



Fényes, springlakes, Tata
Educational Trail

Gábor Ballabás, PhD.
Geographer, historian

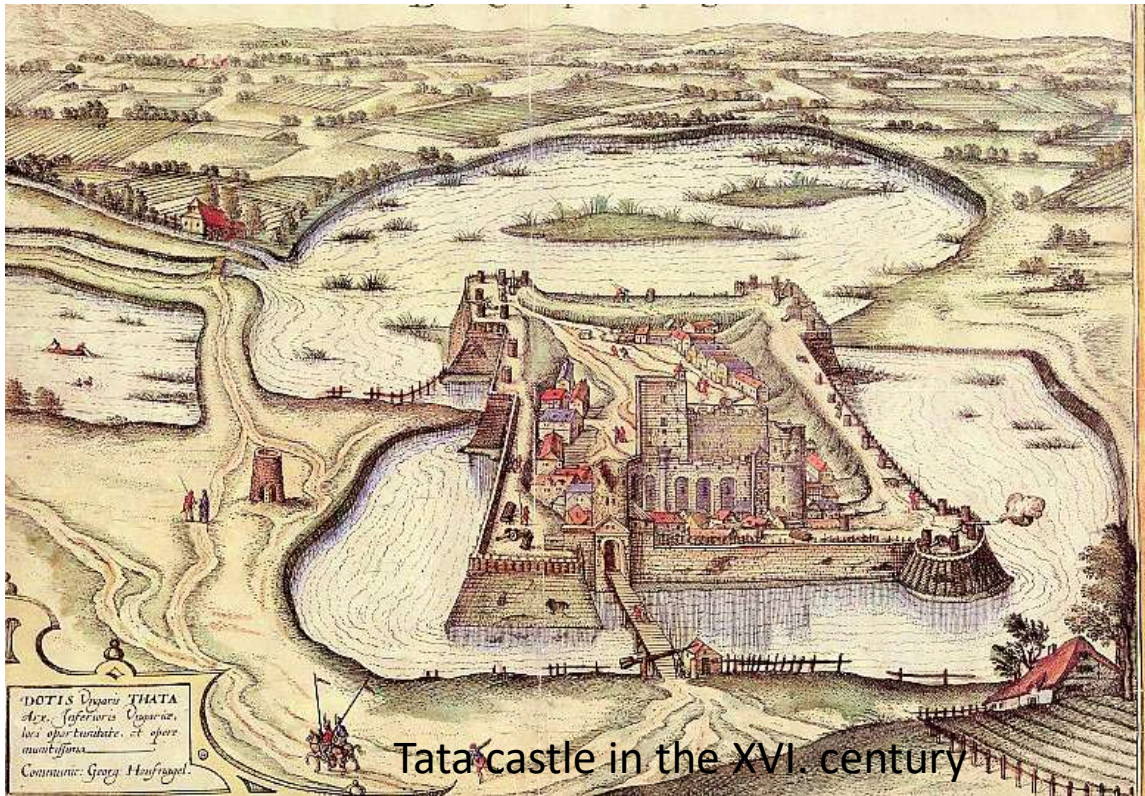
Tata, 20.06.2023.

