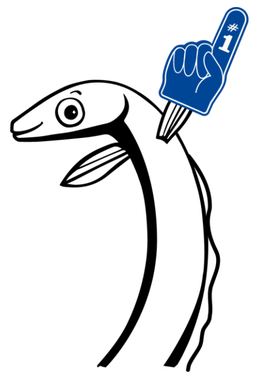


A desperate need for ‘Eel Reserves’



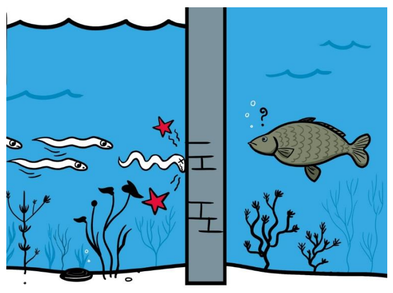
M. Schiphouwer, M. Kooiman & S. Ploegaert – RAVON, the Netherlands

Why ‘Eel Reserves’?

Virtually nowhere eels can:

- Freely enter their preferred habitats **AND**
- Grow up without getting heavily contaminated **AND**
- Live without encountering commercial or illegal fishing gears **AND**
- Escape without being chopped by pumps or turbines.

For eel recovery we simply need more healthy eels to successfully recruit, grow, escape and spawn. ‘**Eel Reserves**’ tackle inland threats and facilitate eels to be successful again.



What is needed?

→ Better (scientific) understanding of:

- Arrival and recruitment success, especially at barriers
- Where and how to facilitate immigration by effective fish passes
- What silver eel escapement success and survival is at barriers
- Contamination of habitats (both pollutants and diseases) and effects on reproductive success
- When the population and its recovery allow a certain level of fishing efforts (now or in the future)

→ Ambitious and bold management decisions:

- Design, implement, test and improve effective fish ways
- Open up complete routes from eel perspective
- Implement fish friendly pumps and turbines
- Evolve to truly sustainable fishing effort (or temporary closure), which will also lead to long term survival of fisheries

Current situation (the Netherlands)

Recruitment

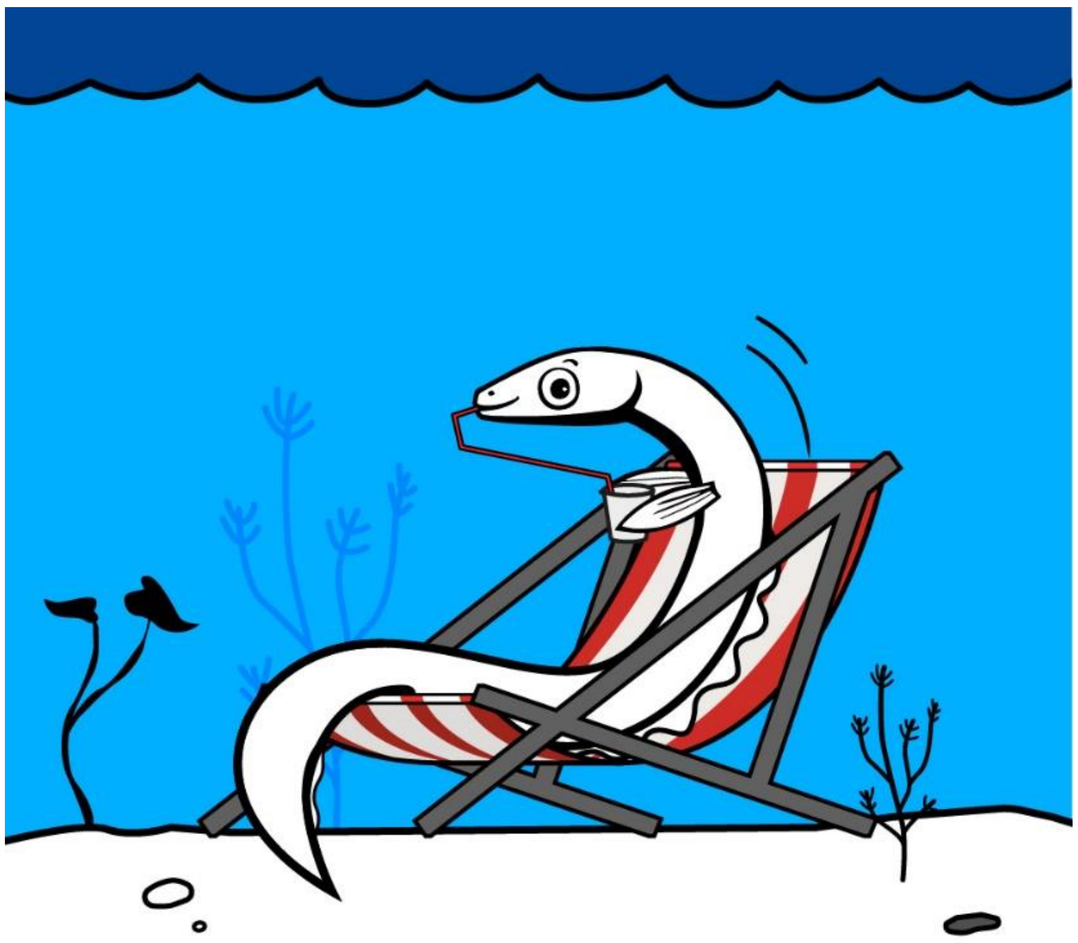
- Recruitment is around 1% of ’60 and ’70
- 10’s of millions of glass eels arrive at Dutch estuaries
- 3 million of young eels are relocated from France, most in commercially fished semi-stagnant waters
- >95% of routes are blocked
- Fish pass immigration success is only ~25%
- <60% of all habitats are limited available

