



# ECOLOGICAL CONDITIONS AND STATUS OF BIODIVERSITY IN THE RIVER ŠVENTOJI

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# River Šventoji

- ▶ The largest tributary of the Neris
- ▶ The length of the river is 246 km
- ▶ Basin area 6789,18 km<sup>2</sup>
- ▶ Forest cover 26% of the basin area, wetland - 0.7%, lake cover - 3%
- ▶ The surface is dominated by medium loams (63% of the basin area), sand and gravel (27%)
- ▶ Part of the river belongs to the protected areas: Anykščiai Regional Park, Šventoji State Ichthyological Reserve (part of the reserve) and biosphere polygon of Šimoniai forest

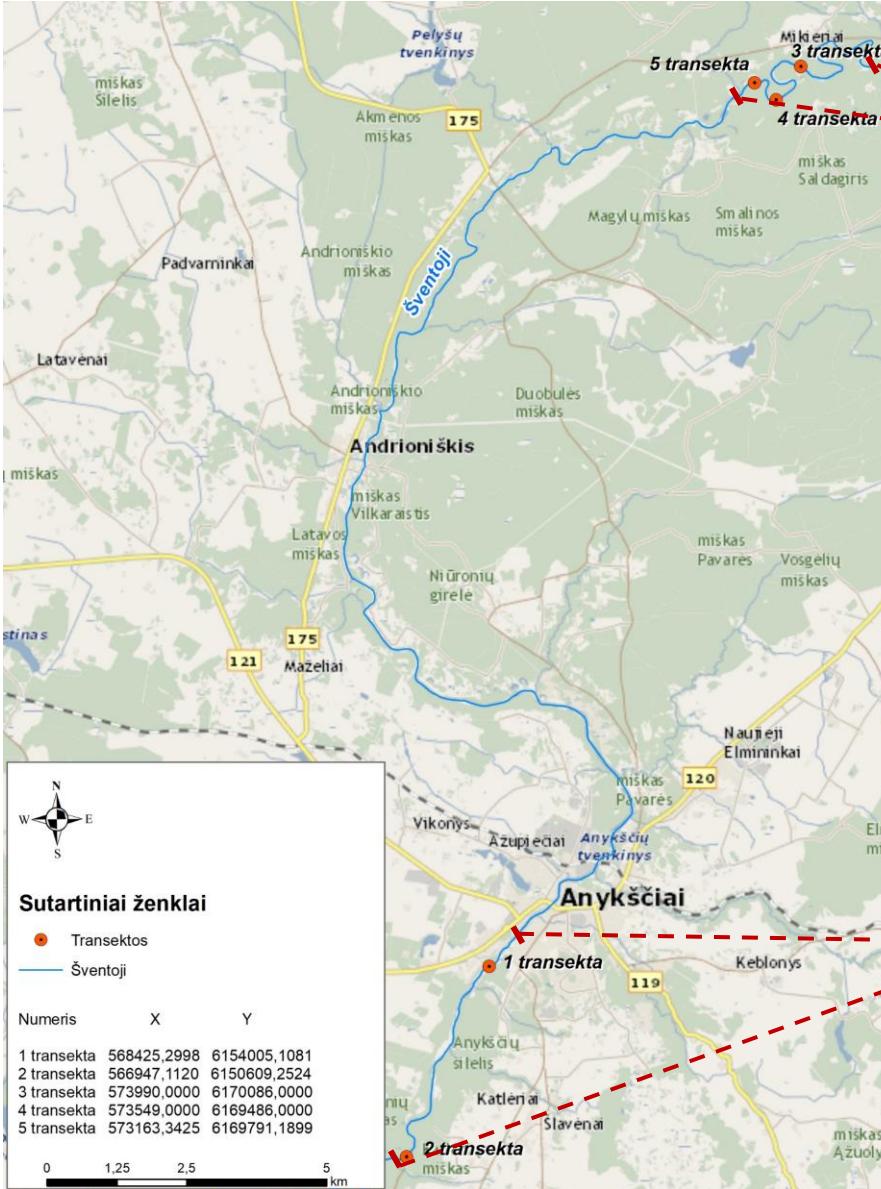


Šventoji sub-basin, <http://vanduo.gamta.lt>



The river Šventoji. Mikieriai outcrop. © D. Morudov

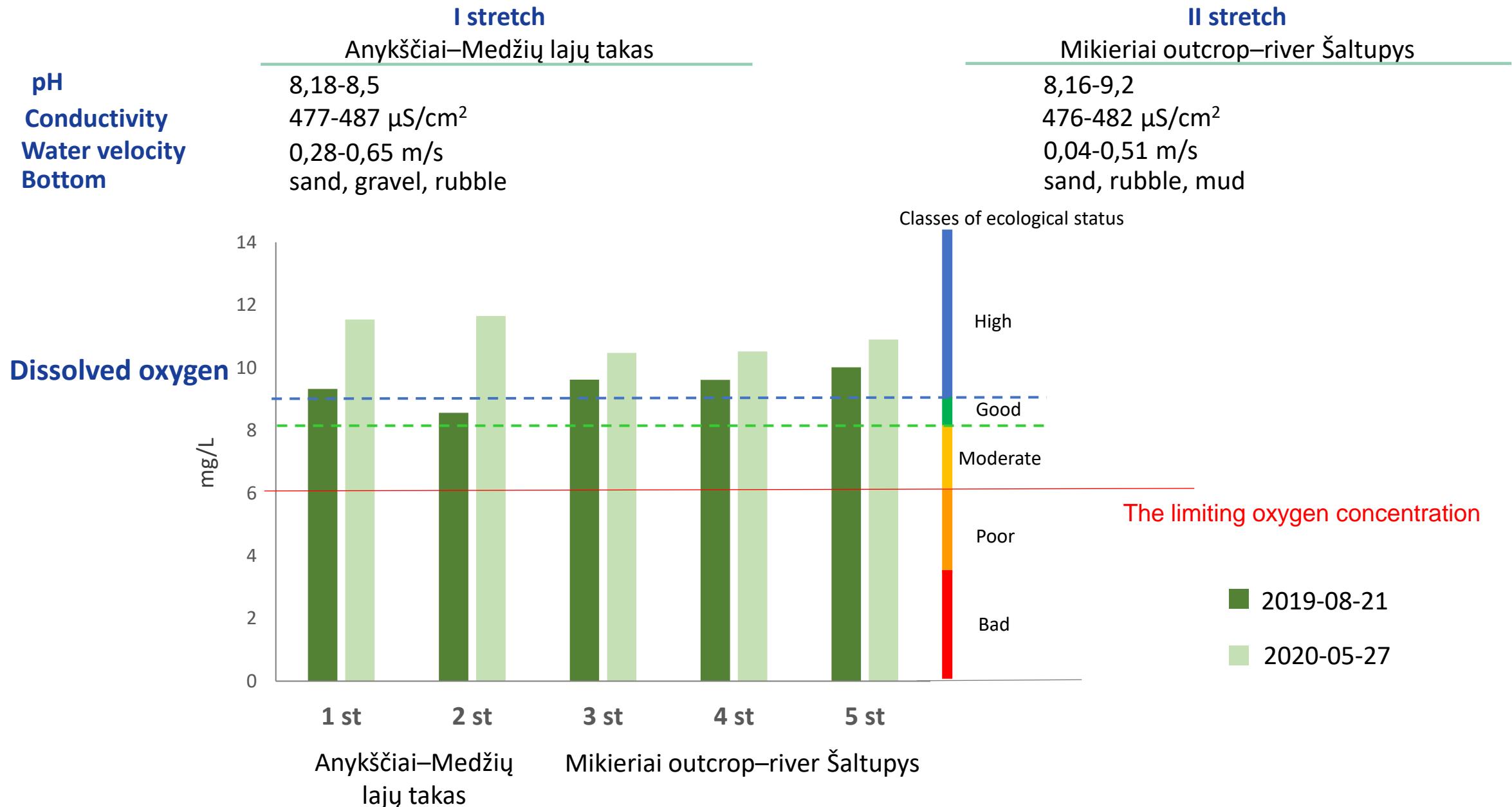
# Studied stretches and stations in the river Šventoji



