

An aerial photograph of a wide, green river valley. A large, light-colored river winds through the center of the valley, curving from the top left towards the bottom center. The surrounding landscape is a patchwork of vibrant green fields, some with visible furrows or paths. In the distance, the valley opens up towards a hazy horizon under a pale sky. The text is overlaid on the upper portion of the image.

**Europe in de Meuse valley :
border or common, how so
?**

**focus on transboundary
realisation**

content

- **the project(s)**
- **working together and process**
- **benefits**
- **some reflections ...**


Katia Nagels

Agency for Nature and Forests

katia.nagels@lne.vlaanderen.be



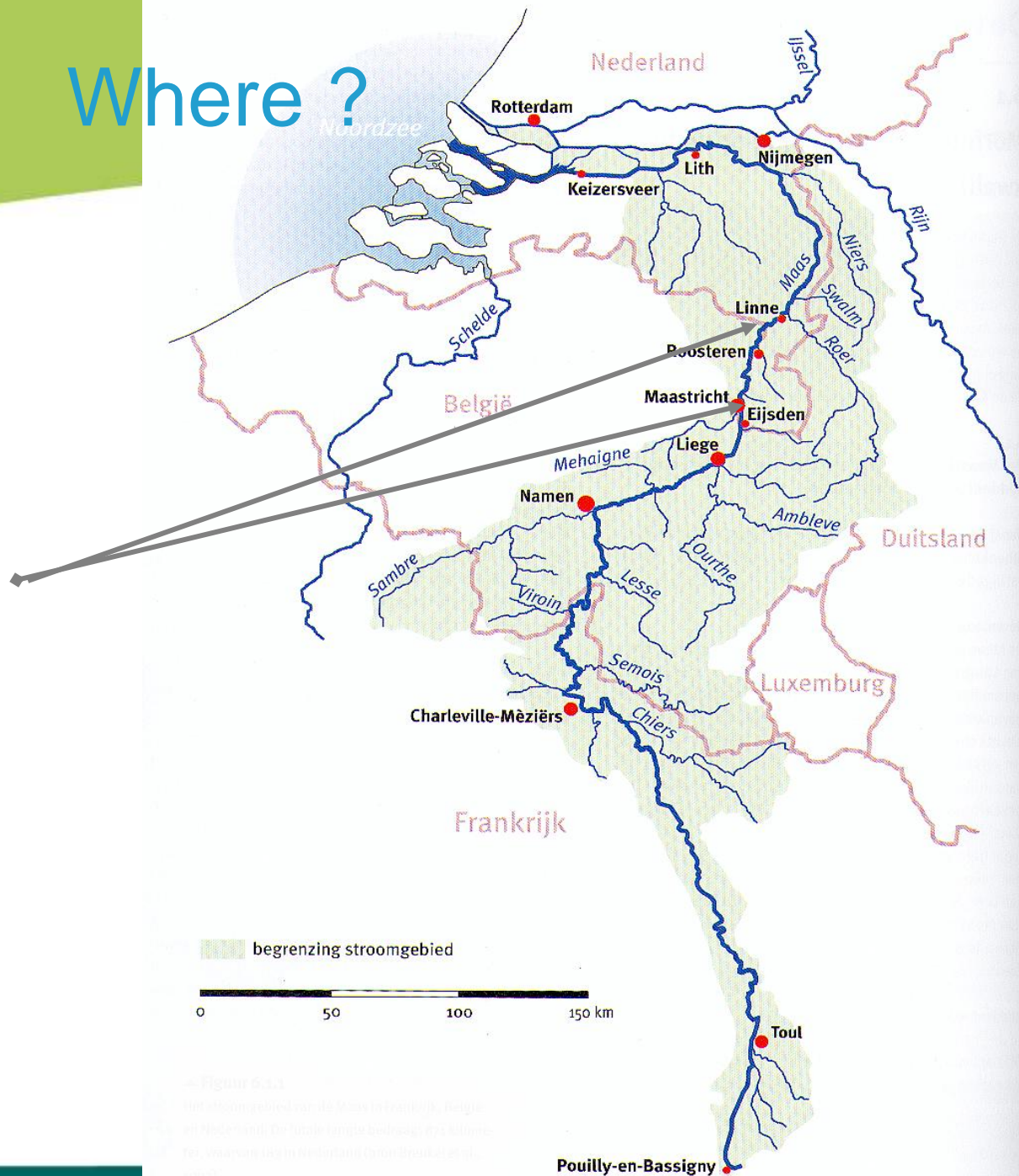
What ...

