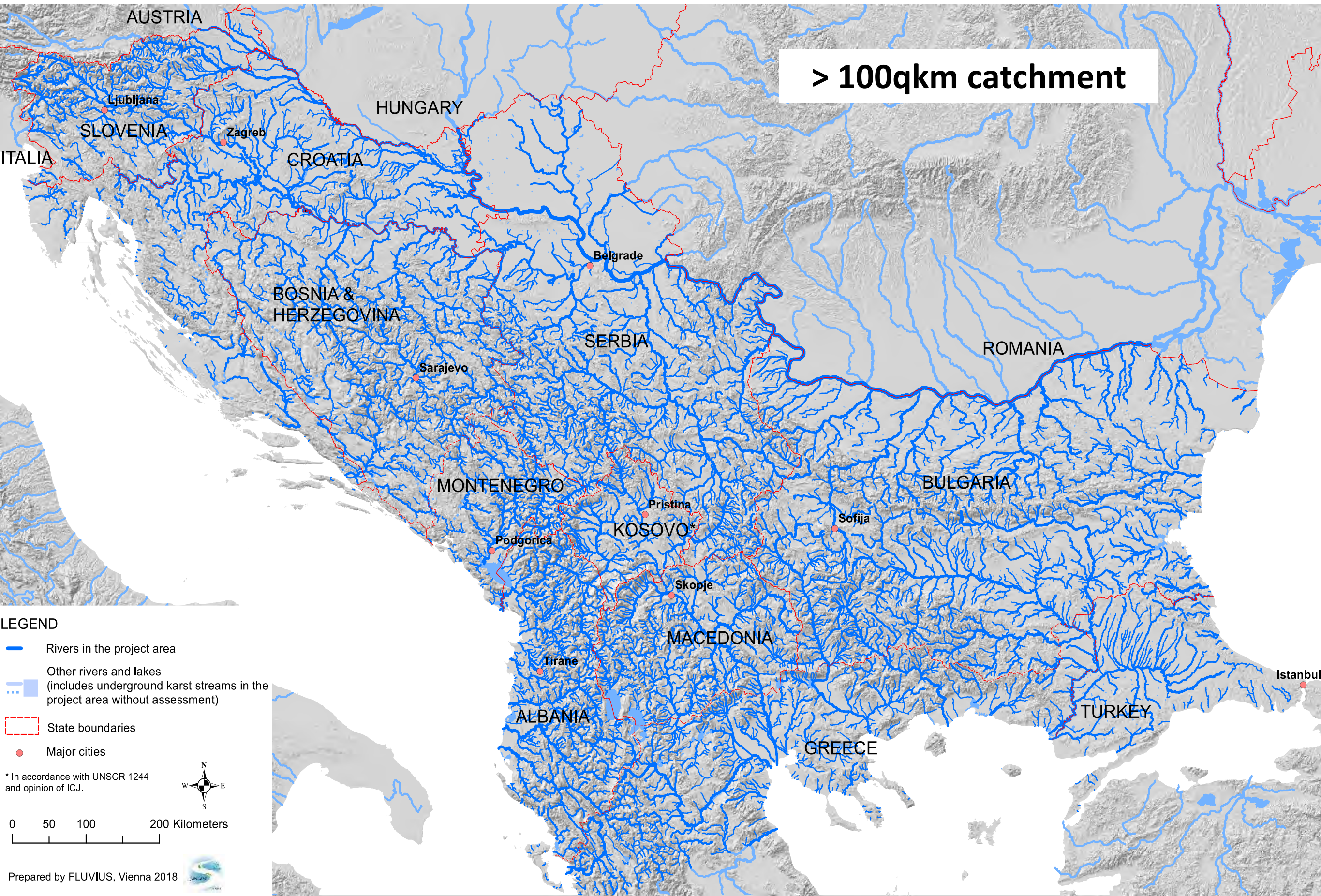




ECO-MASTERPLAN FOR BALKAN RIVERS

DRAWING A LINE IN THE SAND

Map 1: Extent of 80,523 kilometres of rivers assessed for the Eco-Masterplan





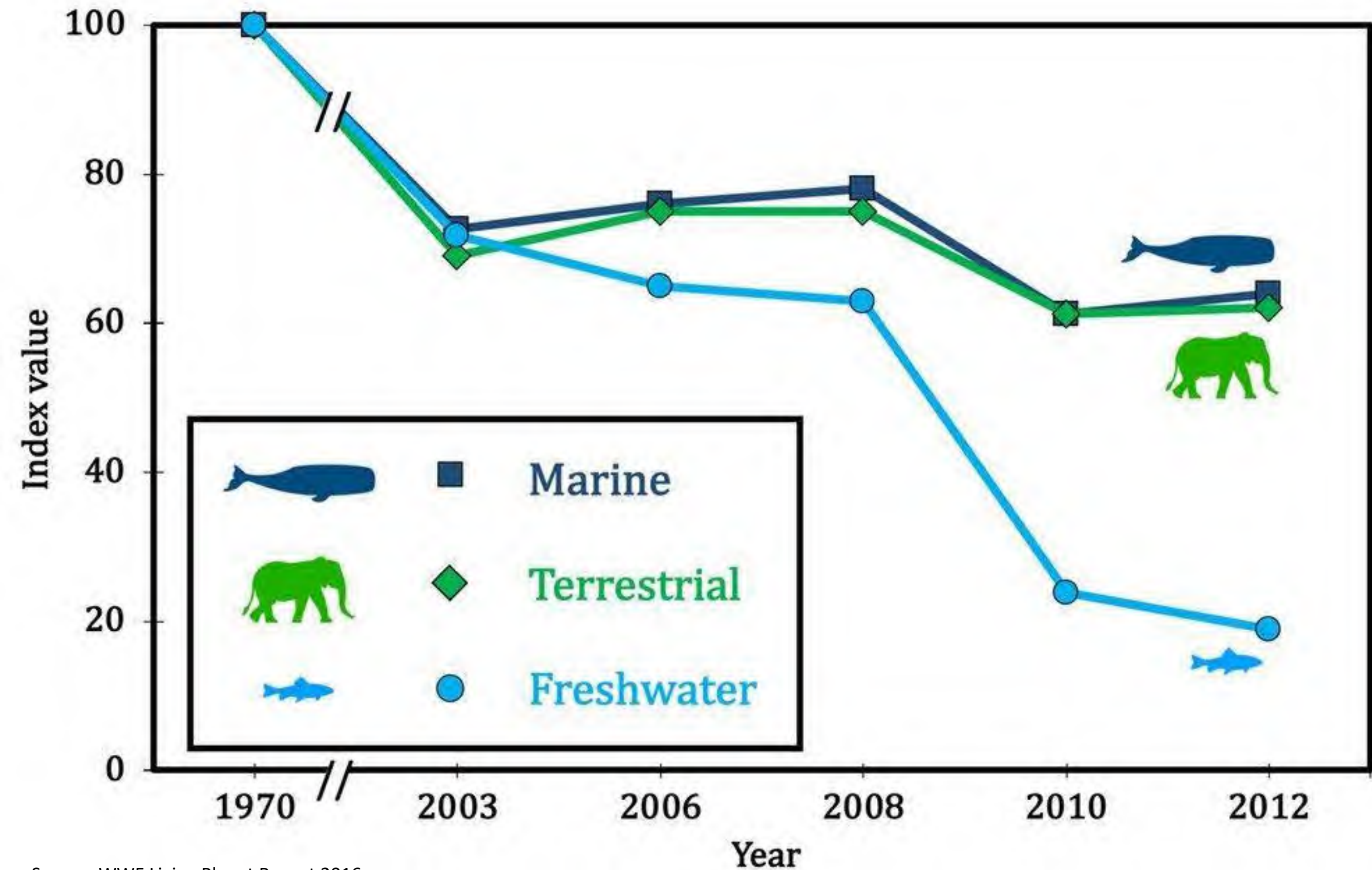
Based on science

In line with WFD method to assess ecological status

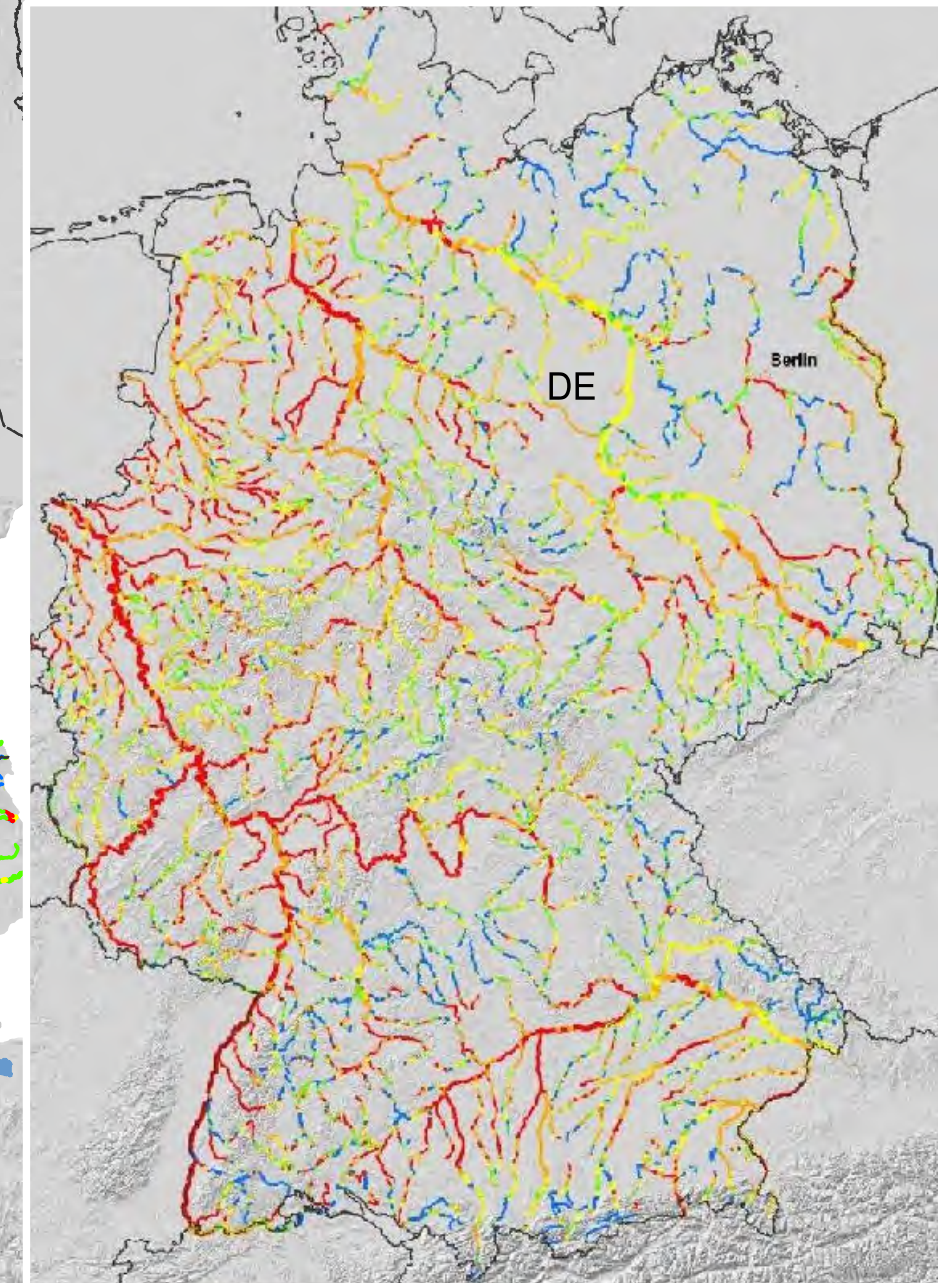
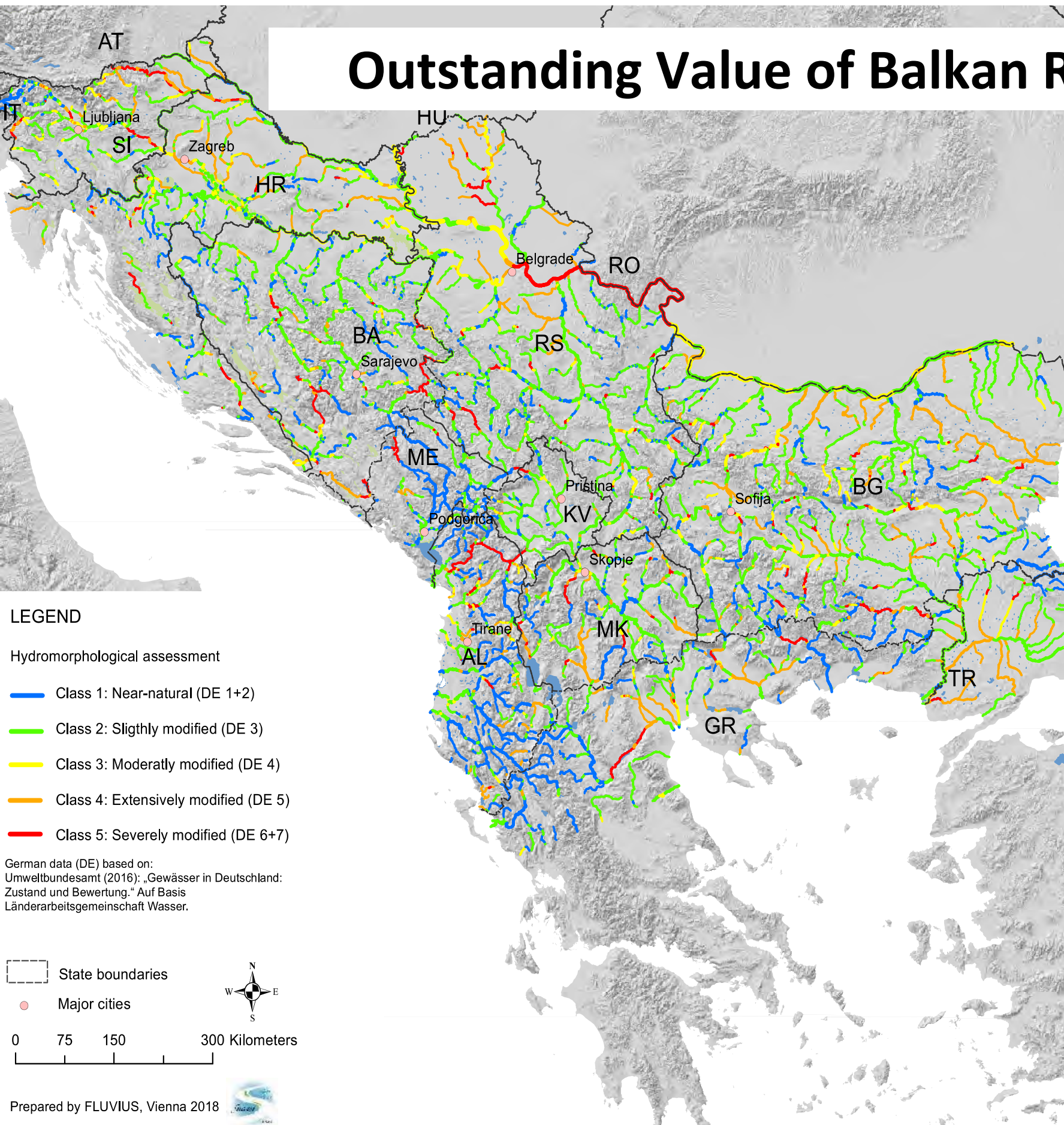
1.5 years of work

90,000 rows in excel files

1. Why we need a BR Eco-Masterplan



Outstanding Value of Balkan Rivers



Map 2.1: Hydromorphological situation for German rivers. Source: German data from 2002 based on: Umweltbundesamt (2016): “Gewässer in Deutschland: Zustand und Bewertung.” Auf Basis Länderarbeitsgemeinschaft Wasser.

Note: The German assessment is originally based on 7, rather than 5, assessment classes. Based on the official recommended class boundaries for original survey data the transposition combines classes 1 and 2 into class 1 (blue) and classes 6 and 7 into class 5 (red), the other classes 3-5 being the same. This leads to a slight overestimate of blue and red river stretches, but does not change the overall share of rivers falling into the more intact (blue and green) and more degraded (orange and red) classes.

