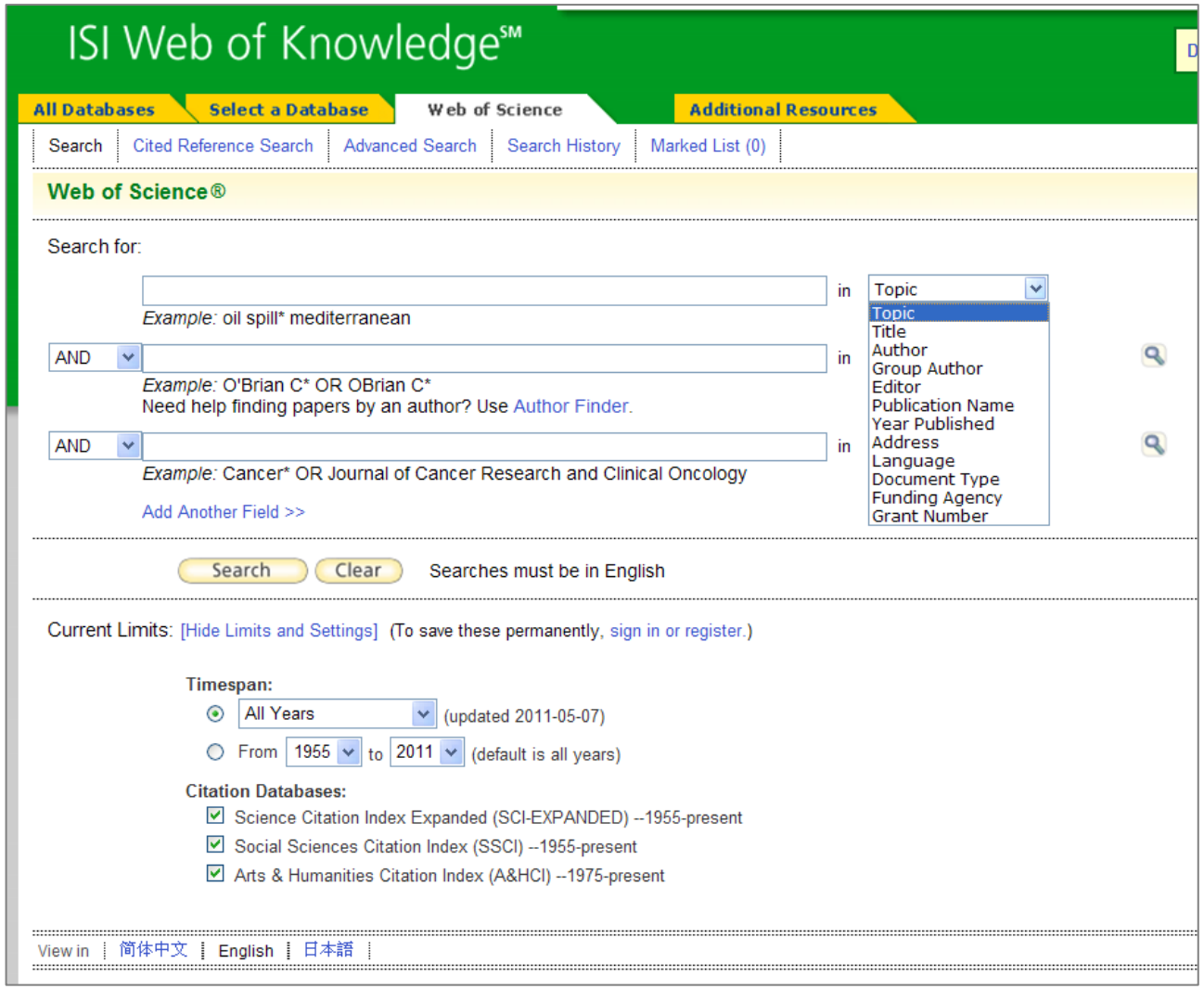
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