

MASTER OF SCIENCE NATURE CONSERVATION
THESIS DEFENSE



Springs Connect People and
Landscapes in the Region
Liberec - Zittau

CZECH-GERMAN WATER SPRINGS

By Diego Sebastián Serrano Suárez

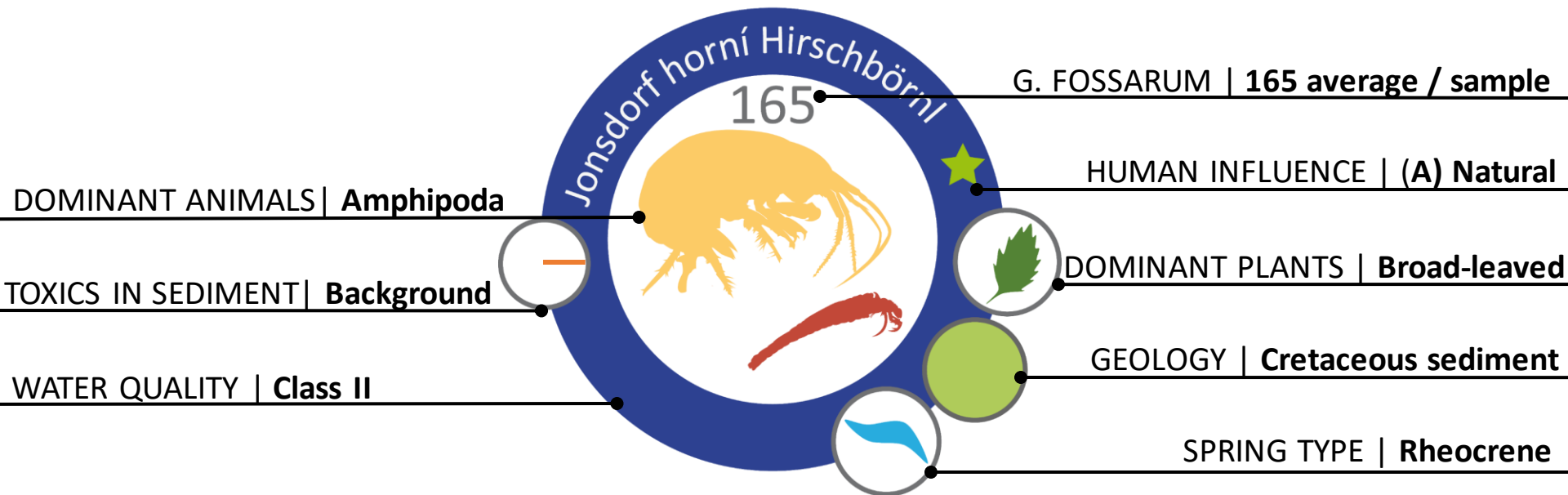
Supervisor: PhD. Dana Komínková
Advisor: PhD. Michal Bílý



TECHNISCHE
UNIVERSITÄT
DRESDEN



Occurrence and ecology of freshwater shrimp (*Gammarus fossarum*) in water springs of Lusatian Fault

