



# Successful restoration of migratory fish populations confirms the benefits of dam removal in middle-sized rhithral stream

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EU LIFE Programme integrated project

“Implementation of River Basin Management Plans of Latvia towards good surface water status”



# Latvia

- **More than 12 000 rivers;**
- **At least 1300 migration barriers;**
- **Very few dam removal projects implemented.**



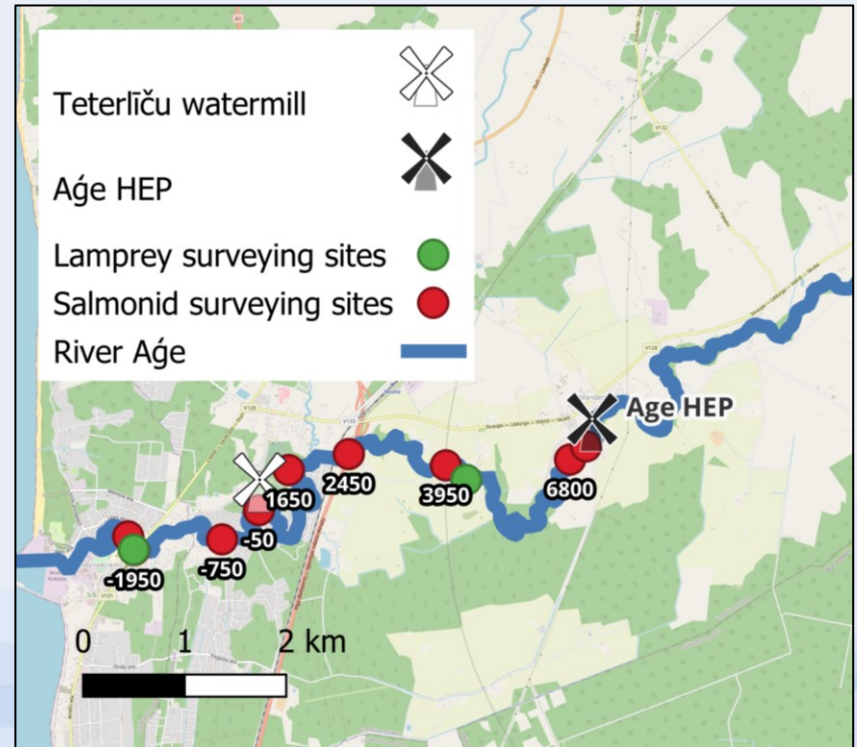
## Age river

- ❖ Flows into Gulf of Riga;
- ❖ Length: 43 km;
- ❖ Mean slope: 1,20 m/km;
- ❖ Catchment area: 214,9 km<sup>2</sup>.



## Age migration barriers

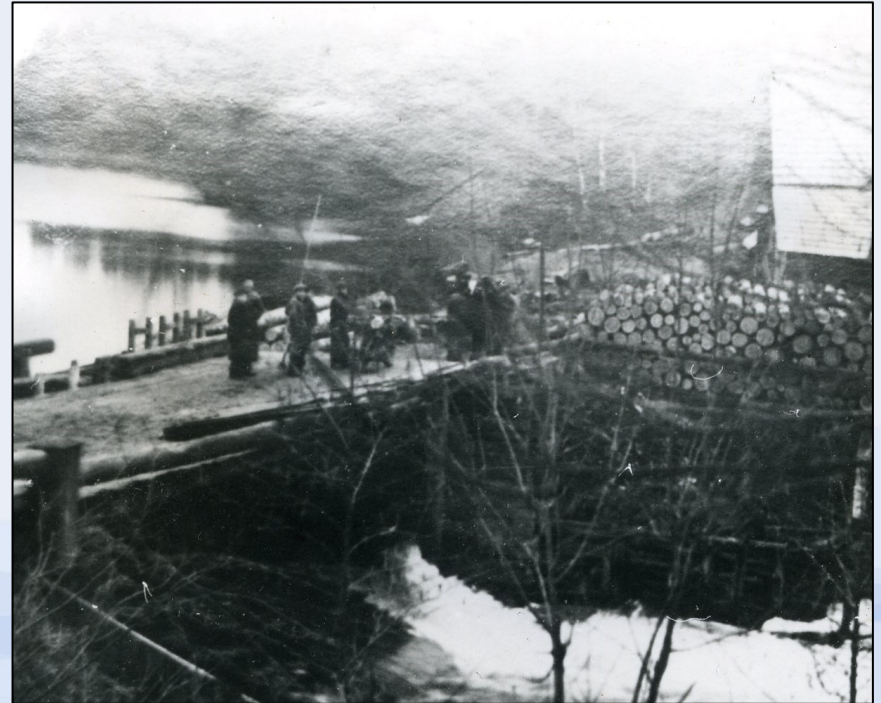
- ❖ **2 historical barriers:**
  - ❖ Teterlīču mill;
  - ❖ Age mill (HPP);
- ❖ Riffle habitats: 2,1 ha, ~0,9 ha upstream of HPP;
- ❖ Age HPP – priority object in LIFE GoodWater IP.





