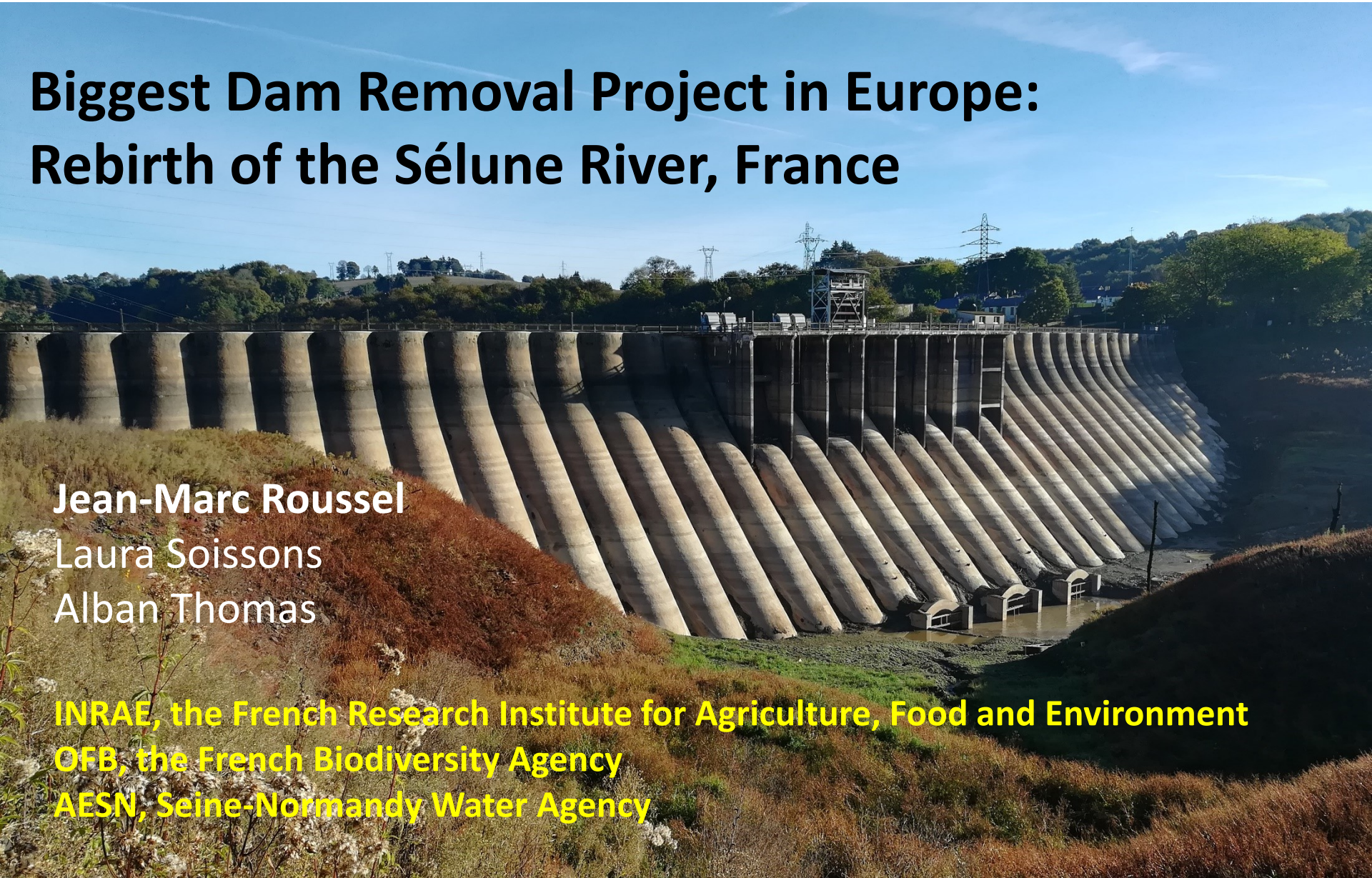
# Biggest Dam Removal Project in Europe: Rebirth of the Sélune River, France



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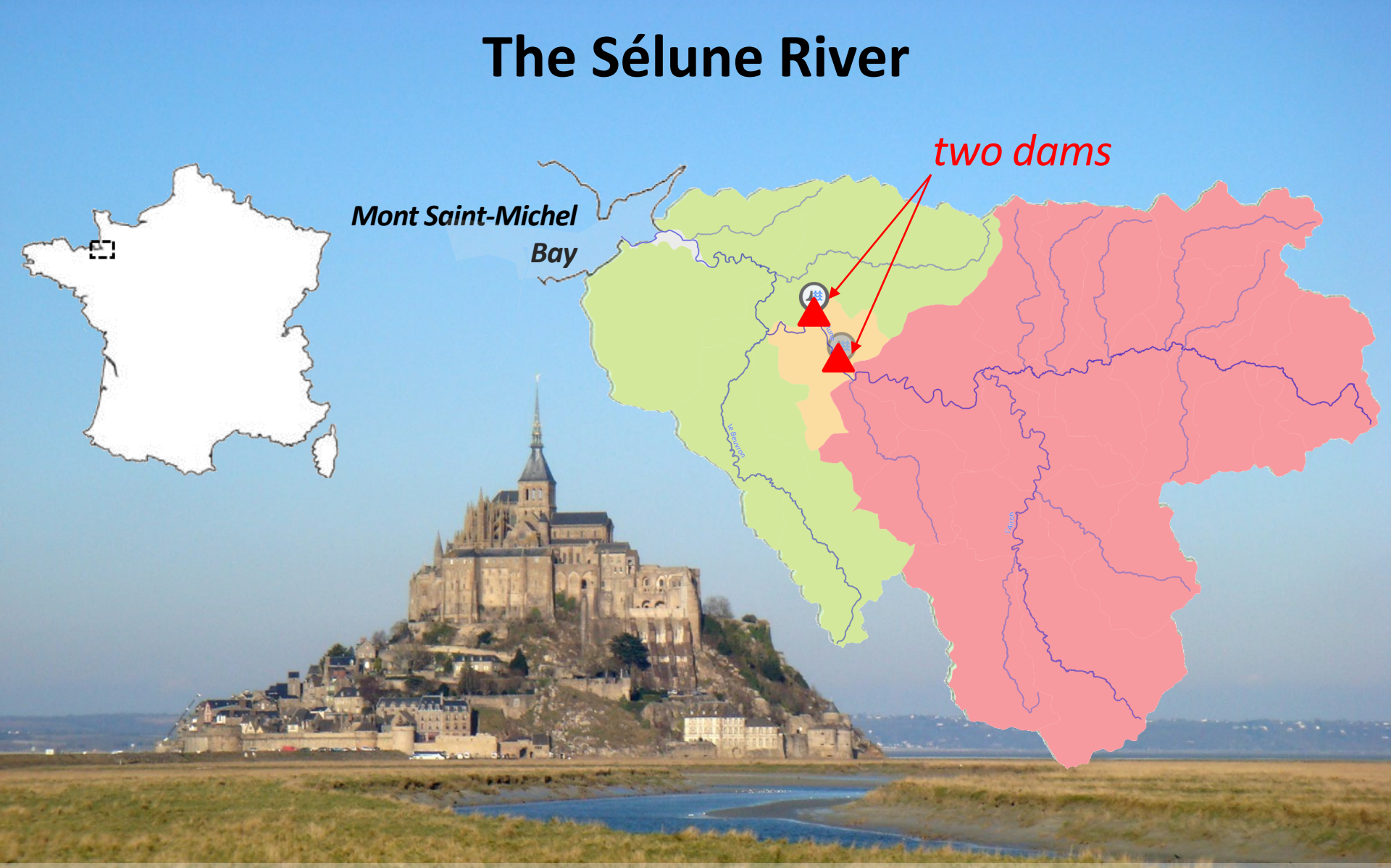
**OFB, the French Biodiversity Agency**
**AESN, Seine-Normandy Water Agency**