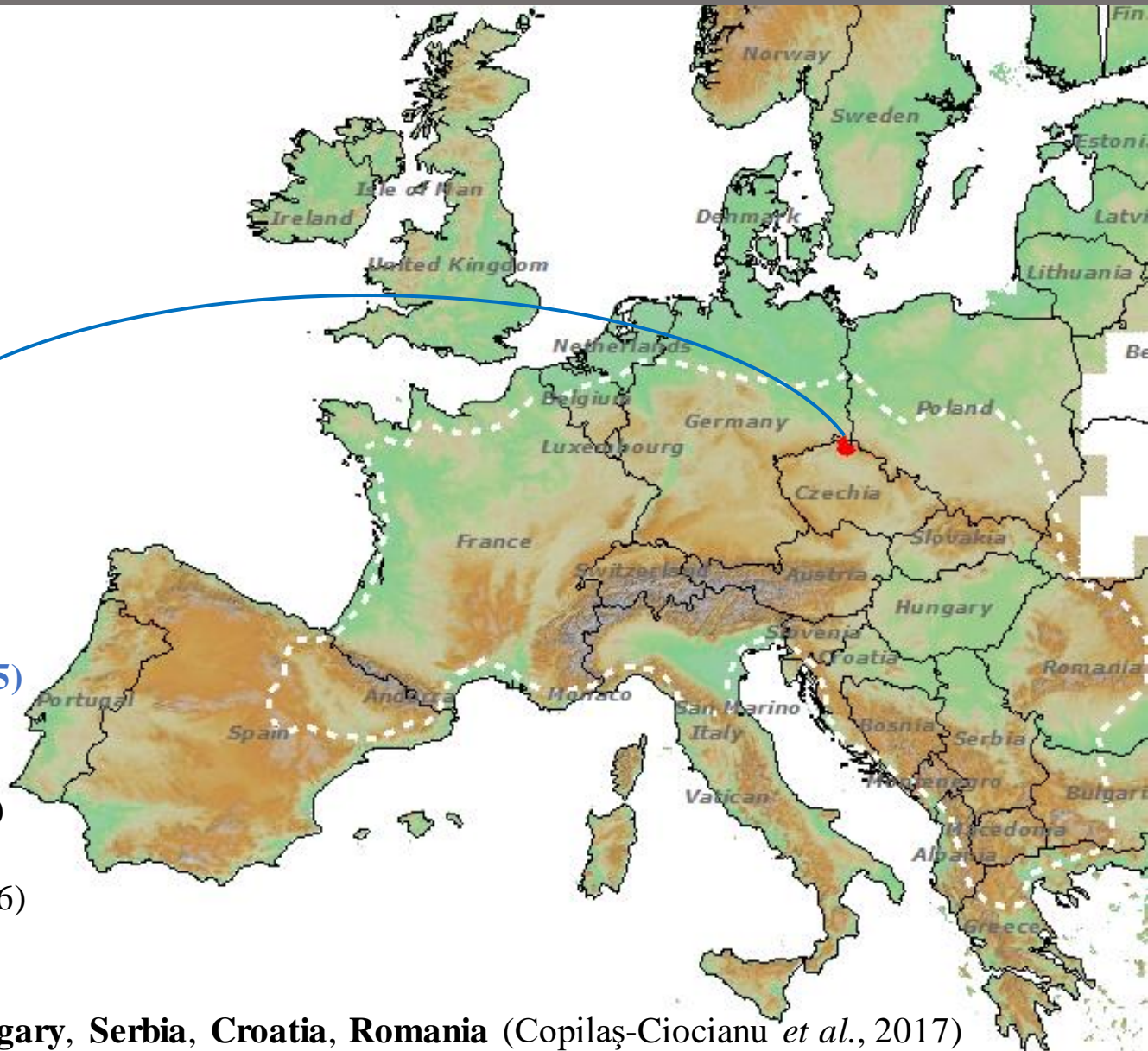


OBJECTIVE OF THESIS:

Detect the main factors affecting presence and abundance of *Gammarus fossarum* in a set of 40 springs along the Lusatian Fault in the Czech-German border.

Distribution

Prameny spojují
krajiny a státy
Springs connect



Gammarus fossarum (Koch, 1835)

Switzerland (Alther *et al.*, 2016)

France (Labaude, *et al.*, 2017)

Netherlands (Peeters *et al.*, 1998)

Spain (Alonso *et al.*, 2010)

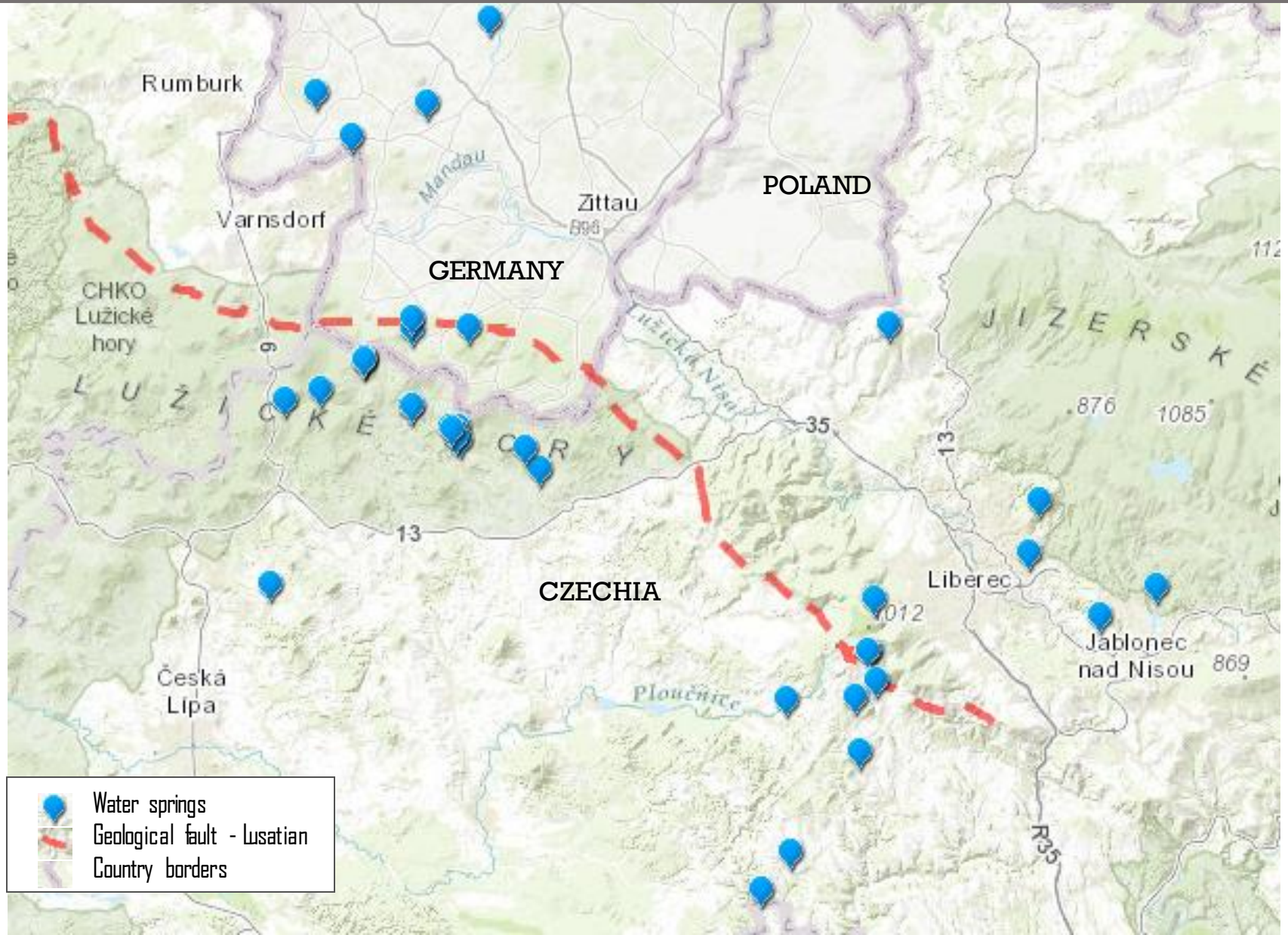
Germany (Weiss and Leese, 2016)