**II stretch** Mikieriai outcrop–river Šaltupys

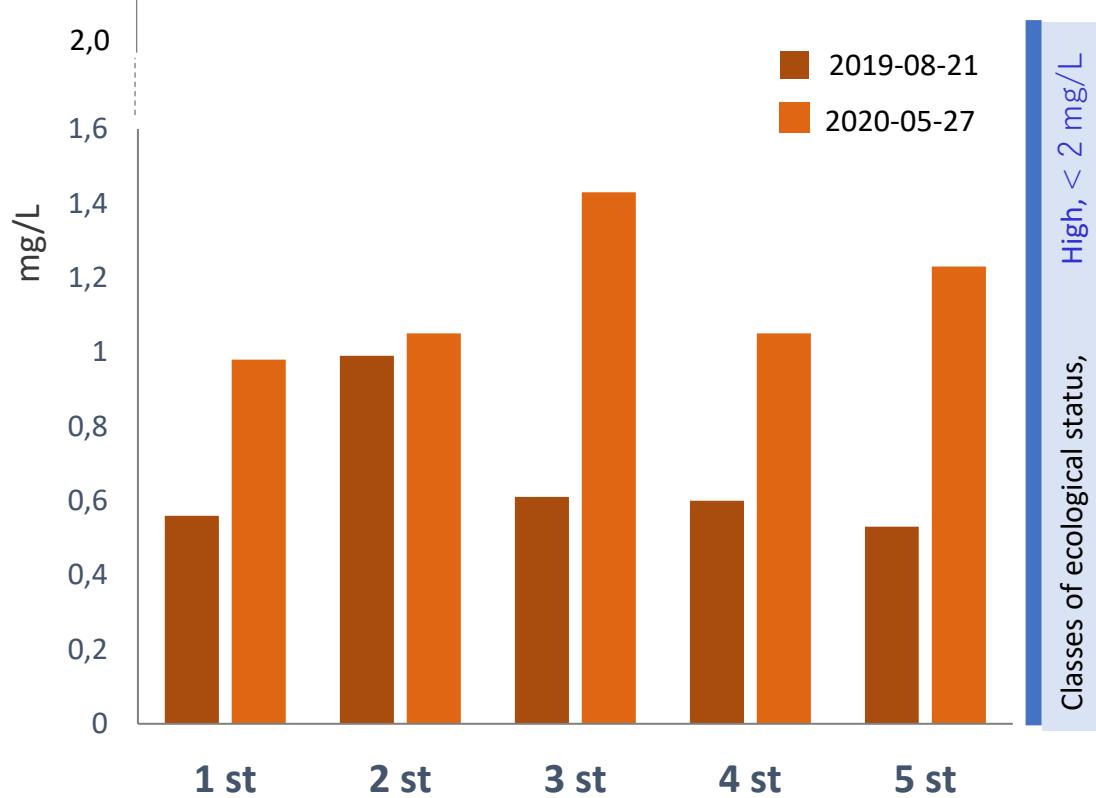
**I stretch** Anykščiai–Medžių lajų takas