# The Sélune River



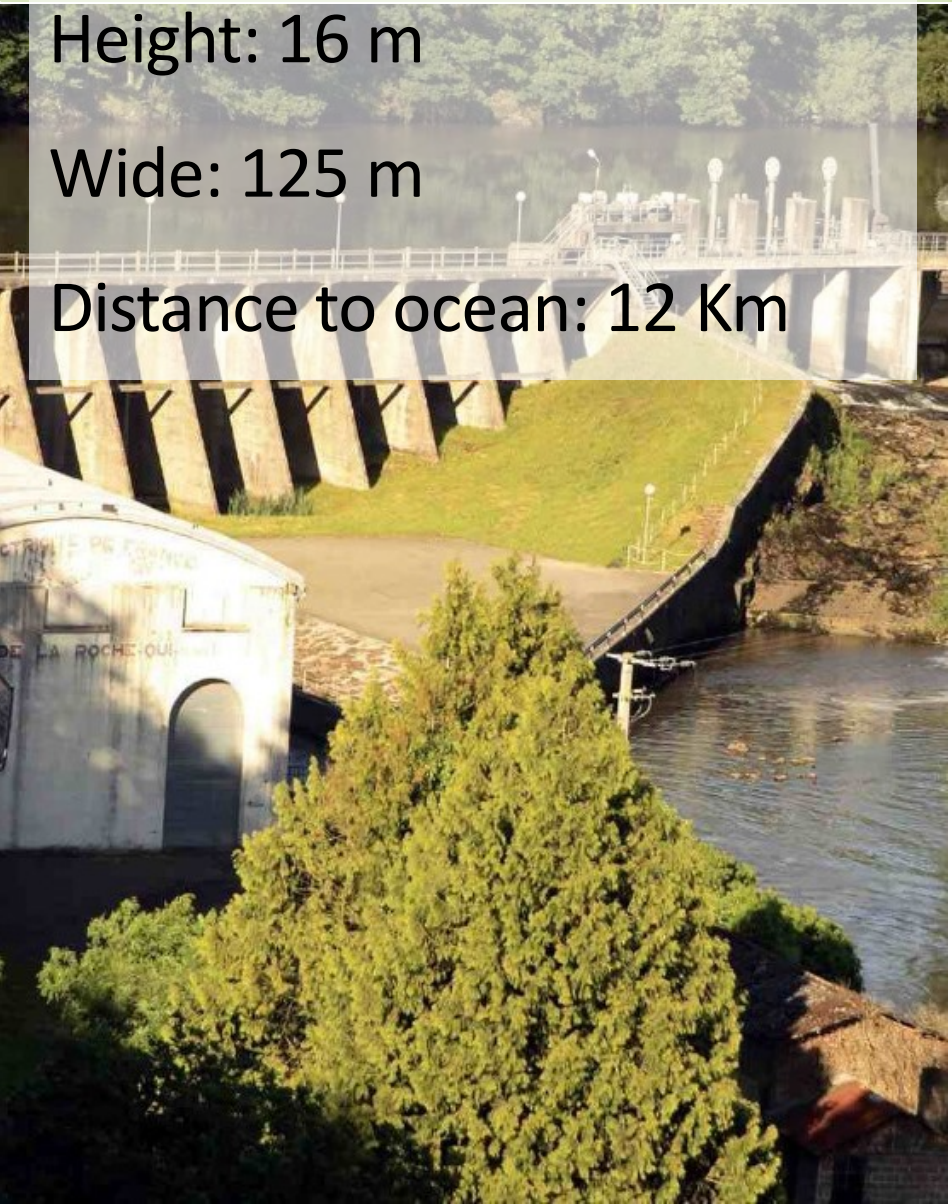

- 91 km
- 1 083 km²
- 57 000 inhabitants
- agricultural watershed

## *Roche-Qui-Boit Dam (Est. 1919)*

Height: 16 m

Wide: 125 m

Distance to ocean: 12 Km



## *Vezins Dam (Est. 1932)*

Height: 36 m

Wide: 278 m

Distance to ocean: 17 Km

# Economic reasons for dismantling

## *1- modest hydroelectric capacity*

- two dams = **27 Giga Watt hours** (GWh) = 3 wind turbines
- production for **15,000 people (25% of population)**

