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[www.lifeconnects.se](http://www.lifeconnects.se)

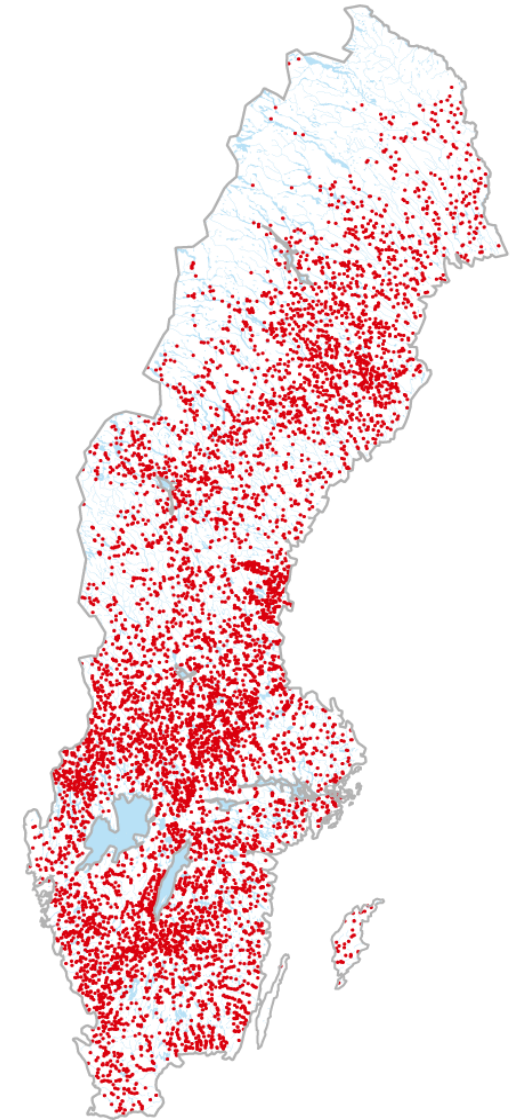
Different use of rivers:

- Timber rafting
- Mills (sawmills, grainingmills, a.s.o)
- Fishing
- Recreation
- Irrigation of agriculture land
- Hydropower



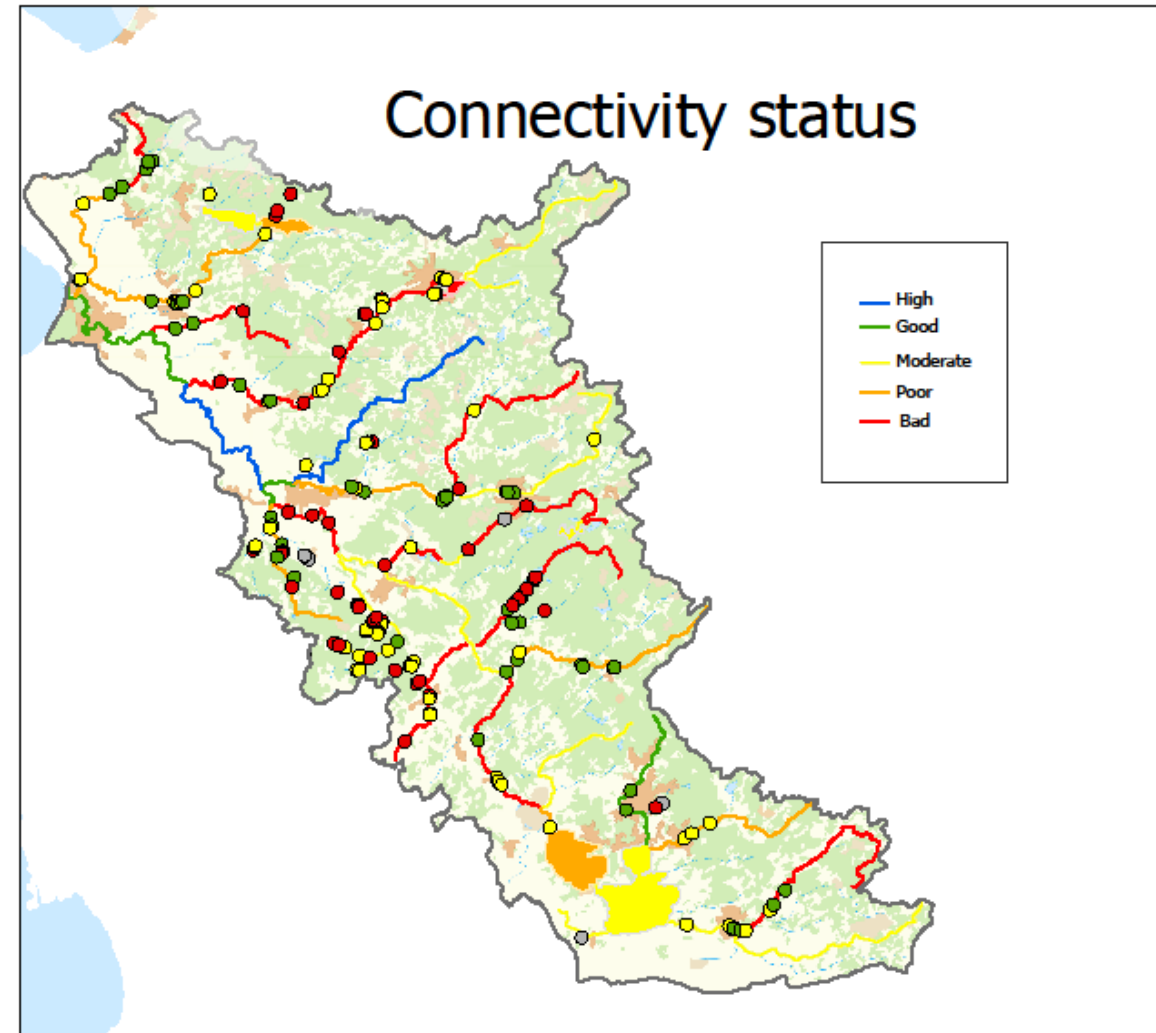
Photos: Swedish metrological and hydrological institute, SMHI, photo archive.

