Status of barriers in Bavarian rivers

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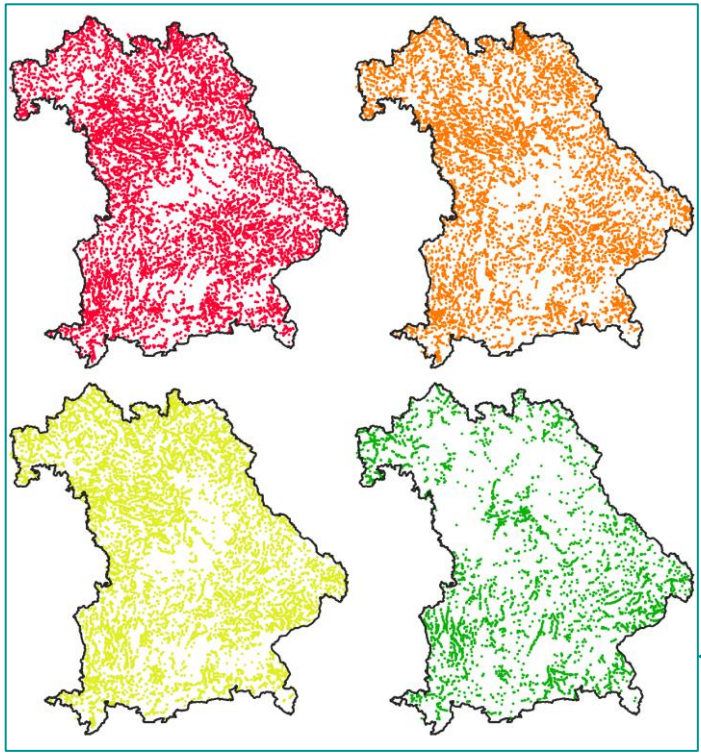
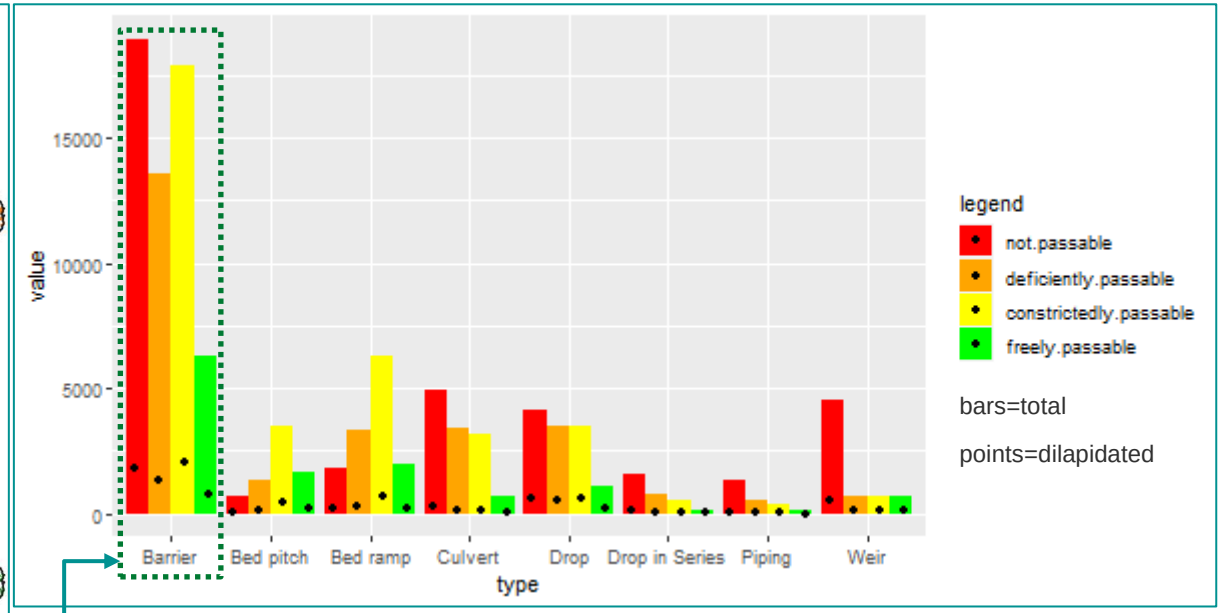
Agenda

- Status quo
- Role of barrier removal
- Barrier removal potential
- Our way forward

https://www.wwf.de/fileadmin/fm-wwf/Publikationen-PDF/WWF-Analyse-Fliessgewaesser-Bayern.pdf

