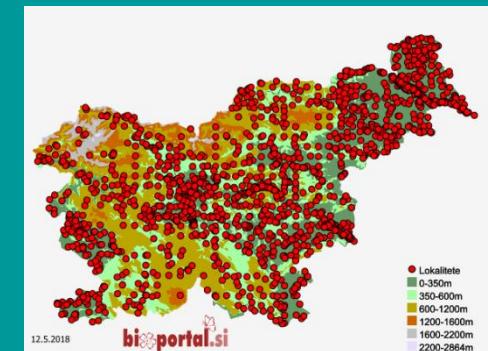
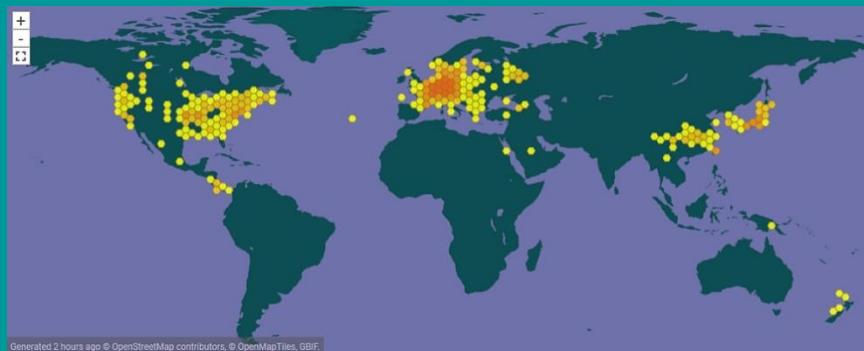




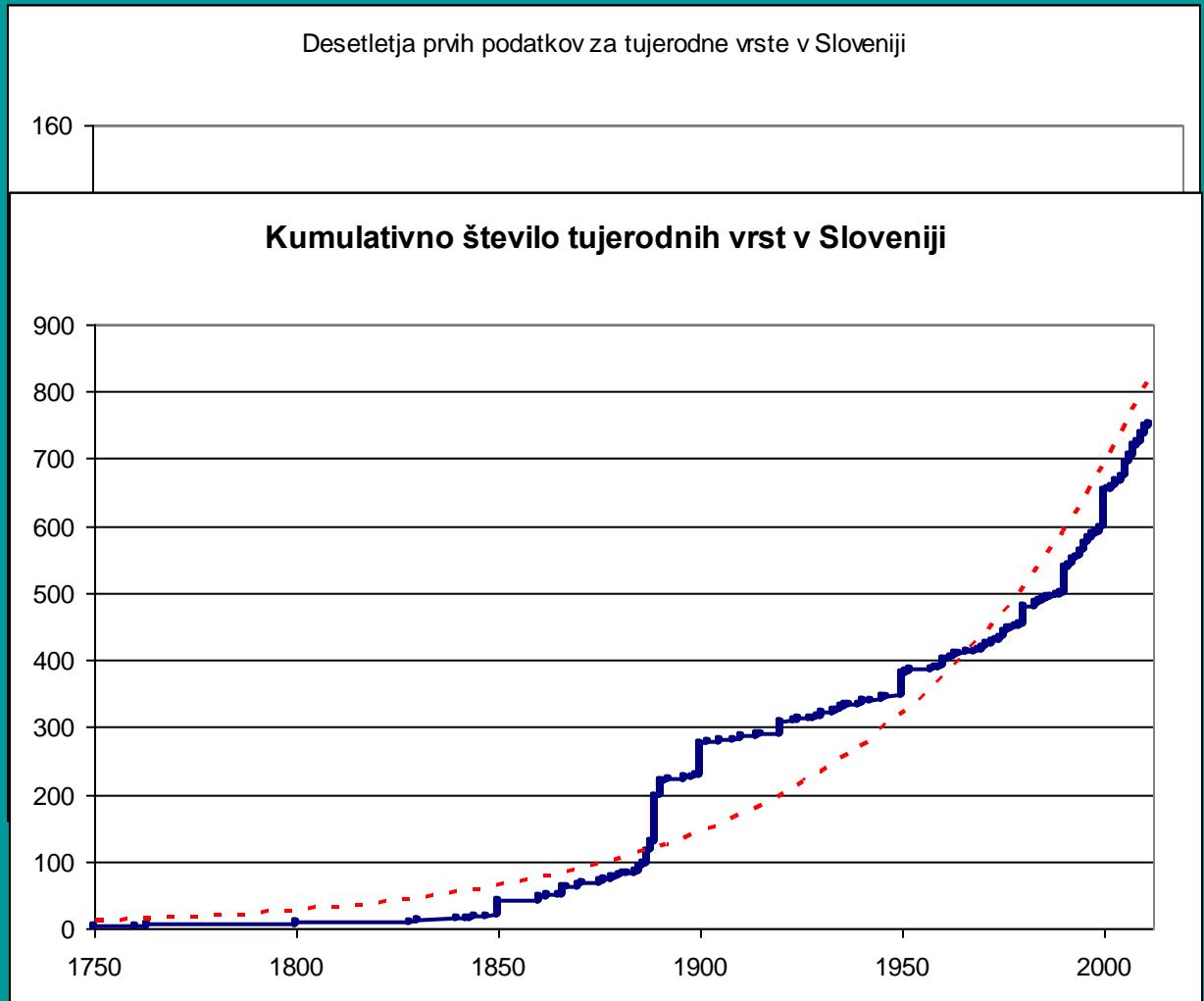
# Tujerodne invazivne rastlinske vrste ... in planinci



tečaj za Varuhe gorske narave,  
12. in 13. 5. 2018 na Lisci

# vse tujerodne vrste skupaj

- na videz nenavadna časovna pojavnost
- kumulativni prikaz bolj razločen
- trend (žal) jasen



# (tujerodne) rastlinske vrste

- **primarni producenti** bistveni za delovanje ekosistemov
- **funkcija:** hrana specifičnim skupinam rastlinojedov, sezonskost, kompeticija, odpornost na zunanje vplive...
- **struktura:** oblikovanje različnih prostorskih niš, plastovitost vegetacije, homogenost rastlinske odeje...
- **invazivke** podrejo ravnotežje v naravnih ekosistemih

# tujerodne rastlinske vrste

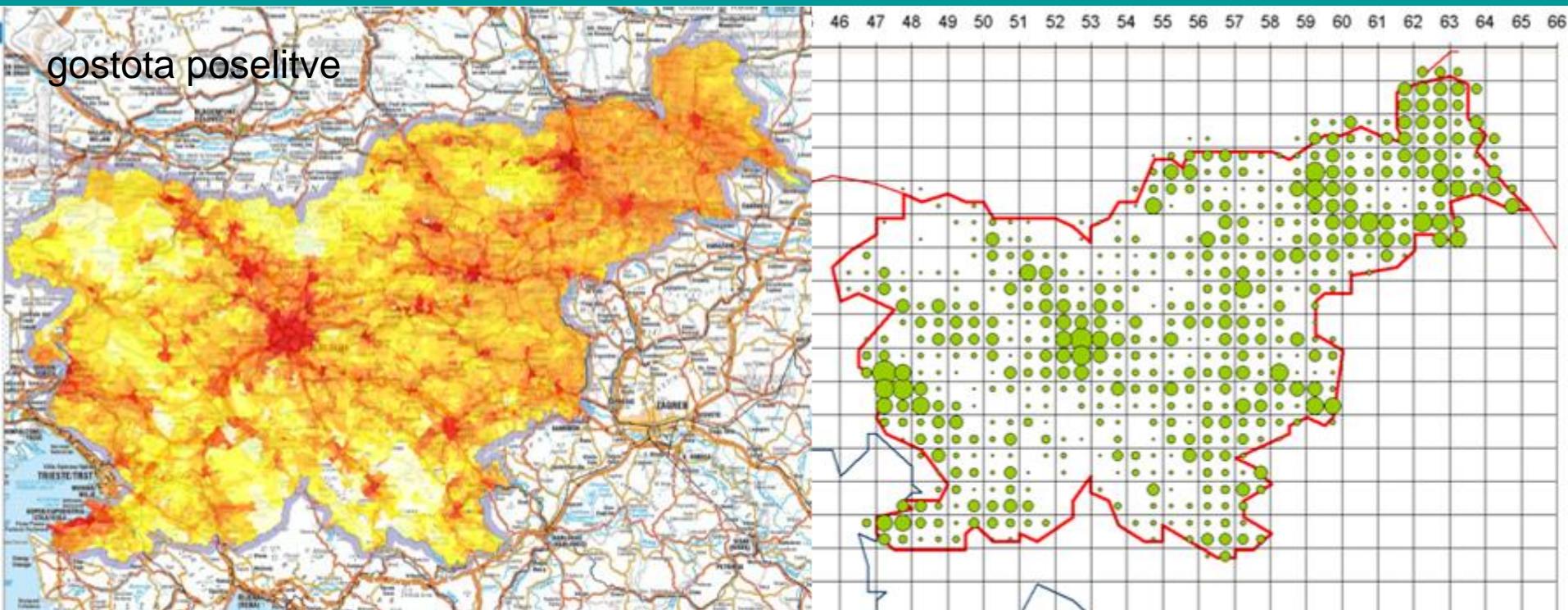
- najbolj preučene višje rastline (praprotnice in semenke)
- 32 vrst od 100 najhujših svetovnih **invazivk** (ISSG 2000)
- od teh 6 v naši flori, 2 invazivni, 2 avtohtoni
- naša flora najbolj ranljiva za vrste iz klimatsko podobnih predelov S poloble
- zavedanje problema v naravovarstvu pozno, Strategija (2002) invazivke komaj omenja

# tujerodne rastlinske vrste

- težave v prepoznavanju **arheofitov** (naseljeni pred več kot 500 leti)
- navadno le posredno prepoznavni preko izključnega uspevanja v ruderalnih združbah
- arheofiti dejansko vklopljeni v avtohtono floro, večinoma prisotni več tisočletij
- nekatere med njimi (npr. redki žitni pleveli) naravovarstvo poskuša celo ohraniti
- med arheofiti nobene zanesljive invazivne vrste!

# tujerodne rastline v Sloveniji

- vzorec pojavljanja arheofitov / neofitov



arheofiti: max 148

neofiti: max 54

# kaj pa invazivke?

- **tujerodna invazivna vrsta** (TIV):
- **tujerodna vrsta, ki z vnosom in/ali širjenjem ogroža biotsko raznovrstnost [CBD, NOBANIS, Evropska strategija BK]**
- **tujerodna vrsta, ki ogroža ekosisteme, habitate ali vrste [CBD COP D VI/23]**
- **tujerodna vrsta, ki se udomači v naravnih ali pol-naravnih ekosistemih ali habitatnih tipih ter s tem spremeni in ogroža naravno biotsko raznovrstnost [IUCN 2000]**
- tujerodna vrsta, katere vnos (lahko) povzroča ekonomsko ali okoljsko škodo ali škoduje zdravju.[GISP, ZDA 1999]
- tujerodna vrsta, ki se lahko širi in s tem povzroča škodo okolju, gospodarstvu, zdravju ali ustaljenemu načinu življenja. [VB: NNSS 2008]

# izločene vrste

- **pleveli** (epekofiti): trajno uspevajo le na stalno motenih rastiščih
- **prehodne** vrste (efemerofti): pojavljajo se le kratek čas in kmalu odmrejo
- **domače invazivne** vrste: ki s hitrim širjenjem zarastejo predvsem opuščene površine
- **naturalizirane** vrste (agriofiti) z majhnim vplivom na njihova nova rastišča

[širina definicije “invazivka” je nekoliko variabilna!]

# 100 OF THE WORLD'S WORST INVASIVE ALIEN SPECIES

A SELECTION FROM THE GLOBAL INVASIVE SPECIES DATABASE



## Invasive Species Specialist Group

ISSG Home

About ISSG

About Invasive Species

Publications

Events

Contacts

## GLOBAL INVASIVE SPECIES DATABASE

Standard Search

Taxonomic

Species name

Country or location

Habitat

Organism type

### LATEST ADDITIONS

*Clarias gariepinus*

*Tamias sibiricus*

*Tenrec ecaudatus*

*Agaveatina adenophora*

*Andropogon gayanus*

*Canis latrans*

*Hemitragus jemlahicus*

*Herpestes pulverulentus*

*Martes melampus*

The Global Invasive Species Database (GISD) aims to increase awareness about invasive alien species and to facilitate effective prevention and management activities. It is managed by the Invasive Species Specialist Group (ISSG) of the IUCN - International Union for Conservation of Nature. The GISD was developed as part of the global initiative on invasive species led by the Global Invasive Species Programme GISP and was funded by the National Biological Information Infrastructure (NBII), Manaki Whenua-Landcare Research and the University of Auckland.

The GISD focuses on invasive alien species that threaten native biodiversity and natural ecosystems and covers all taxonomic groups from micro-organisms to animals and plants in all ecosystems. Species information is either supplied by contributors from around the world.

As the database is continually being populated with species information, please check back on a regular basis for updates. See the site index for more information. If you have questions or comments about the GISD, please contact the GISD Officer of the ISSG.

# globalno



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The Convention | Cartagena Protocol | Nagoya Protocol | Programmes | Information | Secretariat

## Invasive Alien Species

About Invasive Alien Species

> Progression > Invasive Alien Species > Implementation > Info-Agency/IS

What are invasive Alien Species?

What's the Problem?

## Inter-agency Liaison Group on I

The general purpose of the Liaison Group is to facilitate cooperation between the Convention and the IS. The IS will provide the liaison group with information and advice on issues related to invasive alien species and the problems they pose to the environment and to human health and welfare. The IS will promote the implementation of the Convention and its protocols and the development of national and regional action plans to combat the problems posed by invasive alien species.



Home

100 of the Worst

About

GAISSE

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Experts



## Delivering Alien Invasive Species Inventories for Europe

Biological invasions by non-native or 'alien' species are one of the greatest threats to the environment and economic well-being of the planet. Alien species can act as vectors for new diseases, alter ecosystems, change landscapes, disrupt cultural traditions, reduce the value of land and water for human activities and cause other socio-economic consequences for man.

To help tackle this important policy challenge, the Global Environment Facility (GEF) has established a One-stop-shop for Information on Alien Species Inventories. Please note that the GAISSE database intended this website is continuously being updated. Read more about GAISSE.

GAISSE Handbook of alien species in Europe available



© Helen Tarr

*Threskiornis aethiopicus*  
One of the 100 worst alien species in Europe.  
click here to see the full list

Search Species

Search Regions

Search Experts

## NOBANIS

European Network on Invasive Alien Species  
Gateway to information on invasive alien species in North and Central Europe

Home

About NOBANIS

Contact Methods

The problem

Research priorities

Database search facilities

Training opportunities

Information

Links

Photo bank

Training Schools & Workshops

NOBANIS Newsletters

Contact people

GAISSE

## The problem of invasive alien species

The introduction of invasive alien species is increasing due to the physical distance between nearby continents. This introduction of invasive alien species has been enabled by the growth of the global trade, agencies, documentation of genetic flow, illegal alien species, and only the slow decline of biological invasions.

This document aims to inform other major areas of the world that are experiencing biological invasions in the future, where to expect the next introductions, and to alert them to the need for international cooperation. Furthermore, the environmental impact of an alien species is often irreversible once it has invaded a new ecosystem, so the introduction of an alien species must be prevented at all costs.

Natural range expansion of organisms have shown to be local, but the speed at which changes happen has dramatically increased. Much of the alien species introduced to Europe are beneficial to human health and to agriculture, but some also threaten native biodiversity and are considered to be pests. Some alien species affect native biodiversity and are considered to be pests. Some alien species affect native biodiversity and are considered to be pests.