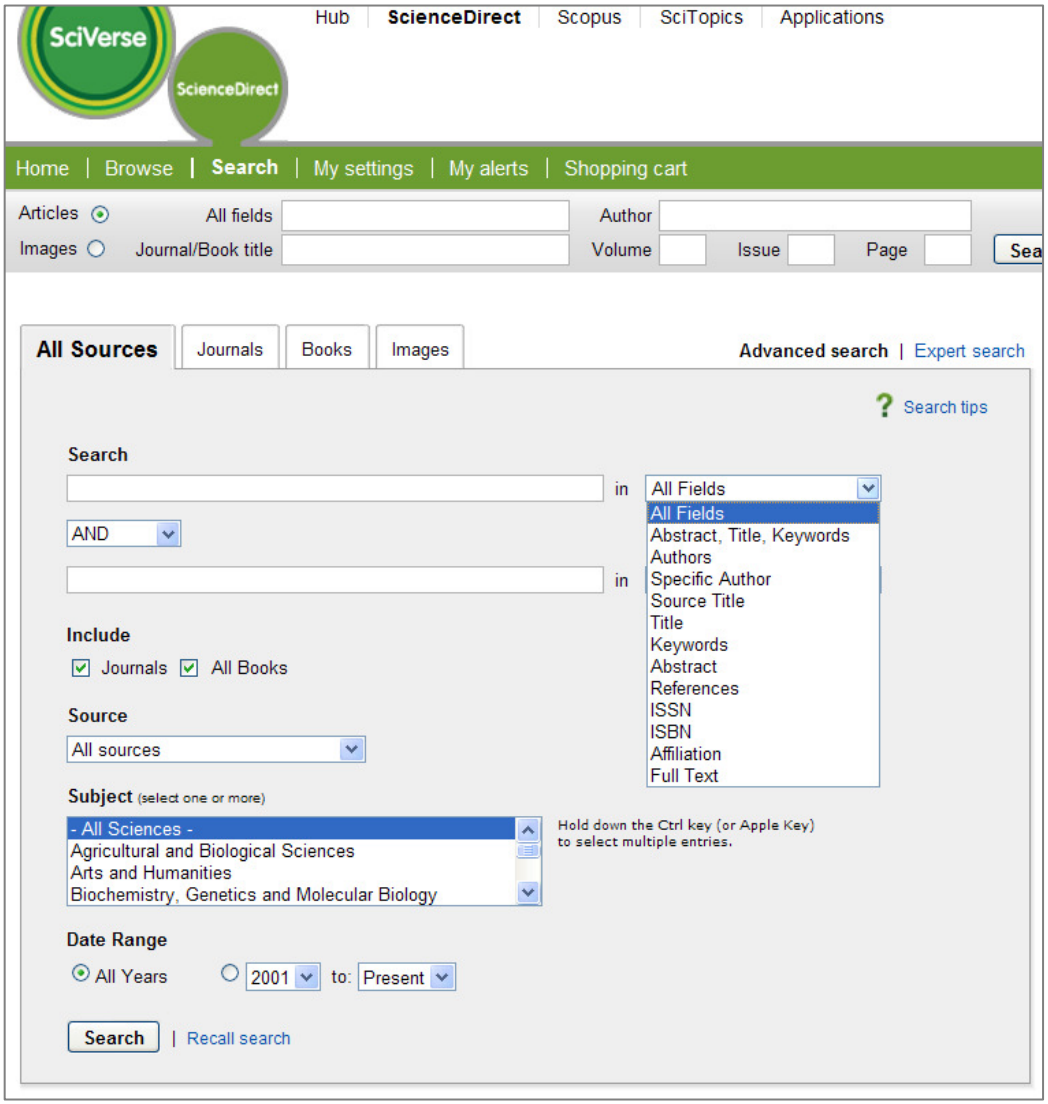
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