Slovenia (Fišer *et al.*, 2007)

Austria (Pöckl, 2007)

Czechia, Slovakia, Poland, Hungary, Serbia, Croatia, Romania (Copilaș-Ciocianu *et al.*, 2017)

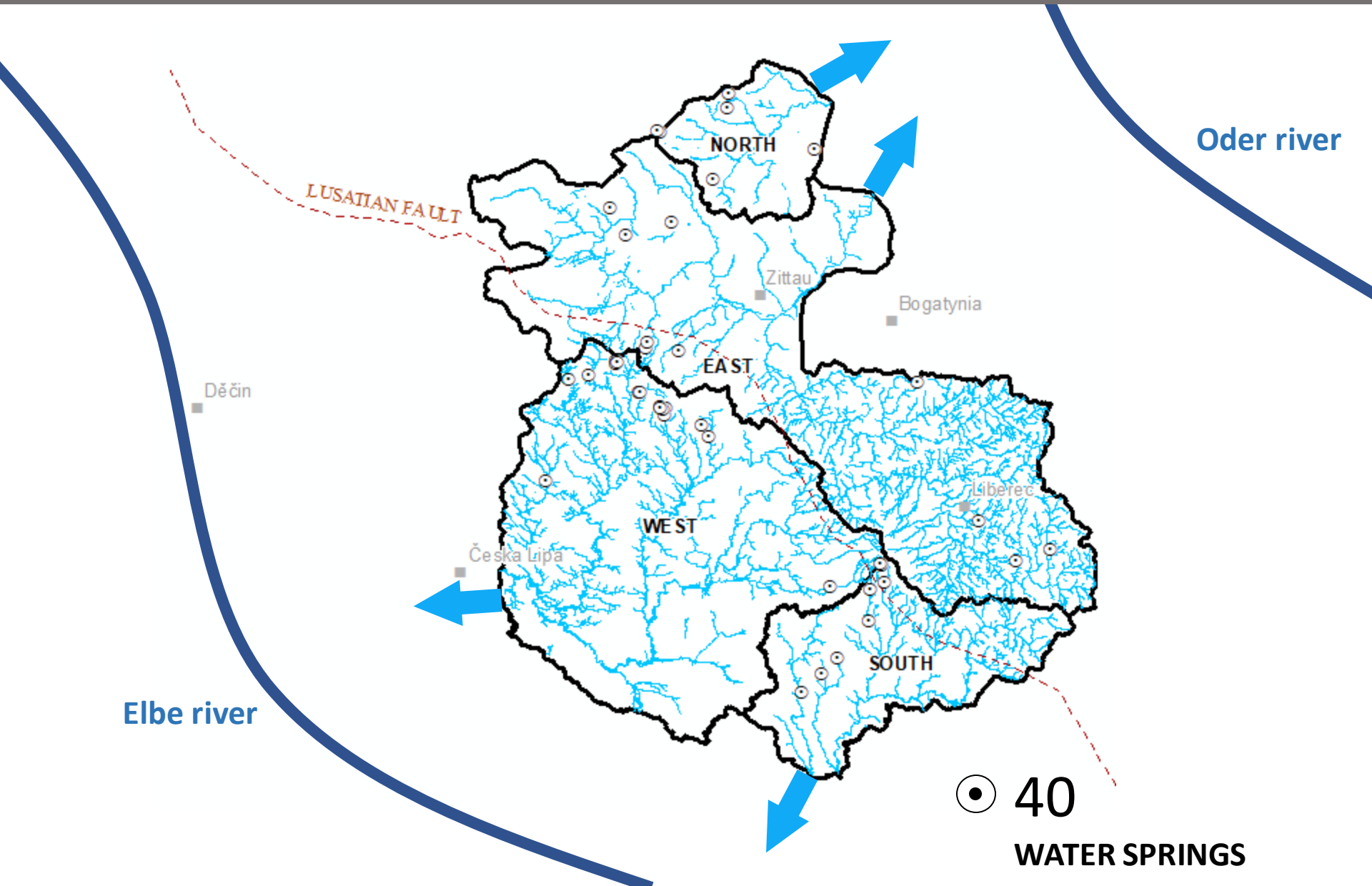
Location



How to recognize a Spring?



Hydrology



What are we looking for?