An aerial photograph showing a large-scale river rehabilitation project. The image features a wide, winding river with a prominent meander. The riverbanks are lined with lush green grass and dense clusters of trees. In the upper left, a large reservoir or dam structure is visible, with a road crossing it. The overall landscape is a mix of natural vegetation and human-made infrastructure, illustrating the project's goal of restoring natural river processes.

**international river rehabilitation
project which aims to restore the
natural river processes**

Where ?

Section border Meuse



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River characteristics

- influenced by human activities
 - *normalisation, embankment, dikes, towing path, gravel mining in the streambed*
- rain fed river
 - *fluctuation in discharge*
- deposition
 - *high sedimentation (polluted)*

But still natural ...



Aims of the projects

Netherlands

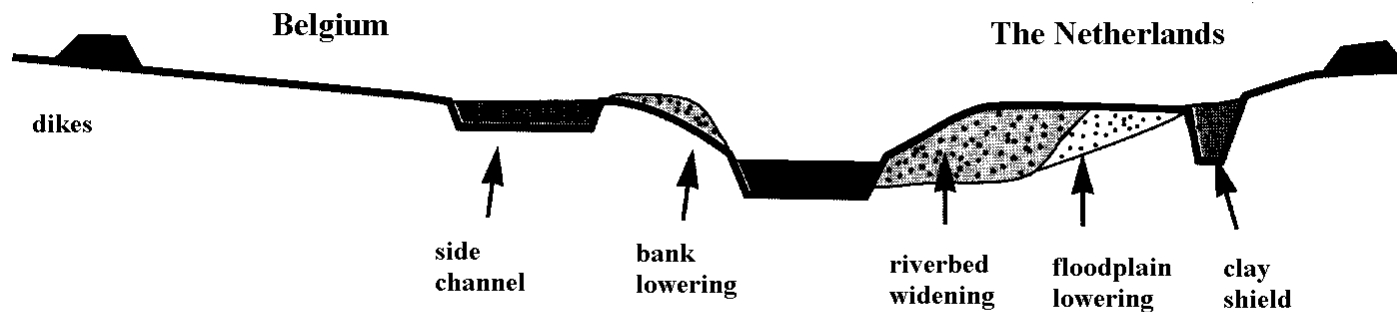
- Gravel excavation
- Safety
- Nature development



Flanders

- **Integrated water management**
- **Nature development**
- **Harmonisation of different functions**

How and what



- lowering of the floodplain and riverbank
- excavation of side channels
- clay shields

improvement of the river contact with
floodplain and its tributaries

habitat types

Marches



River forest



riverbanks



pastures



From old to new landscapes

Agriculture → Mosaic Nature



... Process ...

Planning proces

- Started in 1994
- Intention declaration (1995)
- Coordination by Benelux
- Process of design, environmental impact assesement, cumulatieve impact studies on both sides of the river

Resulted in mutual agreement in 2004 and further decision making



Decision in 2004 on:

- Principles of cooperation on high water protection and nature development
- Agreement on the adverse effects of river restoration on high waterlevel, grondwaterlevel and the control of it.
- Opportunities for strengthening mutual plans