Tata

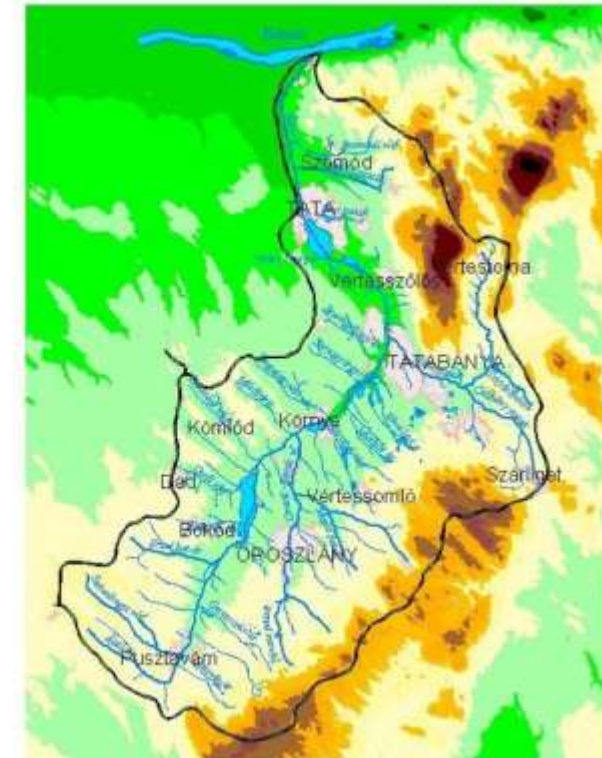
- Near the Danube (7 km) and Budapest (70 km)
- County: Komárom-Esztergom (NUTS 3)
- Region: Central Transdanubia (NUTS 2)
- 23491 citizens (2022.)
- History – „the city of water”
- Surface and groundwaters
- Ramsar city – 2018.