Gammarus fossarum



1 cm

Sampling Methods



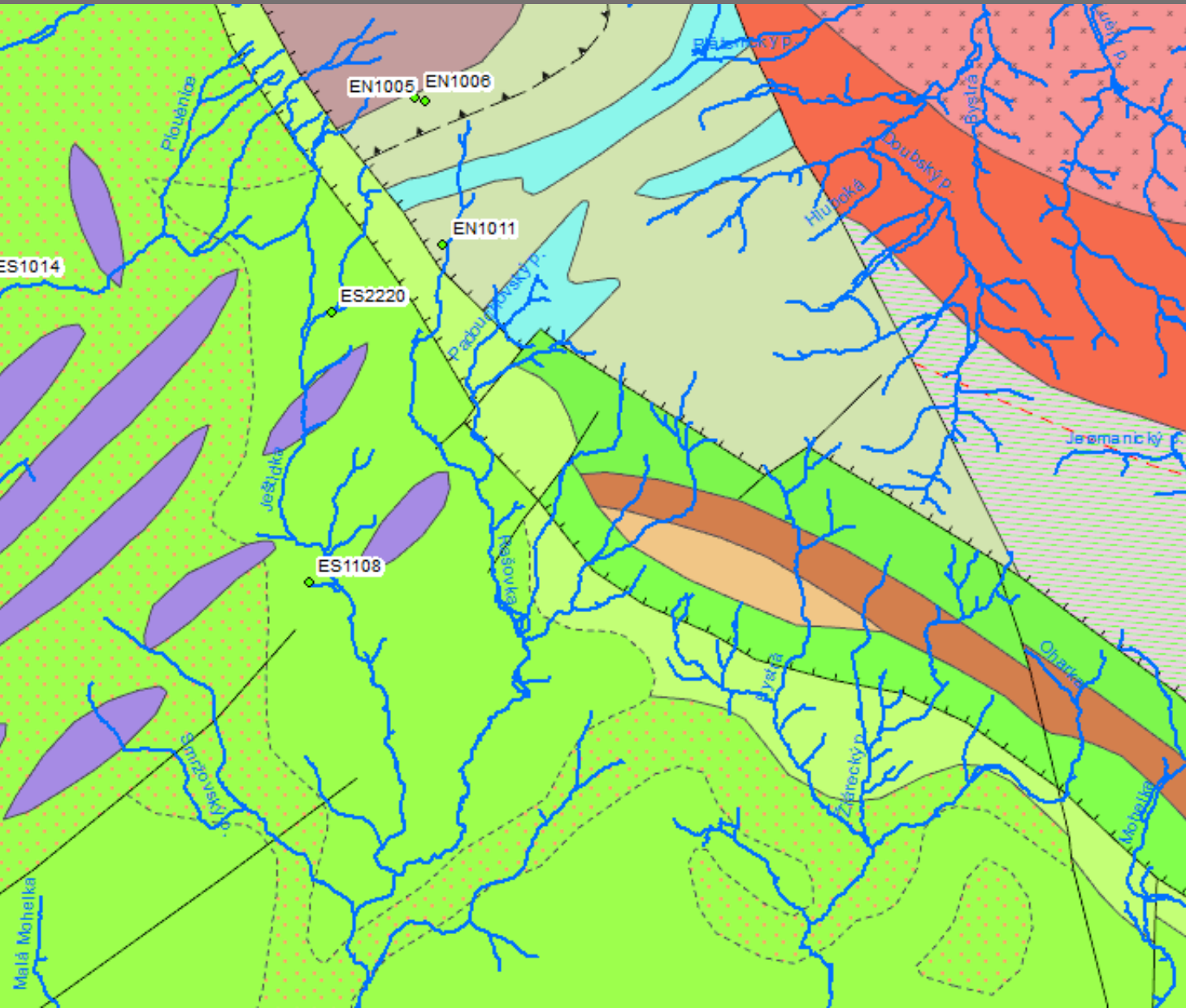
Spring types



Dominant plants



Dominant Geology



Other benthic species



Aeshnidae



Dytiscidae



Trichoptera



Planorbidae.