## Teterlīču mill

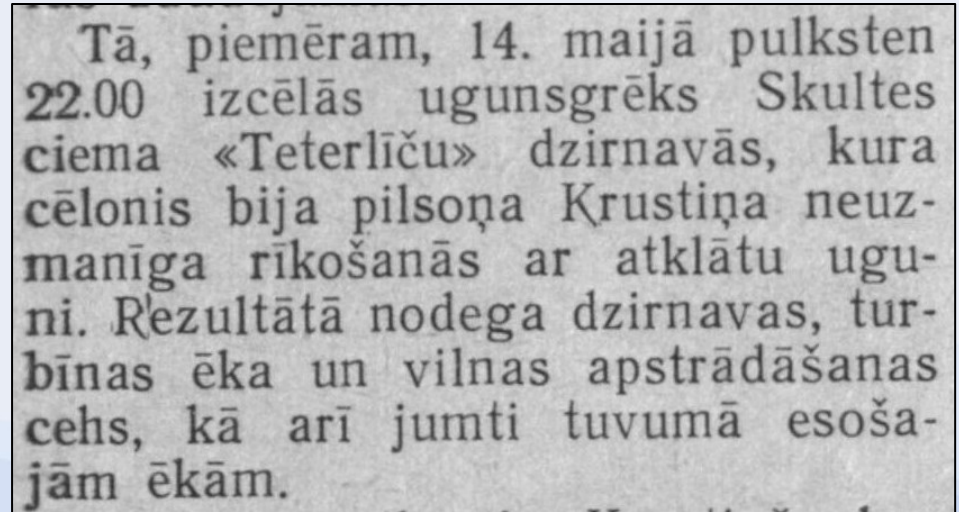
- ❖ First mill
  - ❖ ~1850s until ~1900s
- ❖ Second mill
  - ❖ ~1900s to 1928
- ❖ Third mill
  - ❖ Wood milling and wool carding facility;



Zudusī Latvija - Teterlīču ūdensdzirnavas (zudusilatvija.lv)

## Sad end for the Teterlīču mill

- **Burned down in 14<sup>th</sup> of May, 1959**
- **Burns down in an accident involving a worker, who wanted to process a pig with a blowtorch**

A black and white photograph of a newspaper clipping. The text is in Latvian and describes a fire at the Teterlīču mill on May 14, 1959. The fire started at 22:00 in the village of Skultes. The cause was an accident involving a worker named Krustiņa who was using a blowtorch to process a pig. The fire destroyed the mill's machinery, including the turbine and the wool washing machine, and also affected nearby fields.

Tā, piemēram, 14. maijā pulksten 22.00 izcēlās ugunsgrēks Skultes ciema «Teterlīču» dzirnavās, kura cēlonis bija pilsoņa Krustiņa neuzmanīga rīkošanās ar atklātu uguni. Rezultātā nodega dzirnavas, turbīnas ēka un vilnas apstrādāšanas cehs, kā arī jumti tuvumā esošajām ēkām.

## Dam remains

- ❖ After 1959, only the dam remains;
- ❖ In 1972 the dam gets breached during high flow event.





## Additional 7,1 km were opened for migration





# Sea trout *Salmo trutta*

❖ The minimal recolonization rate: 188 m/year.

	1993	2011	2012	2013	2015	2016	2017	2018	2019	2020	2021	2022	2023
-2050				6									
-1950	2	21	15		21	24	25	16	15	20	67	26	50
-750													33
-50											42	29	82
1650													63
2450			16							63			
3950	3	2										17	
4300										47	39	51	30
6800				0						11			

 **Teterlīču mill**

# Atlantic salmon *Salmo salar*

❖ The minimal recolonization rate: 61 m/year.

	1993	2011	2012	2013	2015	2016	2017	2018	2019	2020	2021	2022	2023
-2050				9									
-1950	0	34	5		70	17	17	47	47	165	116	206	103
-750													46
-50											77	111	89
1650													82
2450			1							35			
3950	0	0										7	
4300										11	16	3	0
6800				0						3			

 **Teterlīču mill**

## River lamprey *Lampetra fluviatilis*

- ❖ Lamprey larvae surveying in 2022 and 2023;
- ❖ Species distinguished by larval densities.





## Main take-aways

- ❖ **Atlantic salmon was able to recolonize new habitats;**
- ❖ **Confirms necessity of dam removal;**
- ❖ **Migration solutions for Aģe HPP needed asap.**



# Thank you!



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