Hydropower plants in Balkan rivers

euRONATUR FOUNDATION

RiverWatch



Extremely threatened

2,796 planned

188 under construction

1,004 existing

LEGEND

- Existing dam
- Under implementation
- Planned dam
- Installed megawatts (MW)
 - 0.1-<1*
 - 1-<10 MW
 - 10-50 MW
 - > 50 MW

* Class incomplete for existing SHHPs

0 50 100 200 Kilometers



Black Drin/ Albania

26.4.2013





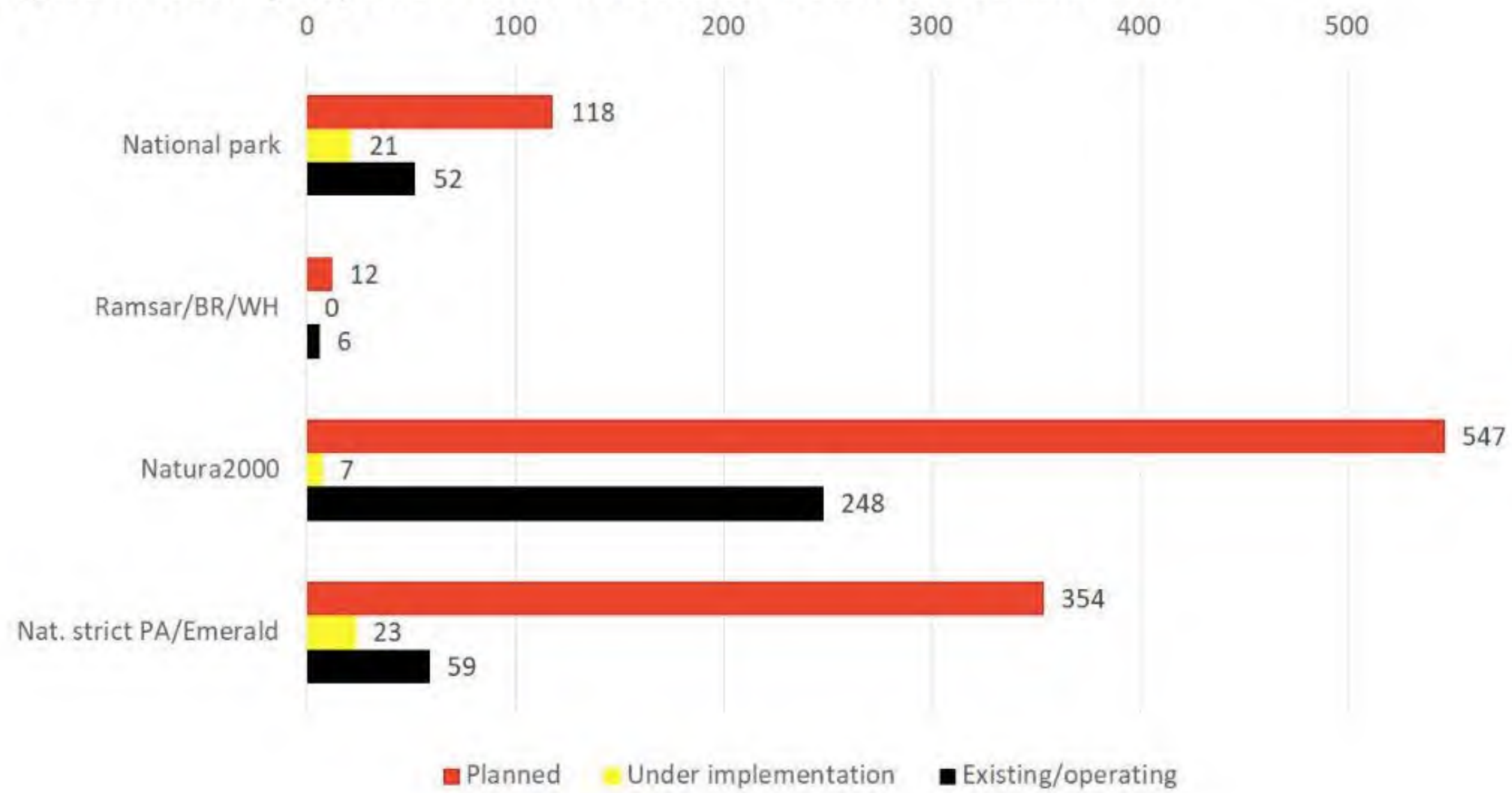




1,000 Projects inside PA's



Figure 3. Total Hydropower Plants in Protected Areas in the Balkans 2017



Reduce Biodiversity Loss

Balkan Freshwater Fish and Molluscs in Numbers

113
SPECIES

listed in one of the three IUCN threat categories and/or listed in one or more of the annexes of the European Habitats Directive or Bern Convention.

69

ENDEMIC FISH SPECIES ARE FOUND HERE and nowhere else on the planet, making it one of the highest concentrations of endemic fish species in Europe.

28%

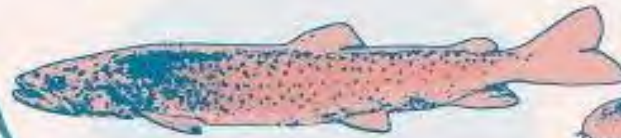
OF EUROPE'S ENDANGERED FISH ARE FOUND HERE

40%

OF EUROPE'S ENDANGERED MOLLUSCS ARE FOUND HERE making the Balkans a hotspot for threatened molluscs which are highly vulnerable to hydropower development.

FRESHWATER FISH AND MOLLUSCS

are the two most threatened taxonomic groups in Europe.



DANUBE SALMON



ARACHTHOS SPINED LOACH



MICROCONDYLEA BONELLI

IF DAMS ARE BUILT:

49

FISH SPECIES are faced with either the threat of extinction or loss of between 50 and 100% of their Balkan distribution. 11 of these are endemic so will be globally extinct.

APPROXIMATELY 10%

of all of Europe's freshwater fish species are threatened by Balkan dams. (There are around 500 freshwater fish species in Europe).

108 OUT OF 113

species would become either extinct or assigned to a threat category.

Avoid Social Conflicts



Brave Women of Kruščica © Andrew Burr

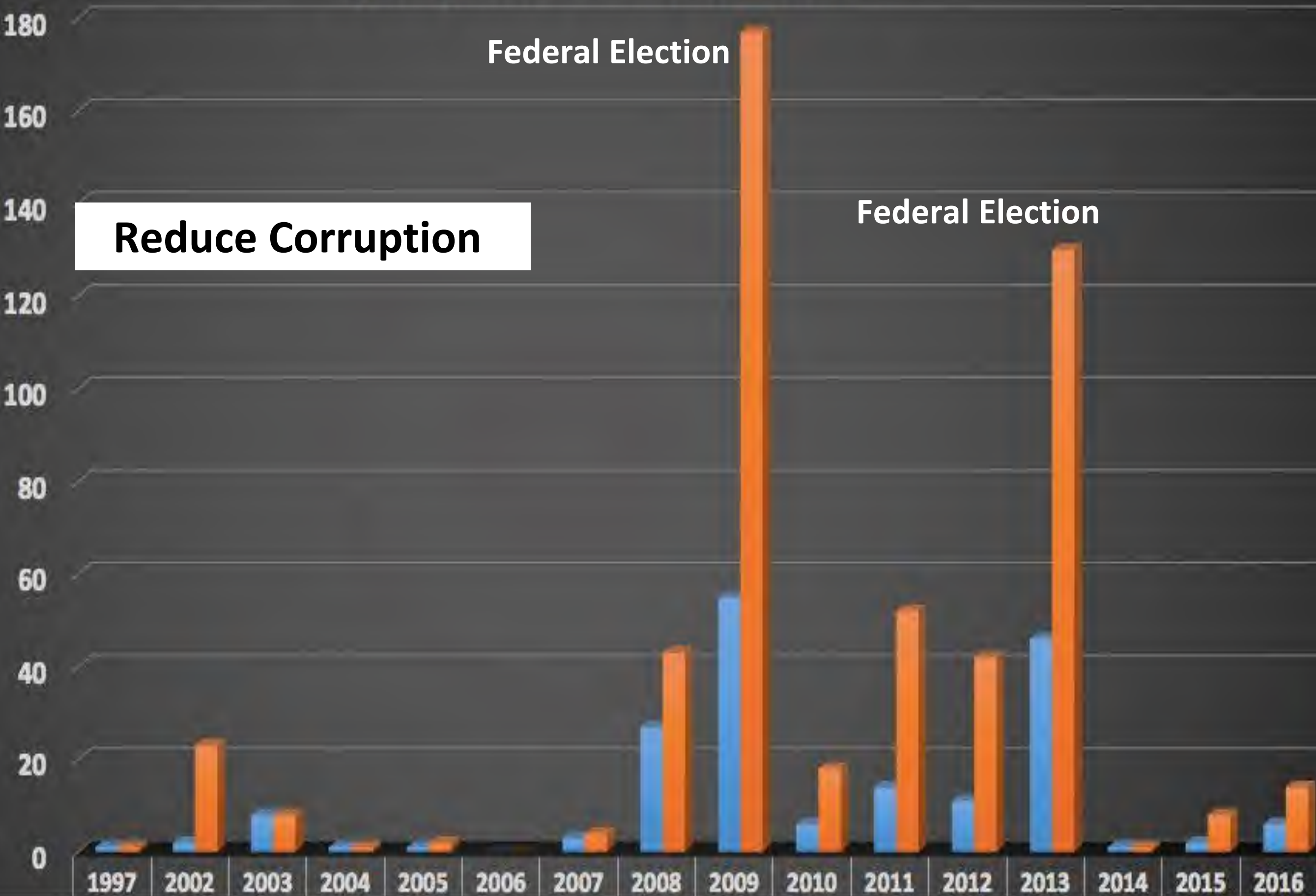
Women of Kruscica: 500 days/nights against dam project



Protest in Belgrade © Radomir Duvnjak

Belgrade, 27.1.19: 5,000 people on anti-hydro protest

Hydropower Boom in Albania



Reduce Corruption

Federal Election

Federal Election

Supporting International Environmental Objectives

- **WFD + Nature Directives + EIA Directive**
- **Bern Convention etc.**
- **Convention on Biological Diversity**

„Pre-planning mechanisms allocating „no-go“ areas for new hydro-power should be developed... It is our view that the WB6 countries should establish clear “no-go” areas for new hydro-power projects, based on the protection of nature conservation values.“

Regional Strategy for Sustainable Hydropower in WB (2018) commissioned by EC.