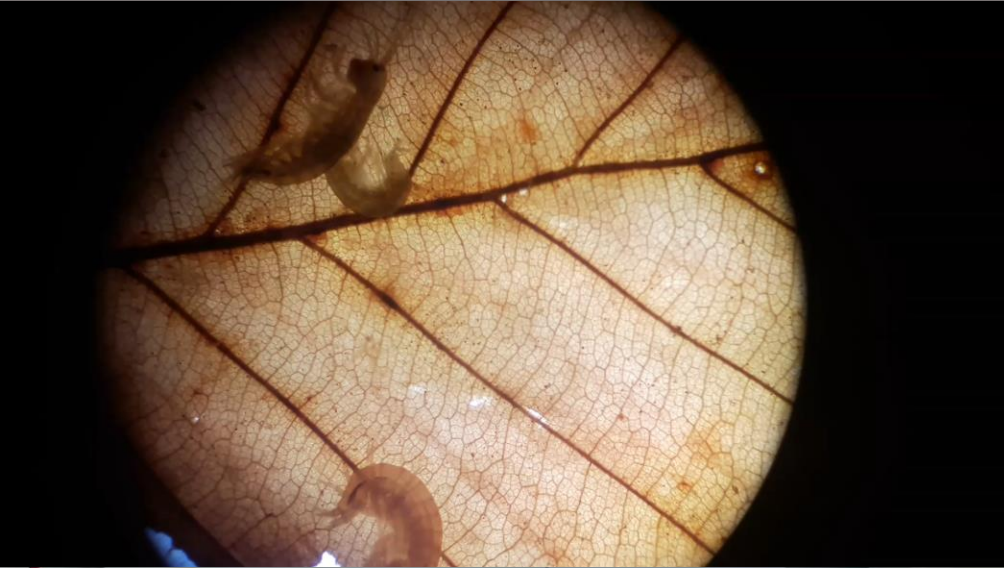


Chironomidae

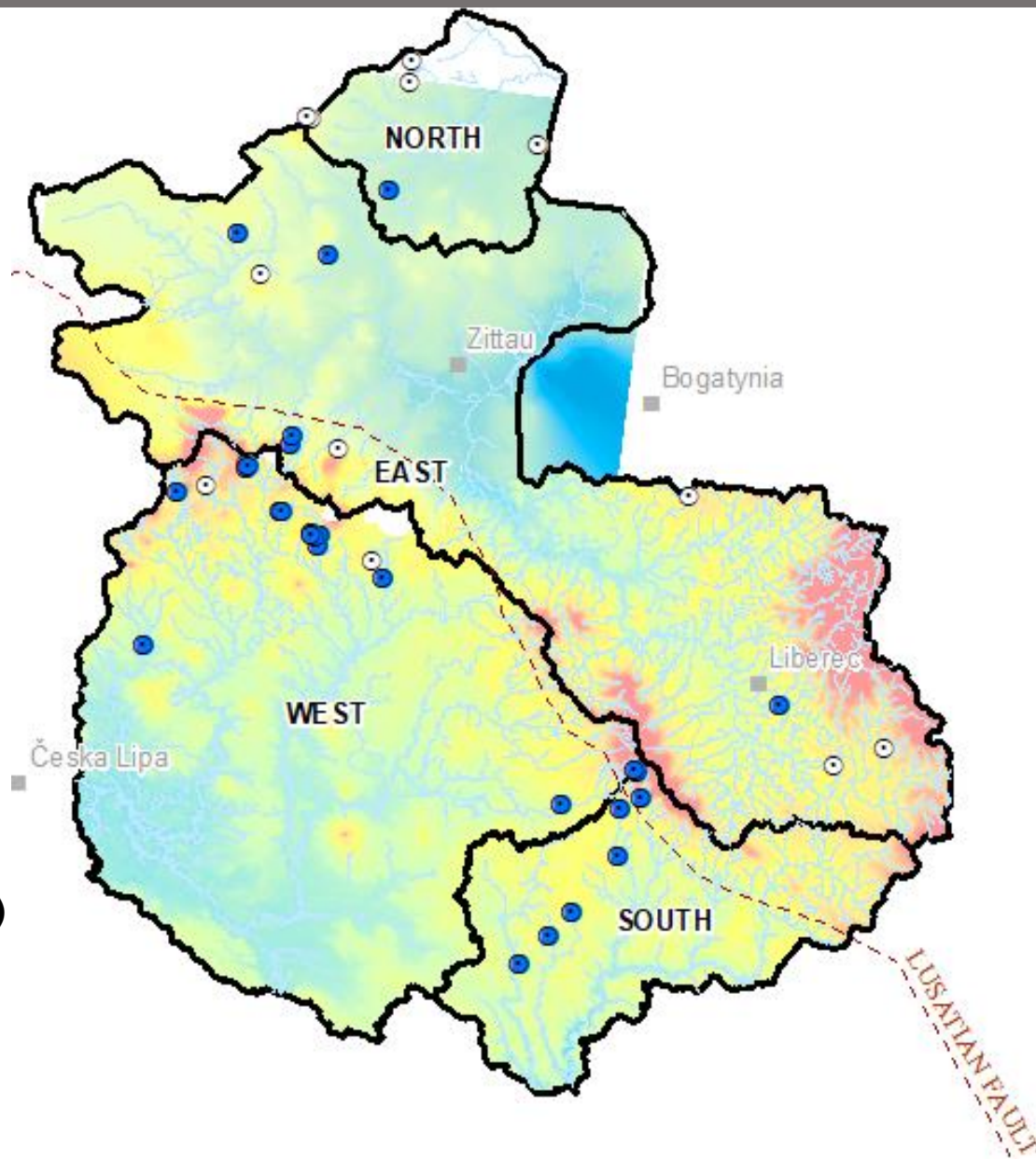


Leuctridae

Toxic metals



Presence of *Gammarus fossarum*



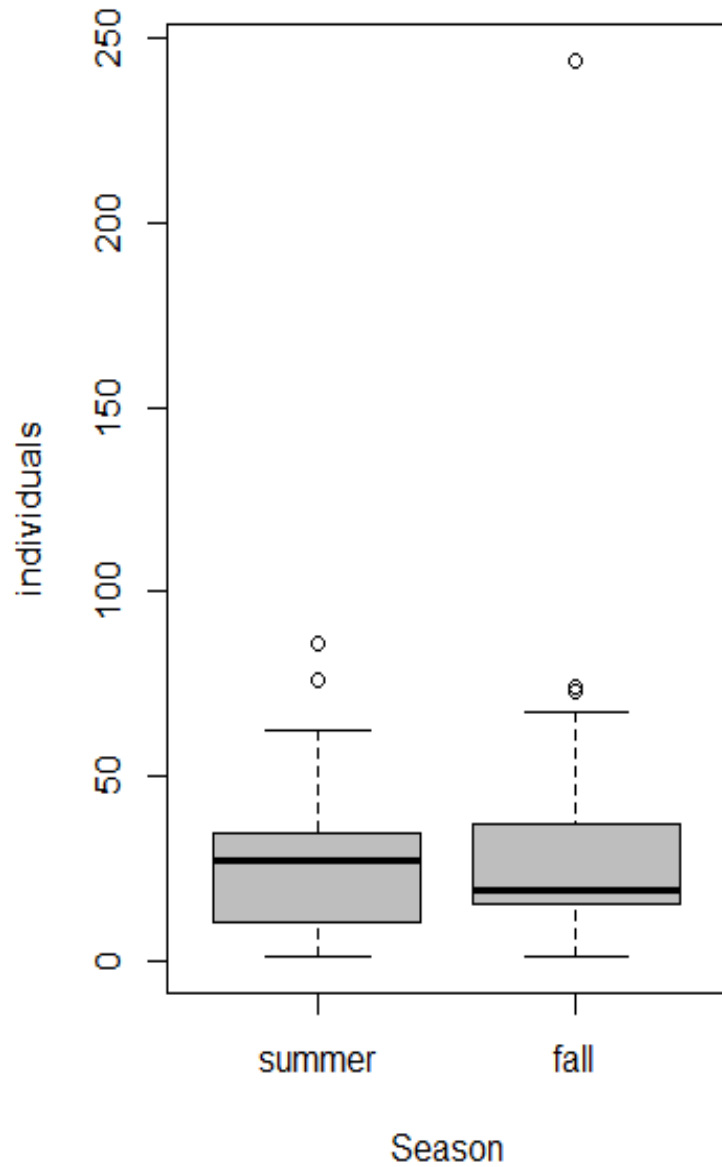
Surface altitude (masl)