Present

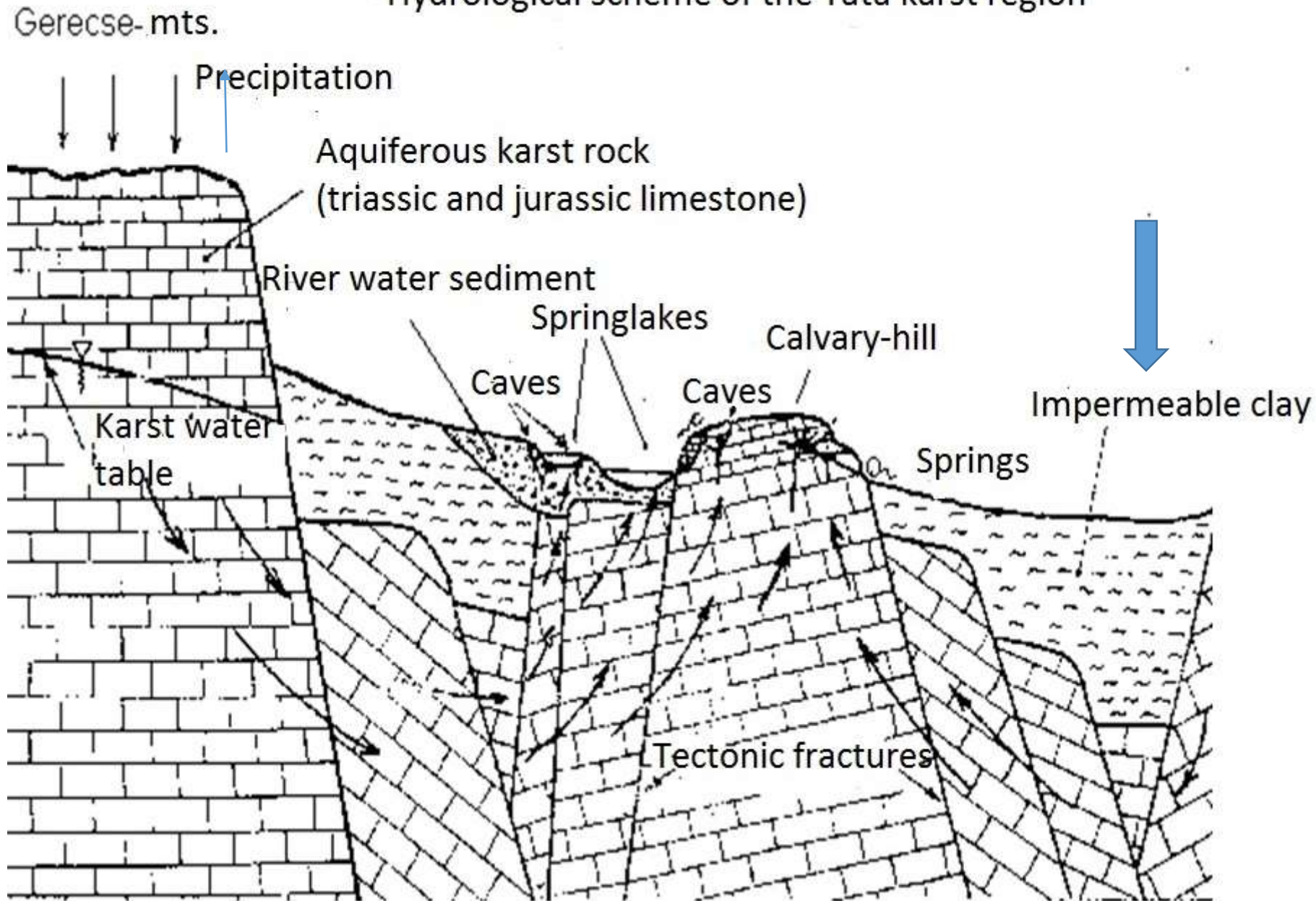


Magasság (mBft)



Source: L. Somlyódy et al. (2003.)

Hydrological scheme of the Tata karst region



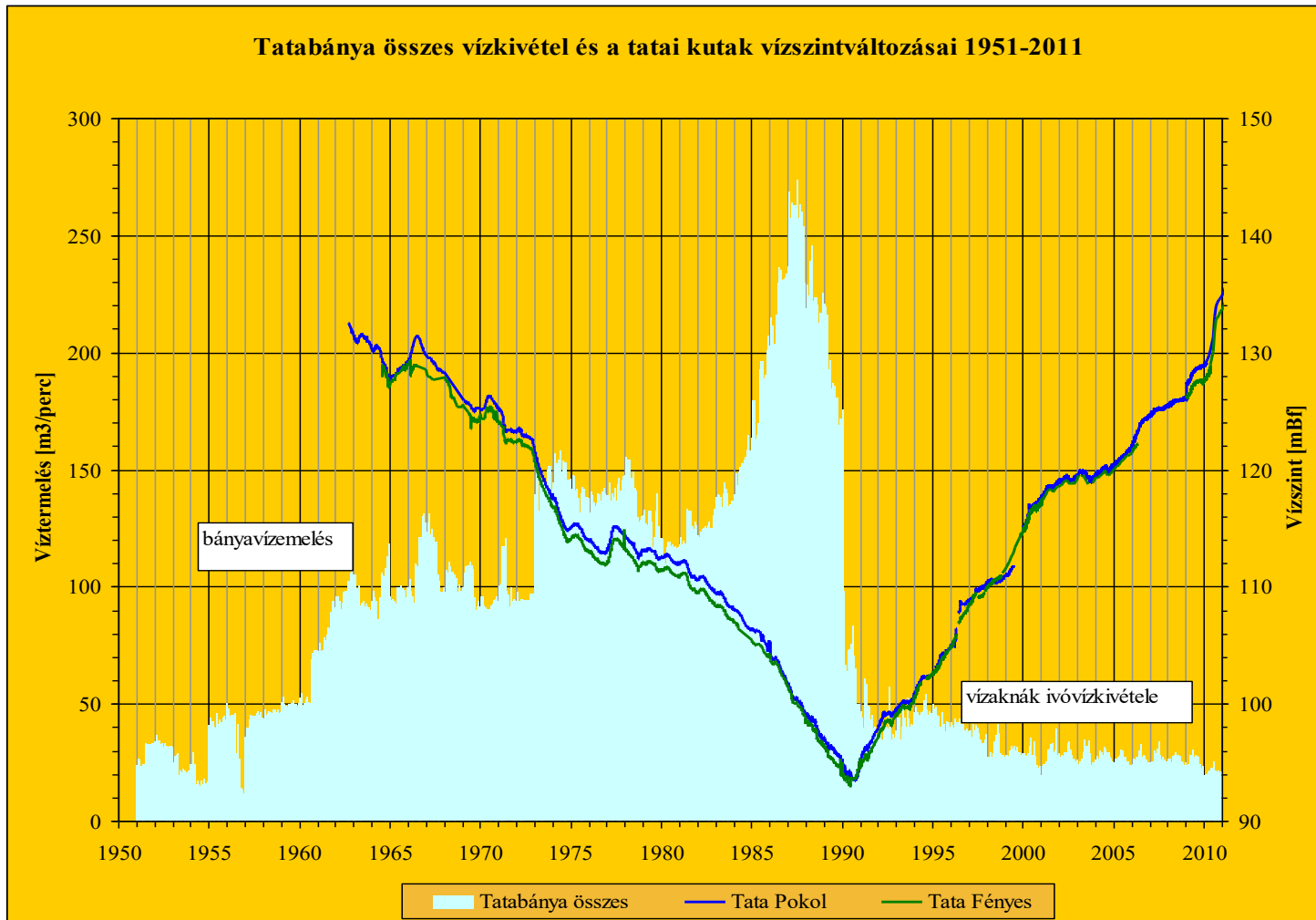
Source: GY. SCHEUER – F. SCHWEITZER (1981.)