# Ecological conditions of the river Šventoji according to physico-chemical water parameters



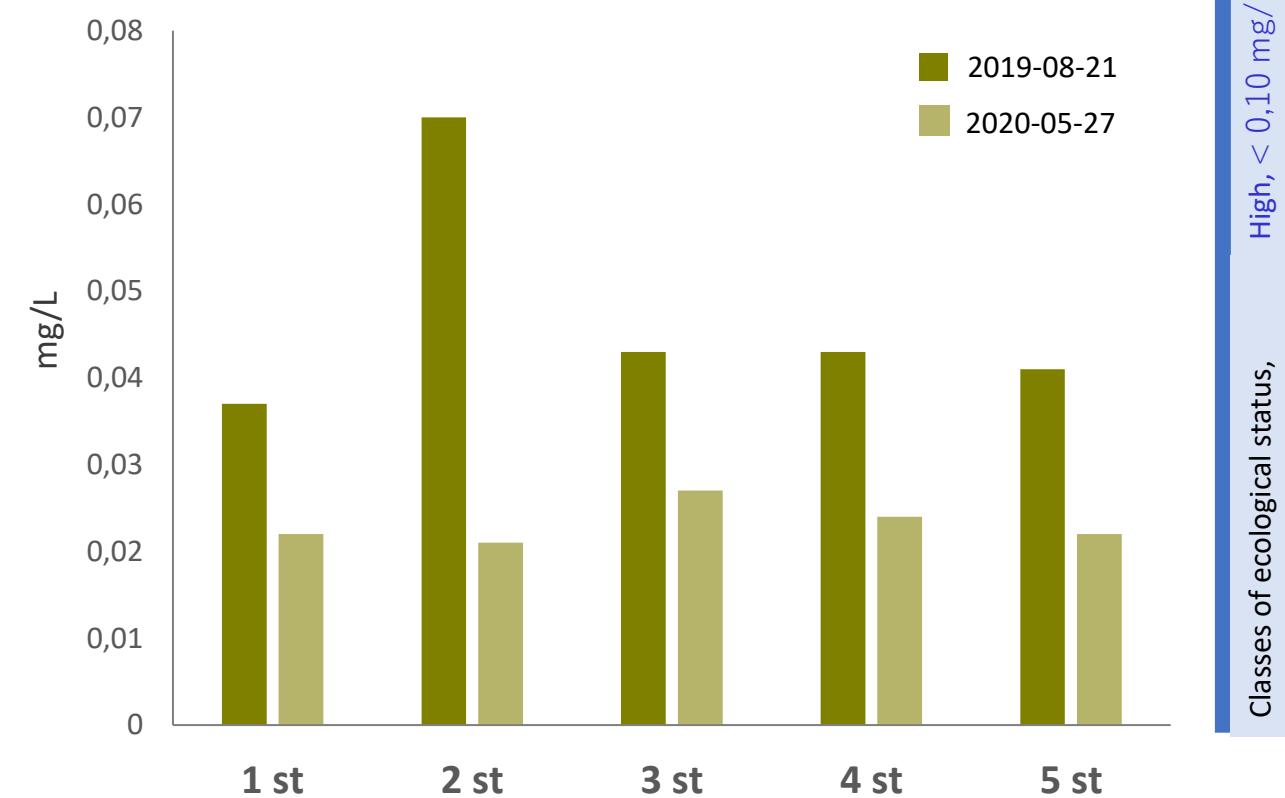
# Ecological conditions of the river Šventoji according to physico-chemical water parameters