2. Criteria



Shushica River © Lukas Thuile Bistarelli

Hydromorphology

Protected areas

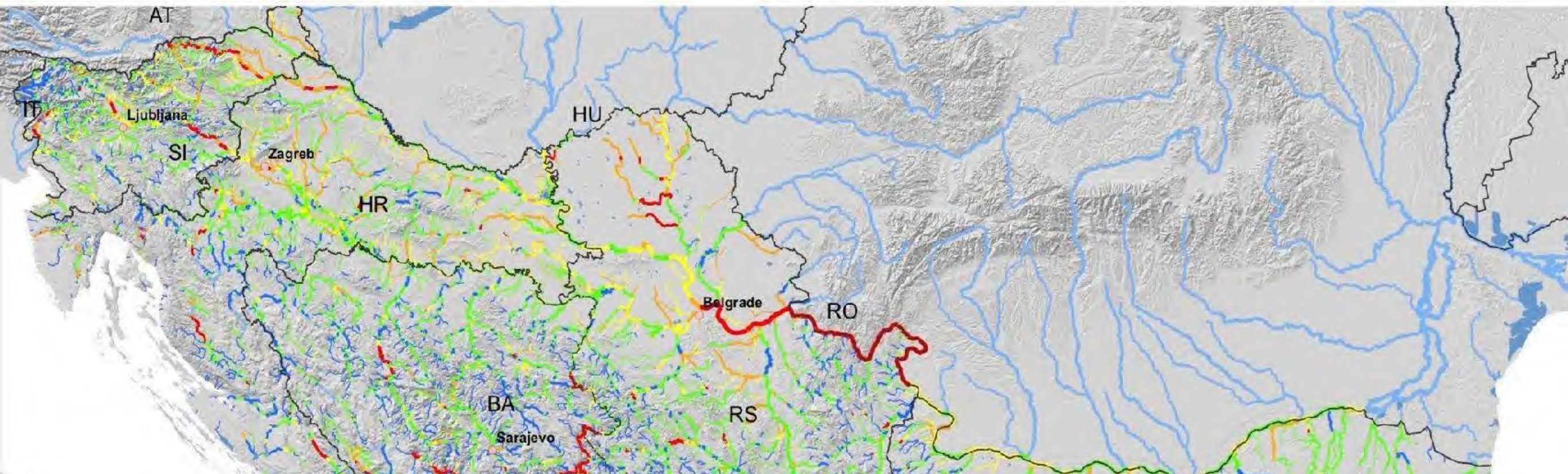
Fish species

Freshwater Mussels

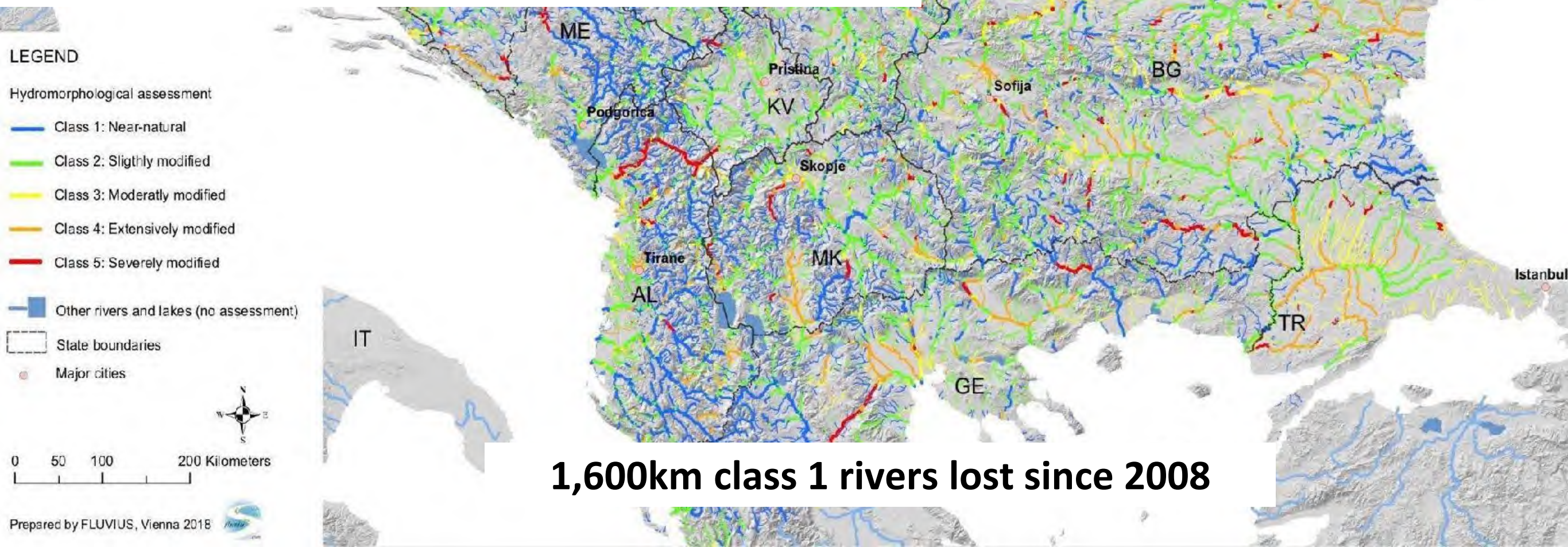
Caddisfly species

**Significant Wetlands: floodplains,
poljes, estuaries**

Hydromorphology Assessment of 80,523 km



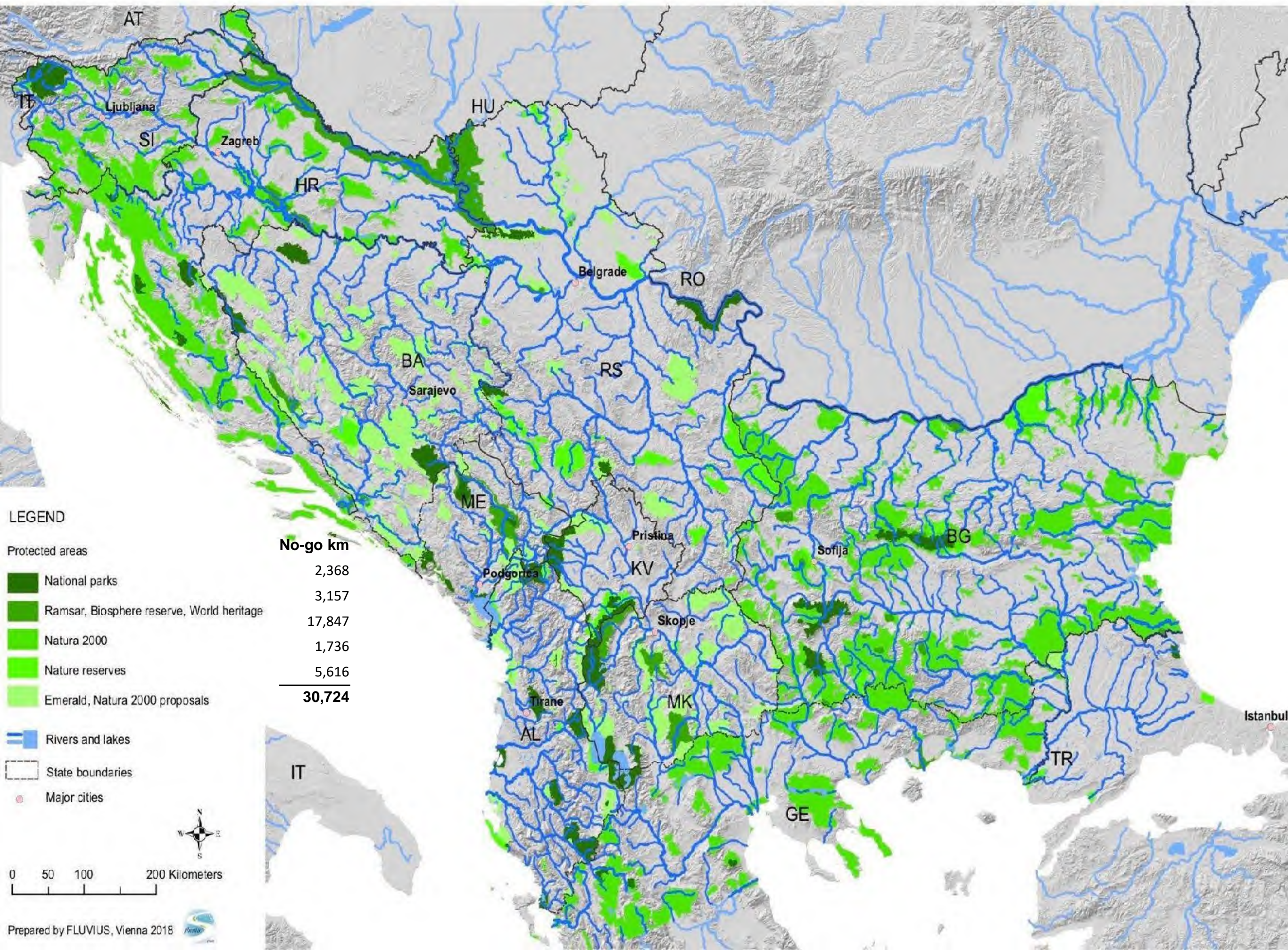
All blue + adjoining green stretches 10/20km



