Institutional Repository - Research Portal
Dépôt Institutionnel - Portail de la Recherche
researchportal.unamur.be
University of Namur

RESEARCH OUTPUTS / RÉSULTATS DE RECHERCHE

Downstream fish migration along the low Meuse river

Ben Ammar, Imen; Mandiki, Robert; Antipine, Sascha; Flamion, Enora; Kestemont, Patrick

Publication date:
2018

Document Version
Publisher's PDF, also known as Version of record

Link to publication

Citation for pulished version (HARVARD):
Ben Ammar, I, Mandiki, R, Antipine, S, Flamion, E & Kestemont, P 2018, 'Downstream fish migration along the low Meuse river', Kick-off ILEE, Namur, Belgium, 11/06/18 - 11/06/18. <http://ilee.unamur.be/posters/ben-ammar-et-al-2018-life4fish-project.pdf>

General rights
Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the public portal ?

Take down policy
If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.

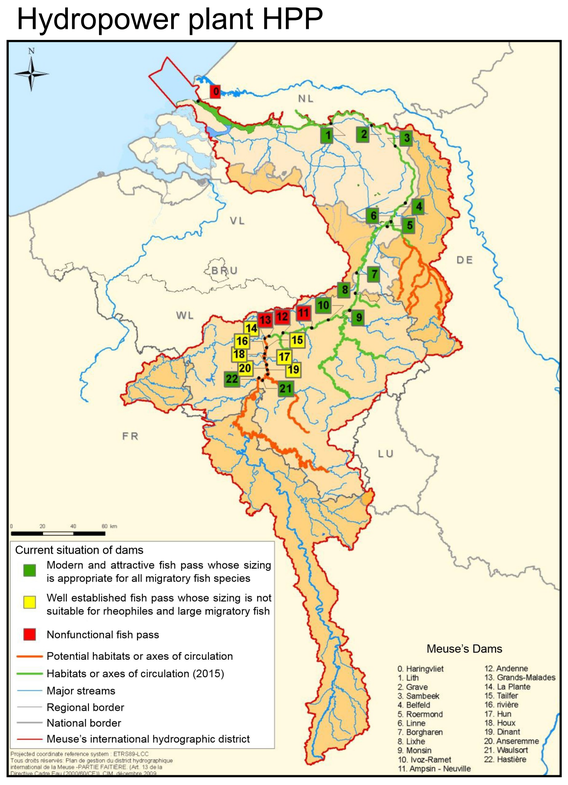
Download date: 12. Oct. 2024

DOWNSTREAM FISH MIGRATION ALONG THE LOW MEUSE RIVER

Imen Ben Ammar, Robert Mandiki, Sascha Antipine, Enora Flamion, Patrick Kestemont

THE MEUSE RIVER

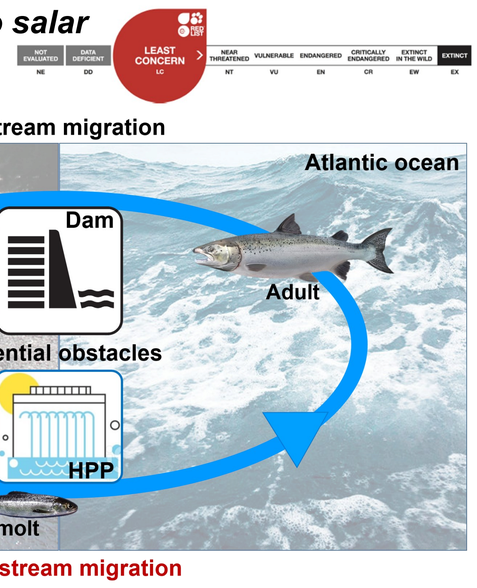
- Heavily modified water body: Dam, Hydropower plant HPP



- Home to 10 highly migratory diadromous fish species and ≈ 30 non-diadromous species