- 2060 hydropower plants
- 1670 regulating dams
- About 5000 more dams used for other purposes
- Unknown number of obsolete dams with no known purpose today
- Unknown number of road culverts
- Unknown number of other barriers

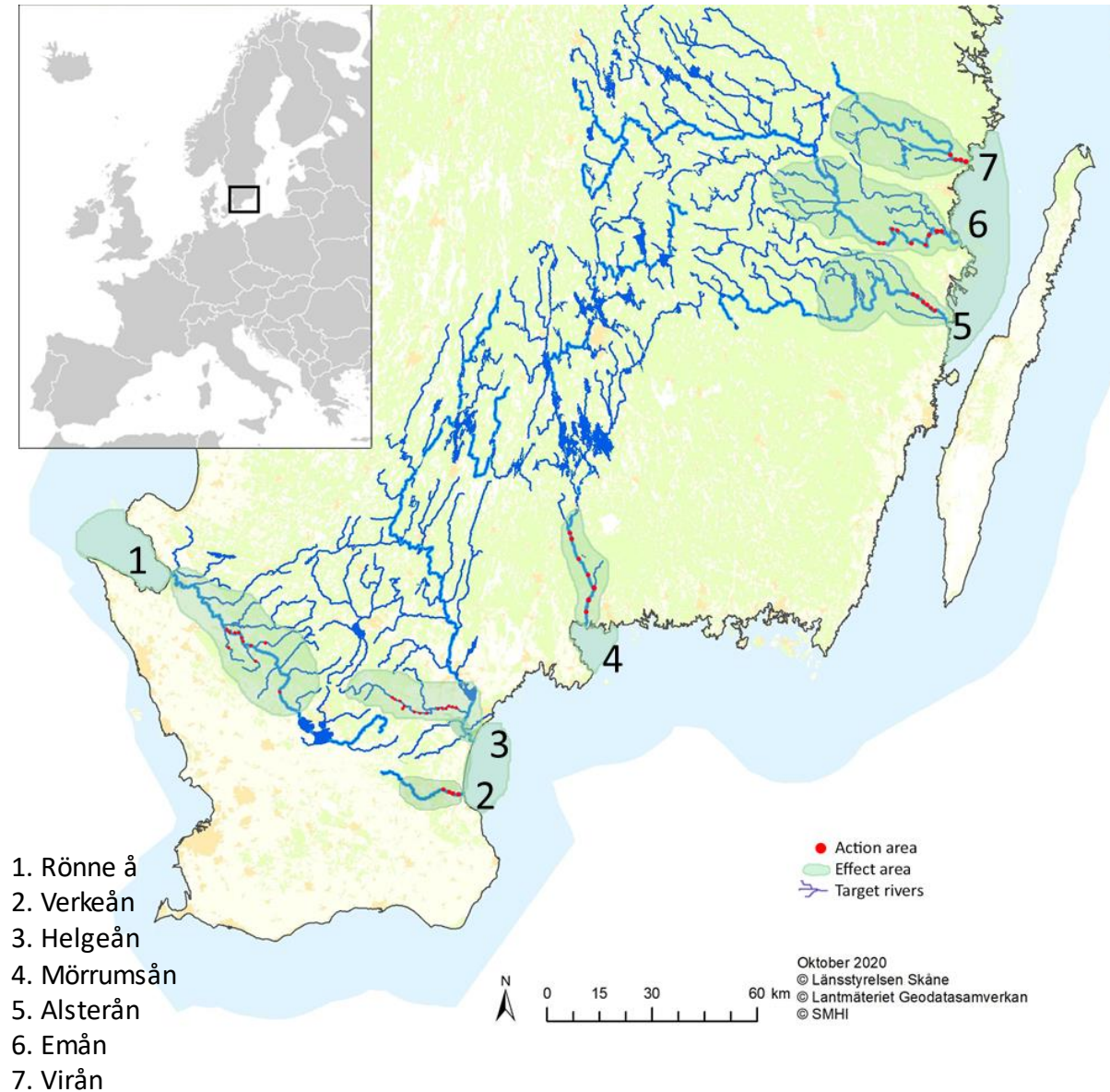


Dams in Sweden

- Water framework directive
- Habitats directive
- EU biodiversity strategy
- National environmental goals

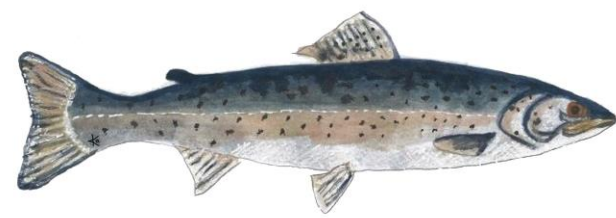
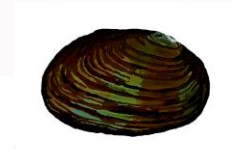
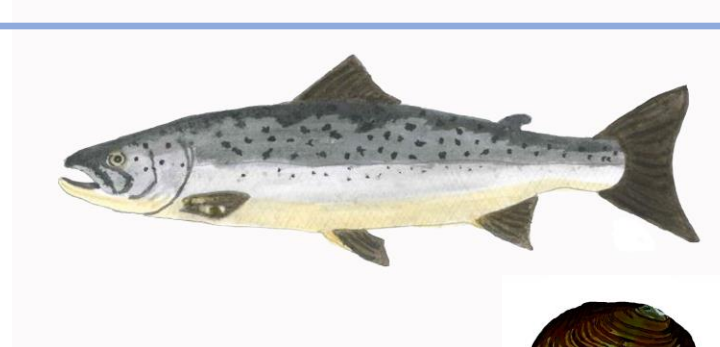


- One country – Sweden
- 7 target rivers
- 7 partners – national authority, 2 regional authorities, municipality, university, NGO, hydropower company
- Project period: 2019-2026
- Budget: ~ 10 M€
- Aim: Restore rivers to improve conservation status for habitats and species as well as the goals of WFD and Biodiversity strategy 2030.
- Threats: Dams, road culverts, channelized, ditched and drained rivers, eutrophication, invasive species, and pollution.



The target species are:

- Atlantic salmon (*Salmo salar*)
- Thick-shelled river mussel (*Unio crassus*)
- Freshwater pearl mussel (*Margaritifera margaritifera*)
  
- European eel (*Anguilla anguilla*)
- Otter (*Lutra lutra*)
  
- Host fishes for the two mussel species:
  - Brown trout (*Salmo trutta*)
  - European bullhead (*Cottus gobius*)
  - Common minnow (*Phoxinus phoxinus*)



And many more species, both animals and plants, will benefit from the project.