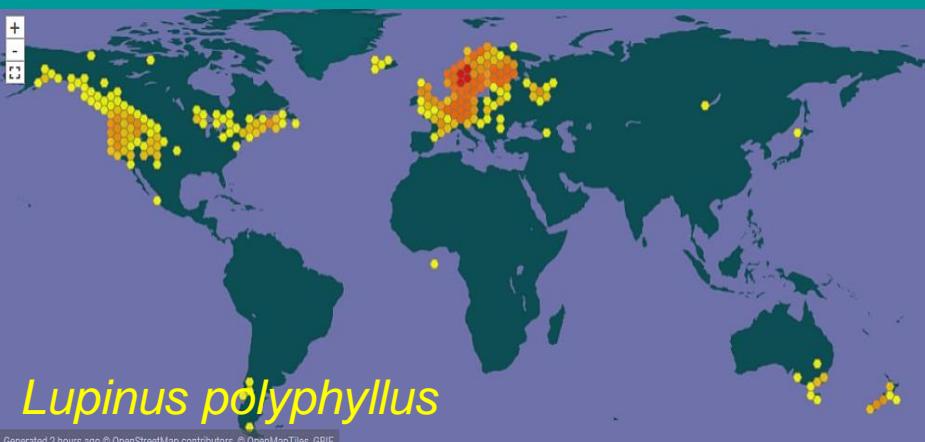
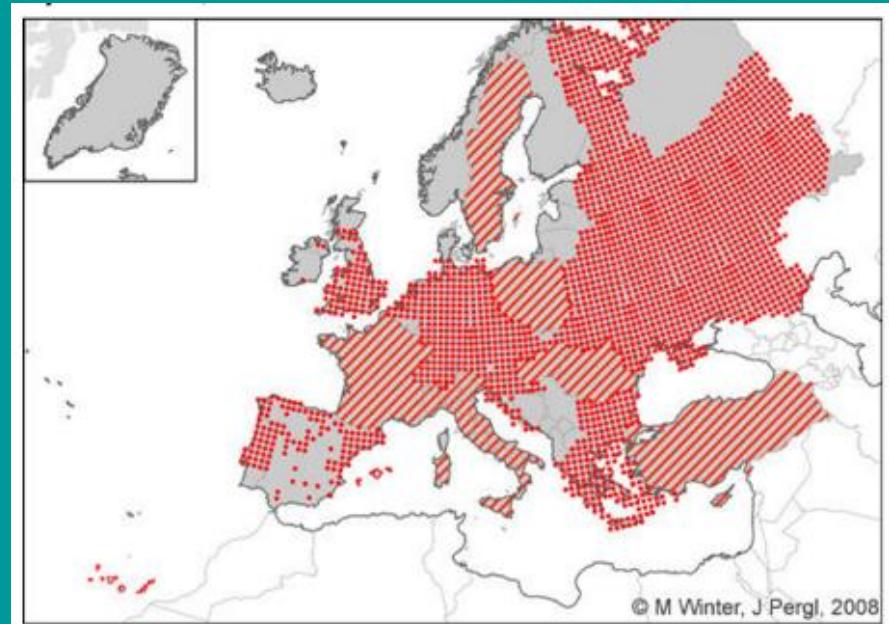
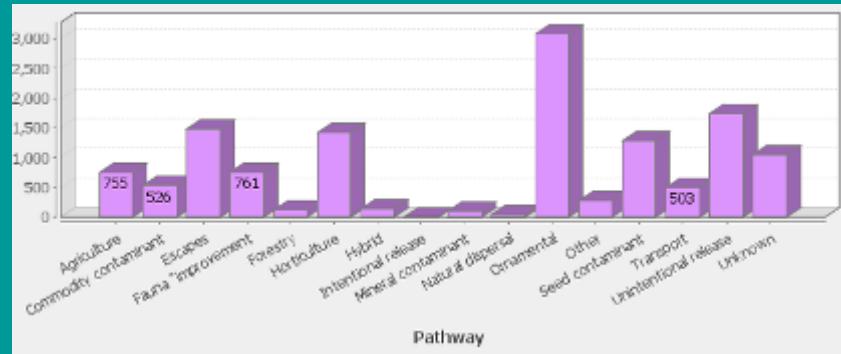
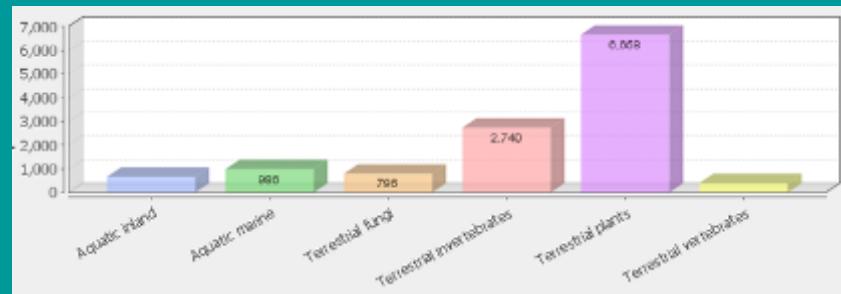
### Invasive alien species may affect biodiversity negatively by:

- Altering the local food web
- Competing with other organisms
- Disrupting the balance of nature
- Being a predator or parasite of a native species
- Destroying a native species or ecosystem
- Altering the local climate

The effects of biological invasions can be calculated from other global and local environmental changes such as climate change, habitat alteration and pollution, insecticide resistance, the increase in global disease rates, the loss of native vegetation and the loss of native species in high latitude environments.

Biological invasions of non-native species can have many negative effects in ecosystems. These invasions are often irreversible and can lead to ecosystem collapse.

# globalno: rastline



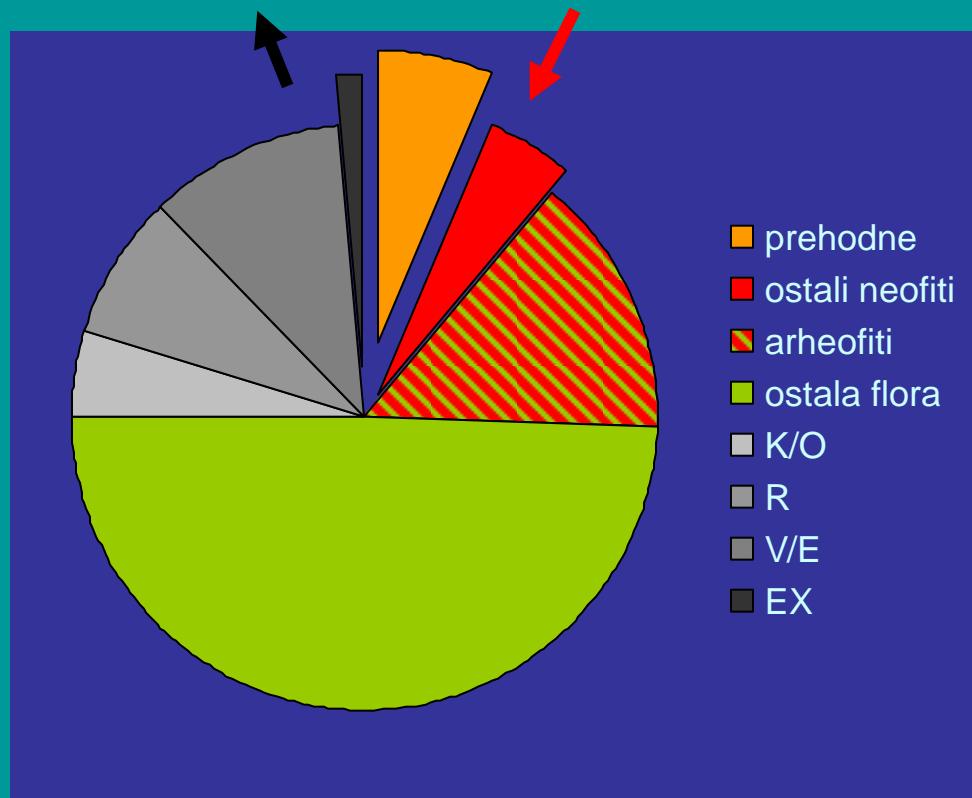
# na območju Slovenije

## spreminjanje flore in tujerodne / ogrožene

- ~ 3200 vrst
- ~ 800 tujerodnih
- ~ 350 neofitov
- ~ 50 invazivnih

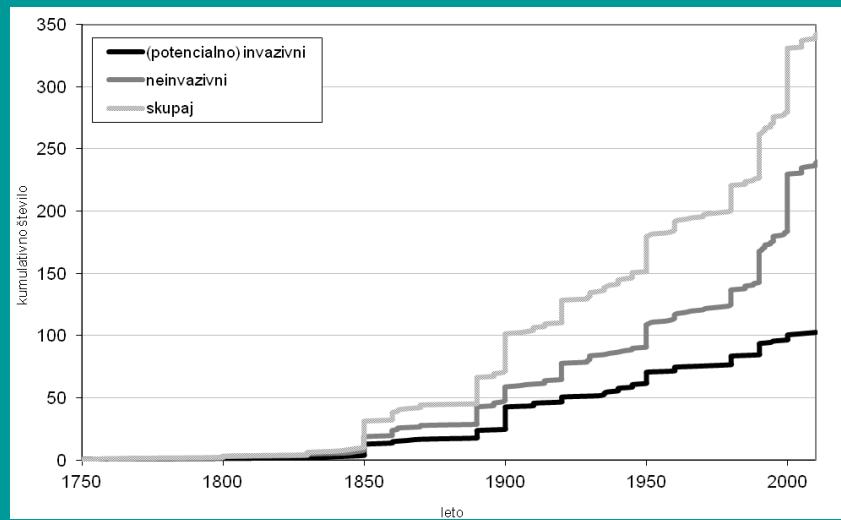
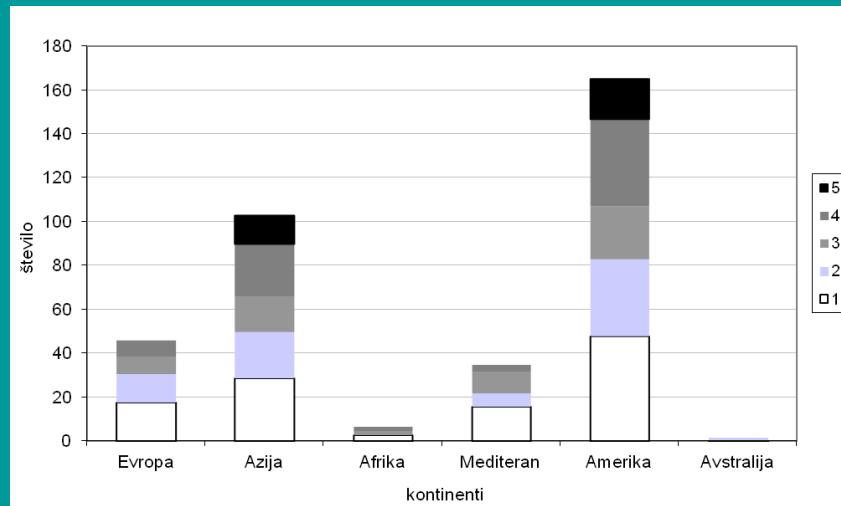
### Rdeči seznam:

- Ex/Ex? 45
- Vu/En 334
- K/O 142
- R 257



# na območju Slovenije

- iz klimatsko podobnih predelov
- hitro naraščanje števila v zadnjih desetletjih
- vse večja pozornost stroke in javnosti
- počasna odzivnost državnih organov



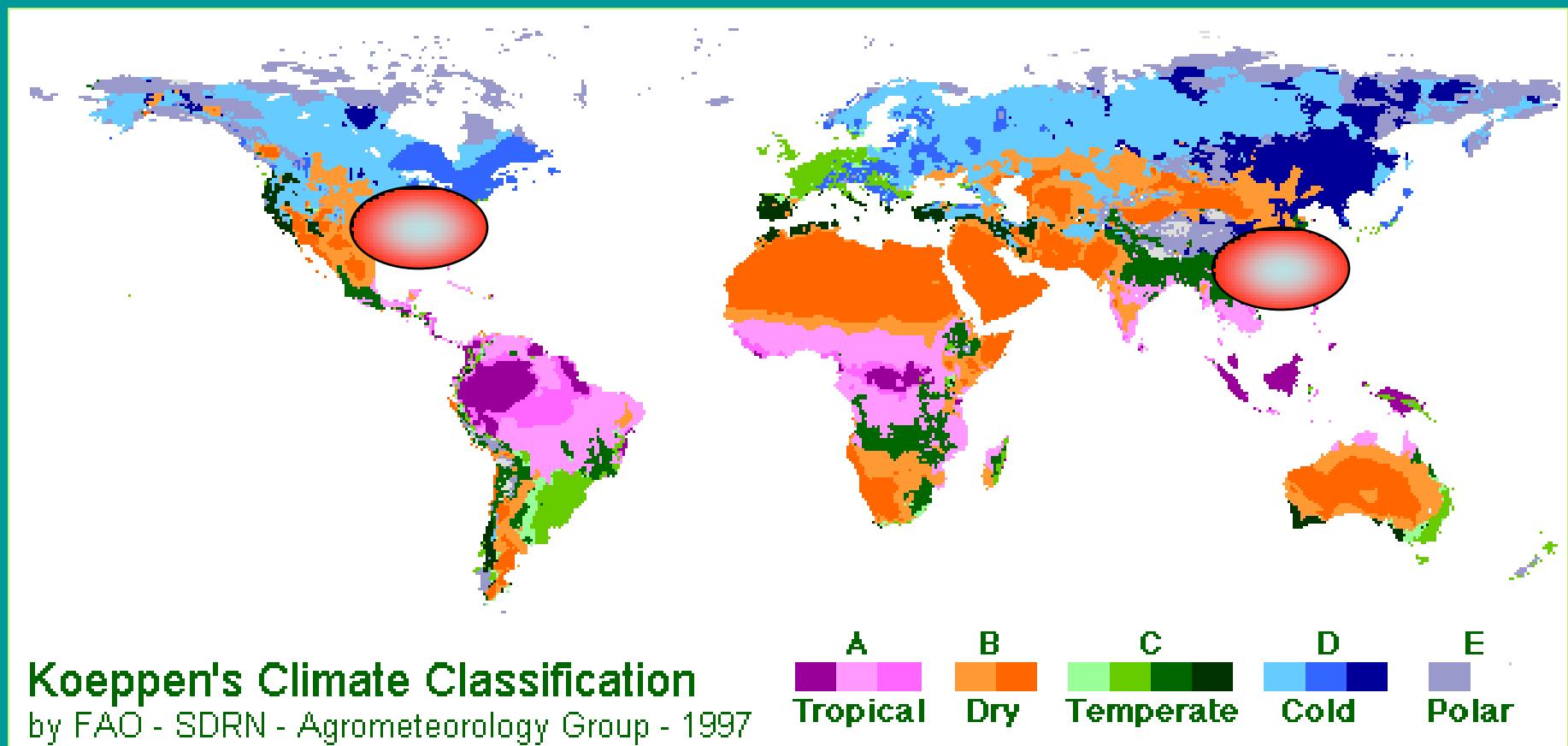
# seznam najhujšíh invazív

- |                                |   |
|--------------------------------|---|
| <i>Acer negundo</i>            | <i>Helianthus tuberosus</i>             |
| <i>Ailanthus altissima</i>     | <i>Heracleum mantegazzianum</i>         |
| <i>Ambrosia artemisiifolia</i> | <i>Impatiens glandulifera</i>           |
| <i>Amorpha fruticosa</i>       | <i>Lindernia dubia</i>                  |
| <i>Artemisia verlotiorum</i>   | <i>Lonicera japonica</i>                |
| <i>Aster</i> spp. div.         | <i>Lupinus polyphyllus</i>              |
| <i>Berberis thunbergii</i>     | <i>Parthenocissus quinquefolia</i> agg. |
| <i>Bidens frondosa</i>         | <i>Physocarpus opulifolius</i>          |
| <i>Broussonetia papyrifera</i> | <i>Pistia stratiotes</i>                |
| <i>Buddleja davidii</i>        | <i>Prunus serotina</i>                  |
| <i>Cuscuta campestris</i>      | <i>Robinia pseudacacia</i>              |
| <i>Echinocystis lobata</i>     | <i>Rudbeckia laciniata</i>              |
| <i>Elodea canadensis</i>       | <i>Solidago canadensis</i>              |
| <i>Erigeron annuus</i>         | <i>Solidago gigantea</i>                |
| <i>Fallopia baldschuanica</i>  | <i>Spiraea japonica</i>                 |
| <i>Fallopia japonica</i> agg.  | <i>Thuja orientalis</i>                 |