Status of barriers in Bavaria

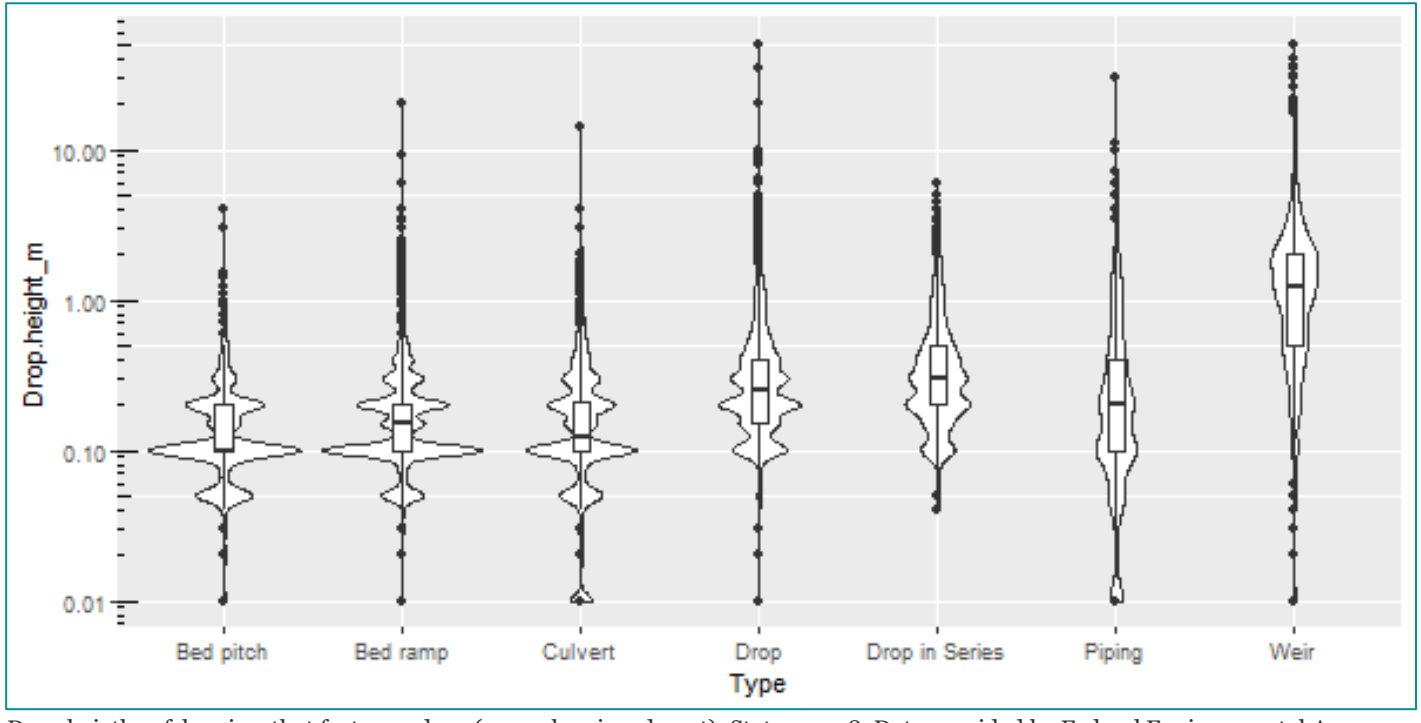




33 24 32 11 9 19 48 23 14 25 47 14 41 28 26 5 34 29 28 9 52 26 18 4 56 24 15 5 68 10 10 11 %