Value

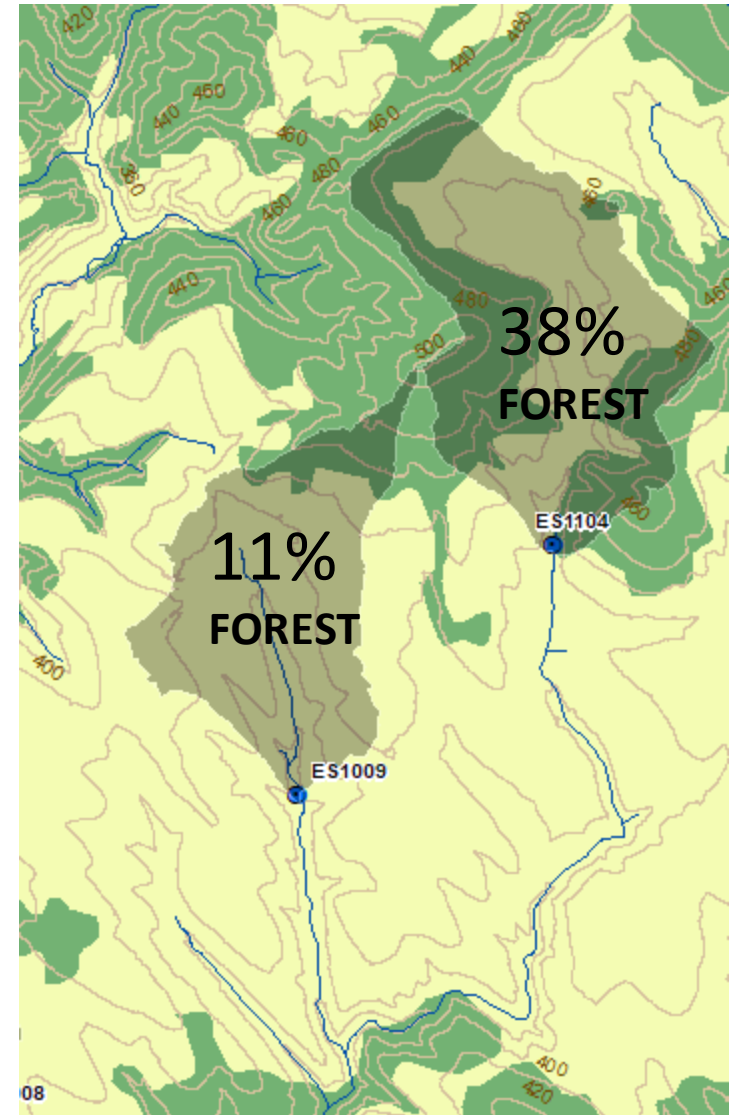
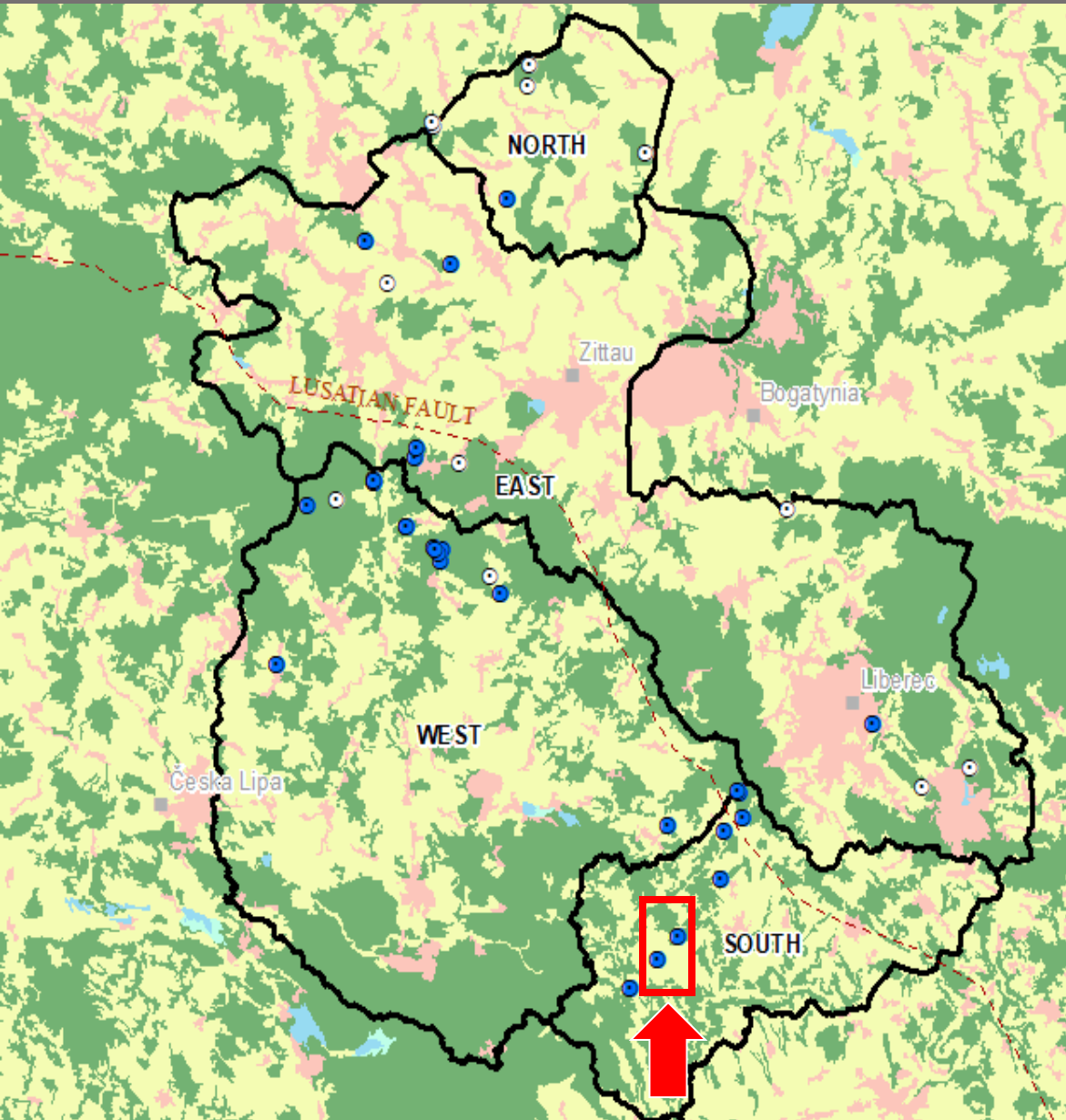
High : 1084.27