# kako so prišle?

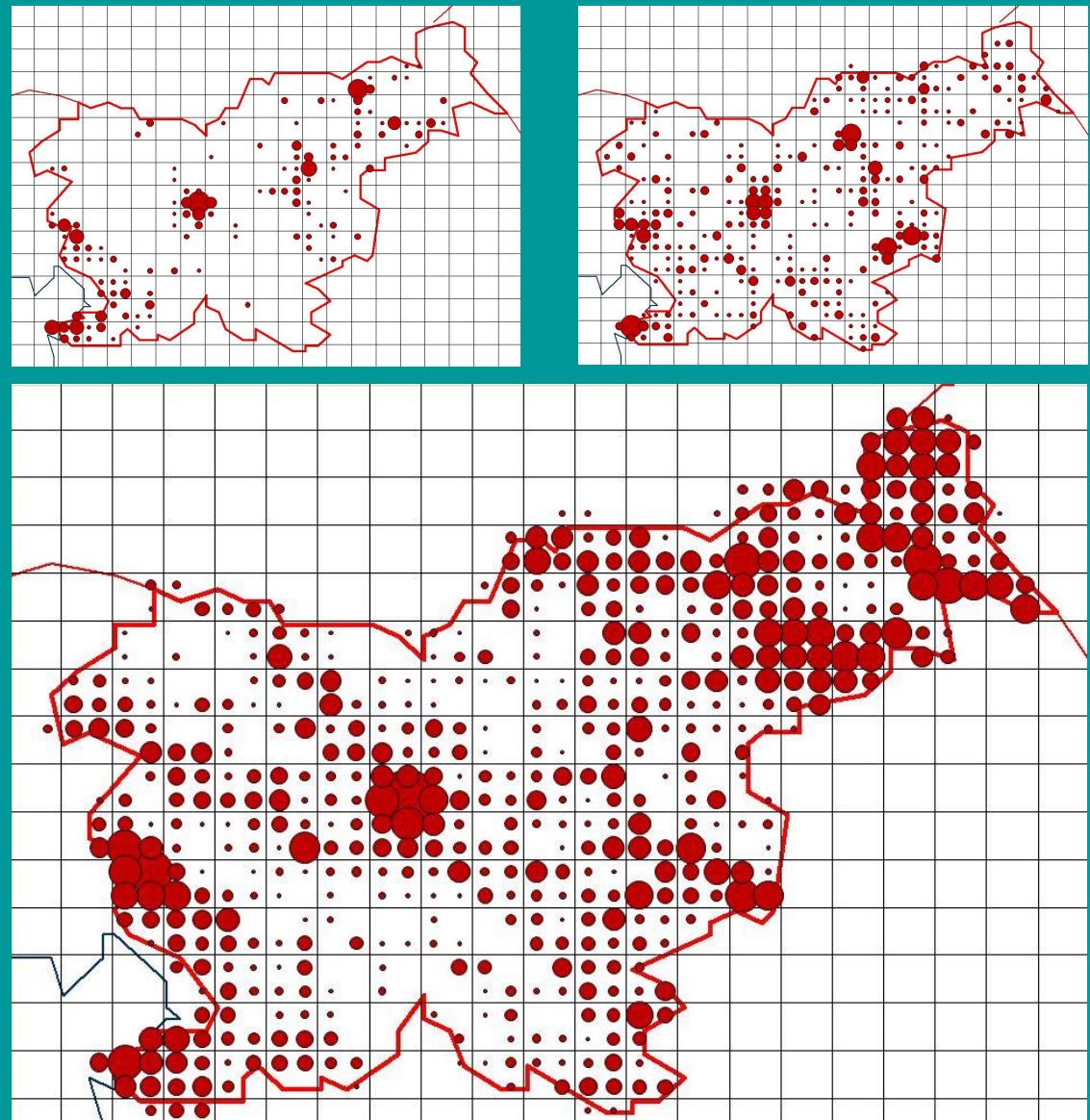
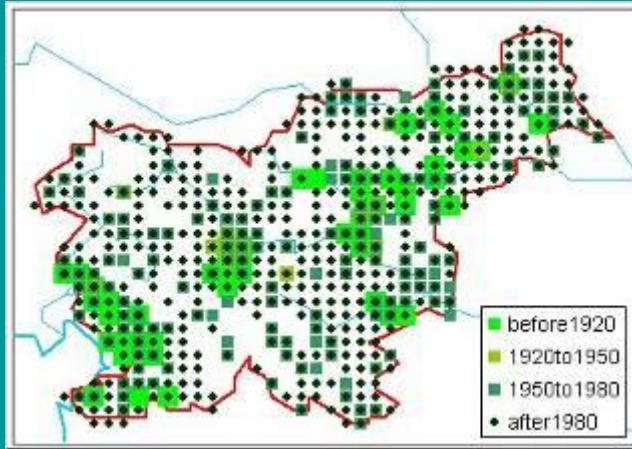
- večinoma pripeljane **namenoma**
- približno 1% od vseh tujerodnih
- prevladujejo **okrasne** vrste, nekaj **dreves** (še veliko več nasajenih!)
- v novi “domovini” so se **dolgo prilagajale**
- **postopna naturalizacija:**  
nasad → ruderálna rastišča → (pol)naravna
- “**invazivni potencial**” izražen na raznih koncih sveta
- nenamenska **selekcia**

# od kod so?



# kdaj so prišle k nam?

- dinamika zbiranja podatkov
- pred 1950
- 1950 do 1980
- po 1980



# vektorji vnosa in širjenja

## **vnos:**

- vse večja ponudba tujerodnih vrtnih rastlin
- poskusi "lepšanja" narave zunaj urbanih območij
- frontalno širjenje po koridorjih iz sosedstva
- ...

## **širjenje:**

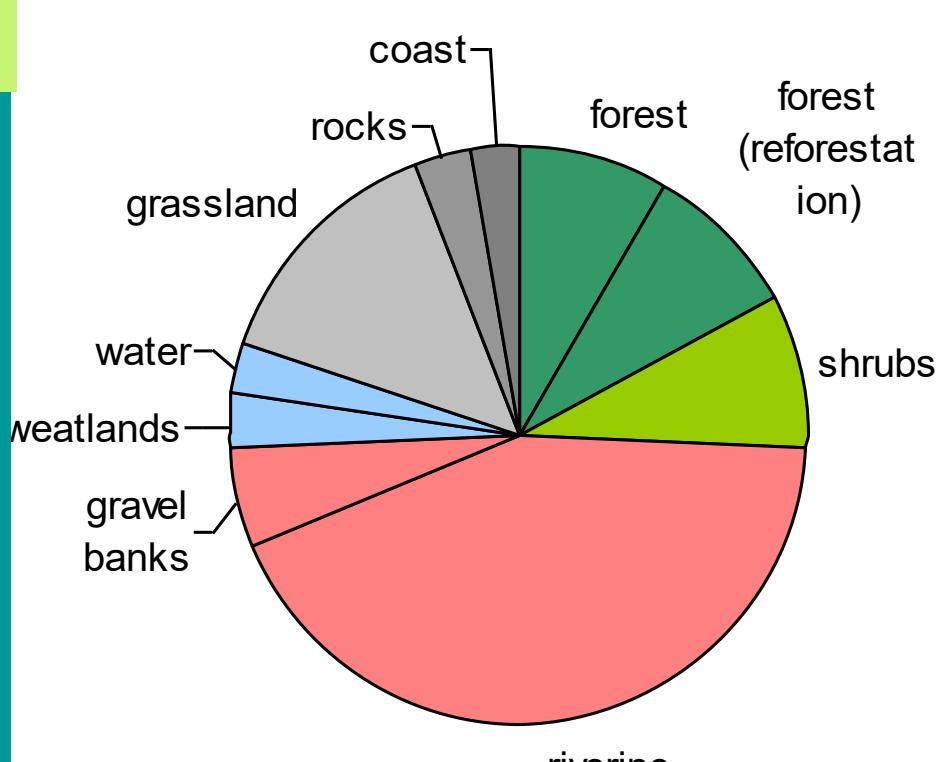
- umetno ustvarjena mreža koridorjev (žive meje...)
- selitve kmetijske in gradbene mehanizacije
- ceste in strojna košnja
- spontano (ptice, veter, voda...)
- ...

# kako se širijo?

- navadno **več** učinkovitih **načinov širjenja** (vegetativno, s semen)
- **razširjanje semen** raznoliko
- pomen **semenske banke** v prsti
- pogosto **sodelovanje človeka** zaradi pozitivnih lastnosti posamezne vrste
- **hitrost širjenja** posamezne populacije odvisna od načina širjenja