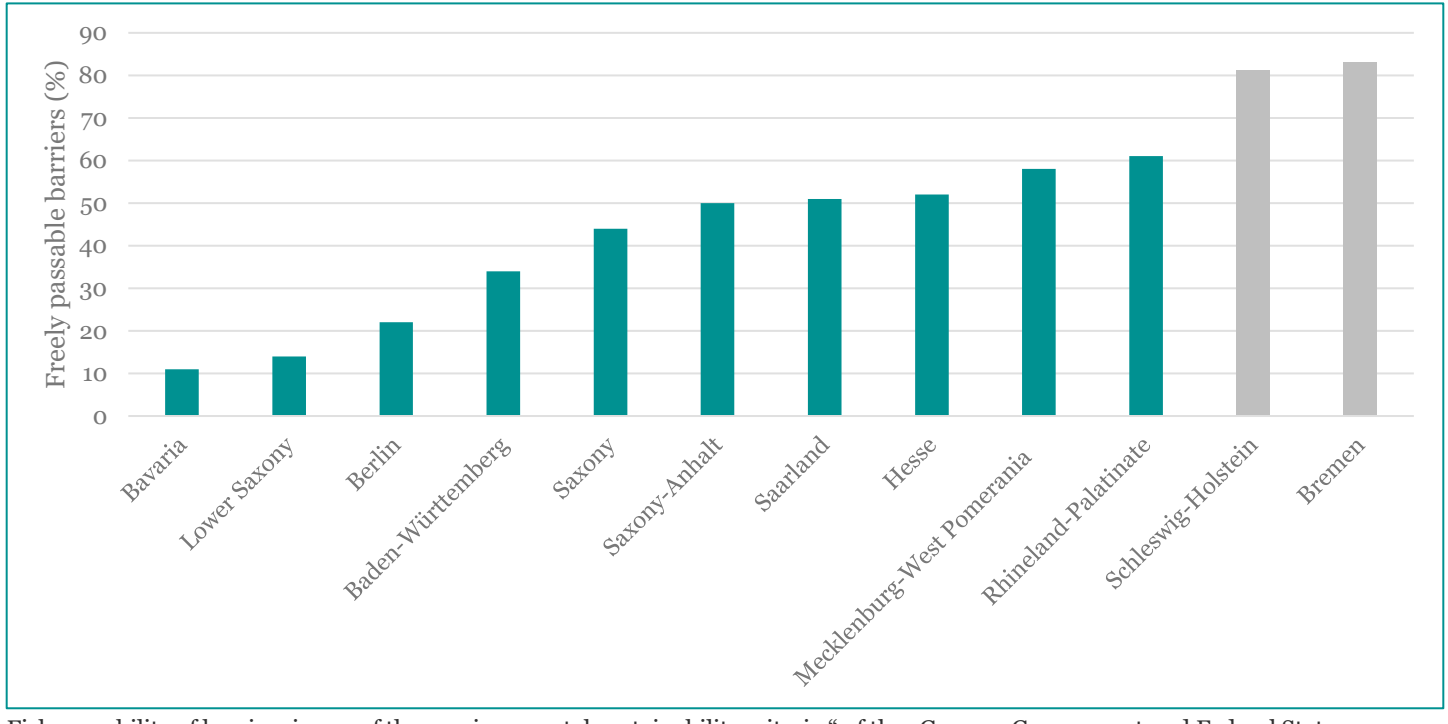
Fish passability ob barriers in Bavaria. Green: freely passable, Yellow: constrictedly passable, Orange: deficiently passable, Red: not passable. Status: 2018, Data provided by Federal Environmental Agency Bavaria (LfU).

Status of barriers in Bavaria



Drop heigths of barriers that feature a drop (21935 barriers do not). Status: 2018, Data provided by Federal Environmental Agency Bavaria (LfU).

Bavaria in the German context



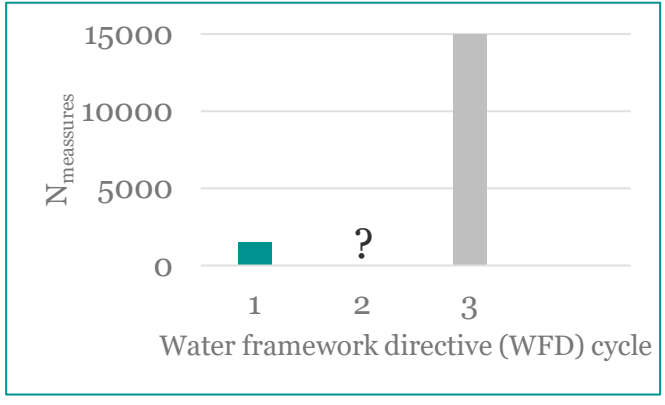
Fish passability of barriers is one of the „environmental sustainability criteria " of the „German Government and Federal States Working Group for Climate, Energy, Mobility – Sustainability" (BlagKlina 2018). Note: There is a high difference in barrier type and density due to geographical reasons.