TARGET SPECIES

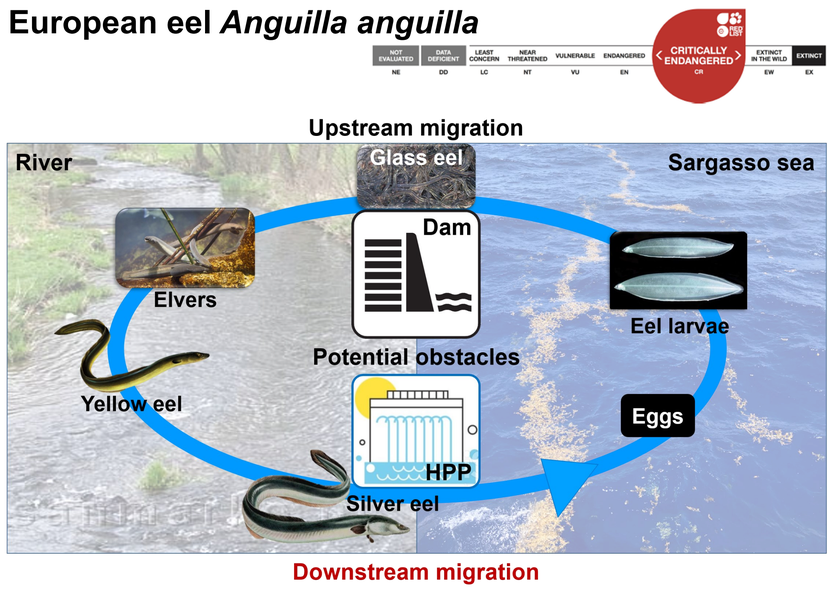
Atlantic salmon *Salmo salar*



1930s: Disappearance of *S. salar* from the Belgian Meuse basin

Reintroduction programs in Europe and Belgium (Meuse Saumon 2000)

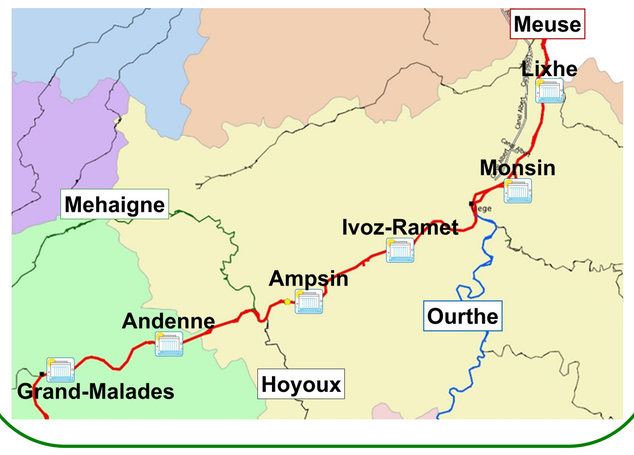
European eel *Anguilla anguilla*



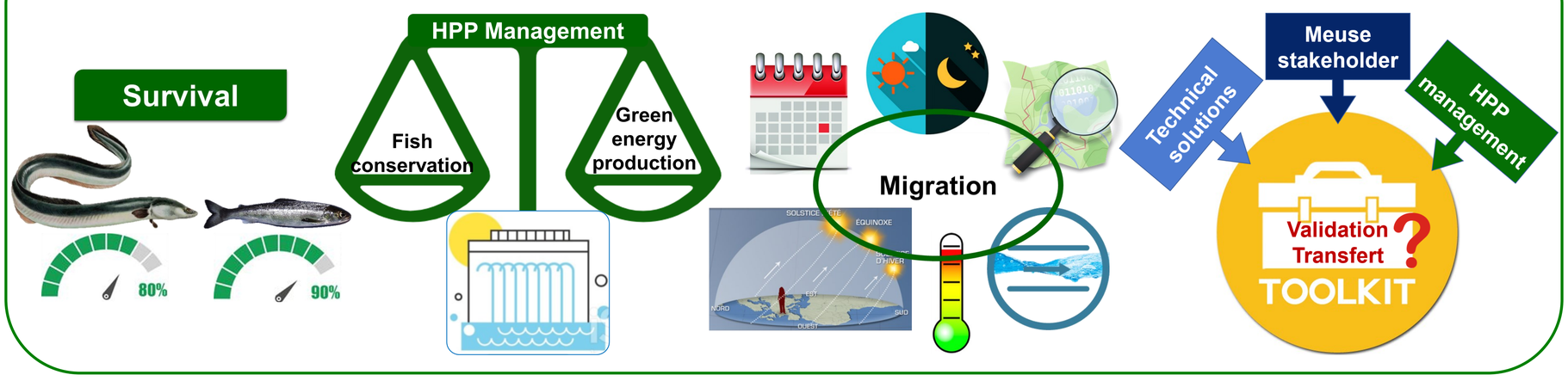
1980s: distribution area ↘, population ↘, natural recruitment of glass eels ↘