1,600km class 1 rivers lost since 2008

Protected Areas

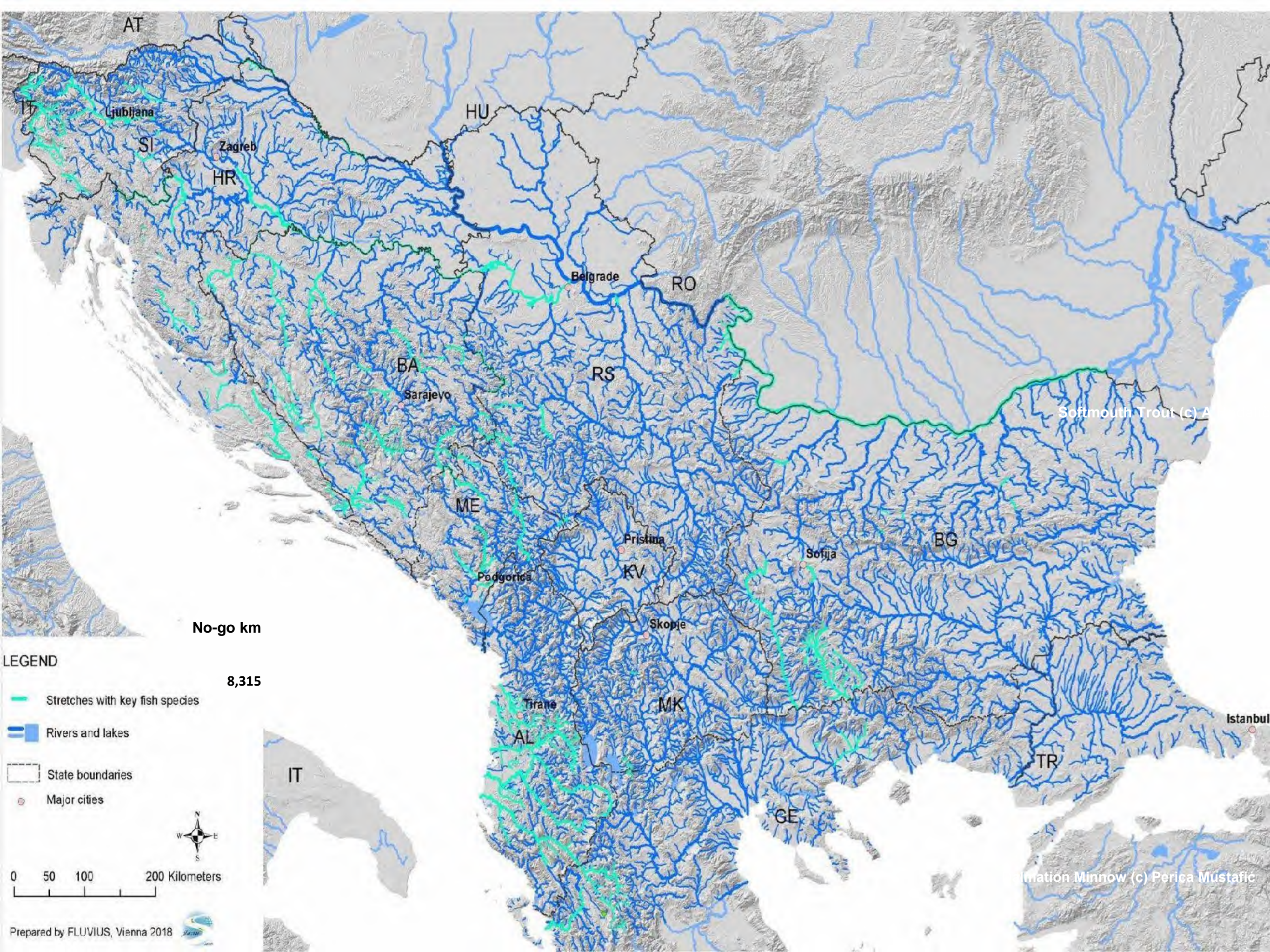




Key Fish Species (33)