# Economic reasons for dismantling

## *2- obsolescence*

- expensive renovation of dam structure for safety reasons
- big investment for upgrading to current production standards

# Environmental reasons for dismantling

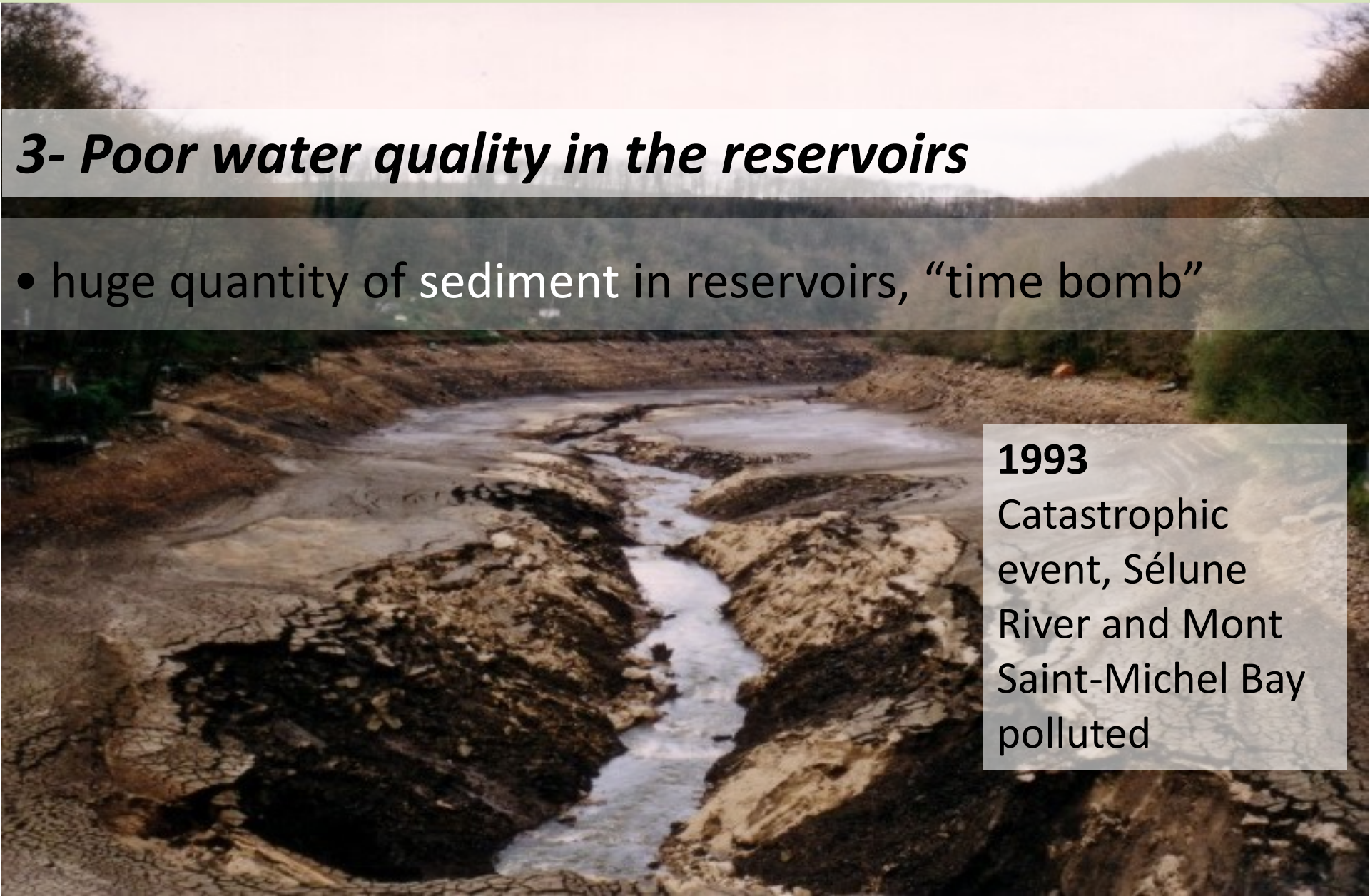
## *3- Poor water quality in the reservoirs*

- blooms of toxic cyanobacteria in reservoirs in summer

# Environmental reasons for dismantling

## *3- Poor water quality in the reservoirs*

- huge quantity of sediment in reservoirs, “time bomb”