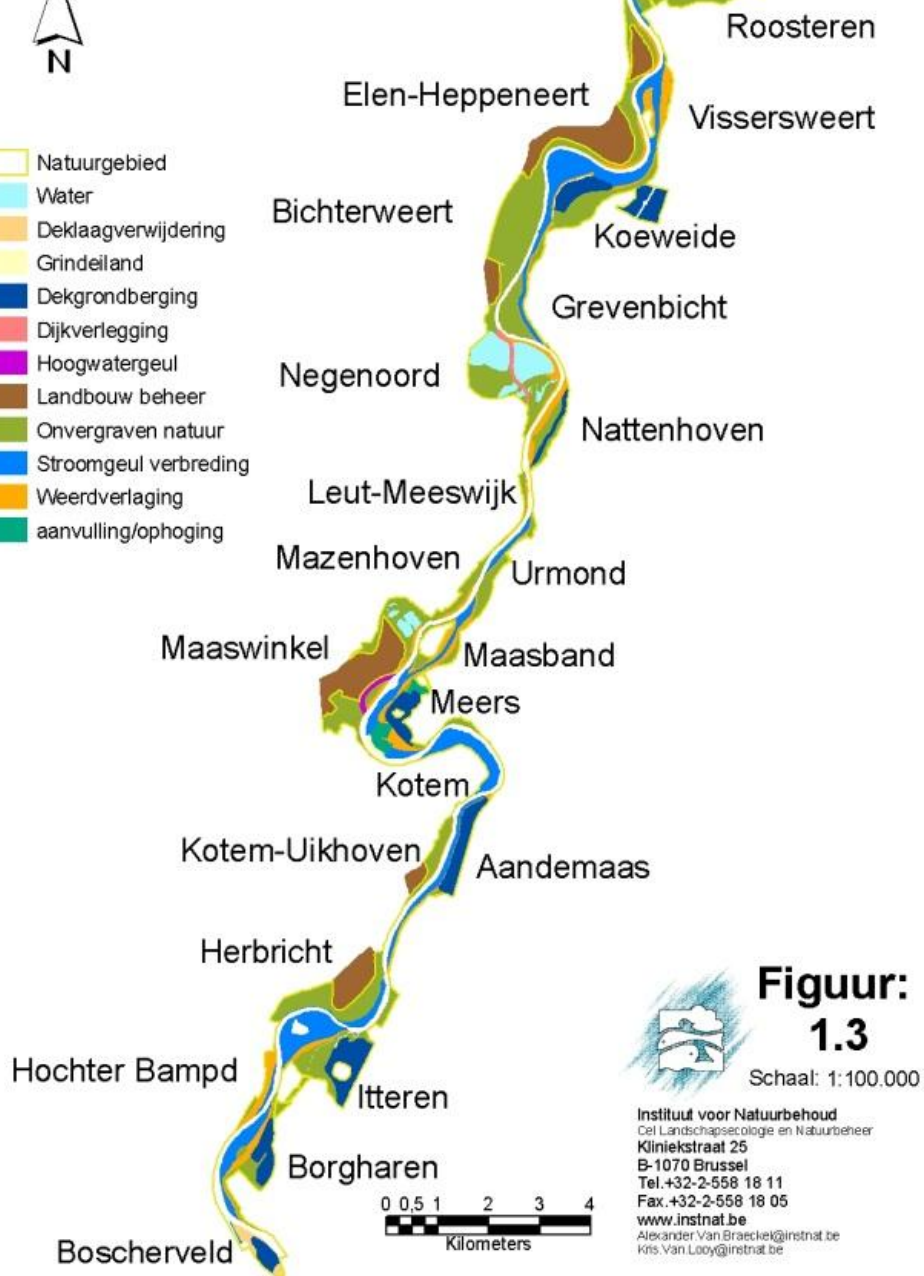
Ingrepenplan Cumulatief Ontwerp B

langs de Grensmaas

Klauwenhof



- Natuurgebied
- Water
- Deklaagverwijdering
- Grindeiland
- Dekgrondberging
- Dijkverlegging
- Hoogwatergeul
- Landbouw beheer
- Onvergraven natuur
- Stroomgeul verbreding
- Weerdverlaging
- aanvulling/ophoging



Figuur:
1.3

Schaal: 1:100.000



Instituut voor Natuurbehoud
Cel Landschapsetologie en Natuurbeheer
Kliniekstraat 25
B-1070 Brussel
Tel. +32-2-558 18 11
Fax. +32-2-558 18 05
www.instnat.be
Alexander.Van.Braeckel@instnat.be
Kris.Van.Looij@iretnat.be



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Implementation process (2004-2025)

- Platform of decision making: VNBM (Flemisch – Dutch Bilateral Meuse Commission)
- VNBM:
 - 2x year
 - official level (different administrations)
 - topics related to watermanagement, nature development, monitoring, long term management, project-continuation



OPERATIONELE WERKPLANNING GEMEENSCHAPPELIJKE MAATREKELN

Standlijn 1 november 2012

concept

VERZAMELING BESTAANDE AFSPRAKEN NAAR HOOFDACTIVITEIT VOOR DE VLAAMSE EN NEDERLANDSE INGEPEN

PROJECT

JAAR 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020

Monitoring

Onderzoeksaanpak overeenkomstig de genoemde termijnen in de VNBM 310305

Doelstelling
Veiligheid
31 Dec.2017

Doelstelling
Natuur
31 Dec.2020

Proefproject Meers
Uitvoering D.O.