# kje uspevajo?

## habitatni tipi

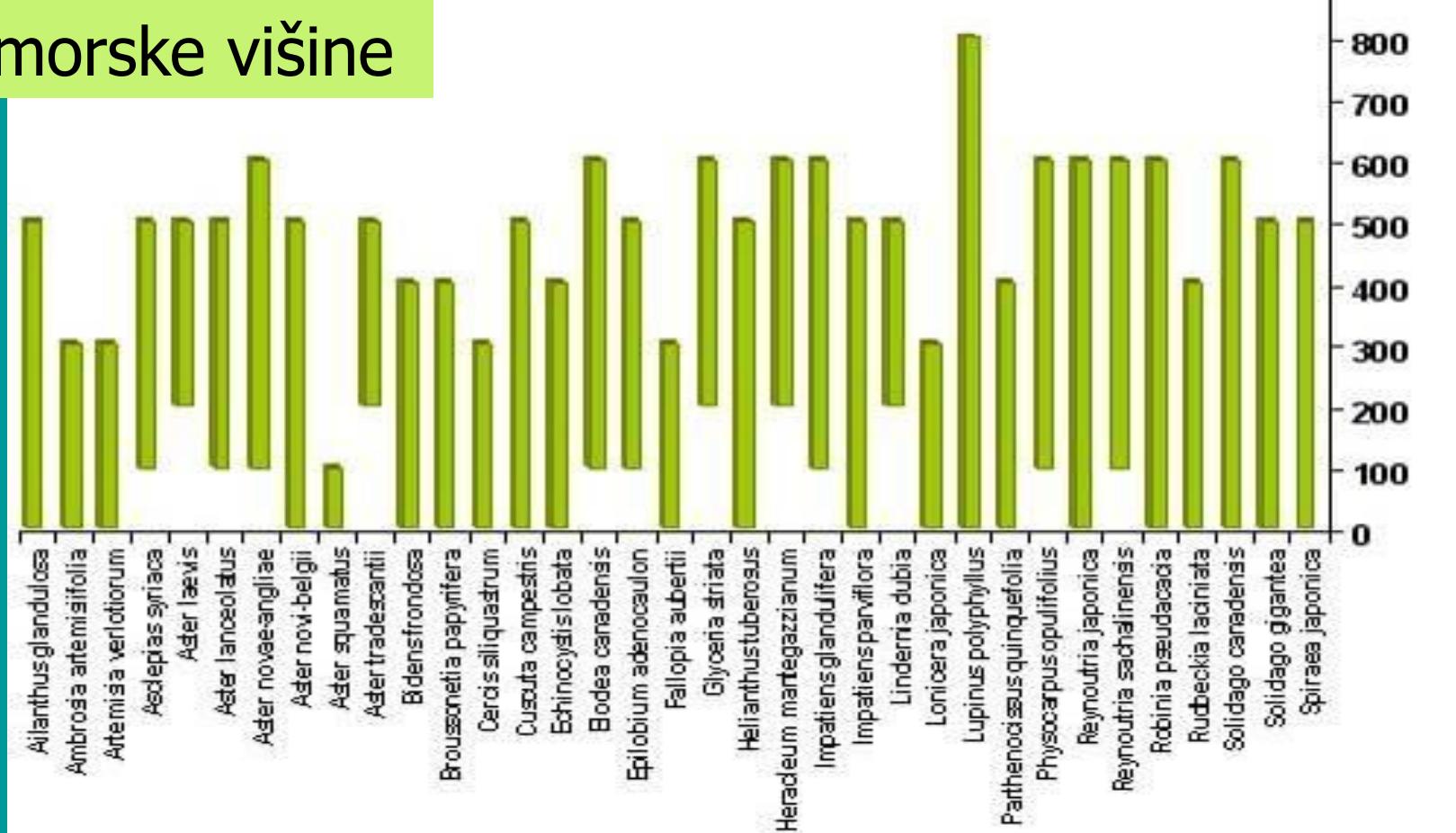


# čisto običajna zapuščena zelenica...



# kje uspevajo?

nadmorske višine

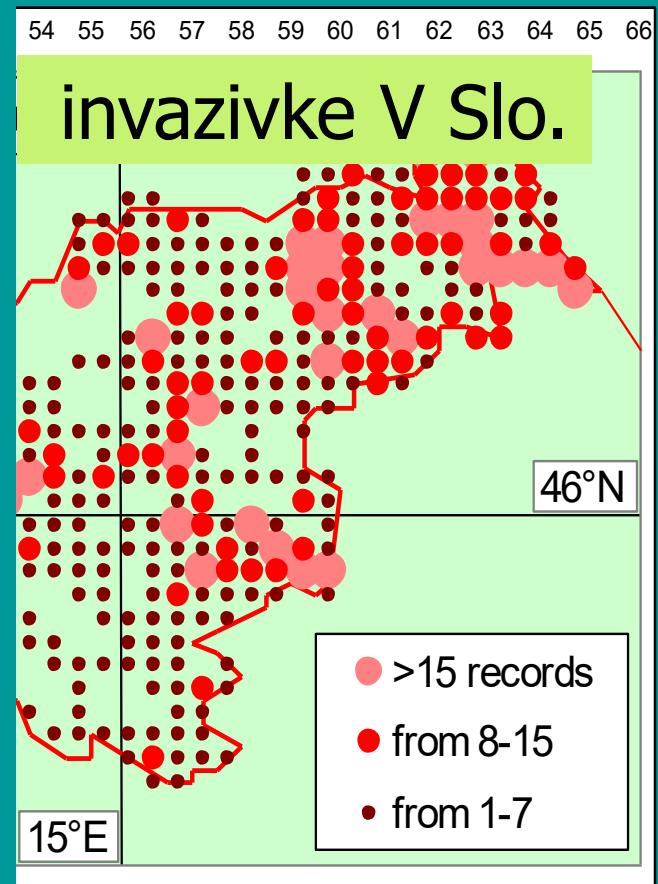
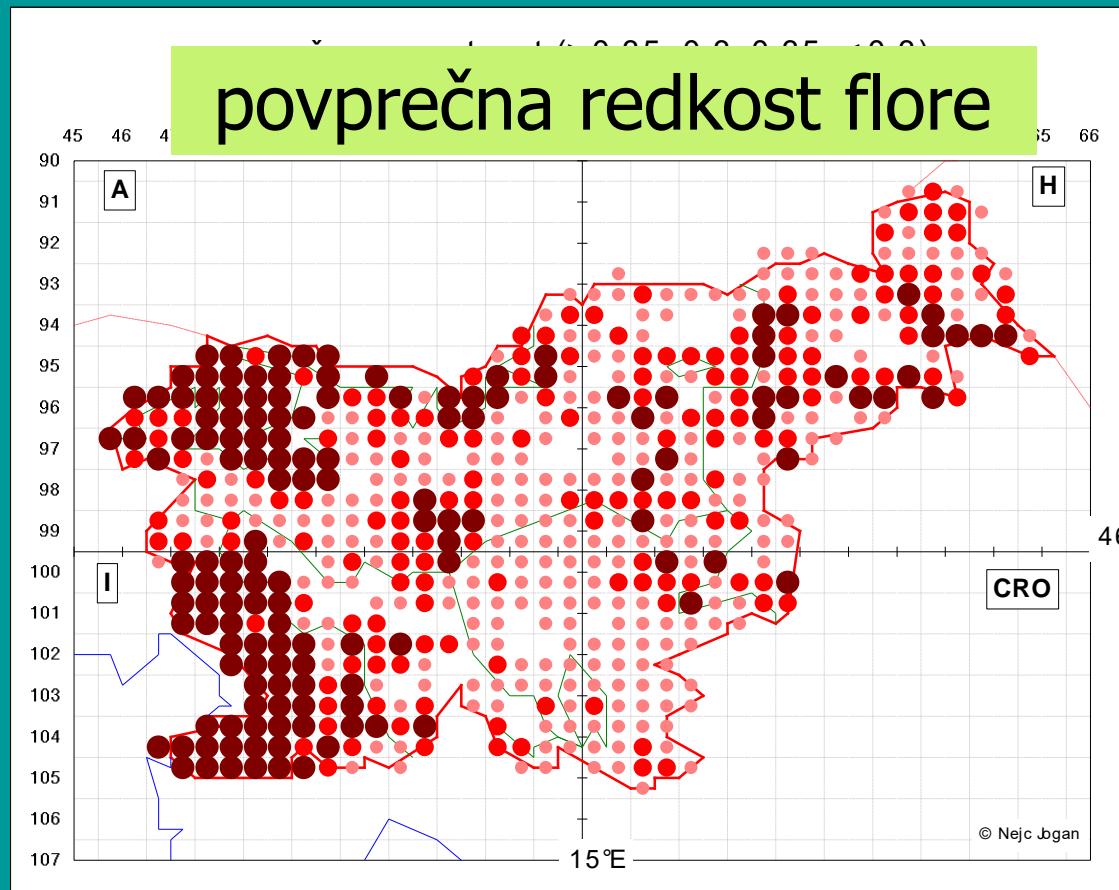


# ogrožanje avtohtonih

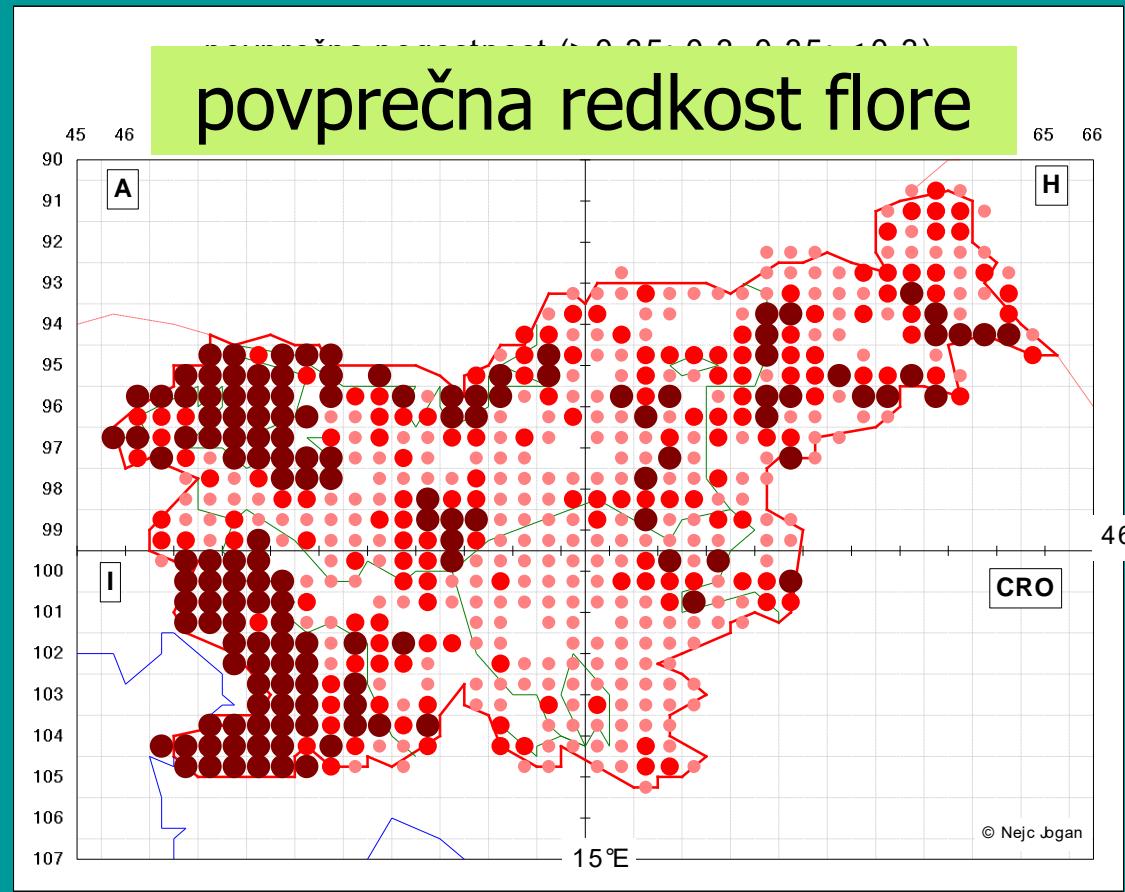
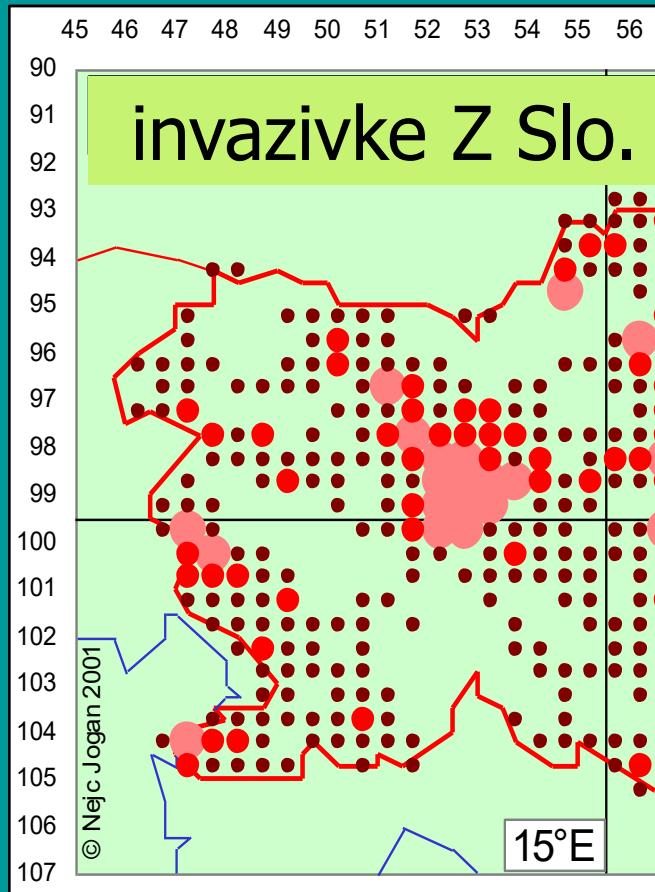
## **ogroženost/izpodrivanje avtohtone flore**

- zaradi nesistematičnega zbiranja podatkov malo znanih konkretnih primerov lokalnega izumiranja
- preko prednostnih habitatnih tipov, v katerih sobivajo
- primer: mrtvica Prilipe
- preko HT: obrečna vegetacija nižinskih rek
- naseljevanje tujerodnih vrst še teče, do pojava invazivnosti posamezne tujerodne vrste lahko minejo stoletja!

# kaj ogrožajo?



# kaj ogrožajo?



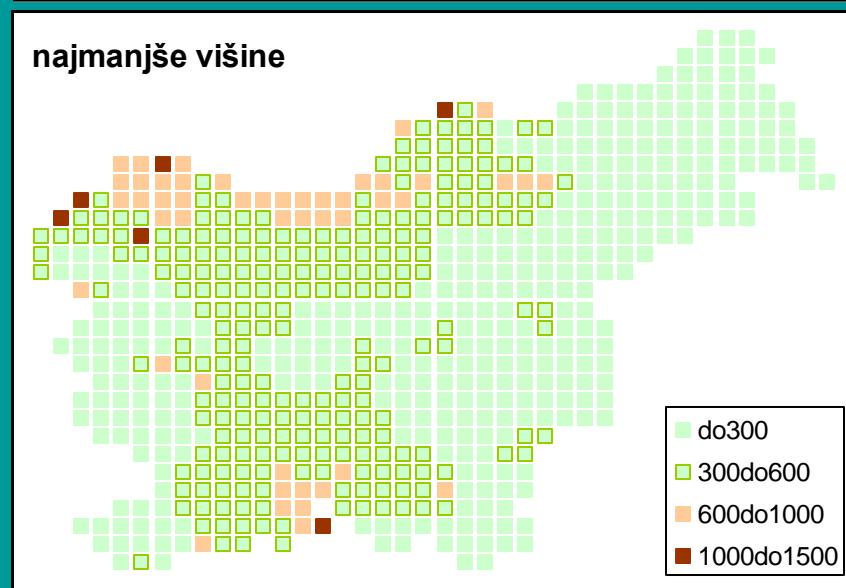
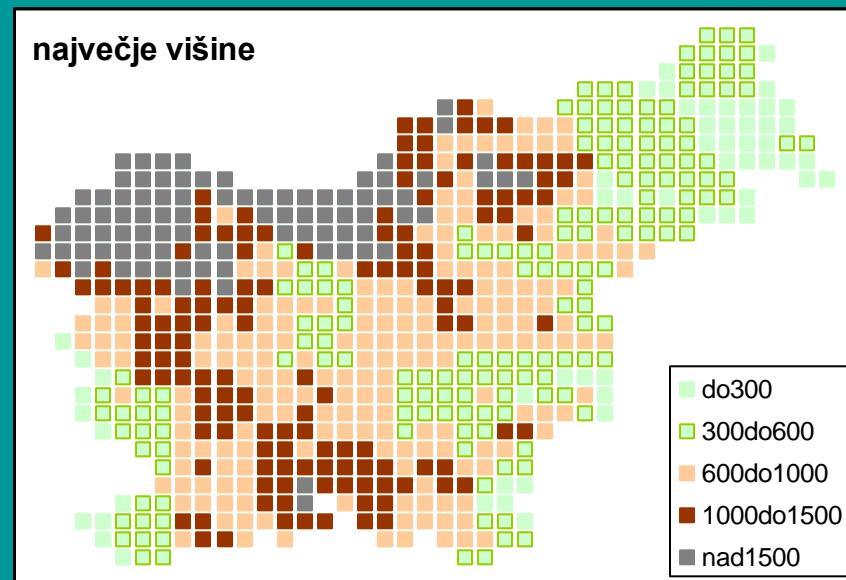
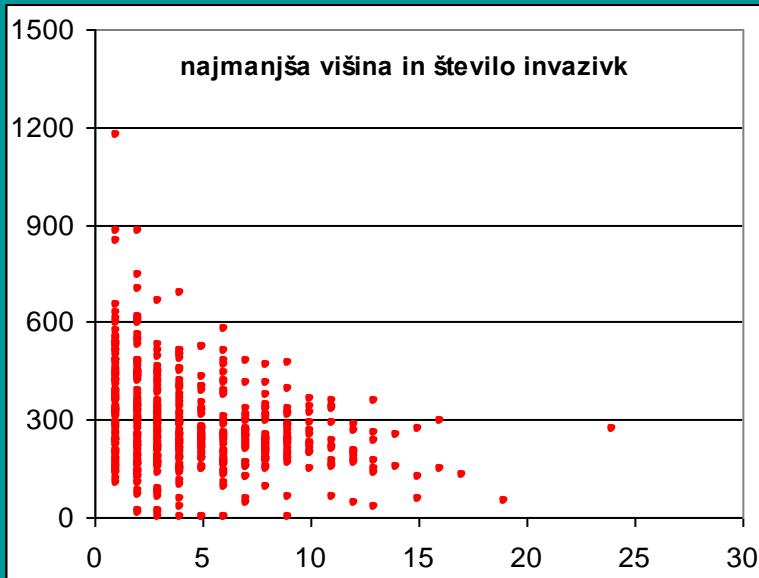
# nadzor