Main data of karst springs in Tata				
Name of the spring	Spring stagnation level (mBsl)	Estimated original water yield 1919.	Water yields of the 50's	Temperature
	(maBsl)	L/min	L/min	C
Fényes springs	118-119	81000	25200	22
Mirror spring (english garden)	138	33.000	17400	20
Hell spring (english garden)	140,8	27000	60	20,5
Spring under the castle	129	10998	3400	21
Spring in the Old Lake	127,3	1000	340	19
Spring Lo Presti	138	600	340	19
Sum (all together)		156420,4	49141	

➤ 2019. Calculated total water yield 21012 L/min Source: Smaragd Ltd. 2021.

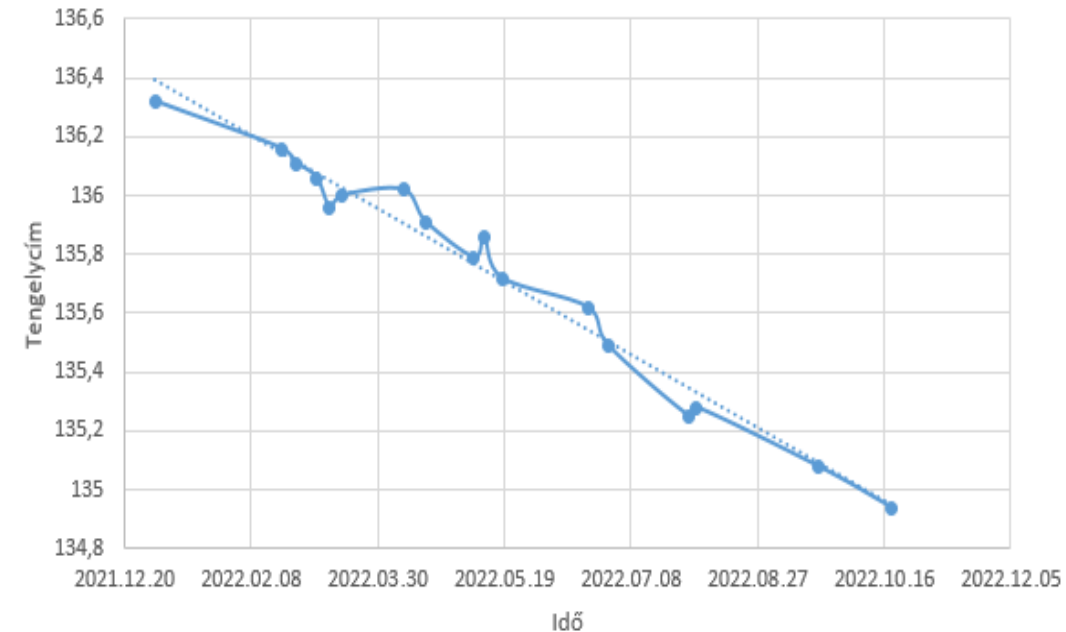
Main problem of the past – **increasing water production in the coal mines** in the Tatabánya area and water level changes in two measuring wells (Fényes and Pokol) in Tata 1951-2011.

Source: Geoszféra Ltd. (2023.)



Source: A. Csepregi (2012.)