Roosteren Rivierverruiming

Boscherveld

Aan de Maas

Meers

Negenoord

Natuur en D.O.

1-07

1-10

1-08

1-07

1-02

1-08

1-03

1-12

4e kwartaal

3e kwartaal

2e kwartaal

1e kwartaal

31-03

31-10

31-03

1-05

1-09

1-05

1-11

Since the implementation

- Different “Boertien” locations (projects for Dutch safety on Belgian river side)
- Several Projects of safety/nature development by the administration of waterways (solving bottlenecks)
- Mitigation measures in the river
- River improvement measures
- Ongoing excavation of gravel



Realisation on the field: succesfull!!

Starting conditions

A heavily regulated lowland gravel-bed river with summer and winter dikes and a floodplain with intensive agriculture.

Restoration measures

2000-2006

- Bed widening (1km river length, 5ha gravel bar, 6ha shallow river bed).
- Bank lowering (2km).
- New flood channels (4ha).
- Removal of bank protection (riprap) (5km).
- Reshaping gravel pits in a more natural profile (500ha).
- Restoration of flower-rich floodplain grasslands on former intensively used agricultural land (400ha).

Objectives

Natural riverine landscape of gravel-bed river with wide alluvial plain; special attention for *Ranunculus fluitans* vegetations, muddy riverbanks with pioneer vegetations, hydrophilous tall herb fringe communities, lowland hay meadows, xeric sand calcareous grassland and different types of riparian forest.

Management measures

Natural grazing.



Mitigation measures
in the river



Hochter bampd

Herbricht



Negenoord







Bichterweert



Role of ANB in VNBM

- Quality control of appropriate assessments
- Member of steering committee on monitoring groundwater effects and mitigation measures
- Advice in building licence of the projects
- Natura 2000 implementation
- Cooperation with the waterway administration/ de maaswerken (saveguard of nature aspects)
- Draft of mutual 'nature' vision (NL/Be) for long term management

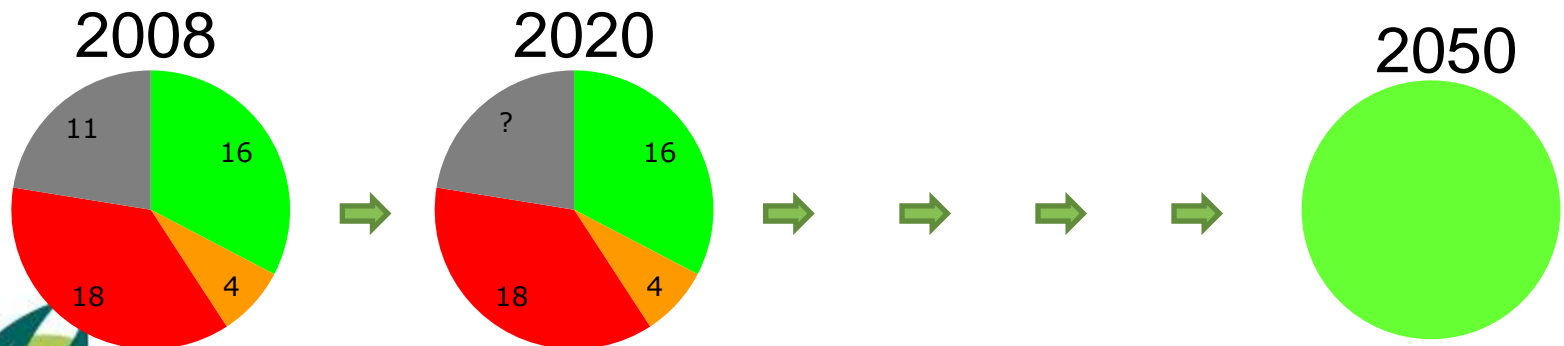
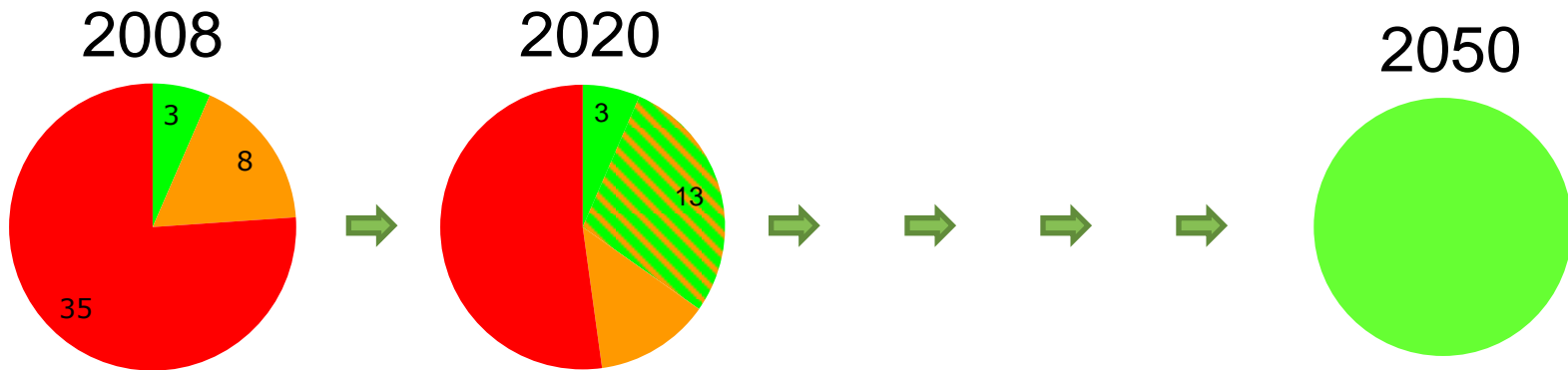