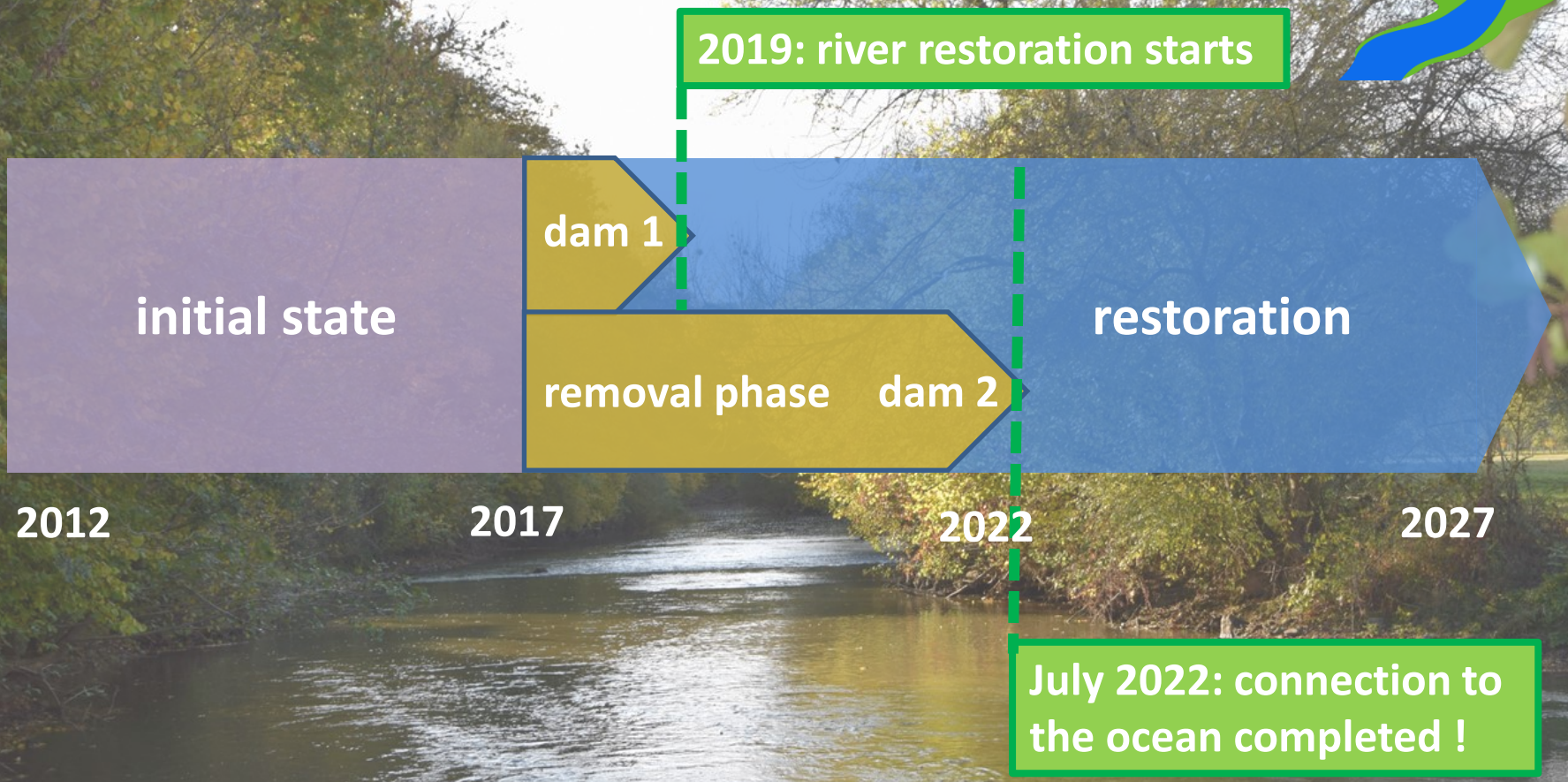
**1993**
Catastrophic event, Sélune River and Mont Saint-Michel Bay polluted

# Environmental reasons for dismantling

## *4- Conservation issues: five diadromous fish species*

*Atlantic salmon*
*European Eel*
*River Lamprey*
*Sea Lamprey*
*Allis Shad*

# 2012-2027: a 15-year scientific project




***Our ambition:***

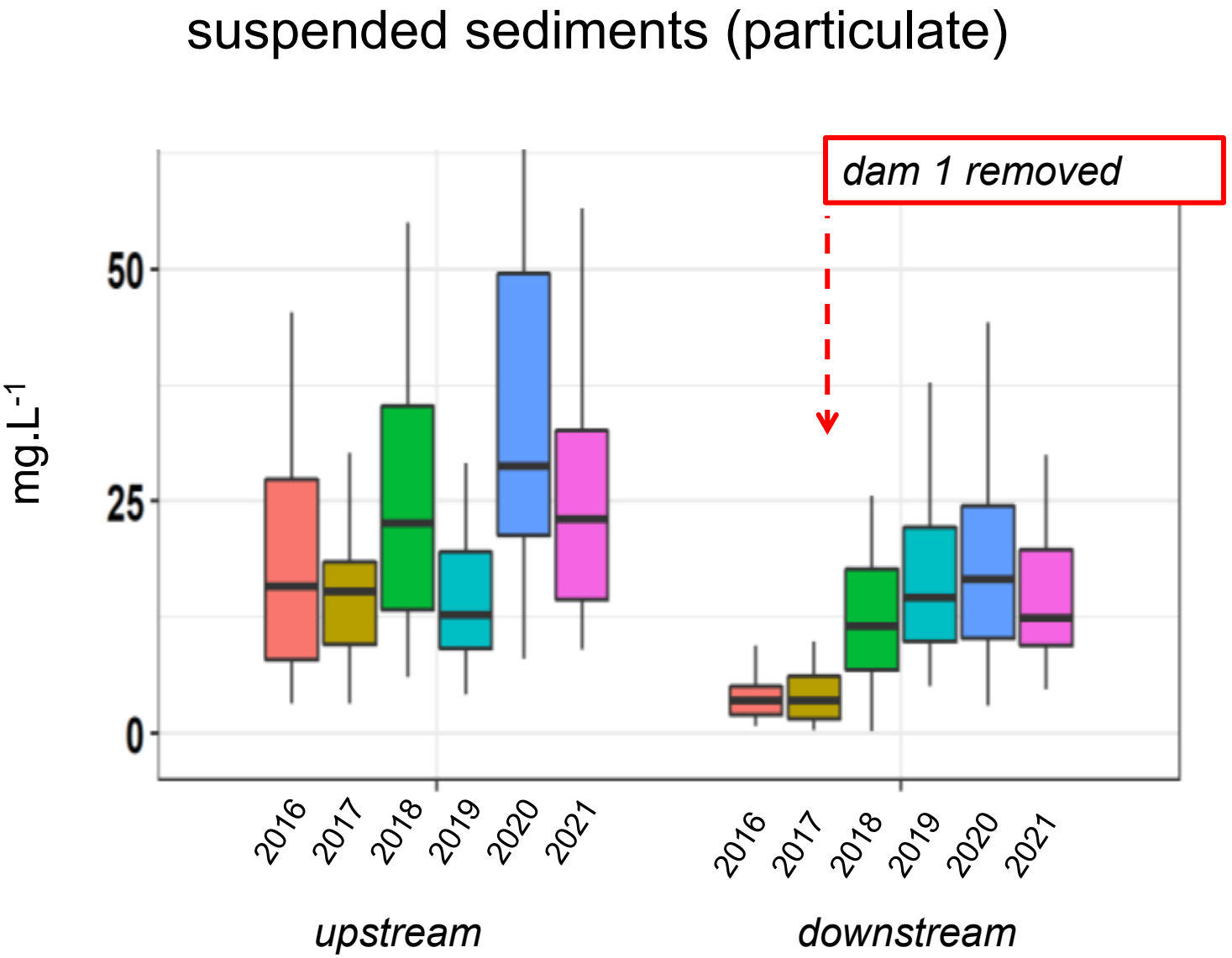
- *provide scientific knowledge for future dam removal projects in Europe*