A Tükör- forrás vízszintváltozása 2022-ben



Main problem of the present: **Water level changes** at the Mirror Spring 2022. (English Garden)

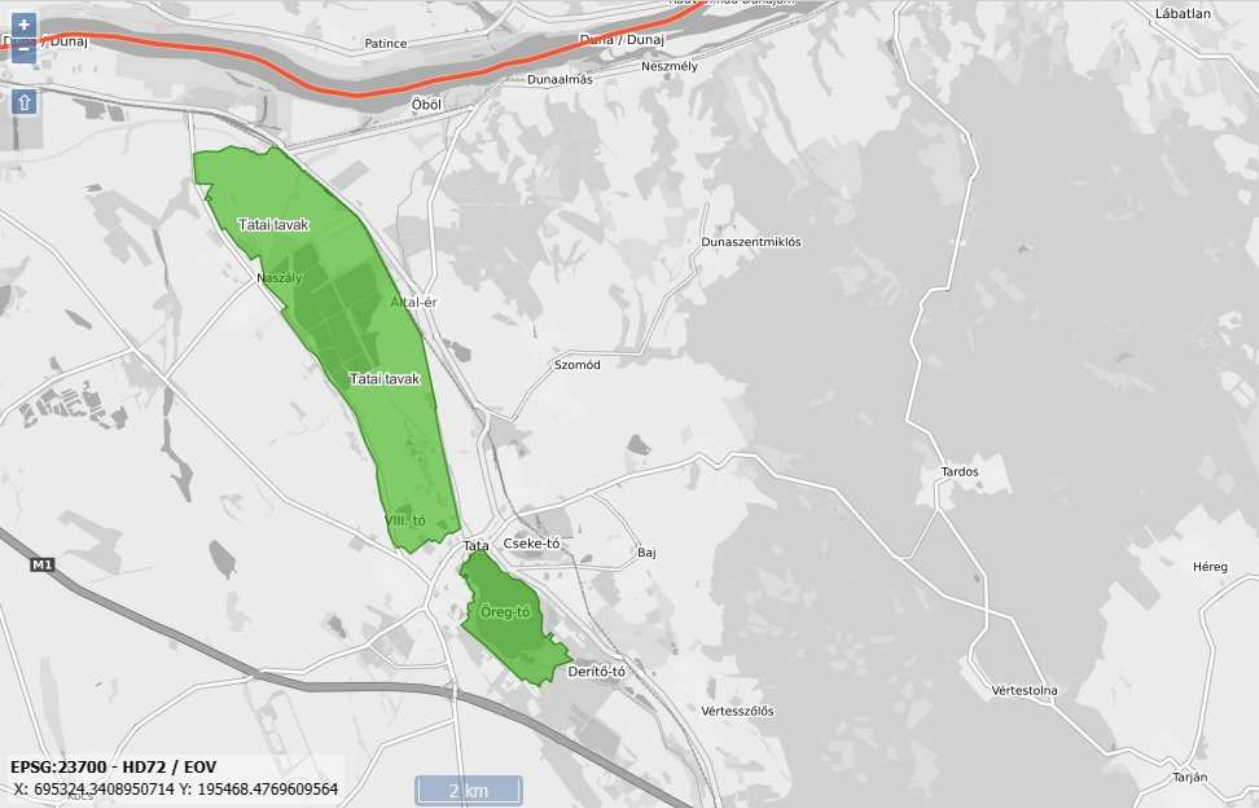
Main cause: Increasing drought stress and **decreasing infiltration into karst from 2018**

Main problem of the future:

manufacturing and battery industry developments in Tatabánya and Komárom - **increasing water production and delivery**