biodiversity benefits: aims in natura 2000

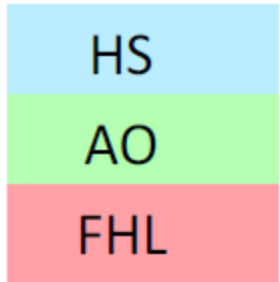
Habitat, species	aim
3150	↑ 2 ha
3260	↑ increase, restoring habitat and quality
3270	↑ 19 ha
6120	↑ 96 ha
6430	↑ 37 ha
6510	↑ 127 ha
7140 Subtype 7140_meso	= 3 ha
9160	= ↑ 1 ha
91E0 *	↑ 62 ha
91E0 * subtype 91E0_wvb wilgenvloedbos	↑ 38 ha
91F0	↑ 58 ha
	↑ 1 pop.
<i>Triturus cristatus</i>	
<i>Cobitis taenia</i>	=
<i>Hyla arborea</i>	↑ 2 pop.
<i>Rana lessonae</i>	↑?
<i>Gomphus flavipes</i>	↑ improvement area
<i>Cottus gobio</i>	↑ improvement area
<i>Castor fiber</i>	= ↑
<i>Lutra lutra</i>	↑ link between existing areas
<i>Rhodeus sericeus amarus</i>	=
<i>Crex crex</i>	↑ 8bp