# Rapid colonization by riparian plants

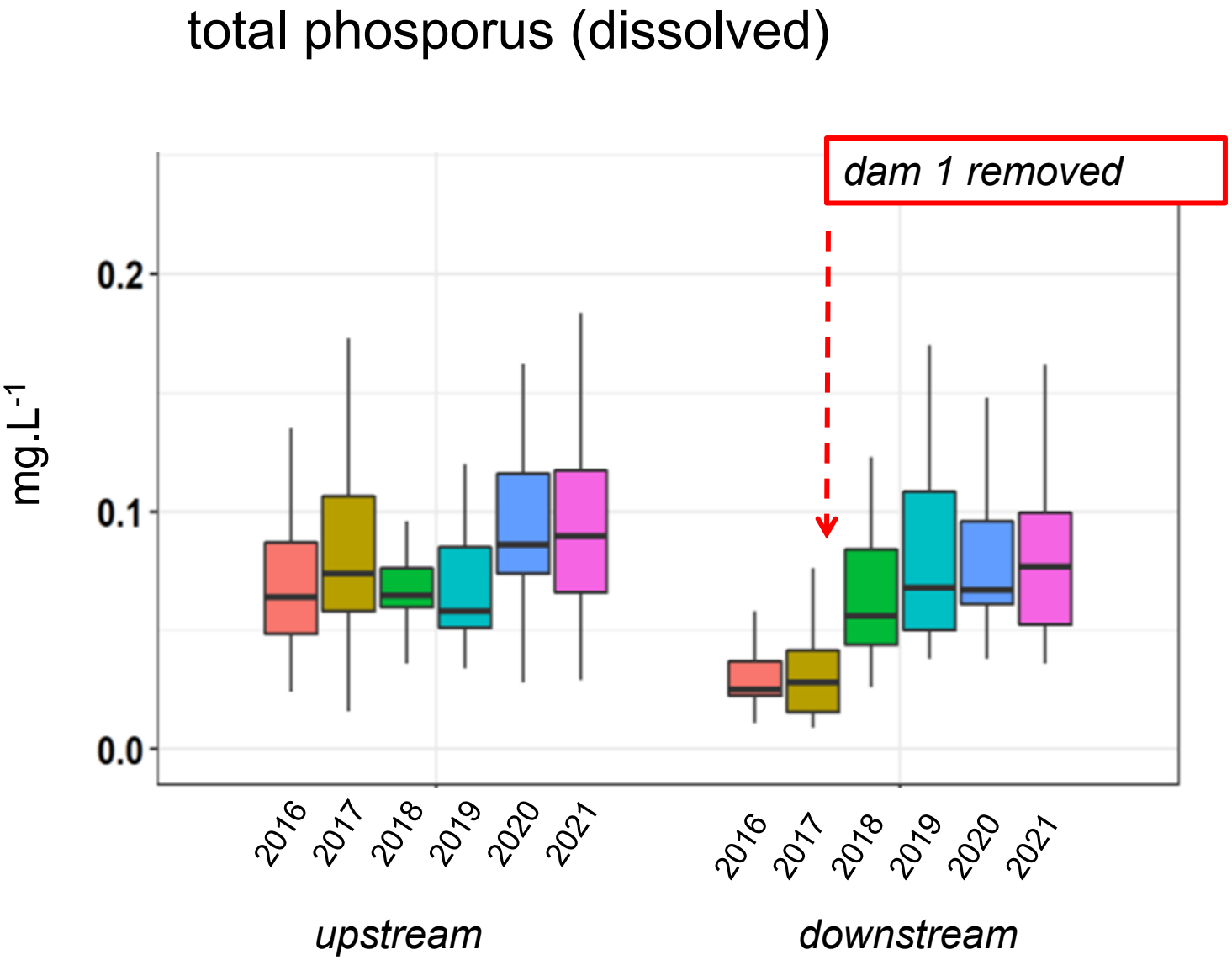

**Seed bank**: tree germination and growth (alders and willows)

*Alnus glutinosa, Salix caprea*

# Natural downstream transfers reactivated

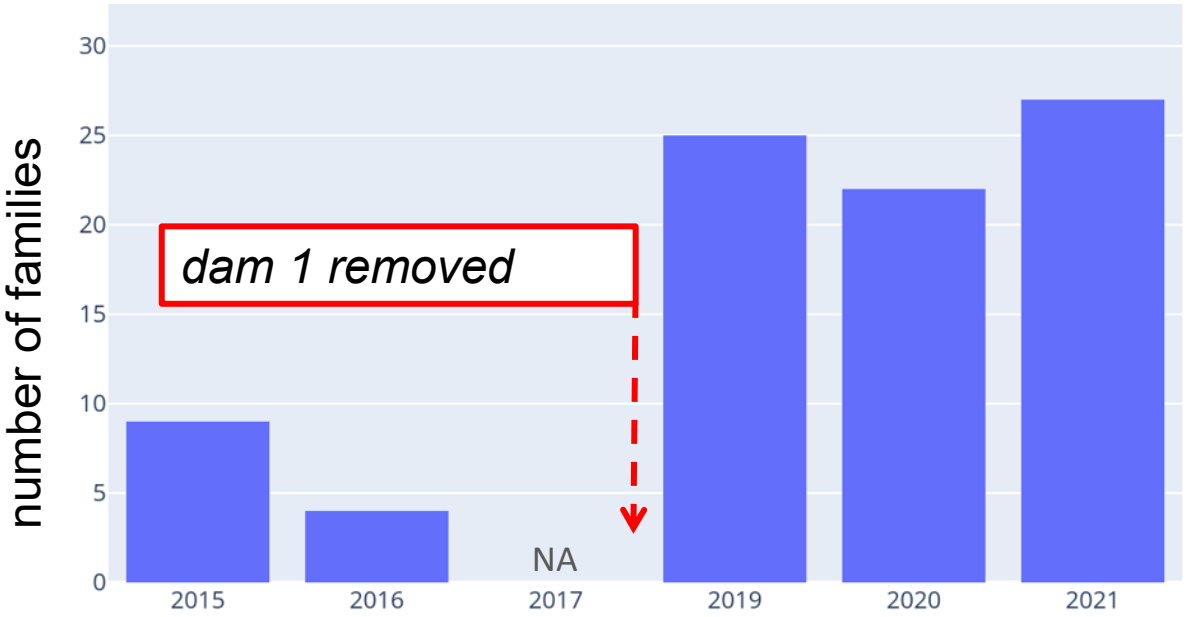


# Natural downstream transfers reactivated



# Rapid colonization by