## možnosti nadzora

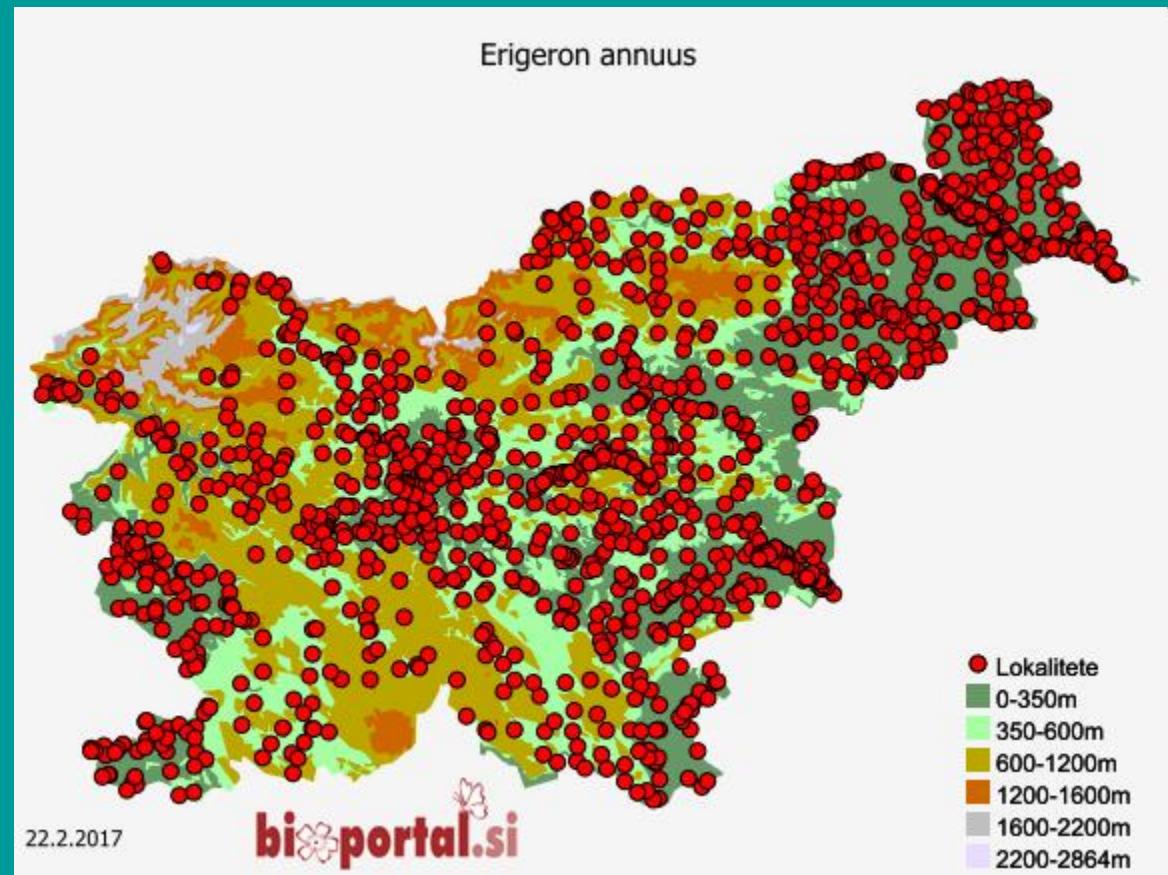
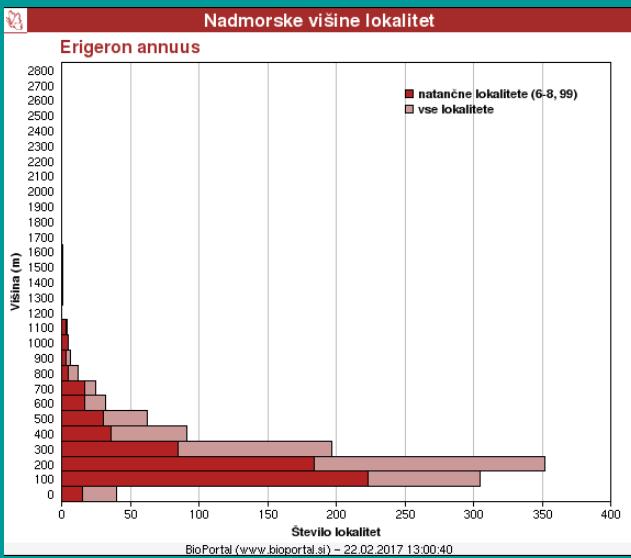
- skoraj le pri aktivni antropohoriji
- nadzor nad ponudbo v vrtnarijah/semenarnah
- strog nadzor nad selitvami gradbene mehanizacije in deponiranega materiala
- sistematicno iztrebljanje potencialnih invazivk iz vrtov/nasadov
- nadzor nad vzdrževanjem cest
- nadzor nad kompostiranjem in kvaliteto komposta

# kako visoko so prodrle?

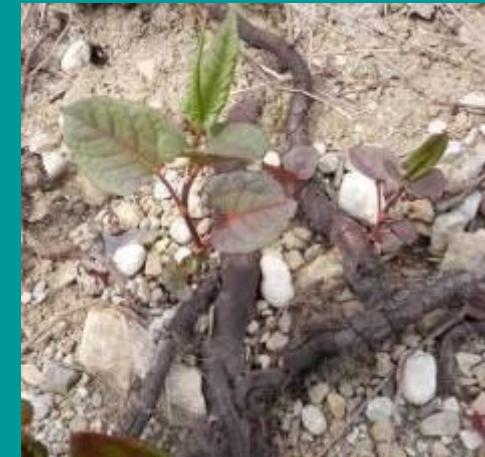
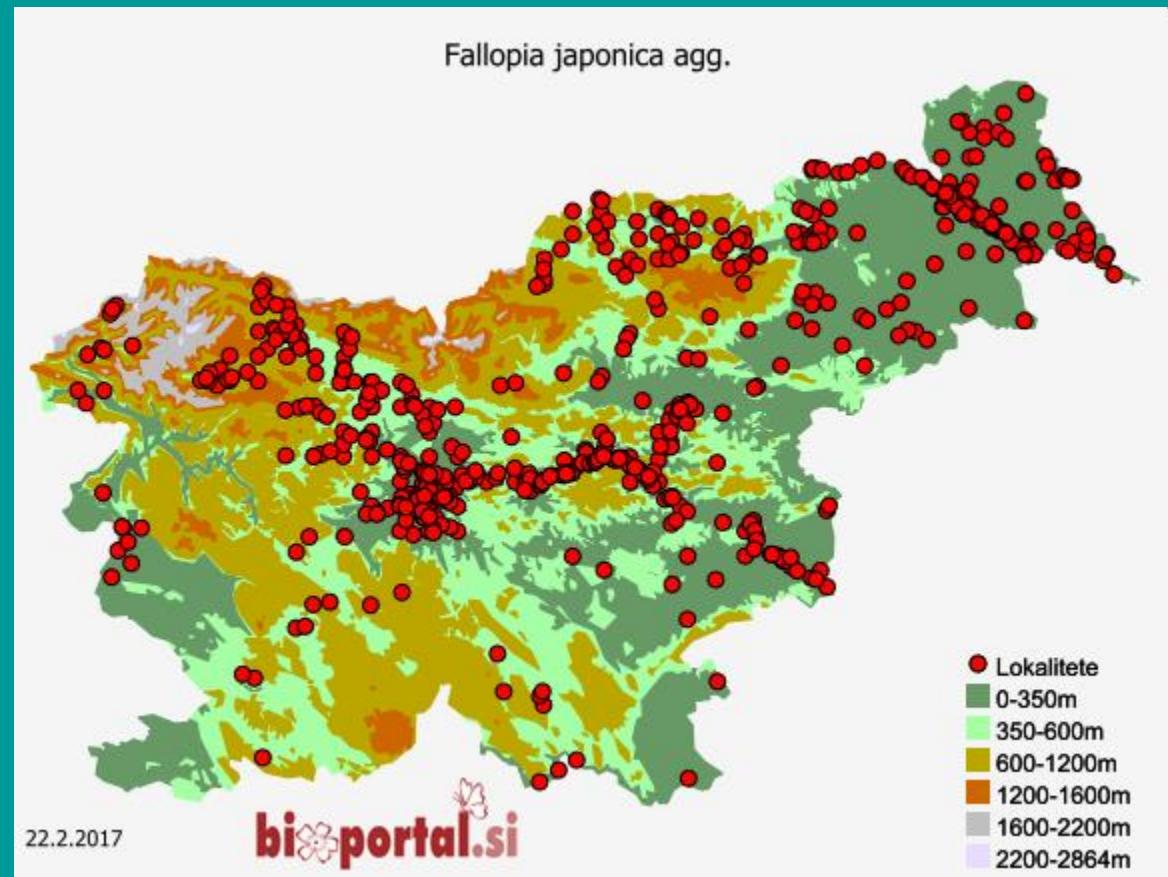
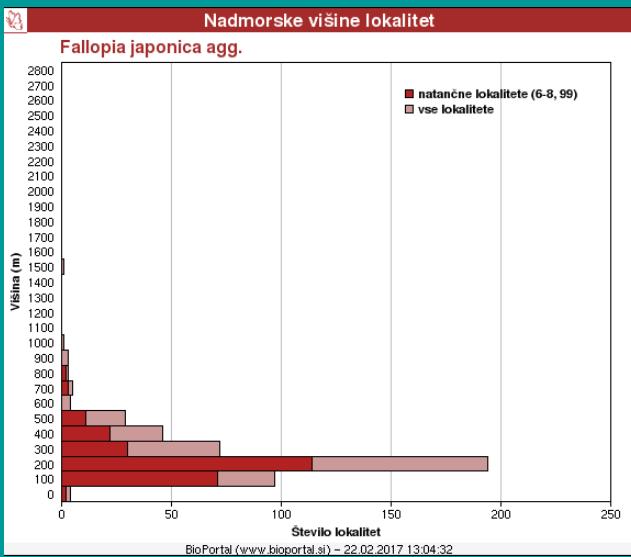
- montanski pas in više razmeroma neprizadet!
- nekaj vrstam vendarle že uspelo
- kandidatk še dovolj!



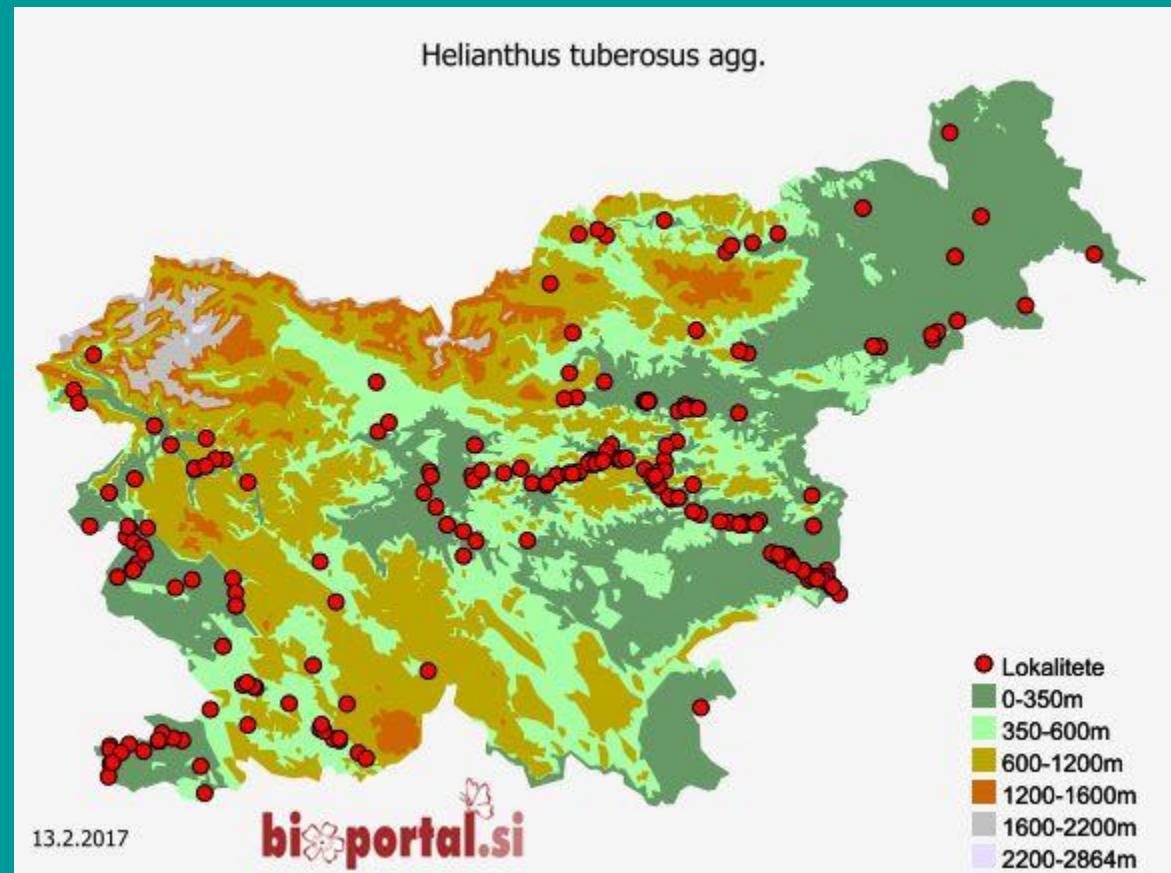
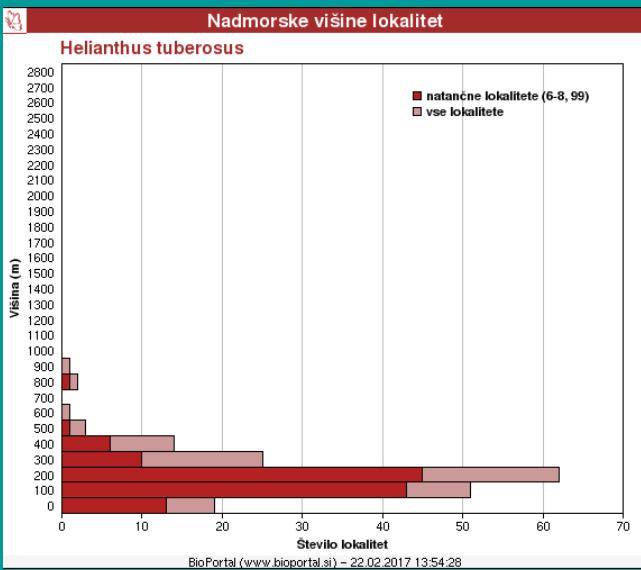
# enoletna suholetnica