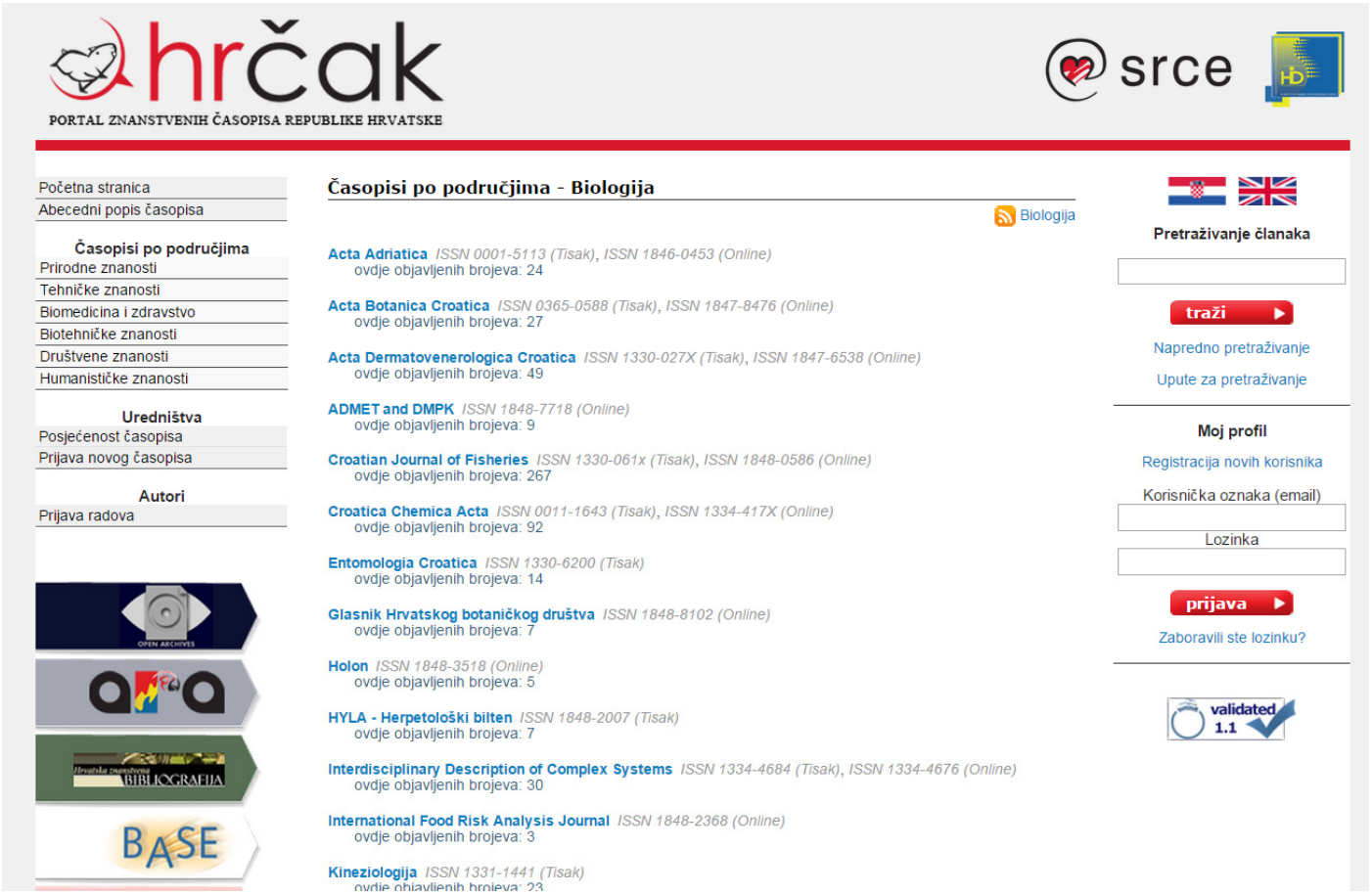
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