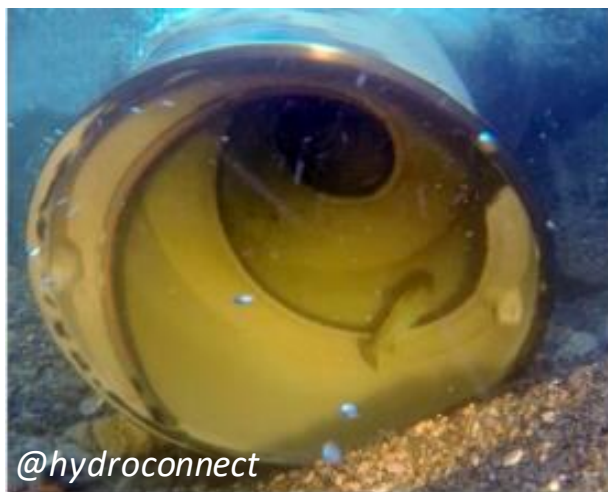
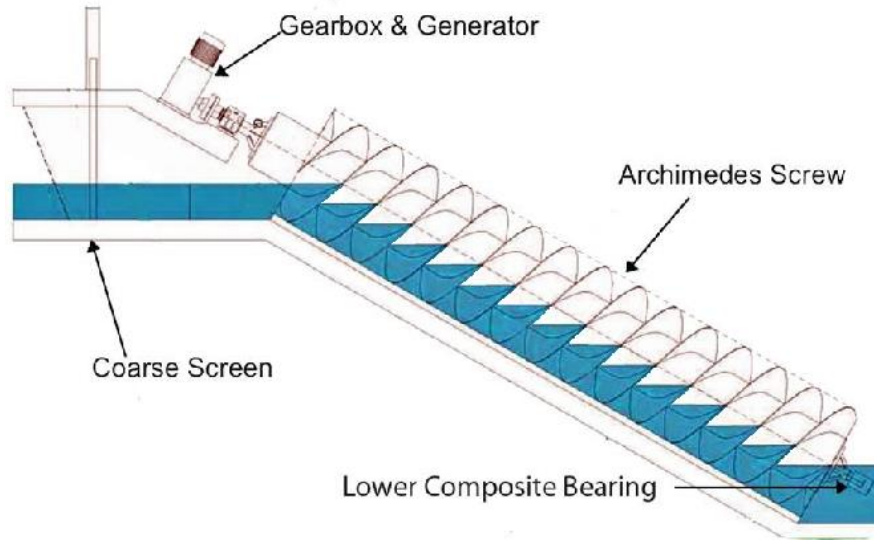
Before