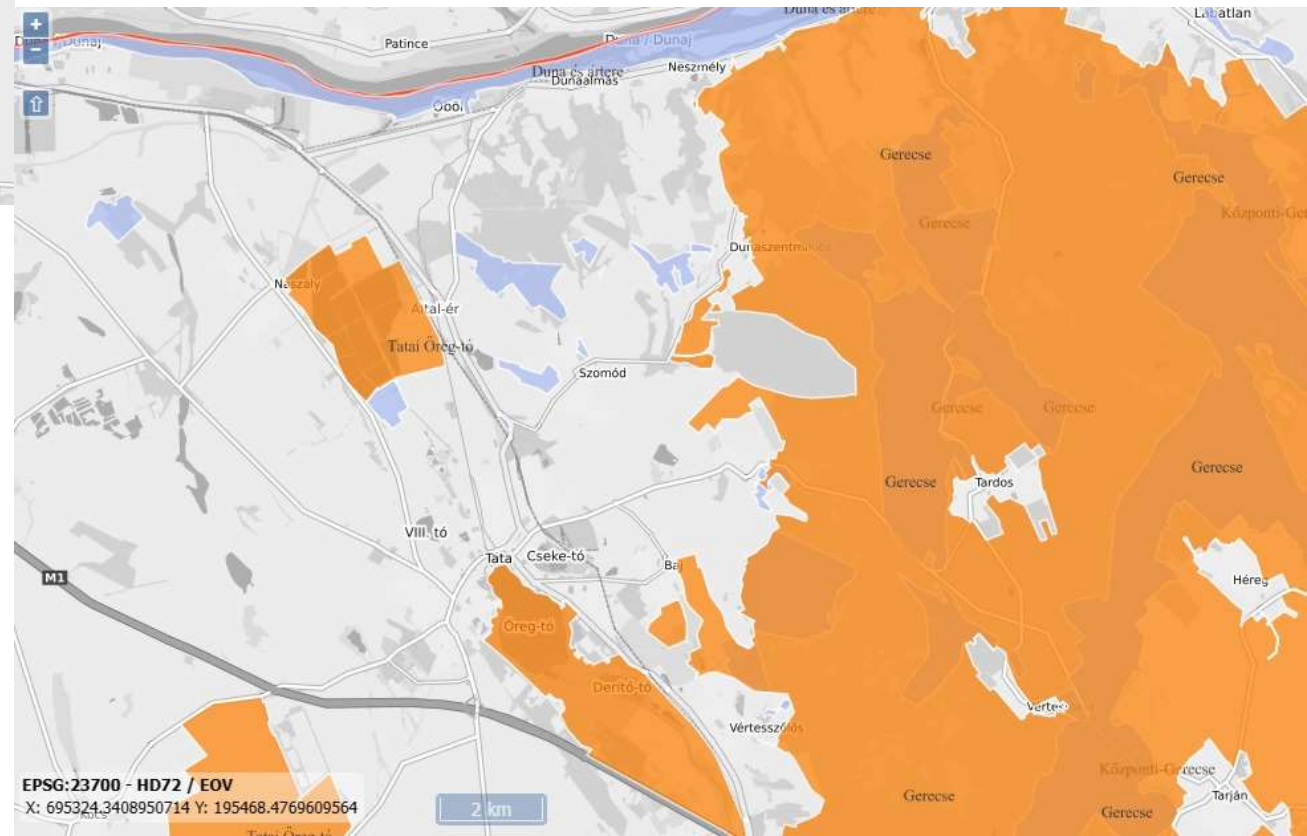
(expected average increase in water production of 20,000-30,000 m³ /day to 70,000-80,000 m³ /day in Tatabánya) – in progress