# japonski dresnik (in sorodstvo)



# topinambur (*Helianthus tuberosus* agg.)

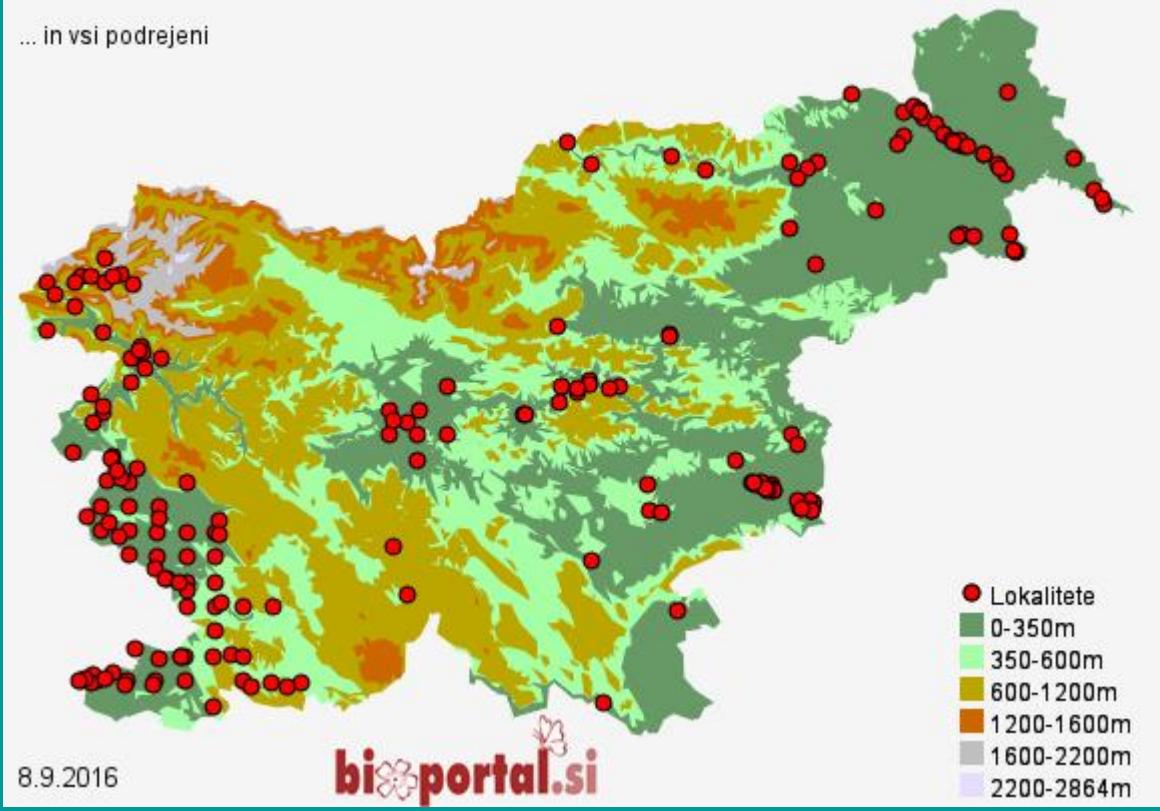


# visoki pajesen (*Ailanthus altissima*)

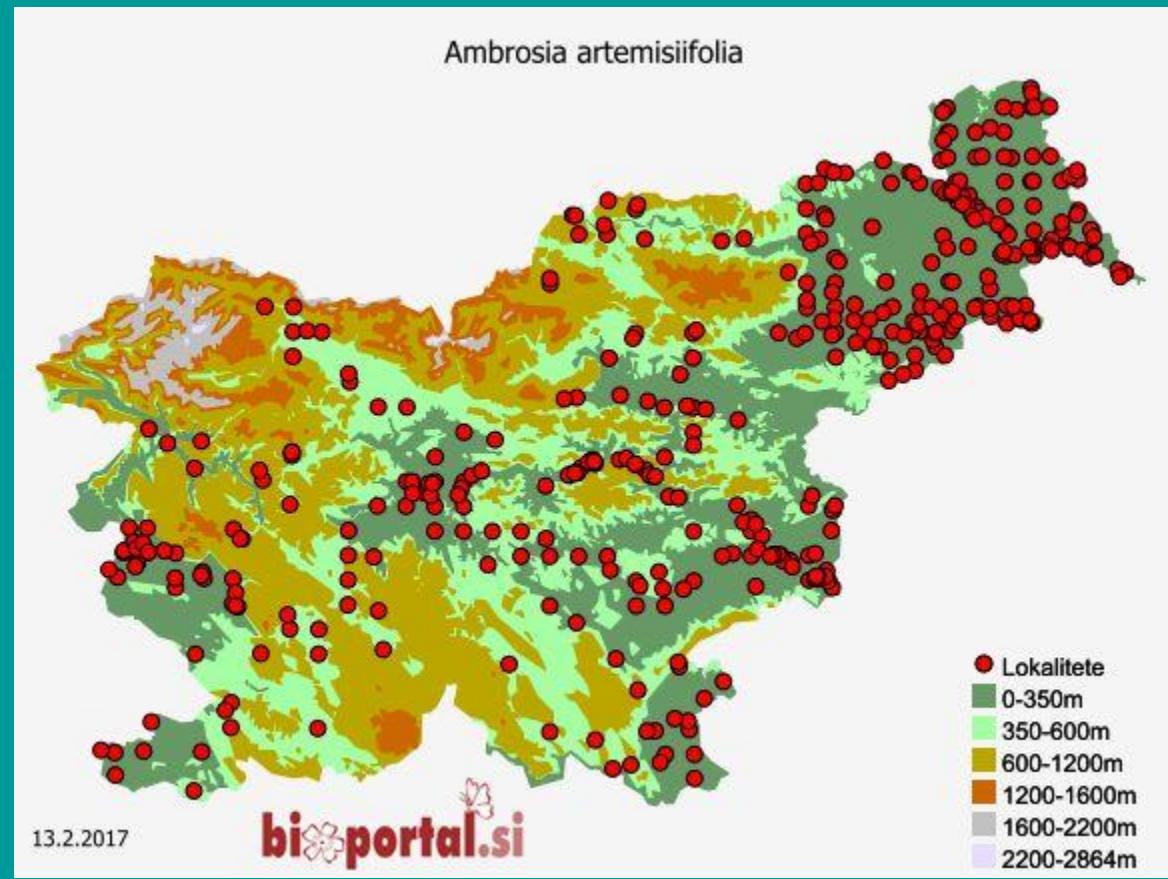
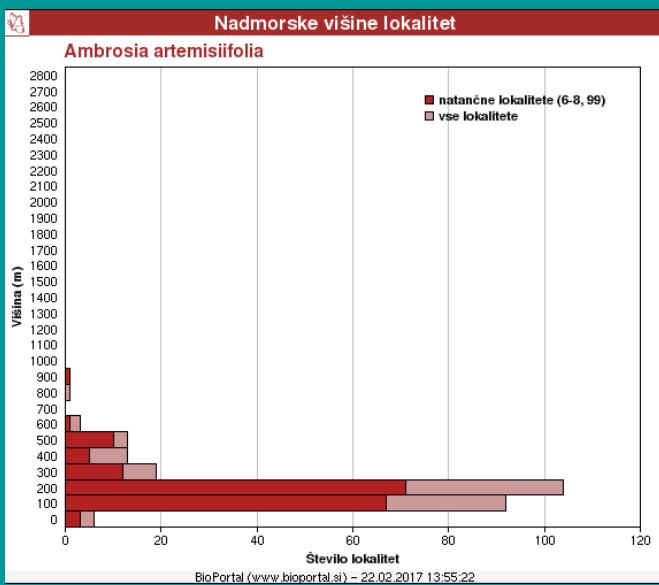


*Ailanthus altissima*

... in vsi podrejeni



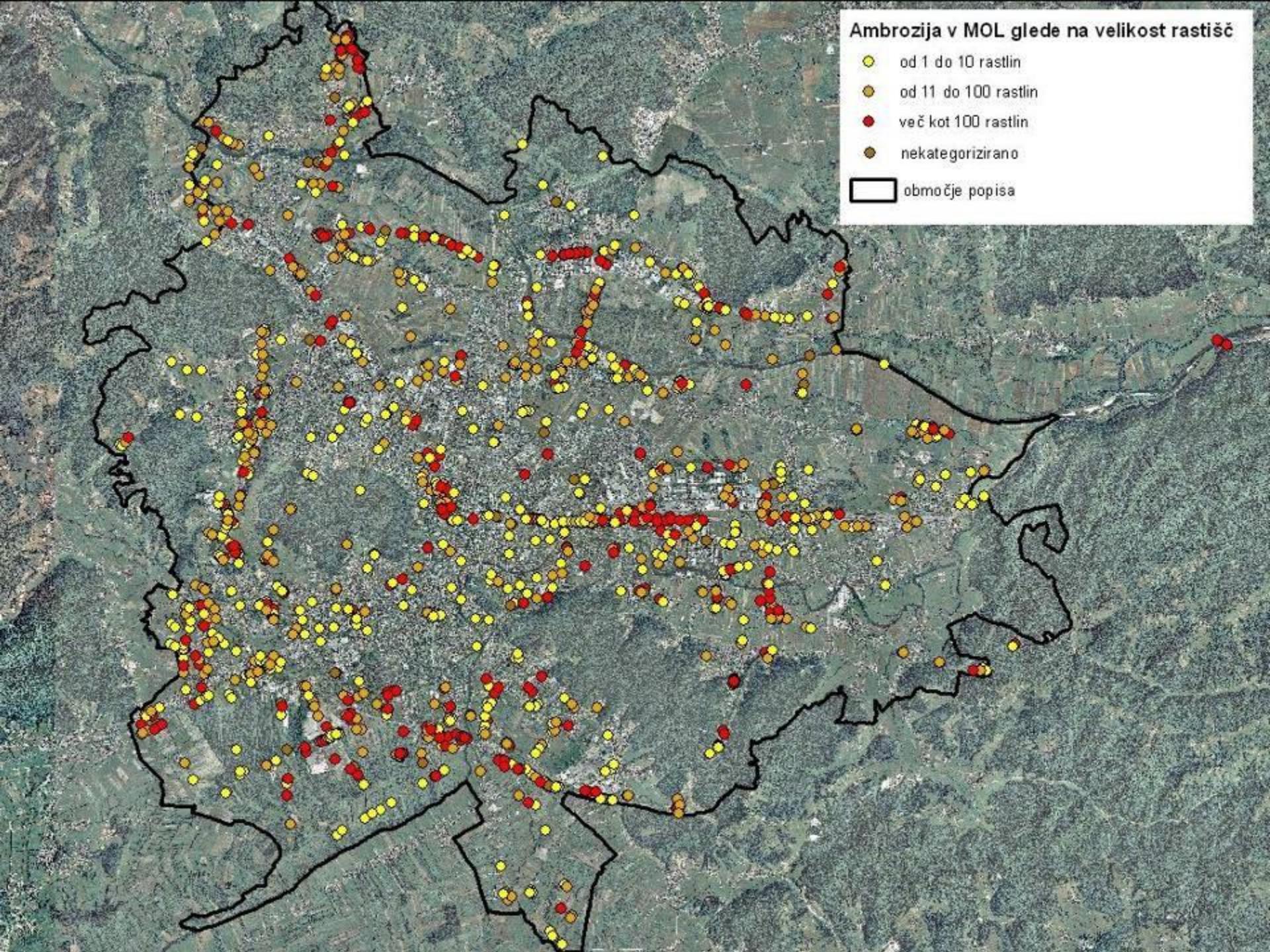
# žvrklja (*Ambrosia artemisiifolia*)



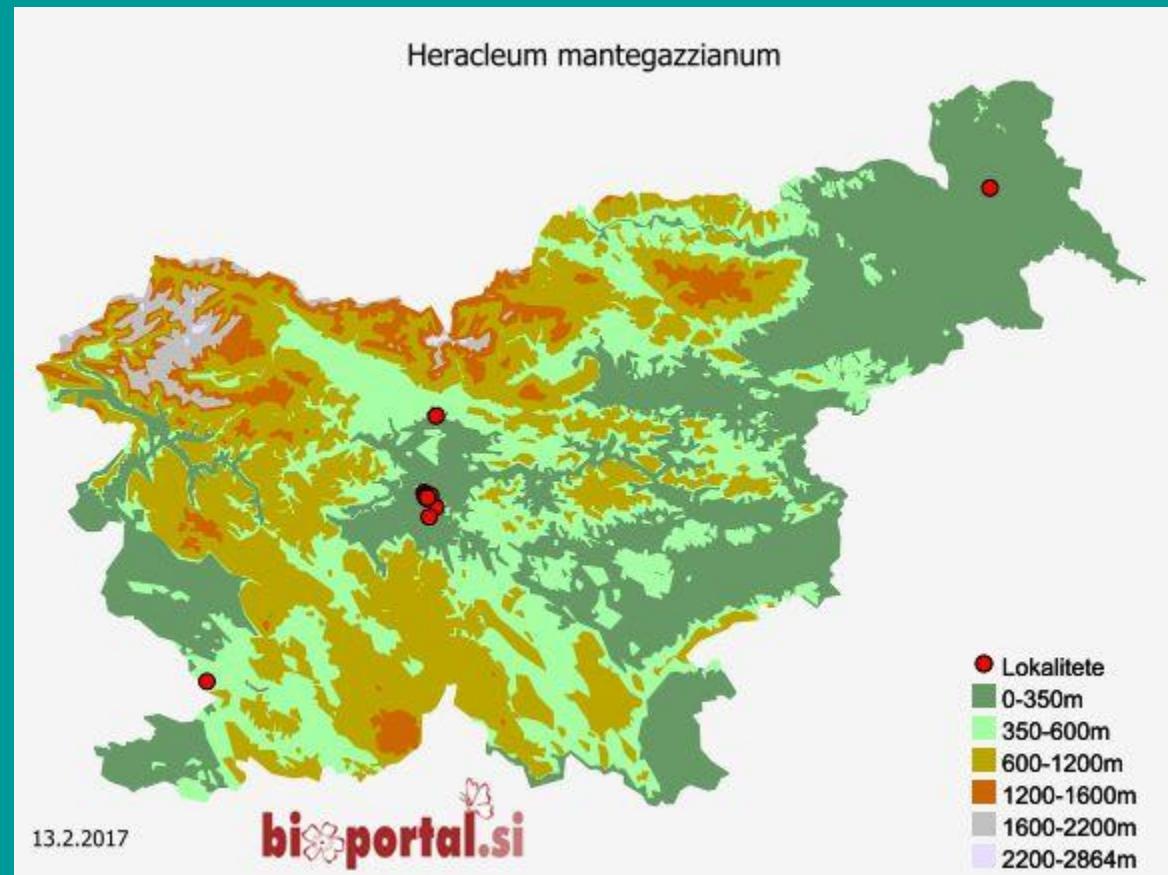
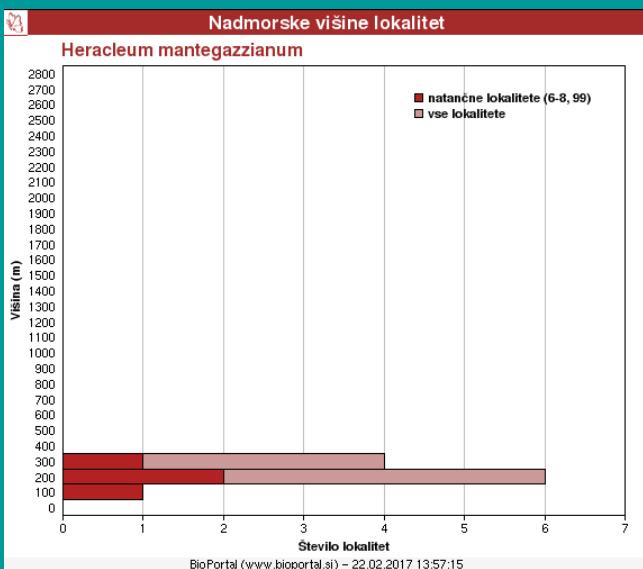
### Ambrožija v MOL glede na velikost rastišč

- od 1 do 10 rastlin
- od 11 do 100 rastlin
- več kot 100 rastlin
- nekategorizirano

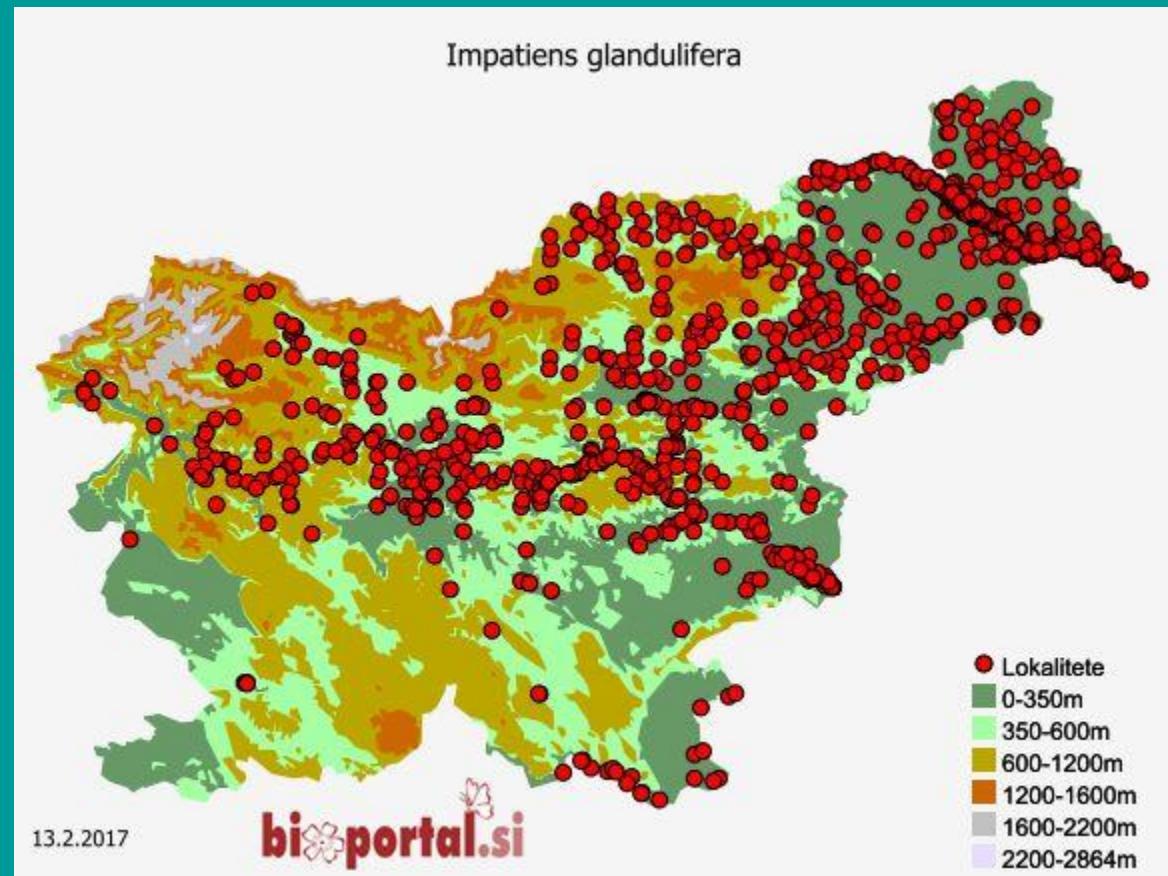
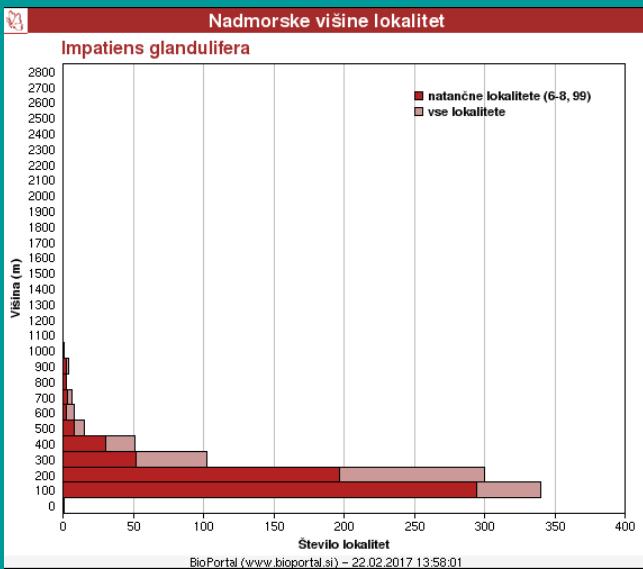
□ območje popisa