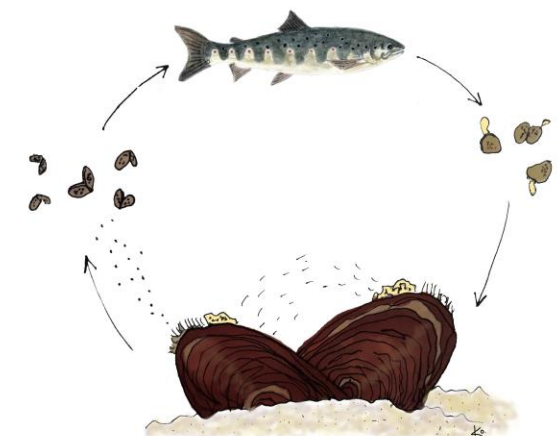
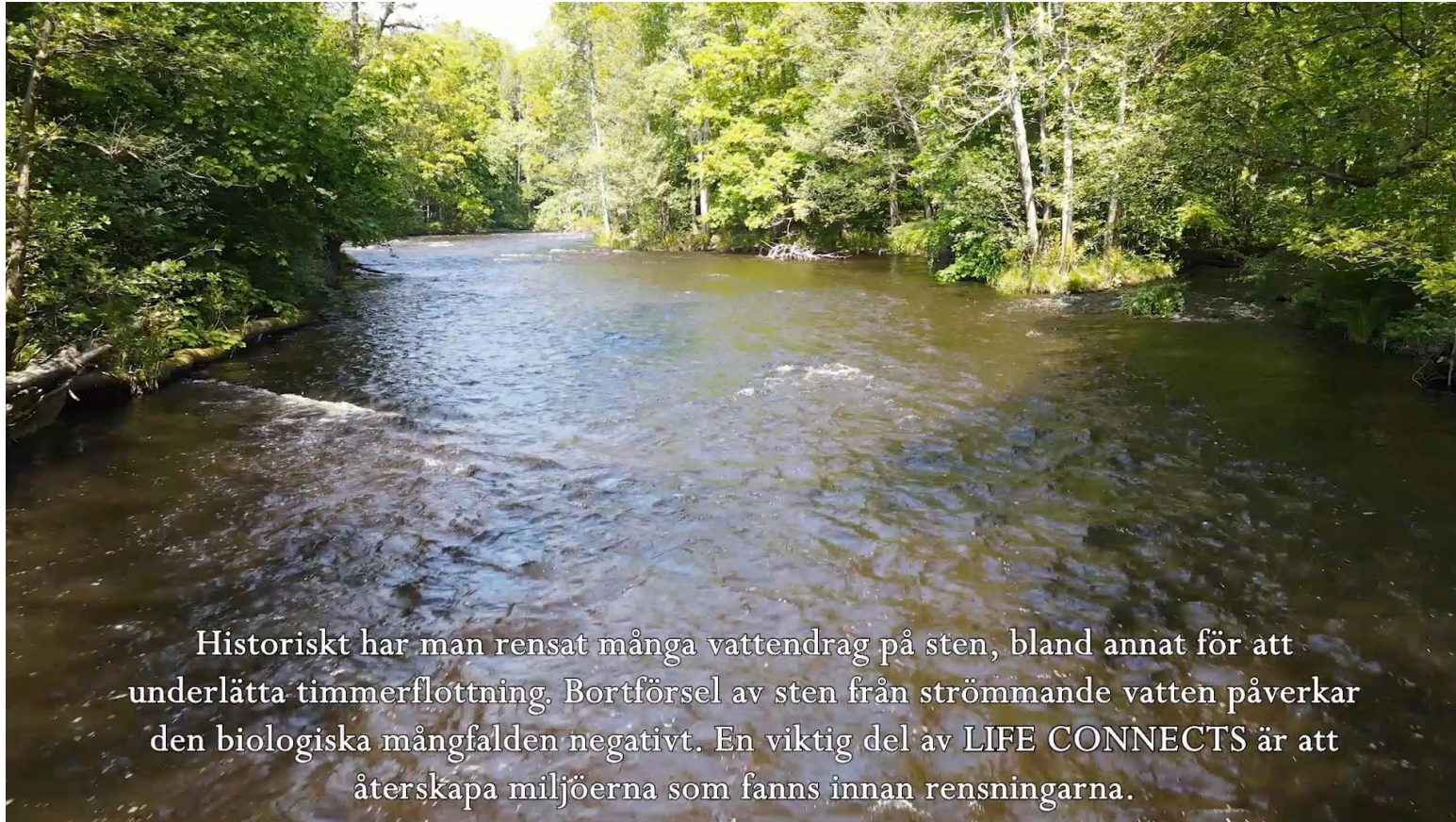


After









Life cycle of a freshwater pearl mussel



*Pre restoration conditions, HPP1*



*Post restoration conditions (2030)*



- Contaminated sediments
- Internal phosphorous load
- Turbidity during removal

- Public opinion
- Cultural heritage
- Permits for water outtake for paper mill, agriculture and cattle

- Permits, licenses and dialog can be very time consuming. Will we achieve the goals for the WFD until 2027 and the Biodiversity strategy 2030?
- The need of a lot of investigations can be time consuming and be very costly. Will we achieve the cost-effectiveness stated in WFD and other directives?
- Public opinion can change due to unforeseen events, such as increased prices on fuel and energy, which in turn can affect the political entrenchment. How can we prepare for changes in opinion and political entrenchment?
- Conflicting legislation and interests can complicate the implementation, such as WFD vs CAP or cultural values vs biodiversity values. How can we harmonize different directives and legislations or interests?
- The link from EU to National level and to regional and local level. How can we strengthen the link so the legislations and strategies on EU-level are feasible on local level?



Before



After



# Thank you!



Before



After