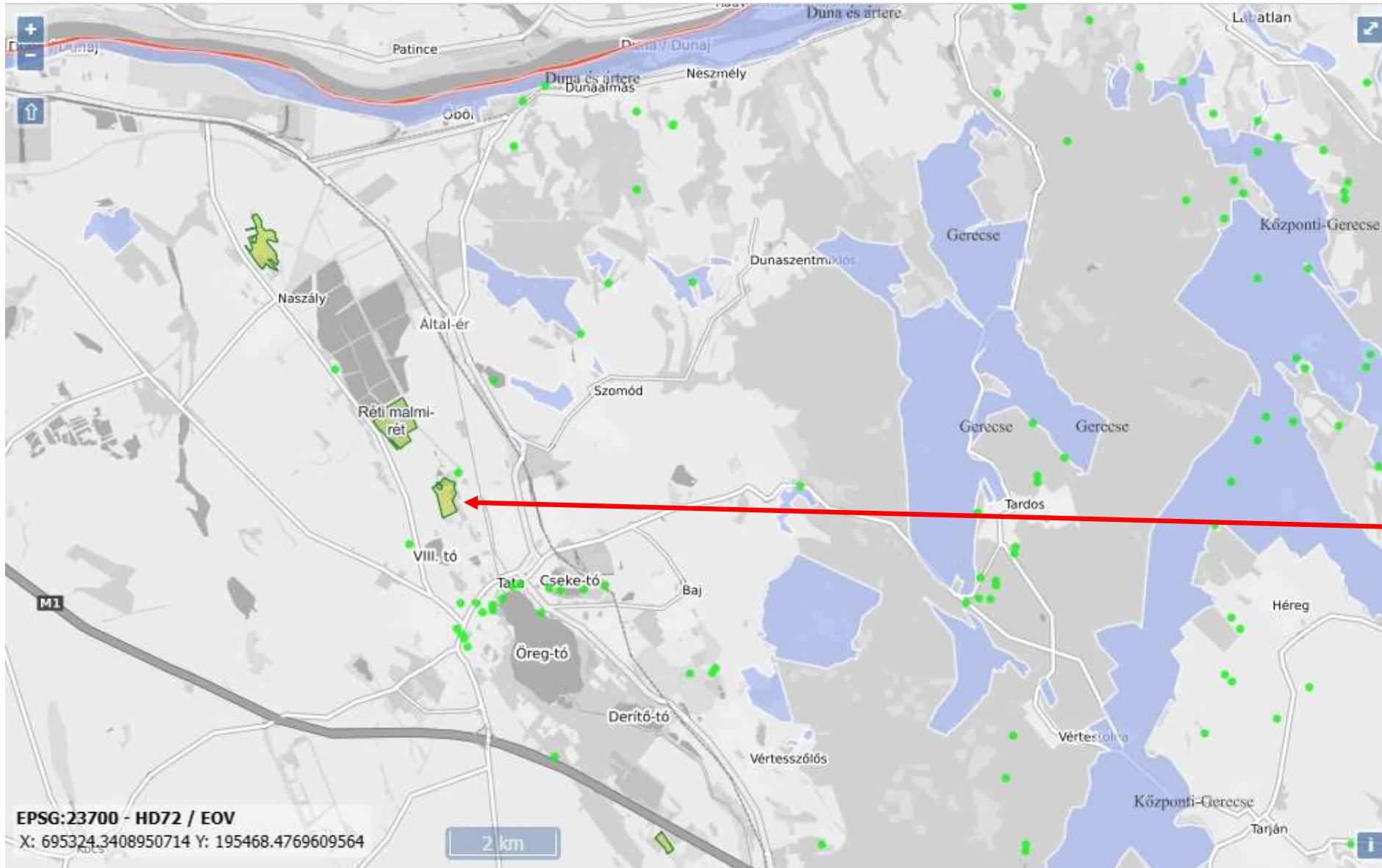
Natura 2000 sites near Tata (2004)
 Orange - SPA sites
 Blue (light) – SAC sites

Ramsar sites near Tata – valley of the Által-ér
 (2006)



Source: TIR (Information System of Nature Protection)

Protected bogs and marshes (with green border), protected karst springs (green points), and Natura 2000 SAC sites (blue)



Fényes springs

Source: TIR (Information System of Nature Protection)

Educational trail of the Fényes Springs (2014.)

- 33 ha protected (local and Ramsar) area and camping/strand
- 1,3 km boardwalk
- 120.000 visitors (2022.)

Typical habitats:

Springlakes and channels
Alder forests and bogs
Blue swamped bog
and sandy steppe



Protected and specially protected
species in Fényes



Senecio umbrosus



**Beautiful demoiselle
(Calopteryx Virgo)**



Night heron (Nycticorax, nycticorax)



European pond turtle (Emys orbicularis)



Dice snake (Natrix tessellata)



Thank you!