river invertebrates

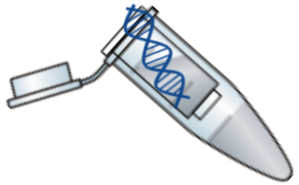
Running water invertebrate species



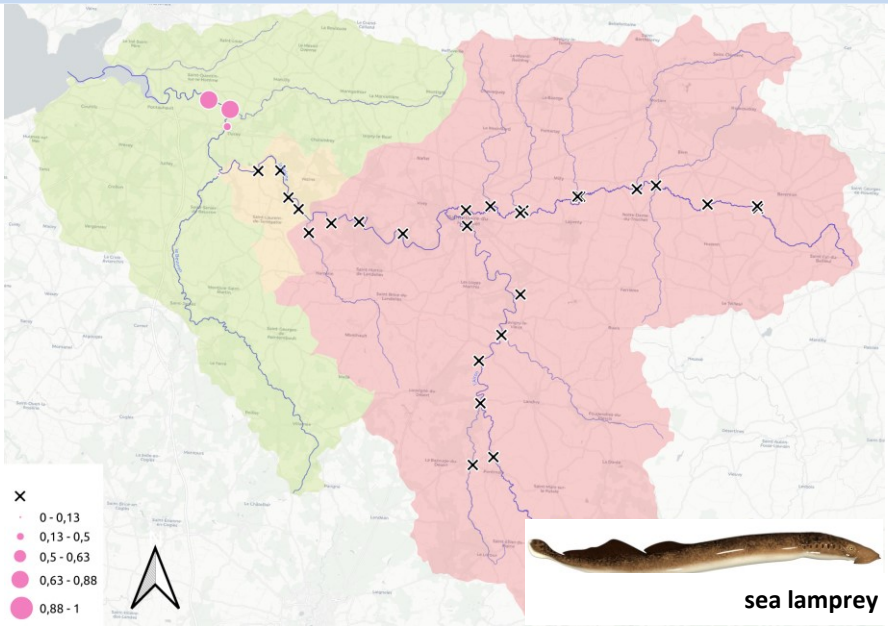

**bonus!**
colonization by pollutant- and oxygen-sensitive species

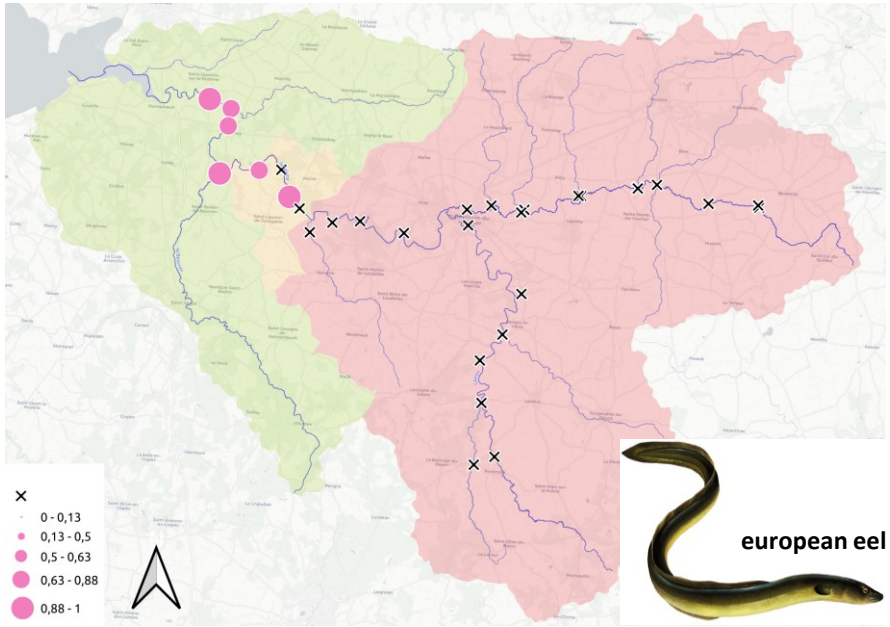


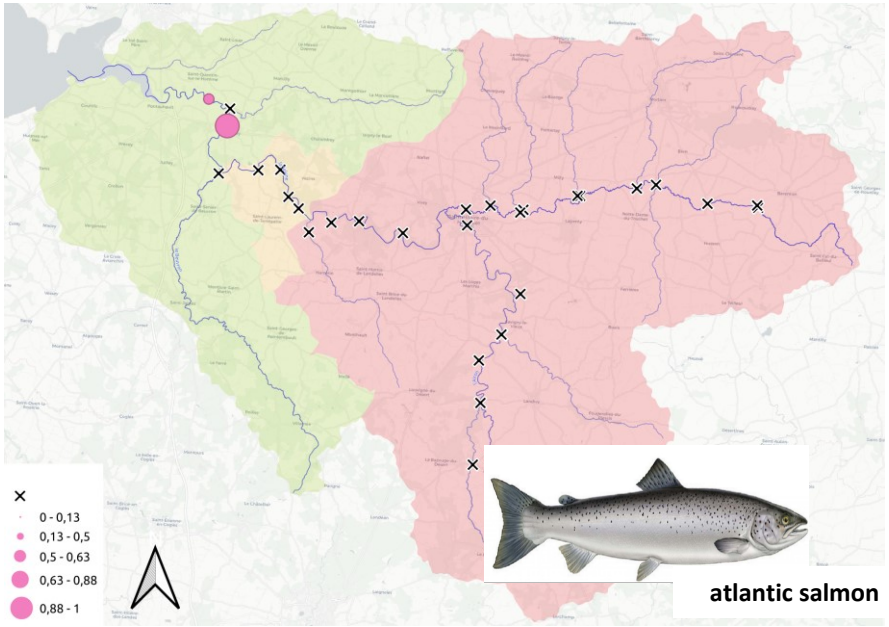
# Diadromous fish species ready for ascending