Young, male Huchen ©A. Hartl



HOTSPOT Morača - Lake Skadar



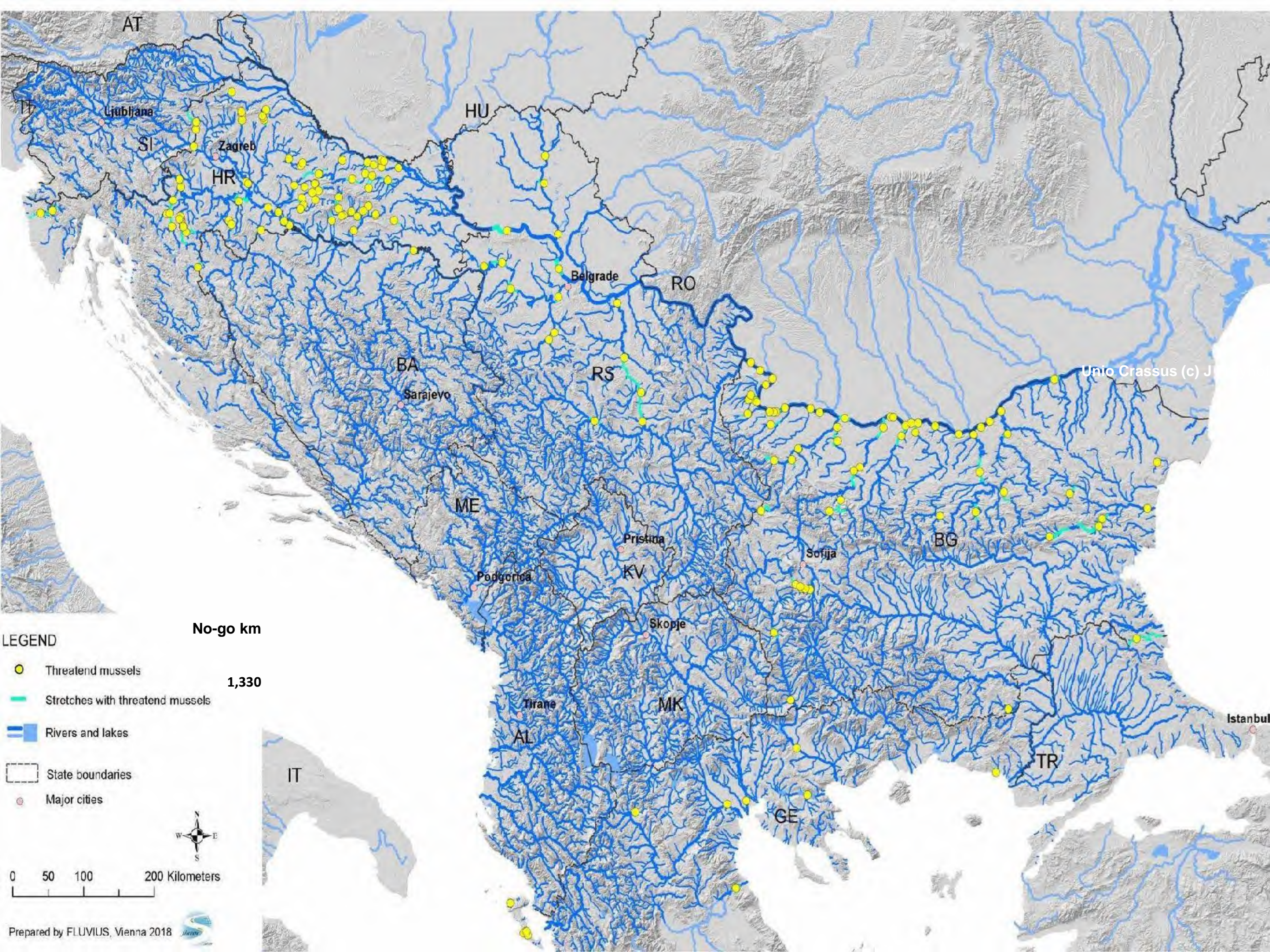


Moraca, Montenegro © Sergey Lyashenko

Moraca: 33 endangered fish species. No-go criteria: hymo, fish, pa + wetlands

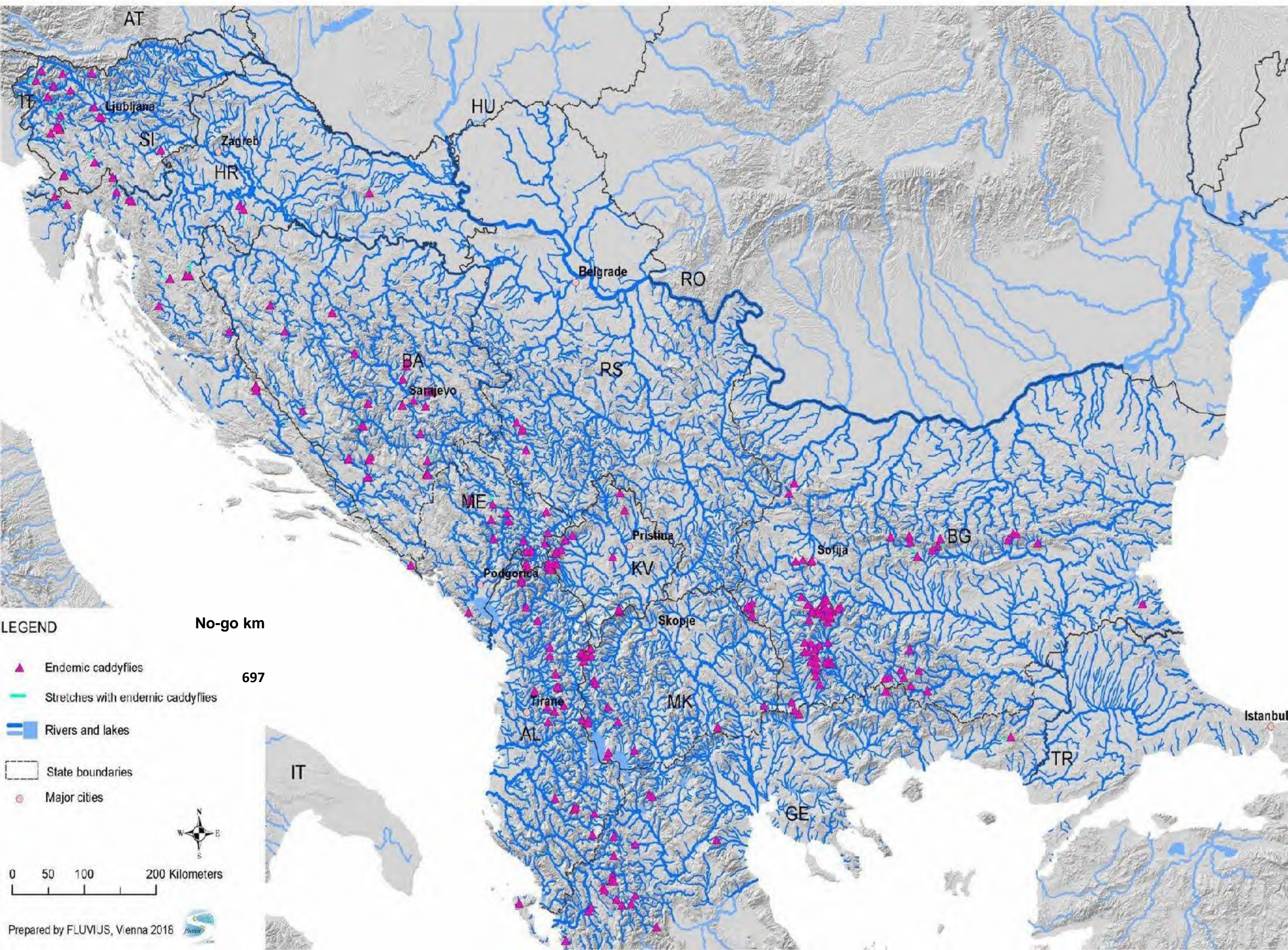
Freshwater Mussels (3)





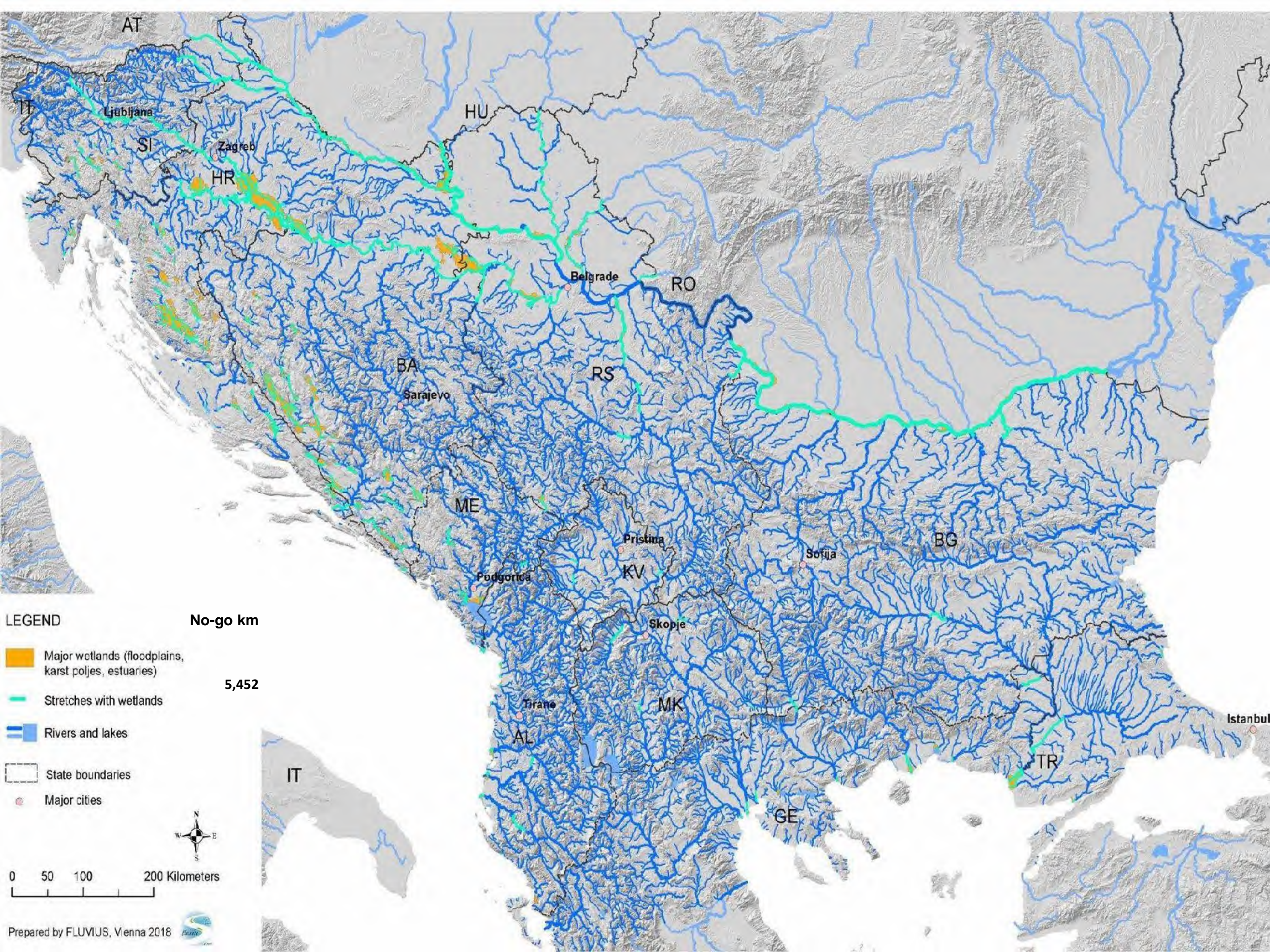
Caddisflies (213)