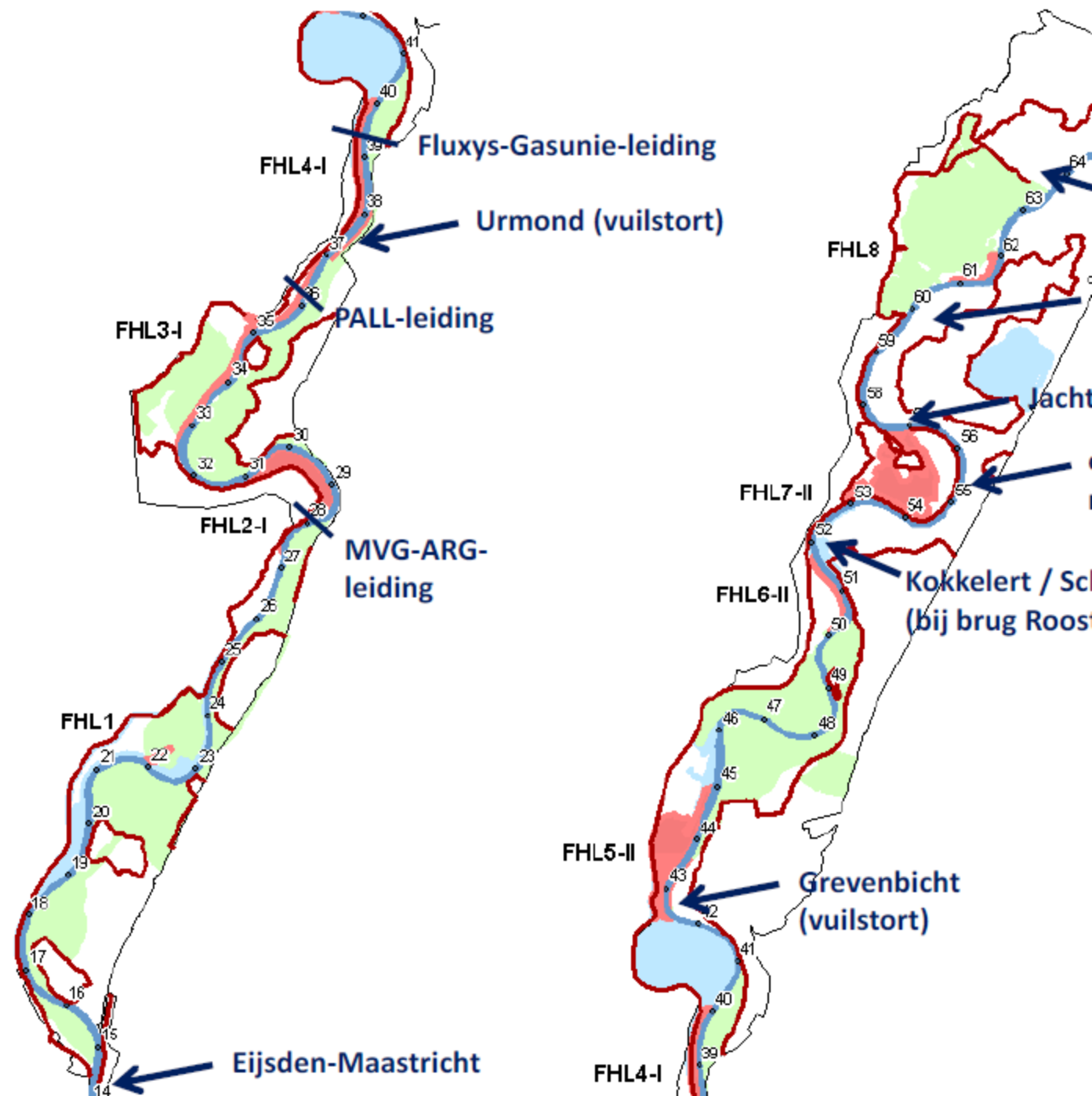
Link to Biodiversity strategy Flanders



toegankelijk.