eDNA species presence survey

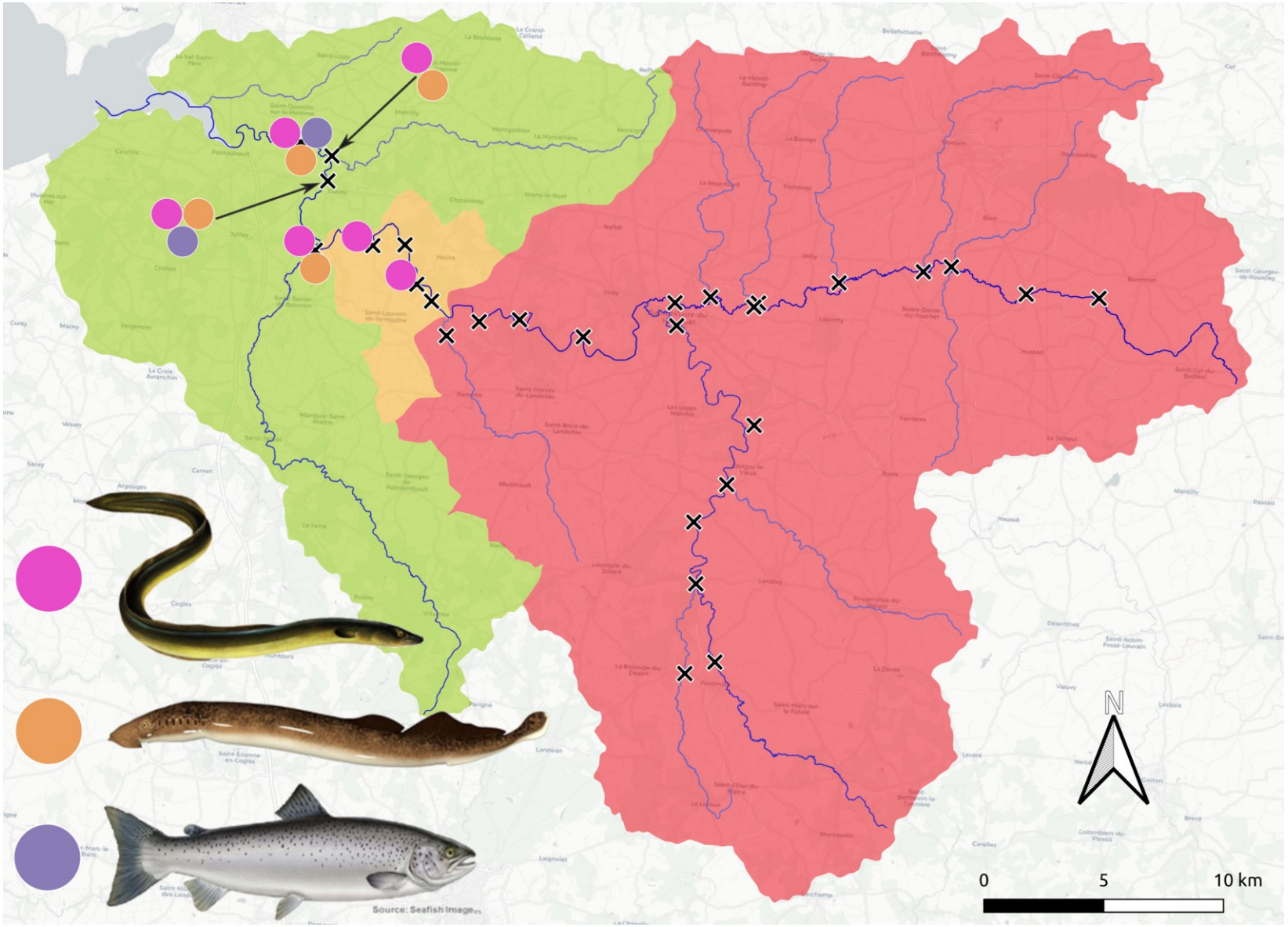


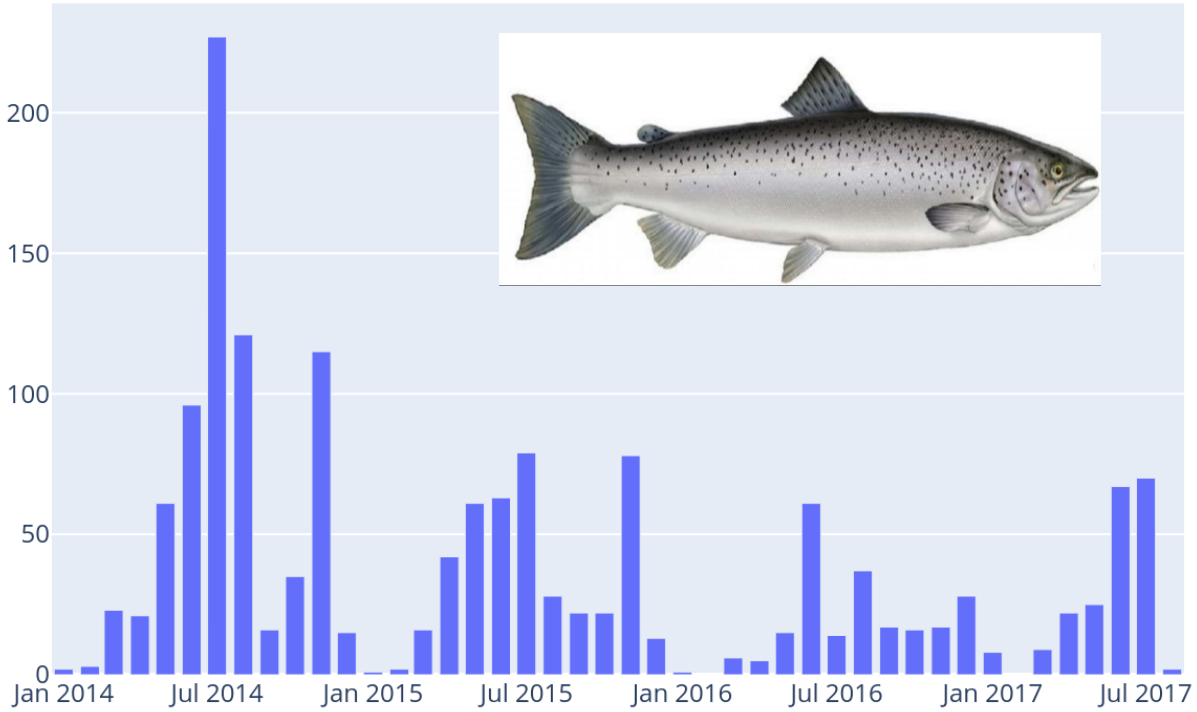
# **D**iadromous fish species ready for ascending

eDNA species survey



# Diadromous fish species ready for ascending

Hydro-acoustic
Camera count



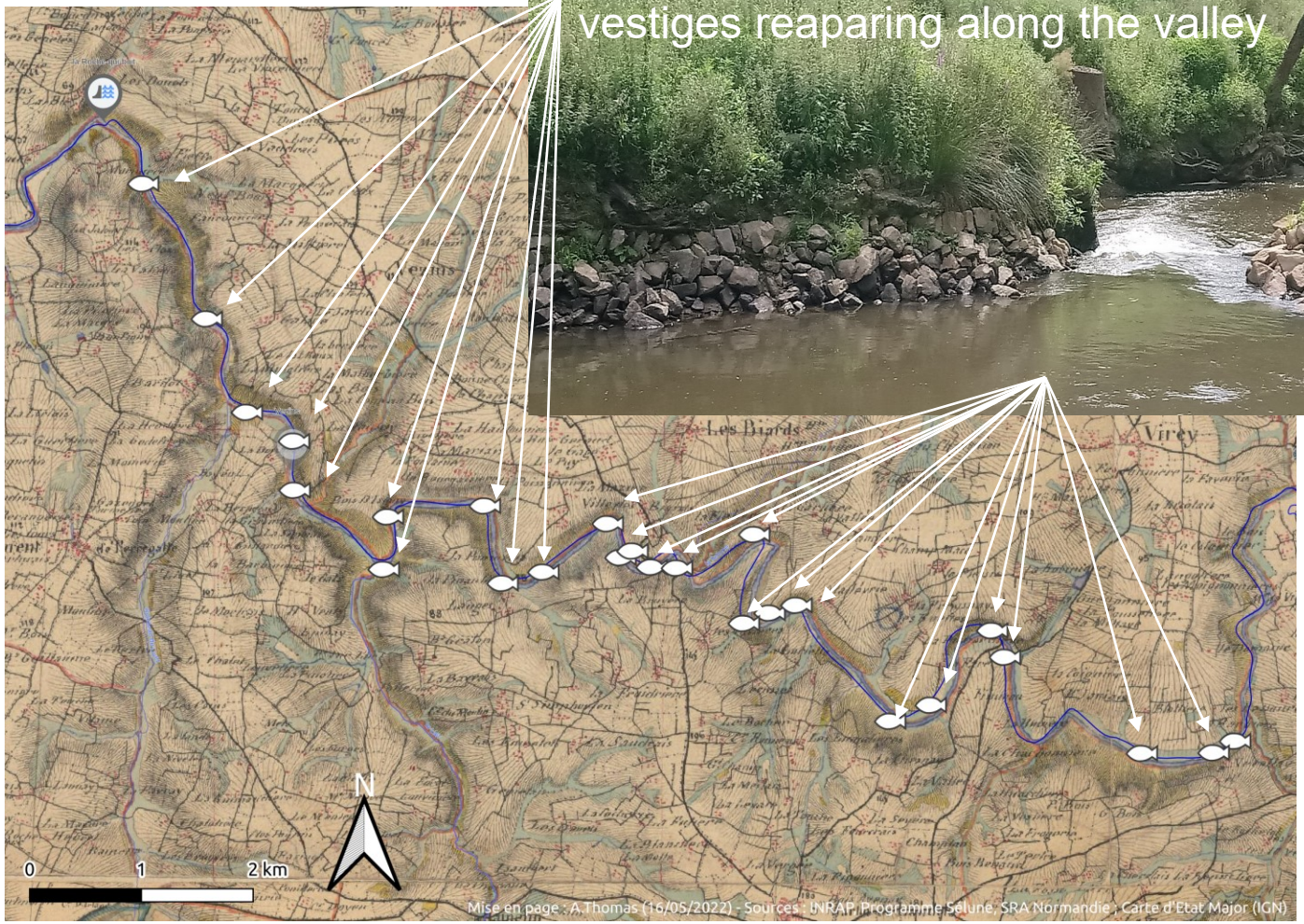

→ from 200-700 salmon dowstream the dams (depending on year)

→ model estimates : **juvenile carrying capacity will be X 4** …

→ …  … have to wait (few years) to check that !

# Diadromous fish species ready for ascending

Archeological study : salmon have been waiting dowstream for one century!


# Scientific Programme Sélune River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