Significant Wetland Systems





LEGEND

Major wetlands (floodplains, karst poljes, estuaries)

Stretches with wetlands

Rivers and lakes

State boundaries

Major cities

No-go km

5,452

0 50 100 200 Kilometers



3. Results

Criterion	No-go River Stretches (km)
Hydromorphology	46,585
Protected Areas	30,724
Key Fish Species	8,315
Significant Wetland Systems	5,452
Freshwater Mussels	1,330
Caddisflies	697

Total: 61,033 river-km (76%) are no-gos

LEGEND

Hydromorphological assessment

■ "No Go" reaches based on:

1. Selection of threatend fish species
2. Protected area network (only strictly protected areas)
3. Hymo class "1" and "2" where connected to class "1"

■ Assessed rivers

— State boundaries

○ Capitals



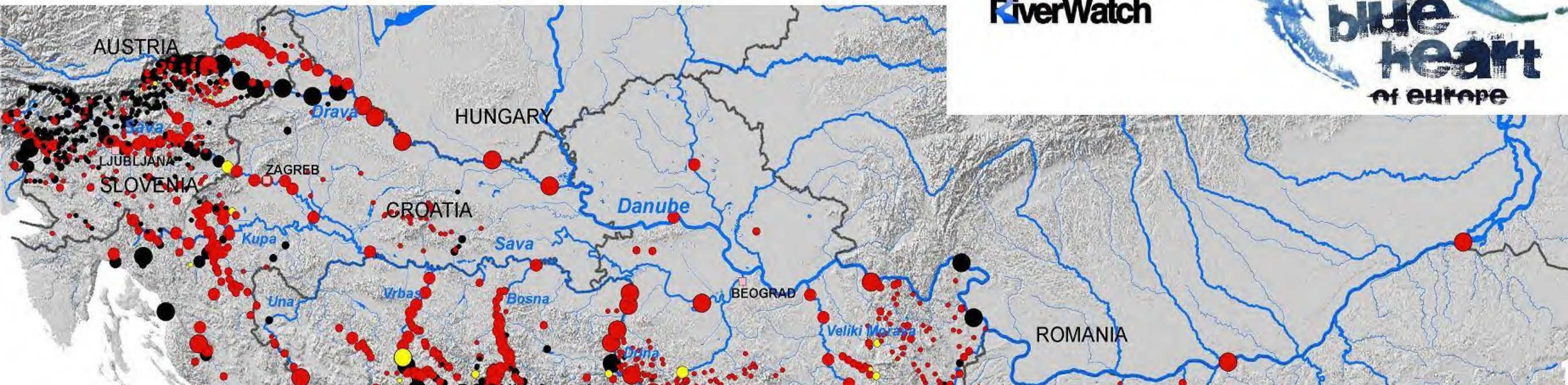
0 50 100 200 Kilometers



Hydropower plants in Balkan rivers

EURONATUR FOUNDATION

RiverWatch



	River Stretches (km)	HPPs	Number of projected HPPs by installed capacity (MW)			
			0.1 - < 1	1 - < 10	10 - < 50	> 50
Total assessed	80,523	2,790	1648	881	192	69
- No-go	61,033	2,497	1421	827	184	65
- Non No-go	19,491	293	227	54	8	4

LEGEND

- Existing dam
- Under implementation
- Planned dam
- Installed megawatts (MW)
 - 0.1-<1*
 - 1-<10 MW
 - 10-50 MW
 - > 50 MW

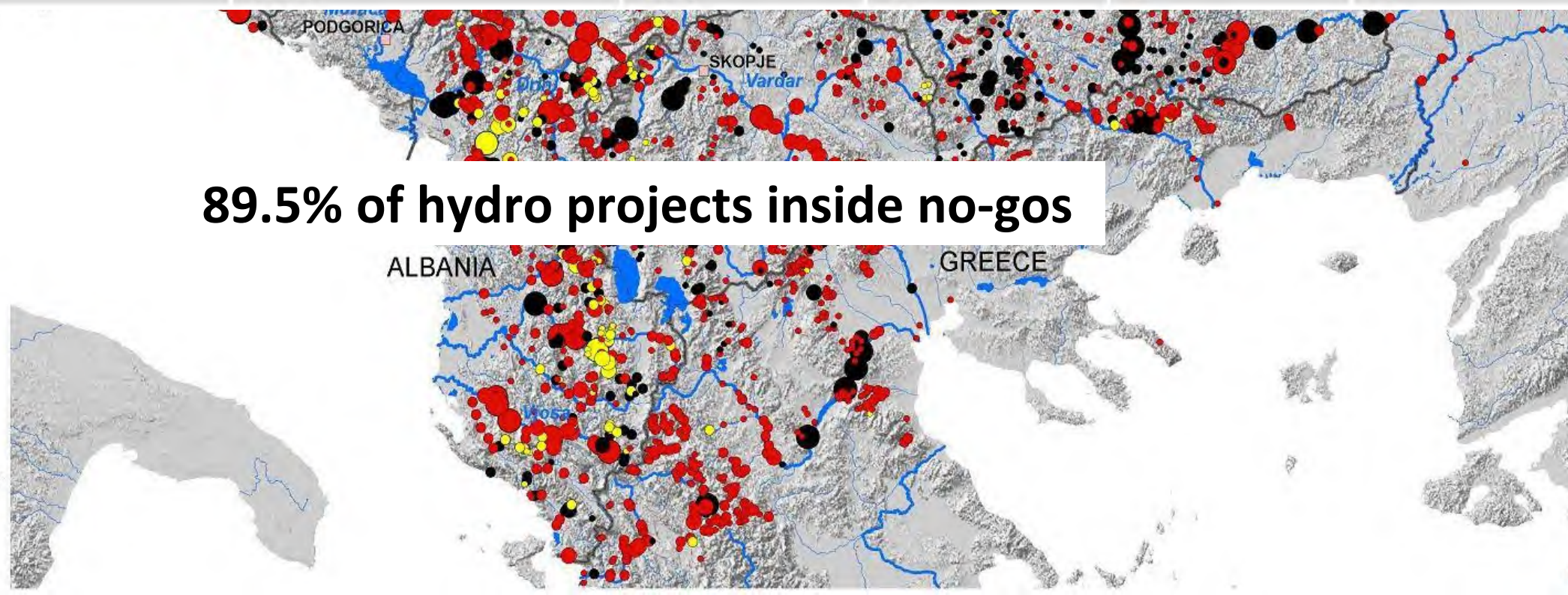
* Class incomplete for existing SHPPs

0 50 100 200 Kilometers

Prepared by FLUVIUS, Vienna 2017



89.5% of hydro projects inside no-gos



But how to reach renewable energy targets?

eg consult

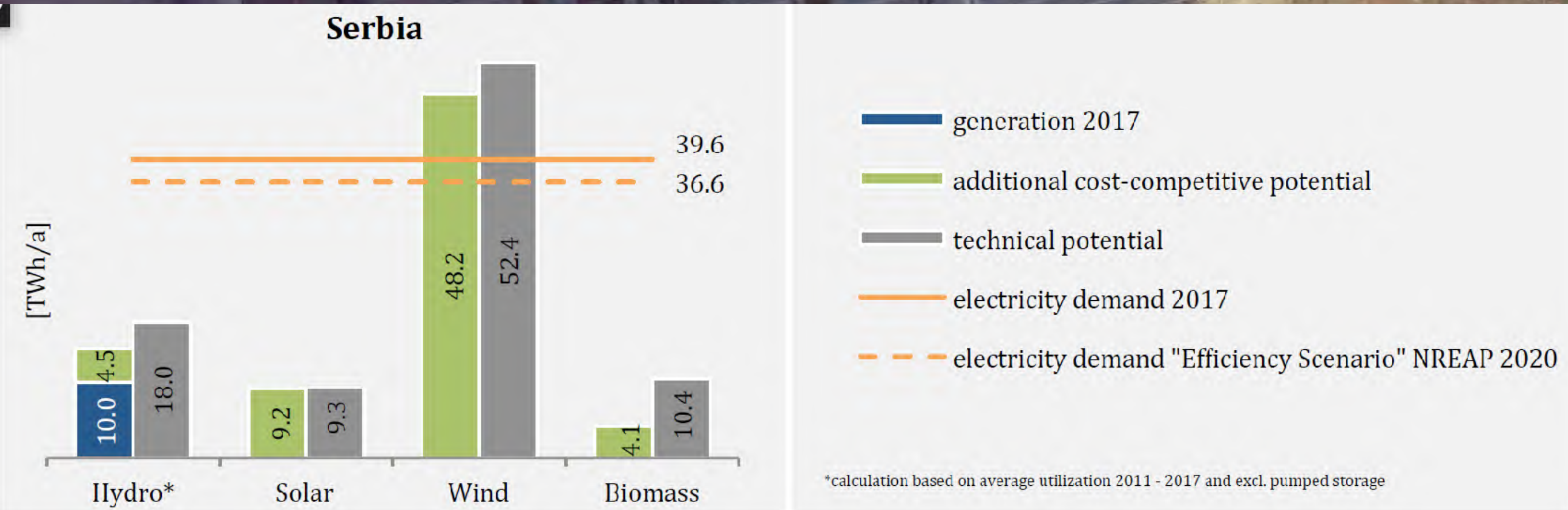
The role of hydropower in selected South-Eastern European countries