Low : 210.41

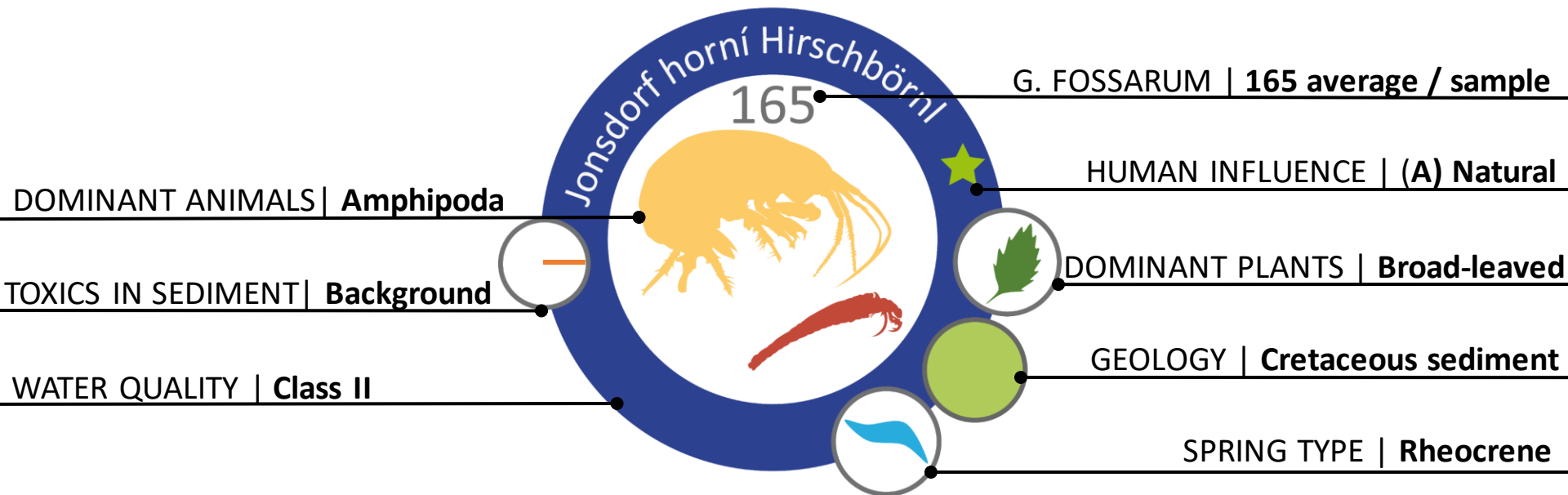
Abundance of Gammarus fossarum



Land use



Occurrence and ecology of freshwater shrimp (*Gammarus fossarum*) in water springs of Lusatian Fault