Growing up

- Eels accumulate pollutants in most rivers and canals
- Large lakes and polder systems are relatively clean, but are inaccessible and/or commercially fished
- Around 500 tons are extracted annually by commercial fisheries
- Up to 100 tons are poached annually
- Successful escapement of stocked eels is likely to be low, due to high fishing pressure and complex exit routes

Escapement

- Around 1000tons of silver eel successfully escape, ~10% of ’60 and ’70 levels
- Pumps and turbines kill many eels, the largest pump kills 10 tons every year
- Health status for reproduction is poor, most eels are polluted and/or are infected



Future Eel Reserves

Recruitment

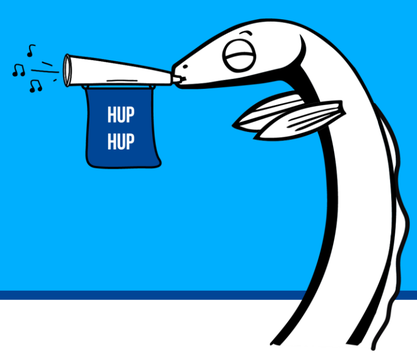
- Routes are unblocked or equipped with highly effective fish passes (>75% successful immigration)
- Natural immigration is preferred over stocking to best match biological processes such as sex differentiation, growth and orientation and to prevent hitchhiking of diseases, parasites and other species

Growing up

- Migration toward clean habitats is facilitated, polluted soils are remediated
- Eel fishermen contribute to research and/or are compensated when fishing is (temporarily) suspended. If possible, they fish at (science based) sustainable levels
- Poaching is adequately being addressed by Law enforcement

Escapement

- Exit routes do not cause delays and/or excessive silver eel damage (<10%)



Challenges

- No obligation for essential measures under Eel regulation, main effort is still on partly regulating fisheries and translocation of young eels over Europe (scientific ICES WGEEL advice is poorly adopted)
- Under the Water Framework Directive, eel is ‘just one of the guys’, eels are not integrally facilitated
- Eels are not protected under Habitat Directive, and therefore have no protected areas or migration routes
- No real priority for policy makers and water managers
- An integral approach to protect eel can be very expensive due to existing infrastructure and thus lack support or funding
- Strong opposition moving toward sustainable fisheries, or temporary closure, due to short term commercial interests
- Fisheries lack long term perspective, socioeconomic impacts of eel recovery measures are not taken into account
- Next to all inland issues, oceanic currents could collapse due to climate change, which will greatly impact the eel’s life cycle

How are we working on Eel Reserves (or trying to)?

- Promote eel recovery in the Netherlands, influence policy and stimulate actions on eel recovery and research
- Monitoring of yearly glass eel arrival (>300 citizen scientists, >40 locations, >15 partners)
- Quantify numbers of glass eel arriving at barriers (>25 locations)
- Quantify successful immigration, test how effective fish way designs are and advise on improvements to be made on fish ways (Passage Check >15 locations)
- Determine impact and causes of silver eel damage at large rivers (turbines, ships, pumps at tributaries) (German/Dutch Rhine River, INTERREG De Rijn Verbindt)
- Successful lobby for eel safety at the renovation of Europe’s largest pump (IJmuiden)
- Gaining insight in eel poaching in the Netherlands
- Implement Eel Reserves (only one to be realised in Amsterdam, which took us 4 years)

Poster presentation: 2nd International Eel Science Symposium

Juli 9th 2024, Liverpool

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Source: Ravon.nl/Doe-mee/Toekomst-voor-de-paling



RAVON

Reptile Amphibian Fish Conservation Netherlands