## Total nitrogen



Anykščiai–Medžių  
laju takas      Mikieriai outcrop–river Šaltupys

## Total phosphorus

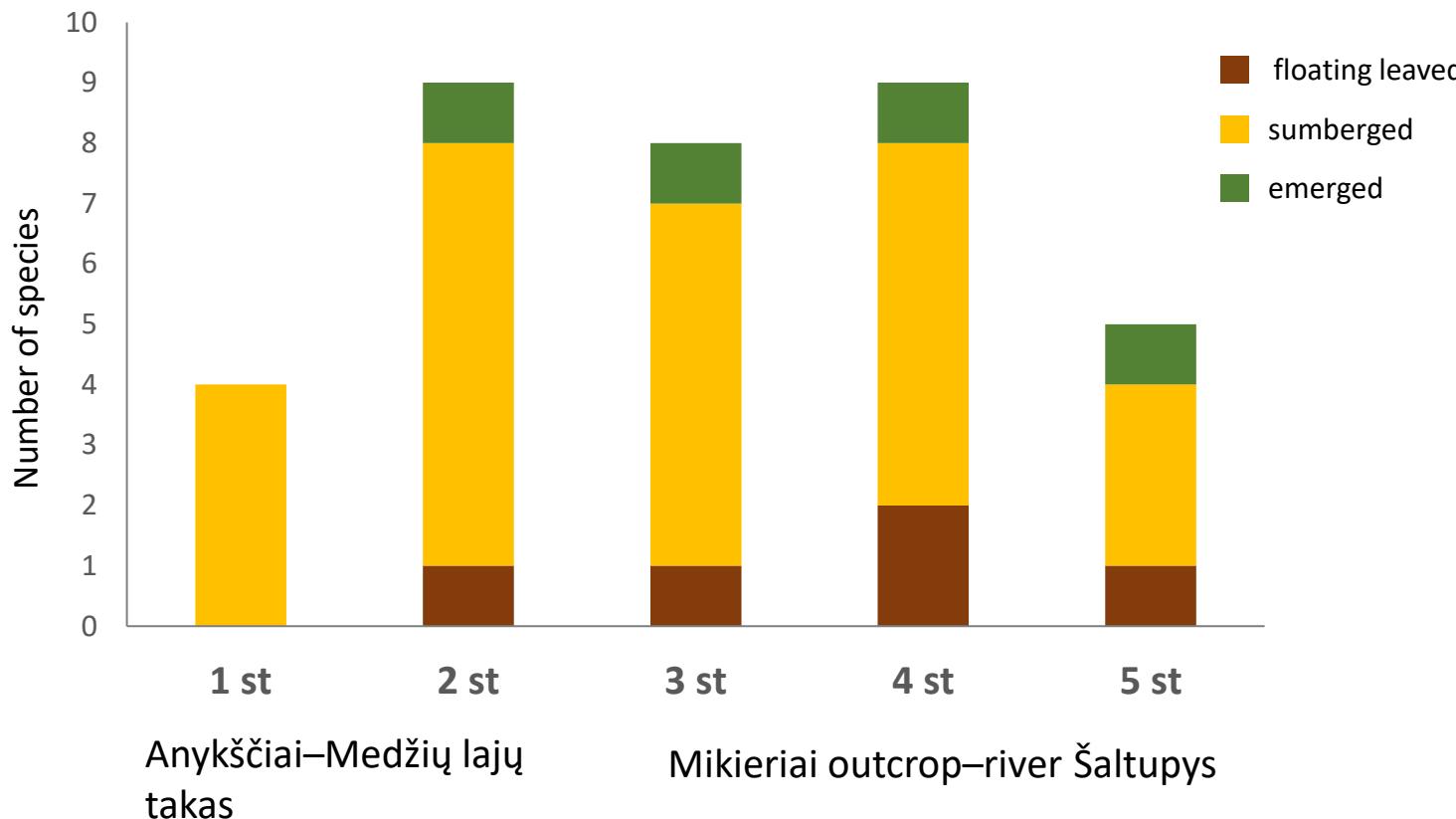


Anykščiai–Medžių  
laju takas      Mikieriai outcrop–river Šaltupys

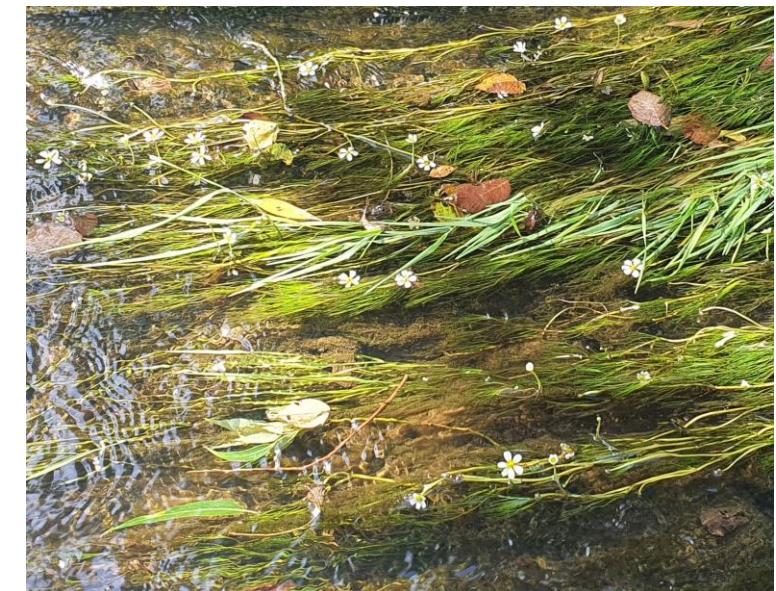
# Aquatic vegetation (macrophytes) and macroalgae *Cladophora glomerata*

(August 2020)

## Totally 16 macrophytes species



Habitat account of Habitats Directive feature H3260 Water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitricho-Batrachion* vegetation was not found.



