

# NURSERY FOR EUROPEAN EELS

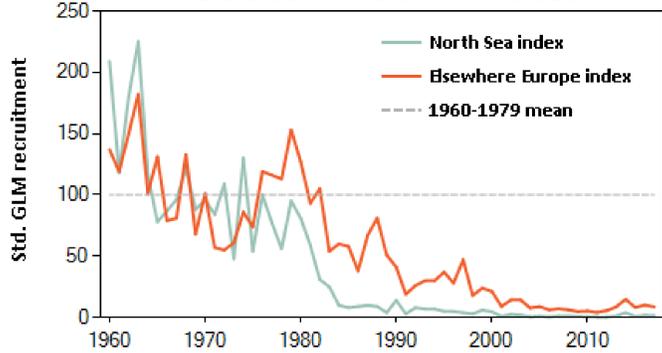


## Intertidal Area Schorerpolder

### Why European Eels?

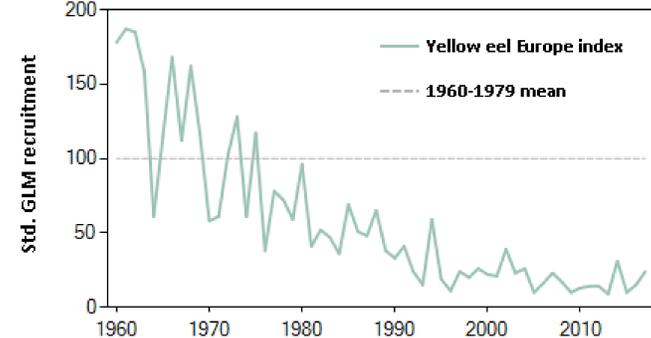
- Decreasing trend over the last 50 years. Goal is to increase their population.
- Cultural relevance to the Netherlands

#### Glass eel recruitment indices



**76%**  
Decrease of  
Annual recruitment  
since  
1960/1979 level

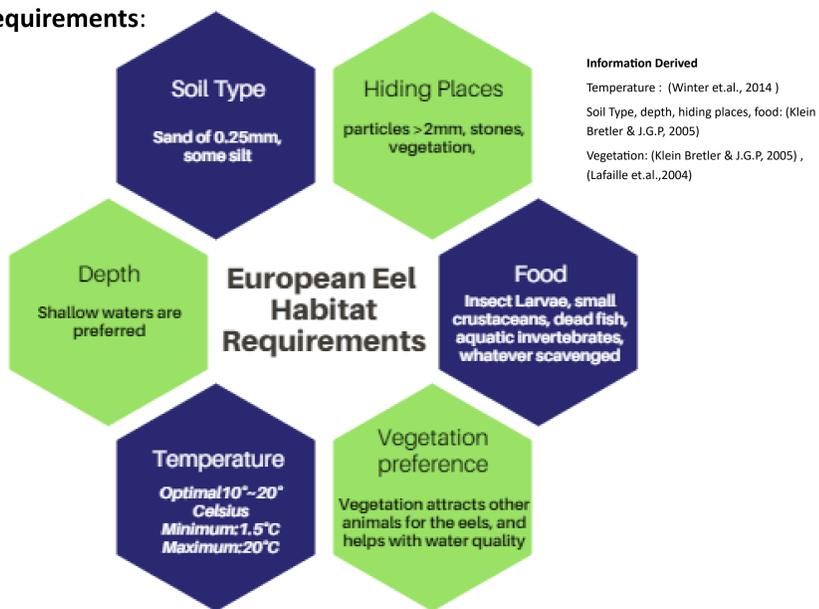
#### Yellow eel recruitment index



GLM is the geometric mean of estimated; predicting recruitment as a function of area, year and site was fitted to 43 timeseries and scaled to the 1960-1979 geometric mean (ICES, 2009).

### What is the Role of Schorerpolder?

- Eels caught from France will be put into the polder
- Requirements:



- Vegetation preference differs based on the lifestage of the eel. Young glass eels prefer emergent, intermediate eels prefer floating, and mature yellow eels prefer submerged.
- Glass eels prefer shallow waters, but during high tide tend to dive down and bury themselves in deeper waters.
- Intertidal area will serve as a feeding ground
- Area for juvenile eels (glass eels) to grow to maturity
- Focus in this research is on depth namely permanent submerged and on food namely intertidal area.

### Schorerpolder Alternatives

Parameters	Open connection	Controlled tide	Separated functions	Combined perspectives
Permanent submerged	-	+	+	+
Intertidal area	-	+	0	0
Entrance or exit	+	-	-	0
Preference	Least preferred	Most preferred	Neutral	Neutral

### Alternative controlled tide is the most preferred alternative



1. Permanent submerged: presence of the channel
2. Largest expected wetted intertidal surface
3. Entrance/exit: easy for glass eels and other species to enter/exit. There need to be food sources for glass eels and a diverse ecosystem where the eels can thrive and have resilience towards disease.

### Further Research

There are other species which are likely to prefer the habitat in the intertidal area. For further research should be to look into *Chelon labrosus* (Thicklip grey mullet), *Platichthys flesus* (Flounder) and *Solea solea* (Sole). A potential research question could be: *To what extent does the design of the intertidal area Schorerpolder meet the requirements of a nursery for fishes for Solea solea to increase this population?*

### In Conclusion

Alternative 'Controlled tide' is the most suitable for providing a habitat for the eel. The intertidal area will provide a habitat where eels can feed and grow to maturity. The eels will be able to migrate to the Sargasso sea, where they originate from, to reproduce. There should be some permanent waters created to meet the requirements of the eel. Vegetation should be added for water quality and habitat provision for the eels and other aquatic species.

### References

- ICES SGAESAW. 2009. Report of the Study Group on Anguillid Eels in Saline Waters (SGAESAW). In: ICES Steering Group on Ecosystems Function (ed.). Sackville/Gothenburg
- Klein Bretler, J.G.P. (2005). Kennisdocument Europese aal of paling, *Anguilla anguilla* (Linnaeus, 1758). Retrieved on 5th June 2018 from <http://edepot.wur.nl/117714>
- Lafaille, Pascal and Baisez, Aurore and Rigaud, Christian and Feunteun, Eric Habitat preferences of different European eel size classes in a reclaimed marsh: a contribution to species and ecosystem conservation. (2004) Wetlands, Vol. 24 (n° 3), pp. 642-651. ISSN 0277- 5212
- Winter, H.V., Griffioen, A.B. and Keeken, O.A. van (2014). De Vismigratierivier: Bronnenonderzoek naar gedrag van vis rond zoet-zout overgangen. Retrieved on 4th of June from [edepot.wur.nl/300166](http://edepot.wur.nl/300166)