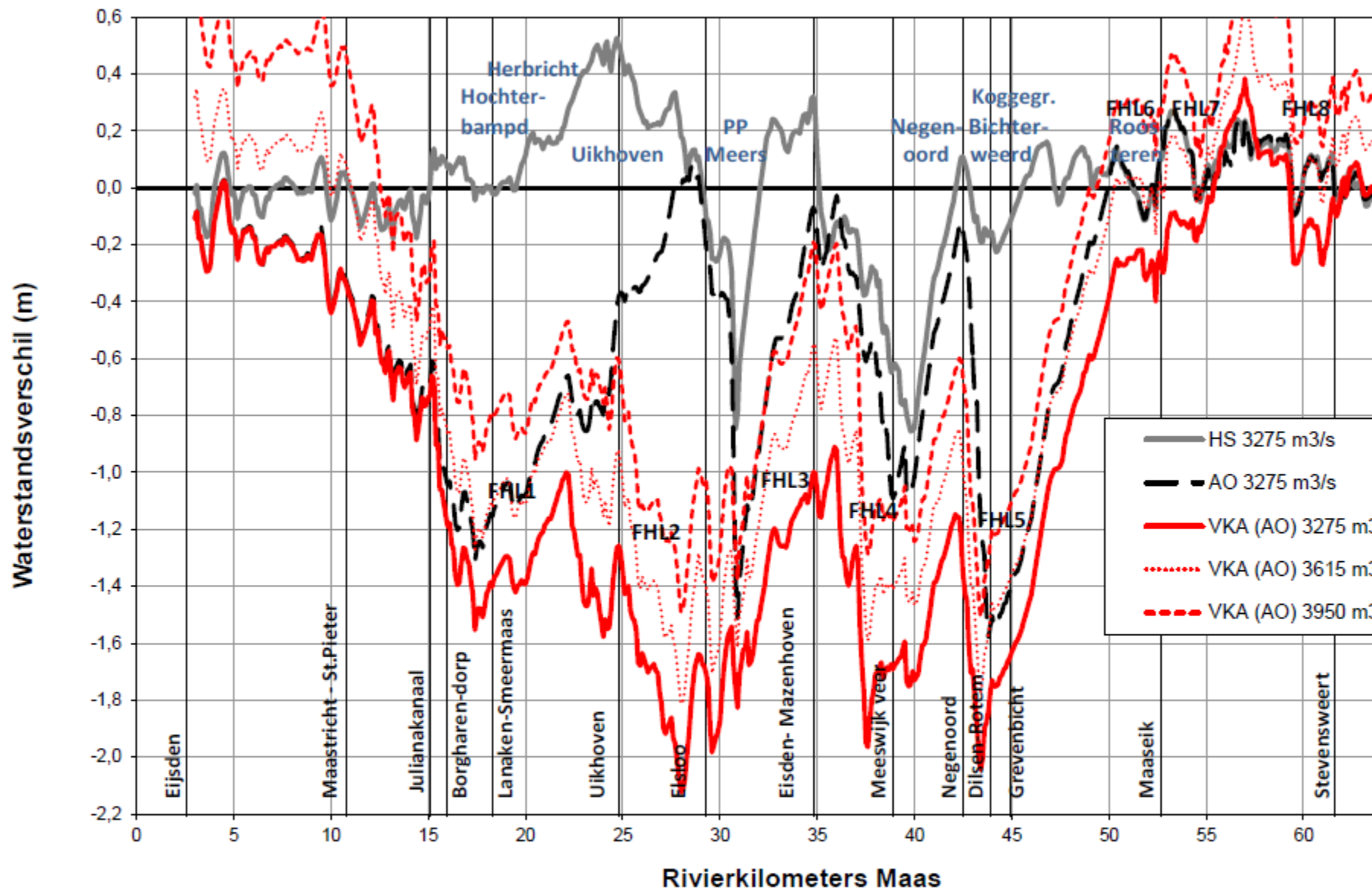
Solving last
bottlenecks



Climate scenario's included in new modelling (study on bottlenecks)

Tabel 1 Overzicht toegepaste hydraulische randvoorwaarden in modelsimulaties Fasen I
(markering: huidig beschermingsniveau Vlaamse en Nederlandse waterkeringen)

(piek)afvoer (m ³ /s)	status (bron)	overschrij- dingsduur/ kans (j ⁻¹)	modelsimulaties		ruwheid
			stationair	dynamisch	
10	Betr.2010 ⁴⁾	356 d	x		L13
40	Betr.2010	317 d	x		L13
100 ¹⁾	Betr.2010	219 d	x		L13
200 ¹⁾	Betr.2010	141 d	x		L13
300 ¹⁾	Betr.2010	96 d	x		L13
500	Betr.2010	45 d	x		L13
975	Betr.2010	10 d	x		L13
1920	HR2001	1/5	x		H13
2710 ²⁾	HR2001	1/50	x		H13
3000 ³⁾	HR2001	1/115	x		H13
3275	HR2001	1/250	x	x	H13
3430	TMR2006	1/250	x	x	H13
3615	KL2050	1/250	x	x	H13
3800	HR2001	1/1250	x		H13
3950	KL2100	1/250	x	x	H13
4000	TMR2006	1/1250			H13
4200	KL2050	1/1250			H13
4600	KL2100	1/1250	x	x	H13



Figuur 25 Waterstandseffecten voorkeursalternatief in combinatie met de autonome ontwikkeling (VKA in AO) opzichte van referentielijn 1995 (3275 m³/s) bij toenemende maatgevende afvoeren als gevolg van geprojecteerde klimaat effecten

Benefits on recreation



RivierPark Maasvallei
Gratis toegankelijke ontdekkingsbaan



- Charter between different communities
- Strategic open space project – regional landscape
- Opening 24 oktober 2012 of riverpark

Some (personal) thoughts on the process

- Mutual cooperation between Flemish administrations could be improved
- Clear the link between Natura 2000 and Water Framework Directive
- Cross Border Alignment on Natura 2000 deals with different processes/timing
- Focus of VNBM on implementation less on policy level
- Different operational fora
- From ad hoc measures to overall view on the river



future

- Decision on natura 2000 conservation objectives
- New projects on river-restoration (safety, sloving remaining bottlenecks) after finishing feasibility study
- New projects on gravel excavation (EIA study ongoing)
- Study on future integrated river management: focus on “natural” management