*Batrachium fluitans*. © J. Karosienė

# Aquatic vegetation (macrophytes) and macroalgae *Cladophora glomerata*

(August 2020)

## I stretch

Anykščiai–Medžių lajų takas

Dominant macrophytes species:



*Stuckenia pectinata* (syn. *Potamogeton pectinatus*)



*Potamogeton perfoliatus*

# Aquatic vegetation (macrophytes) and macroalgae *Cladophora glomerata*

(August 2020)

## I stretch

Anykščiai–Medžių lajų takas



Aquatic vegetation overgrown with *Cladophora glomerata*

# Aquatic vegetation (macrophytes) and macroalgae *Cladophora glomerata*

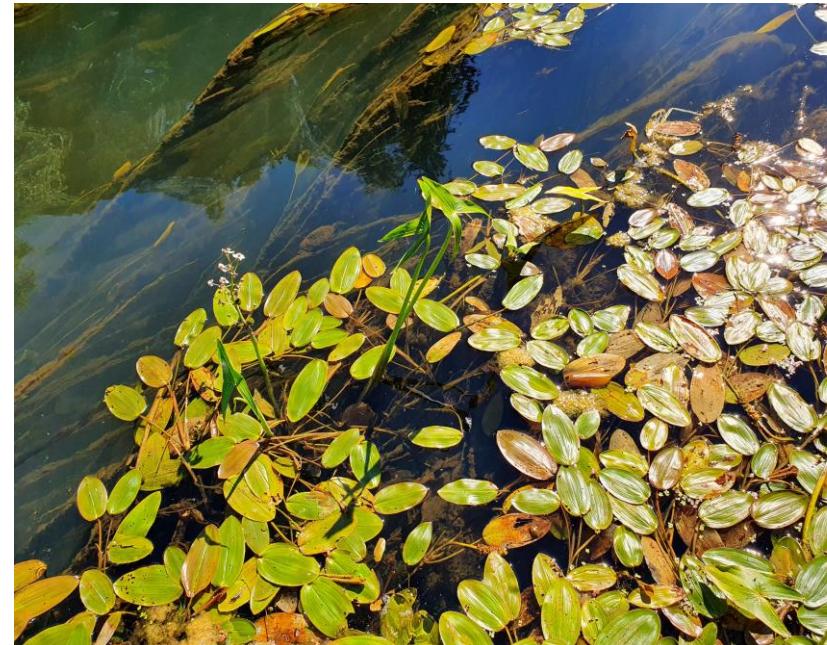
(August 2020)