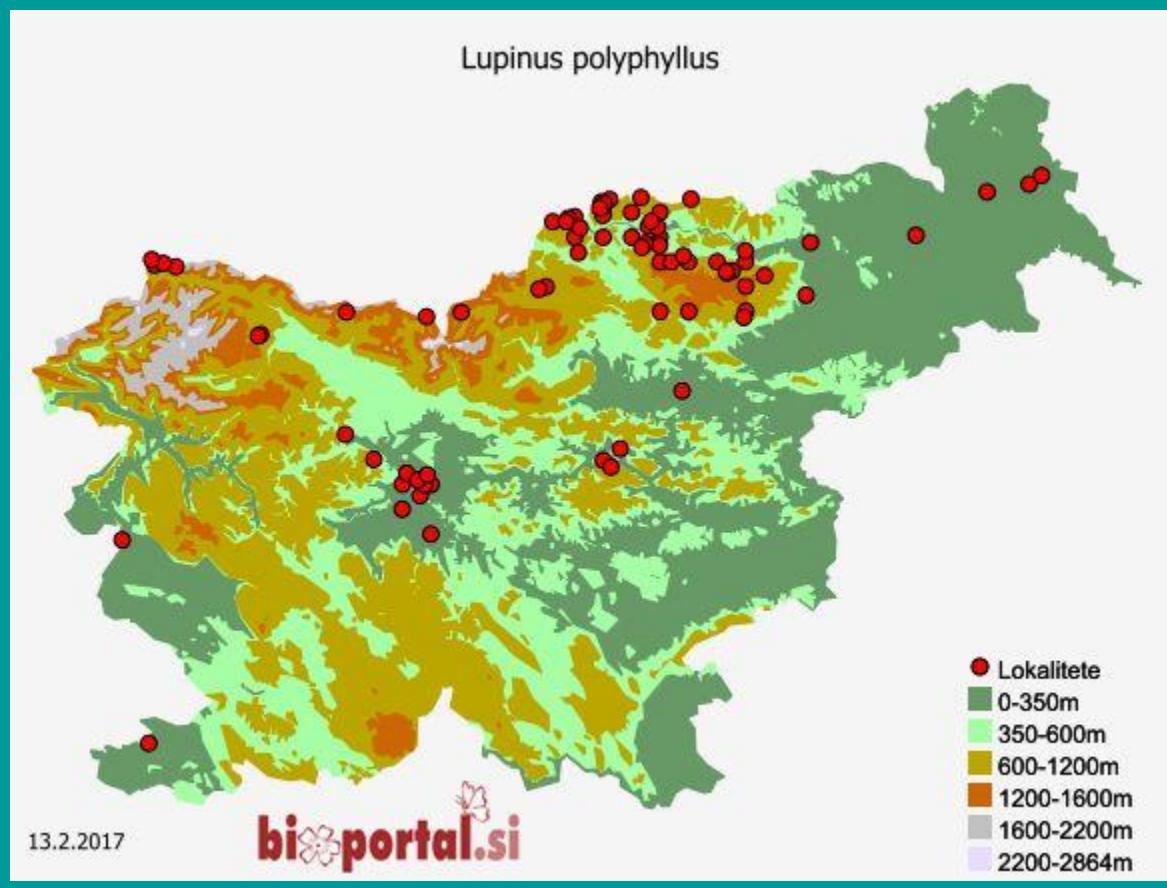
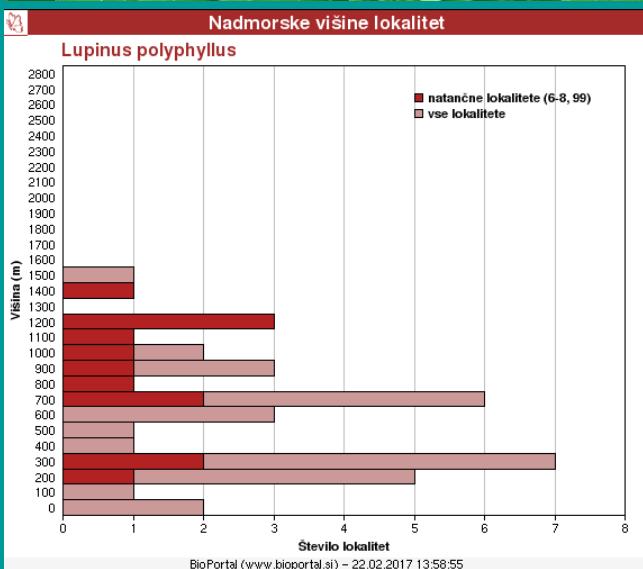
# orjaški dežen (*Heracleum mantegazzianum*)



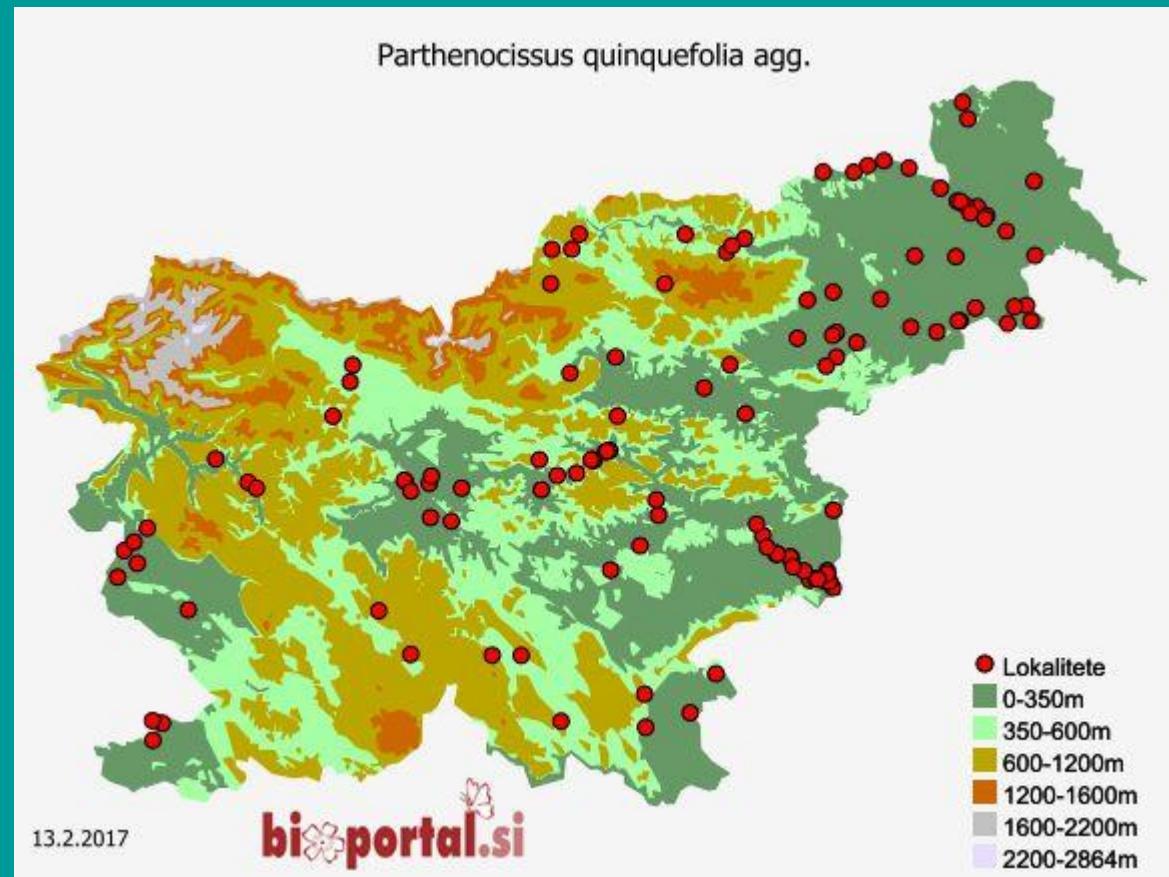
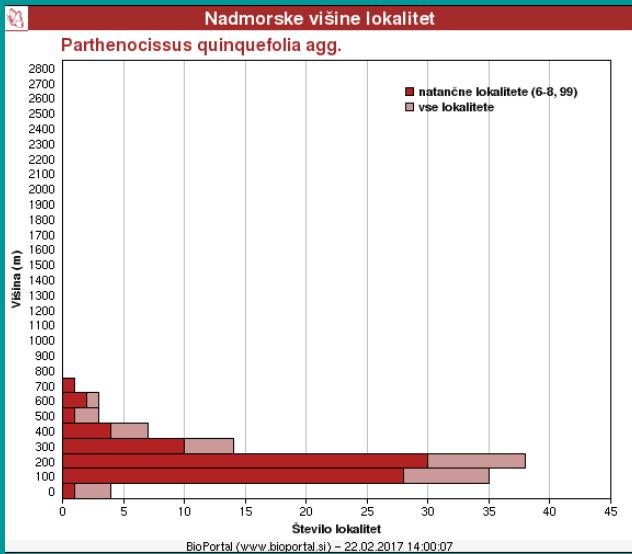
# žlezava nedotika (*Impatiens glandulifera*)



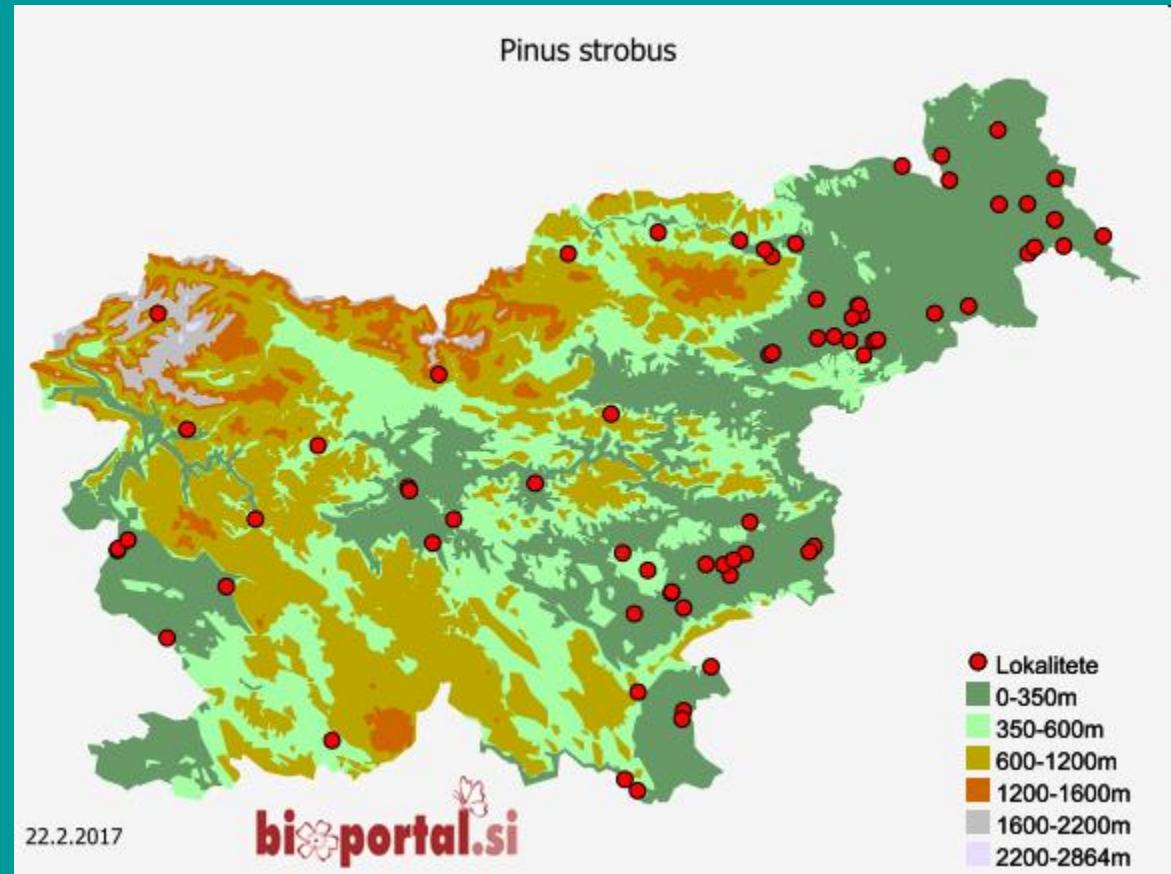
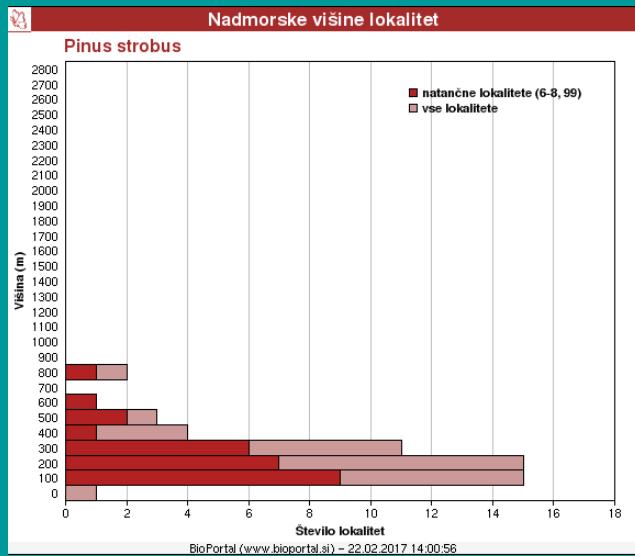
# mnogolistni volčji bob (*Lupinus polyphyllus*)