Source: Neubarth 2018, The role of hydropower in selected South-Eastern European countries

Conclusion Energy Study

1. Most countries would fail to reach renewable targets, even if all dams would be built.



2. Wind and solar could deliver enough opportunities to accomplish the countries NREAP targets

3. Wind and solar could substitute „no-go dams“



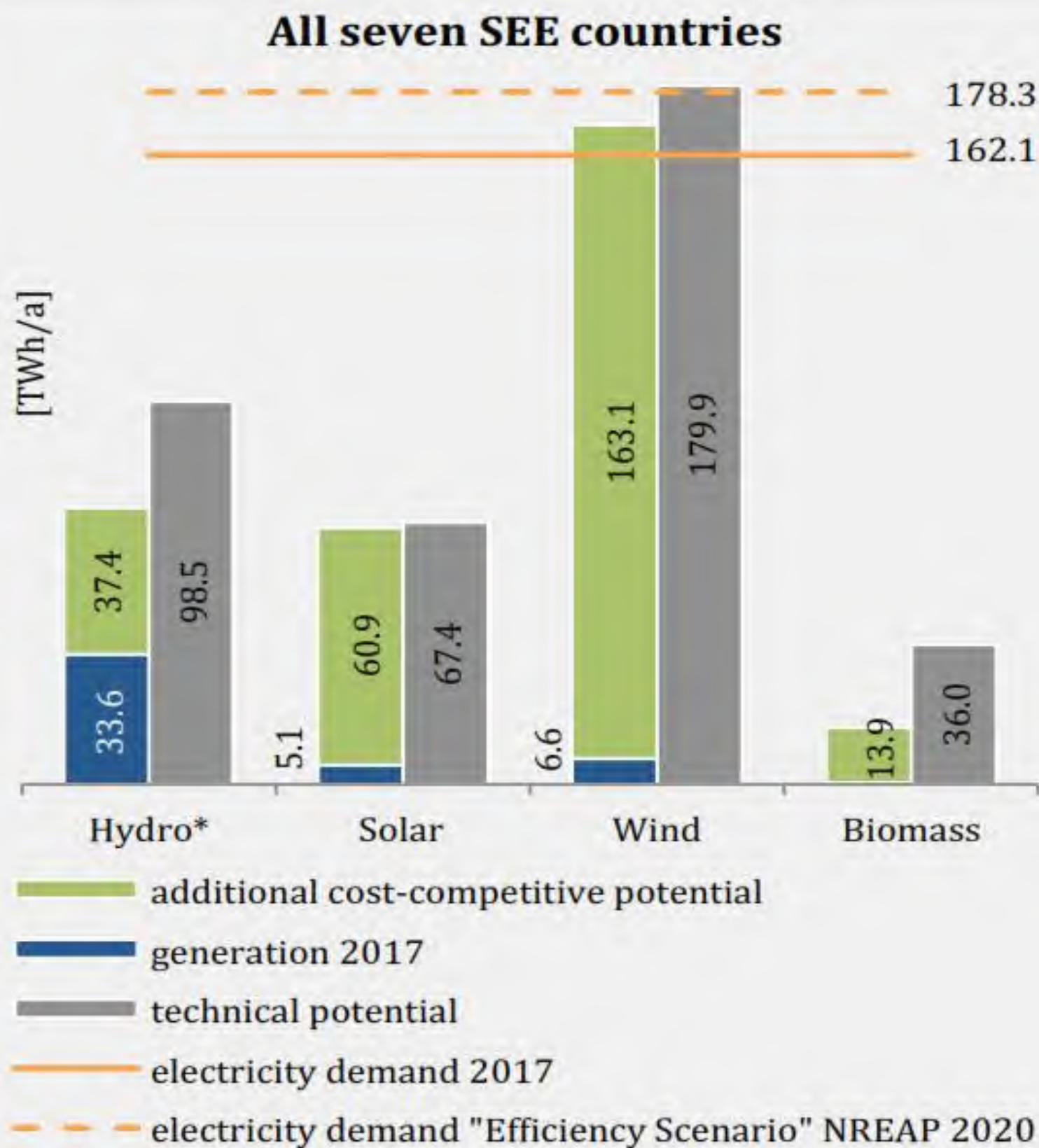
-> New hydropower is not even needed

-> We need a total switch in energy policy

Thank you for your attention!



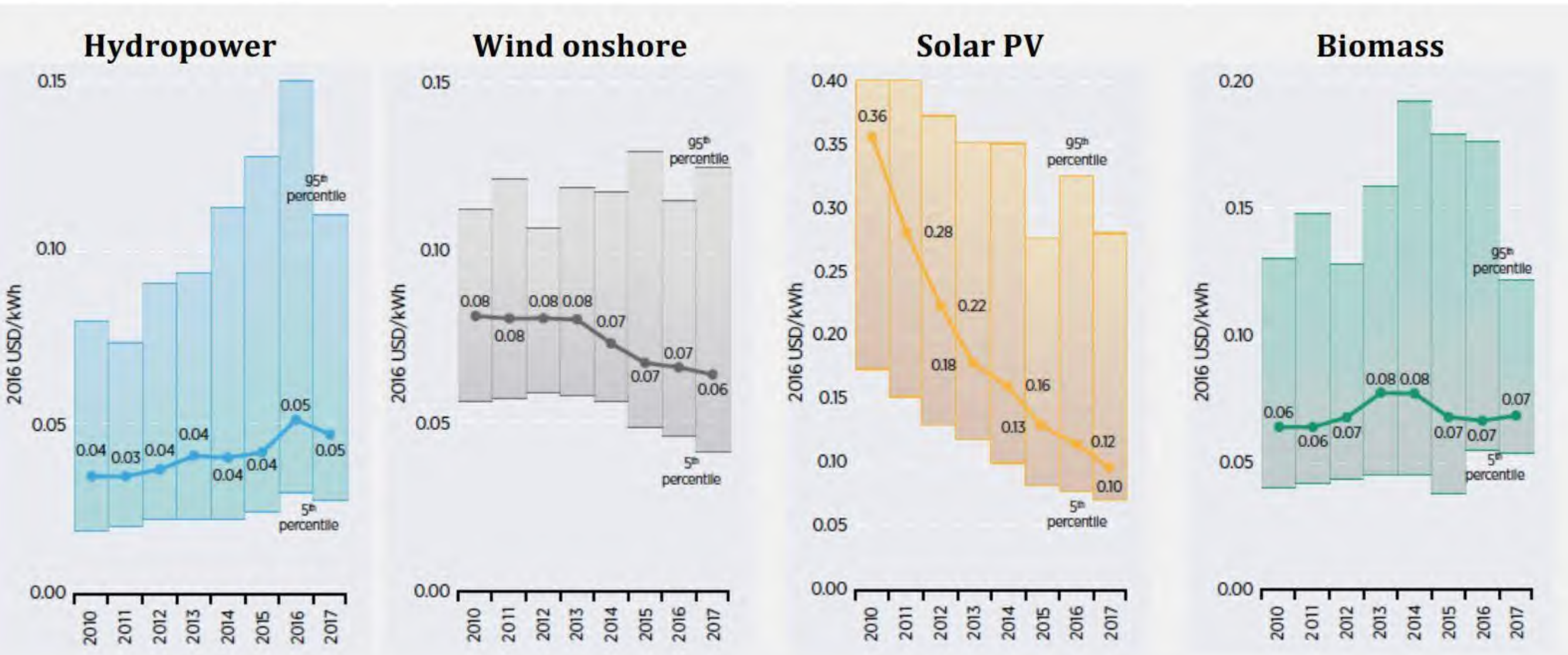
Fig. 23: Generation from renewables, electricity demand and potentials of renewable energy sources for all seven SEE countries



*calculation based on average utilization 2011 - 2017

Source: IRENA, ENTSO-E, Dii, NREAPs of countries

Fig. 25: Global weighted average levelized cost of electricity (LCOE) 2010-2017



Source: IRENA [28]