## II stretch

Mikieriai outcrop–river Šaltupys



*Sagittaria sagittifolia* (subm.) and  
*Cladophora glomerata* on the bottom



*Potamogeton natans*

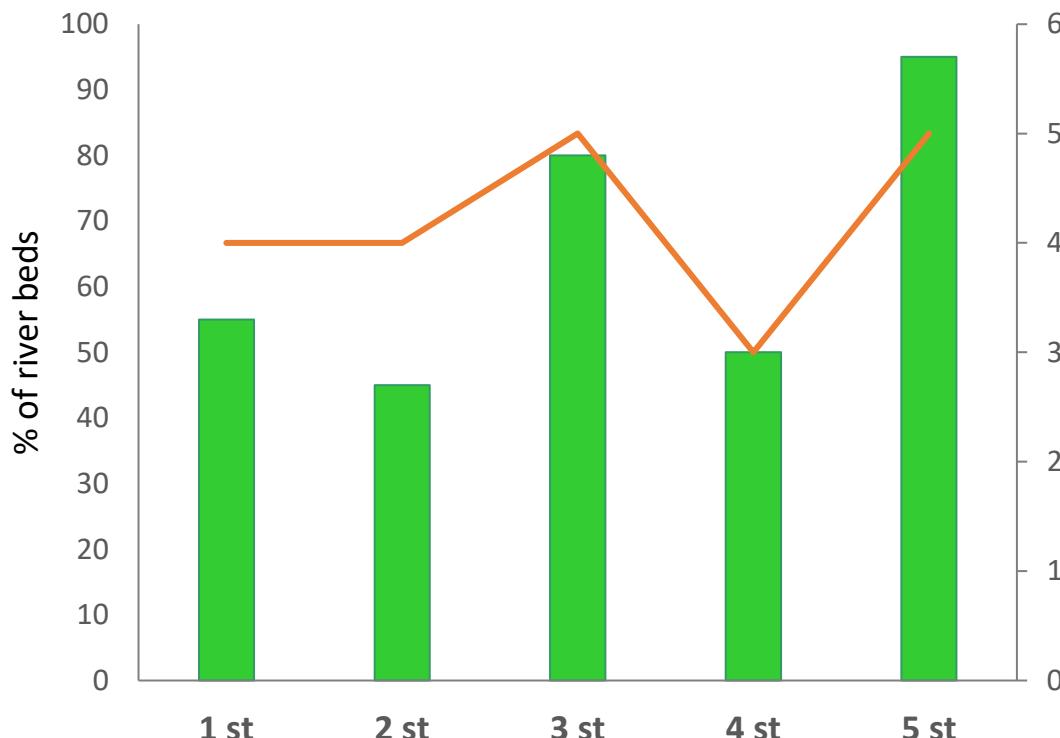


Aquatic vegetation overgrown with  
*Cladophora glomerata*

# Aquatic vegetation (macrophytes) and macroalgae *Cladophora glomerata*

(August 2020)