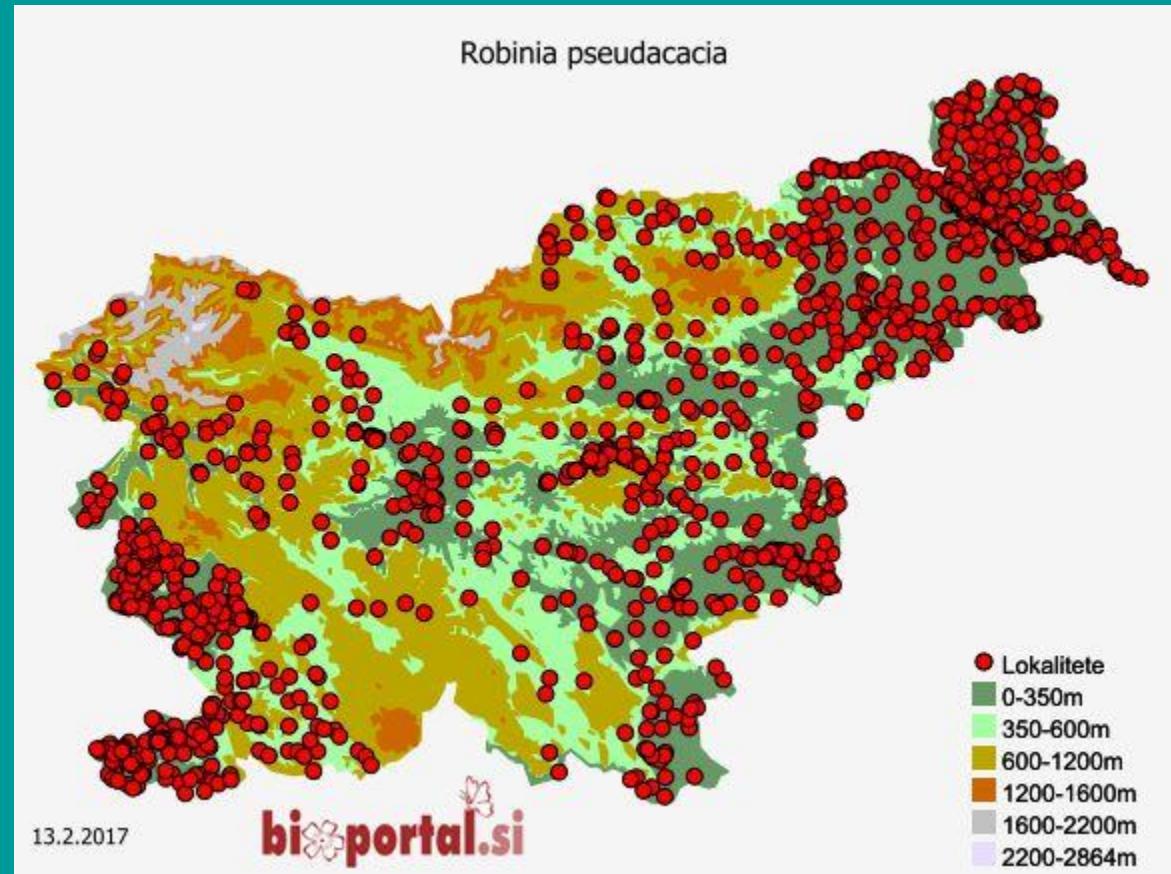
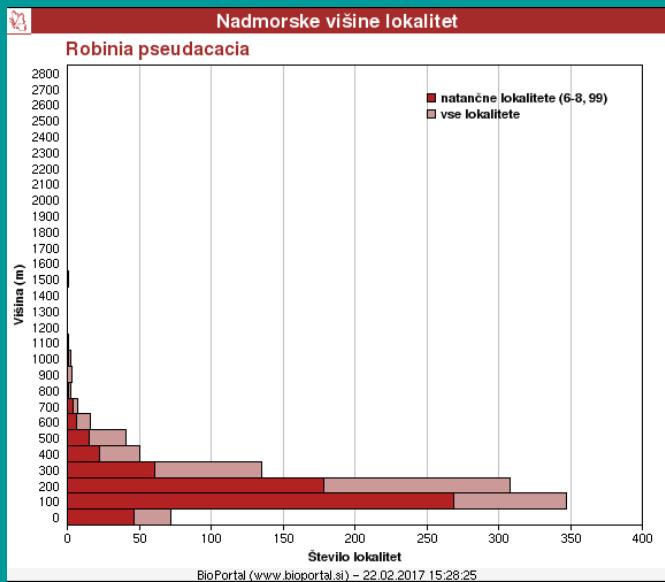
# peterolistna vinika (*Parthenocissus quinquefolia*)



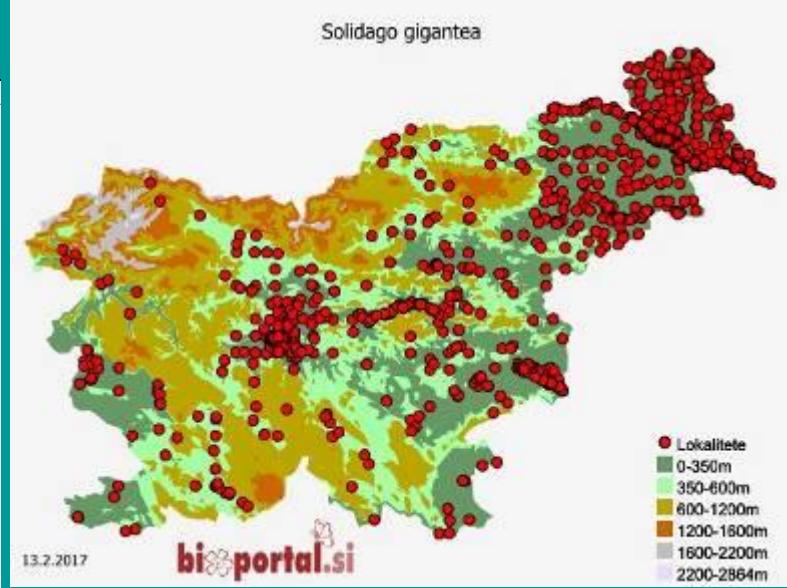
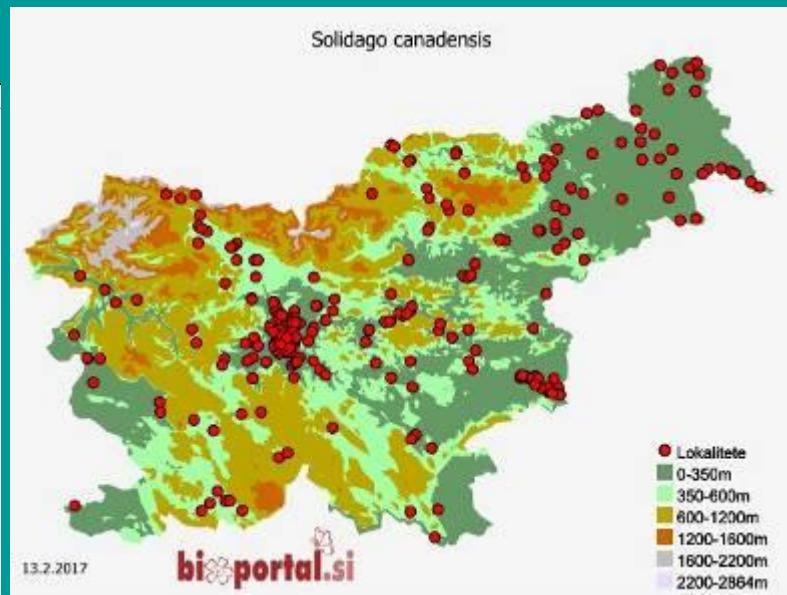
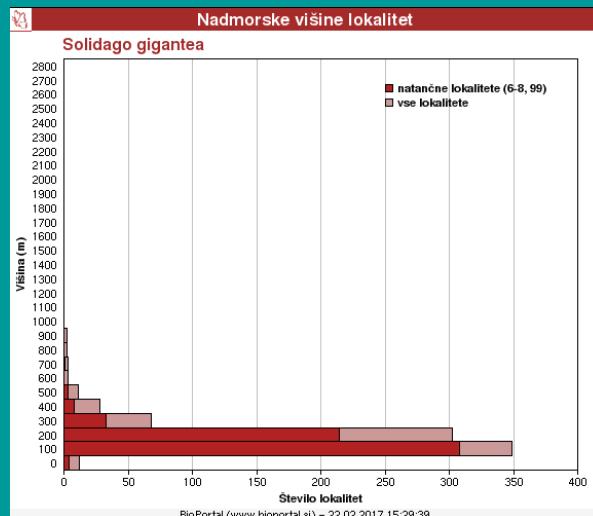
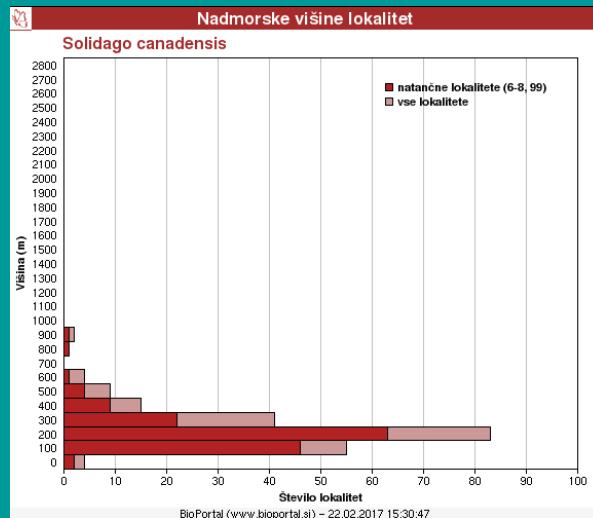
# gladki bor (*Pinus strobus*)



# robinija (*Robinia pseudacacia*)



# ameriški zlati rozgi (*Solidago* spp.)



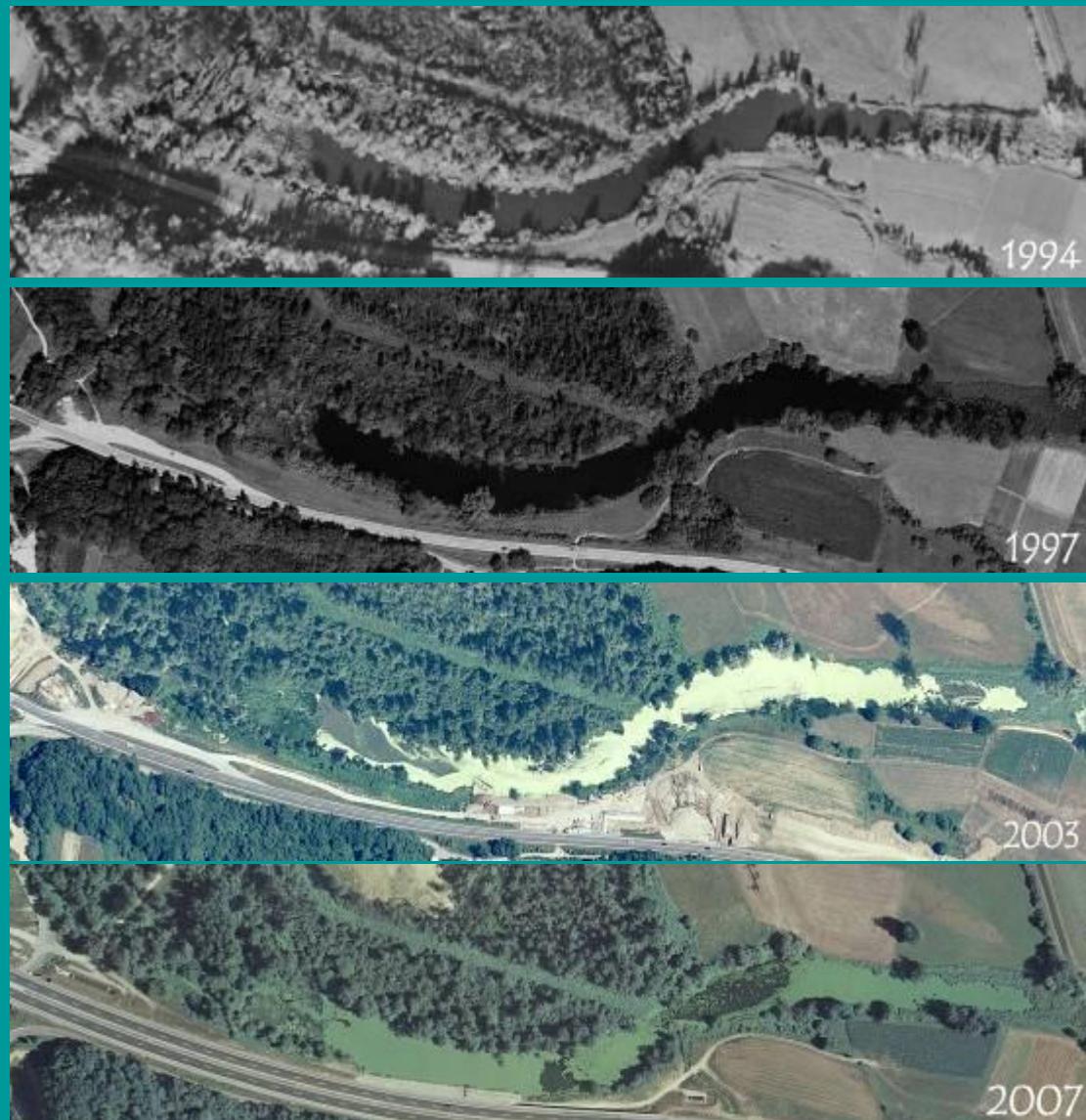
# vodna solata (*Pistia stratiotes*)

vodne rastline prej  
(1992, 1997):

*Berula erecta*  
*Ceratophyllum demersum*  
*Lemna minor*  
*Myriophyllum spicatum*  
*Najas marina*  
*Potamogeton crispus*  
*Potamogeton natans*  
*Potamogeton trichoides*  
*Trapa natans*

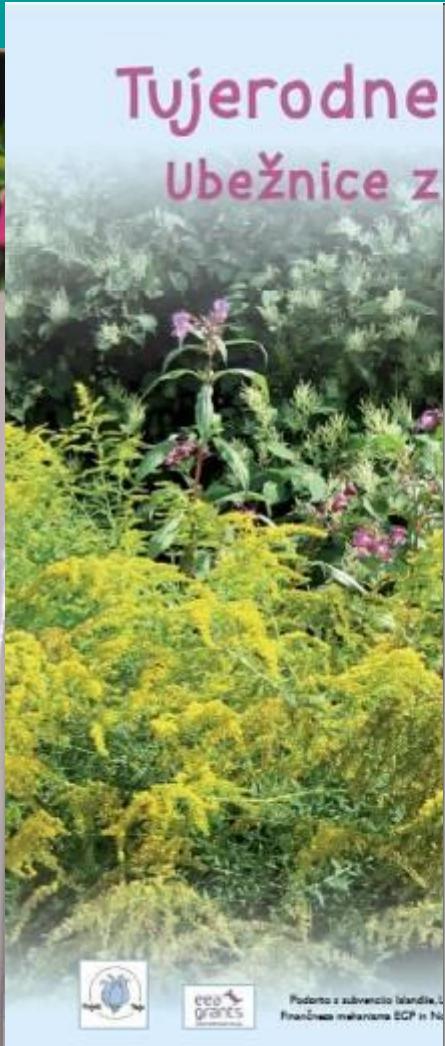
danes:

*Ceratophyllum demersum*  
*Lemna gibba*  
*Lemna minor*  
***Pistia stratiotes***





# kaj vzeti v roke?



# Hvala!