UE management plan: ↘ of all anthropogenic causes of mortality + Escapement of 40% of the biomass compared to "pristine" population

STUDY AREA: LOW MEUSE



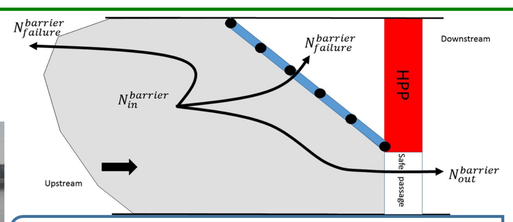
PROJECT OBJECTIVES



STUDY AXIS

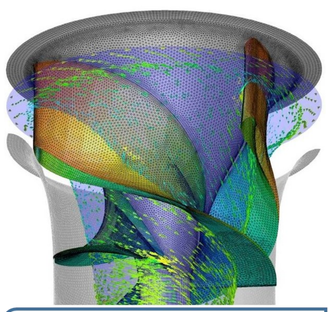
1. Downstream migration model
2. Hydrodynamic modelisation
3. Resident populations: characterization
4. Impact of hydropower plant on fish
5. Performance indicators: definition/evaluation

Downstream migration Model: Radiotelemetry

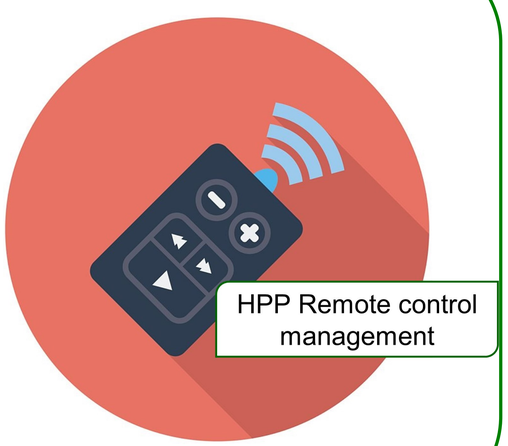


Behavioral barrier

Fish pass installation



Ecosustainable HPP



HPP Remote control management

OUR CURRENT STUDIES

1. Stock assessment

Fyke net

Electro-fishing

In wadable and large rivers

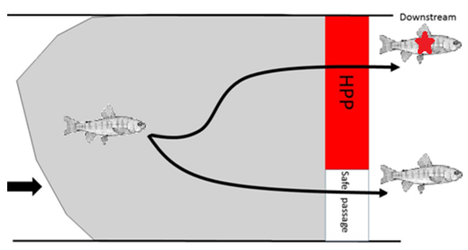
2. Stock estimation

Capture

Marquage

Recapture

3. HPP impact on fish



4. Characterisation of fish population

Morphology & health status

- ✓External & internal examination (X-ray)
- ✓Parasitism/pathology
- ✓Herpes virus (RT-PCR) (eel)

Physiological/immune status

- ✓Cortisol
- ✓HSP70 and 90
- ✓Growth & thyroid hormones
- ✓Immunological activities
- ✓Immune gene expression

Swimming ability / Behavioral responses

Use of swimming tunnel

- ✓Ventilation rate
- ✓Escape speed
- ✓Locomotion