***Cladophora glomerata* relative coverage (%) and abundance according to Braun-Blanquet scale**

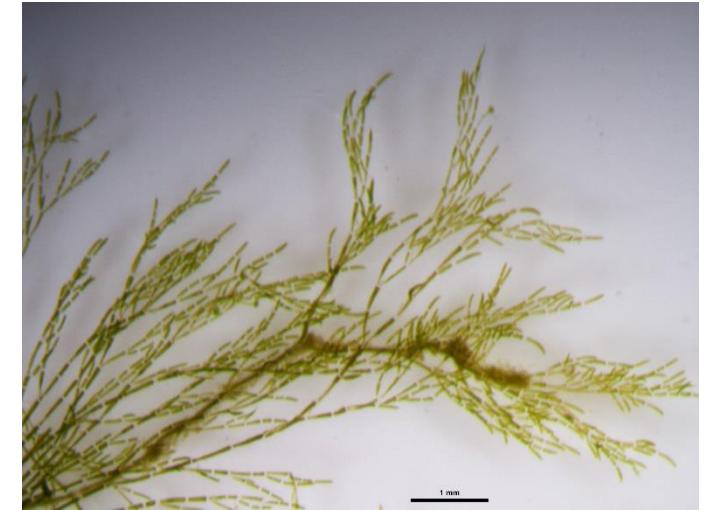


Anykščiai–Medžių  
lajų takas

Mikieriai outcrop–river Šaltupys



*Cladophora glomerata*. © J. Karosienė

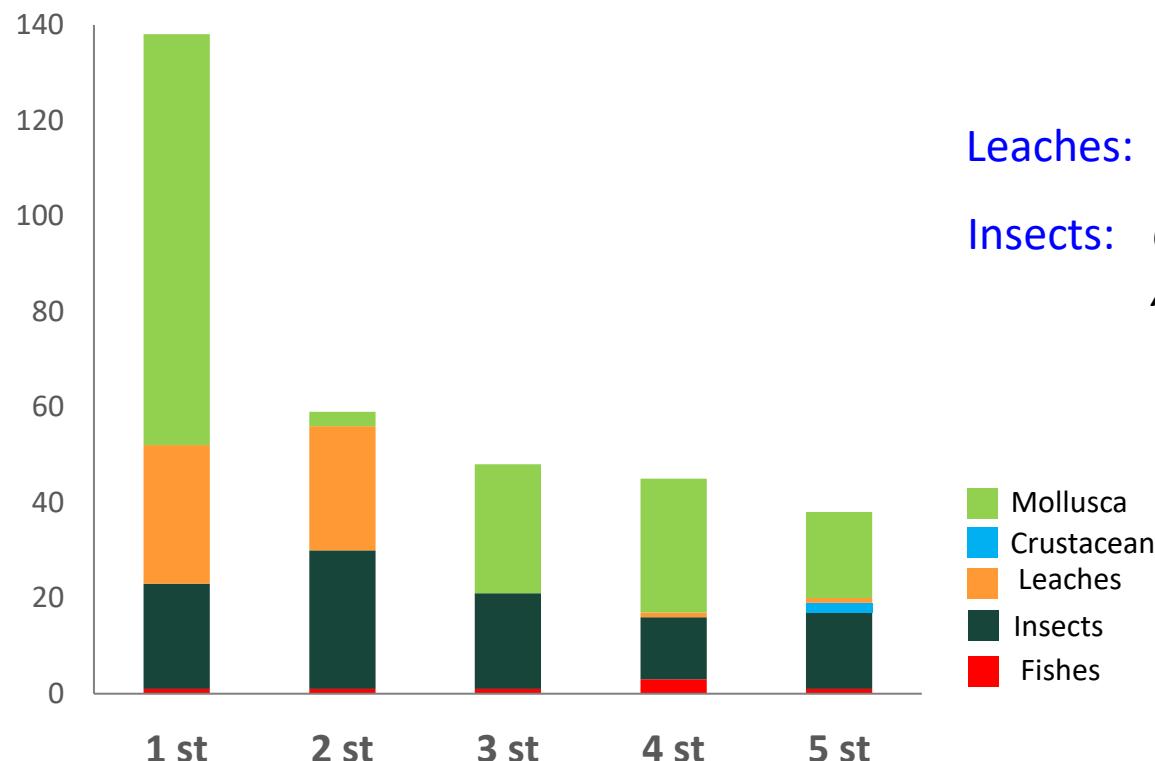


*Cladophora glomerata*. © J. Koreivienė

# Zoobenthos in *Cladophora glomerata* biomass

**Totally 34 species**

Average 65 individuals/1 kg wet biomass of *C. glomerata*



Ankštai–Medžių Mikieriai outcrop–river Šaltupys  
lajų takas

- Mollusca: *Bythinia cf. troschelii*  
*cf. Gyraulis*  
*Theodoxus fluviatilis*
- Leaches: *Erpobdella sp.*
- Insects: *Ophiogomphus cecilia*  
*Aphelocheirus aestivalis*

- Mollusca
- Crustaceans
- Leaches
- Insects
- Fishes



# Zoobenthos in *Cladophora glomerata* biomass

## Species included in the Natura 2000 list of protected species (individuals/1 kg wet biomass)

Group	Species	1 st	2 st	3 st	4 st	5 st	Total
Pisces	<i>Cottus gobio</i>	1			1	1	3
	<i>Cobitis</i> sp.		1		2		3
Odonata	<i>Ophiogomphus cecilia</i>		2	7	1	6	16



*Ophiogomphus cecilia*. © J. Rimšaitė



*Cottus gobio*. © V. Kesminas



*Cobitis taenia*. © Thorke A. S. Østergaard

# Zoobenthos in *Cladophora glomerata* biomass

## Invasive species (individuals/1 kg wet biomass)

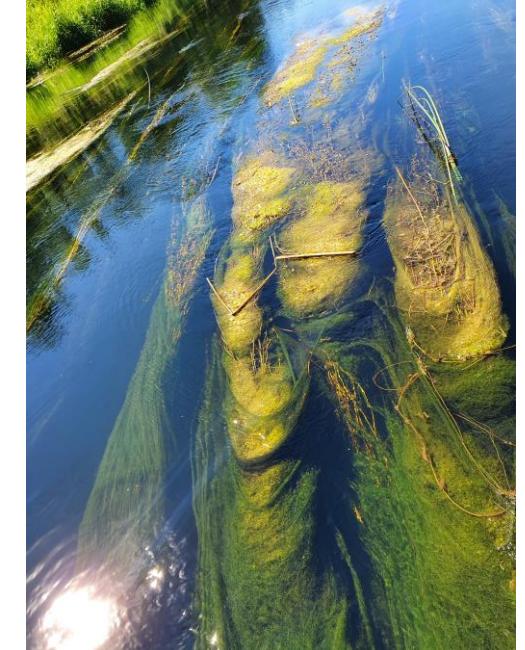
Group	Species	1 st	2 st	3 st	4 st	5 st	Total
Decapoda	<i>Orconectes limosus</i>	-	-	-	-	2	2



*Orconectes limosus*. ©K. Kriščiūnas

# Negative effect of *Cladophora glomerata* excess biomass

- ▶ Overgrown macrophytes
- ▶ Release allelopathic substances that inhibits growth of macrophytes
- ▶ Reduces habitat heterogeneity
- ▶ Reduced water flow rate
- ▶ Cover the bottom



*Cladophora glomerata* in  
the river Šventoji