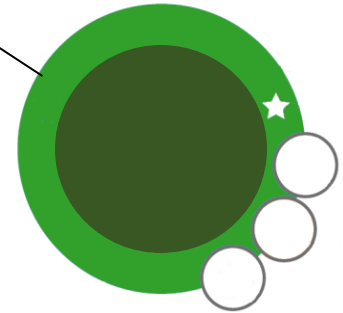
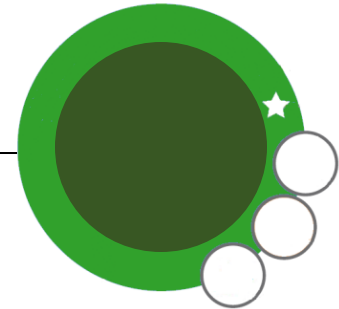
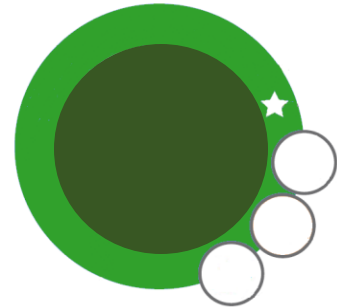
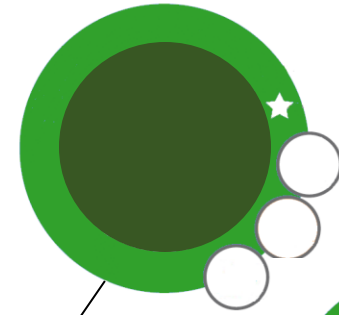
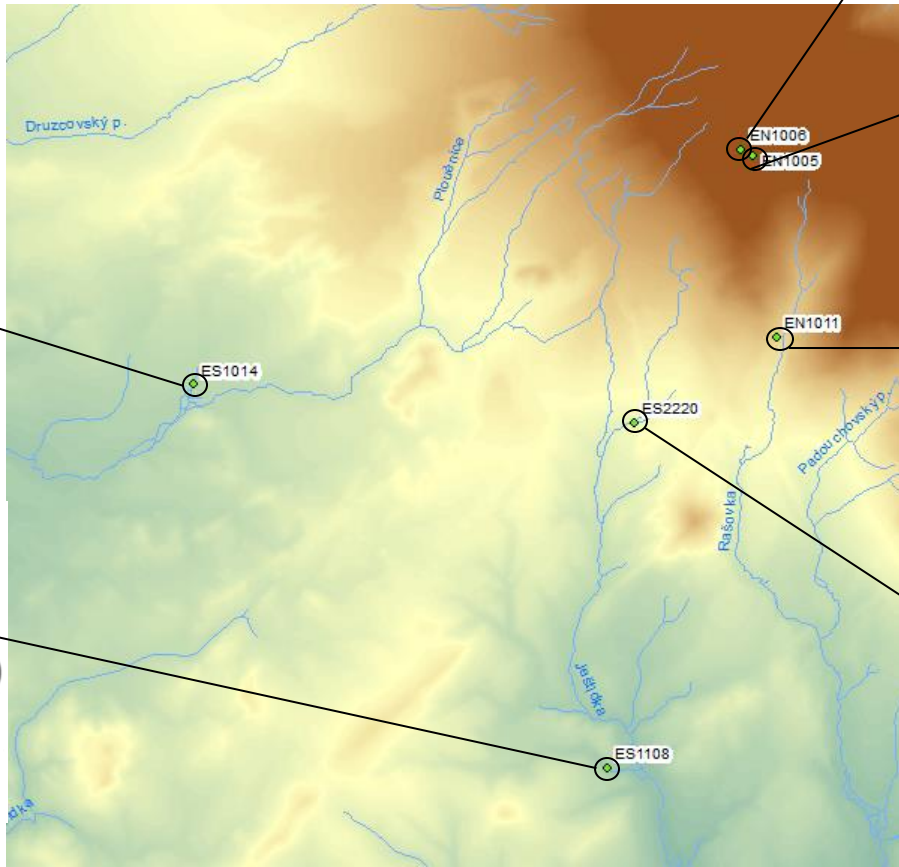
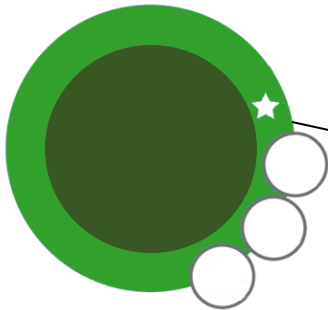
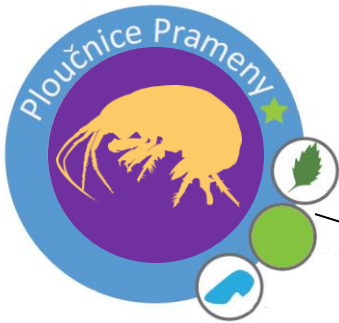
OBJECTIVE OF THESIS:

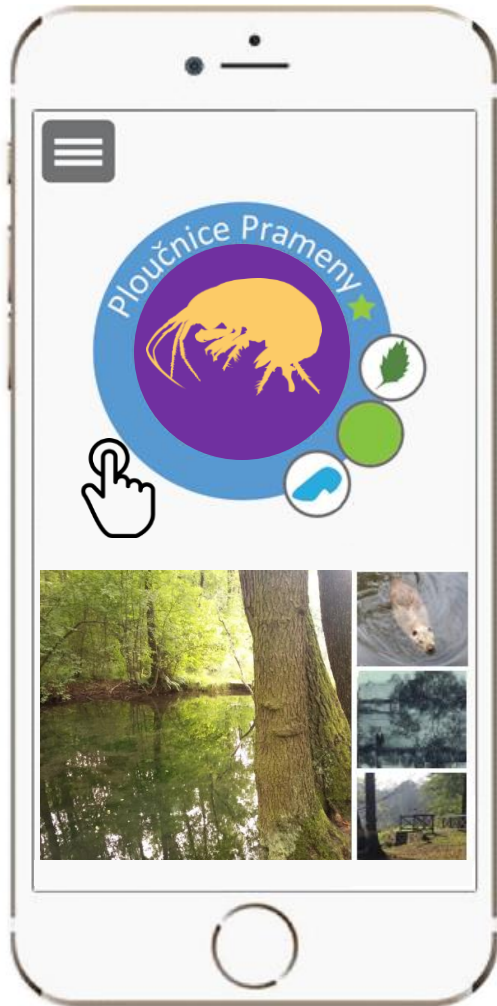
Detect the main factors affecting presence and abundance of *Gammarus fossarum* in a set of 40 springs along the Lusatian Fault in the Czech-German border.

And how do we explain it to the local people?



Interactive Map





People
connect with
Springs

CONCLUSION...

- *G. fossarum* is present in **every catchment**, geology, spring type and any kind of forest.
- **Absent** in springs with low pH, artificial bottom, Fe
- Populations become **more abundant** in autumn, water of neutral pH, high oxygen and low metals
- Forest cover supports healthier **water springs**
- *Gammarus* abundance is useful to evaluate the **environmental conditions** in the watershed
- Constant **monitoring** to evidence changes
- Main principle of **nature conservation**:
REACH THE LOCAL PEOPLE



ANALYZED

By  PRAMENY SPOJUJÍ
QUELLEN VERBINDEN

Water quality: Good

Spring type: Rheocrene

Dominant geology: Cretaceous sediment

Dominant forest: Picea sp.

Human aspect: Domestic use

Dominant animal: Amphipoda



QR code for legend
and more
information about
the project.

*Prameny Spojují's
Official Stamp for
water springs*



CZECH-GERMAN WATER SPRINGS



Europäische Union. Europäischer
Fonds für regionale Entwicklung.
Evropská unie. Evropský fond pro
regionální rozvoj.



Ahoj sousede. Hallo Nachbar.
Interreg V A / 2014 – 2020