Status of fish in Bavaria

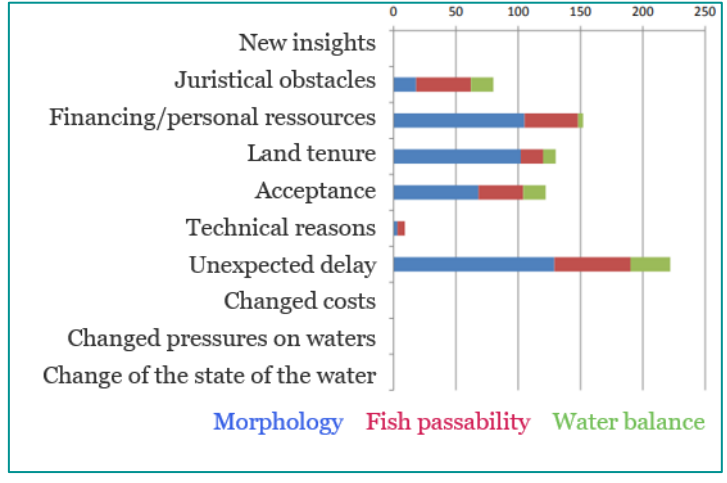
- Until 1990: Loss of 21 out of 69 original species and reduction of distribution area of > 50 % for 27 out of 51 species (Mueller et al. 2018)
- 35 out of the 66 currently occuring species on Red List 2003 (LfL, 2018)
- **Impoundments among the main stressors** (Mueller et al. 2020)

The Danube Salmon (*Hucho hucho*) is quoted as „In danger of extinction“ in the Red List of Bavaria and as „Endagered“ in the IUCN Red List.

Status of fish passability measures in Bavaria



Meassures carried out or started during the 1. WFD cycle and necessary meassures for the 3. cycle (LfU, 2018; FGG Donau 2020; STMUV 2020)



Obstacles for implementation of hydromorphology measures during WFD cycle 1 within the Bavarian catchment of the Danube. Obtained from the respective 2. River Basin Management Plan (STMUV 2015).

- Sophisticated priorization concept
- **By now mainly barrier mitigation**

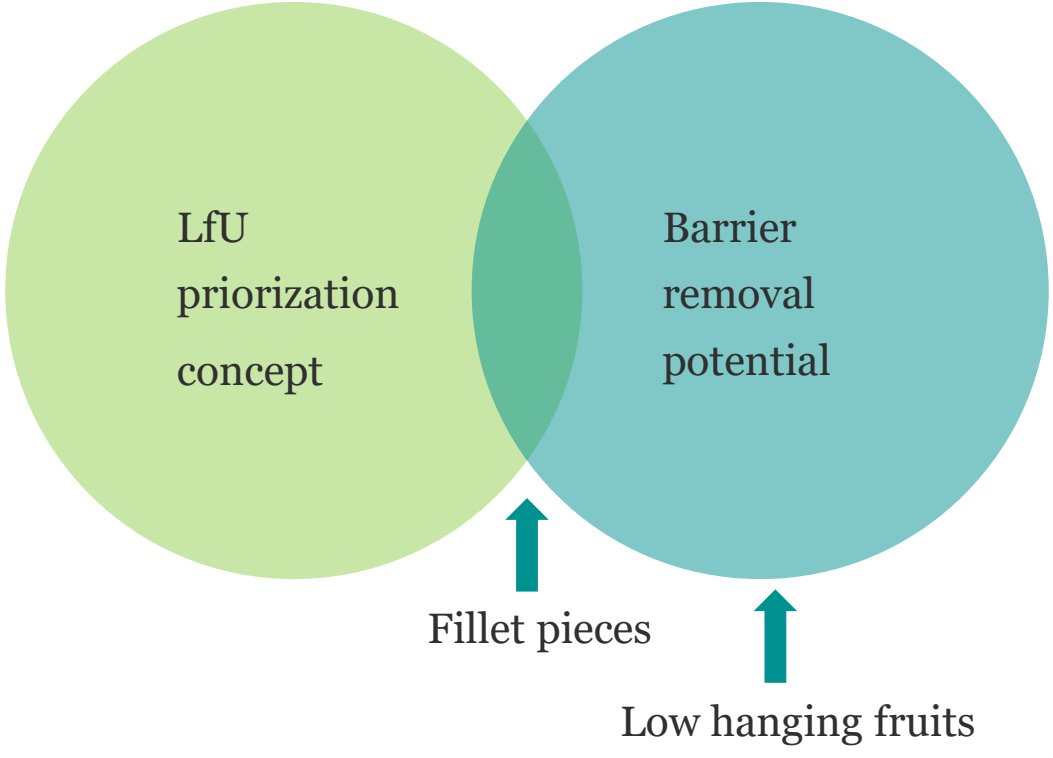
  (< 100 complete removals)

Role of barrier removal

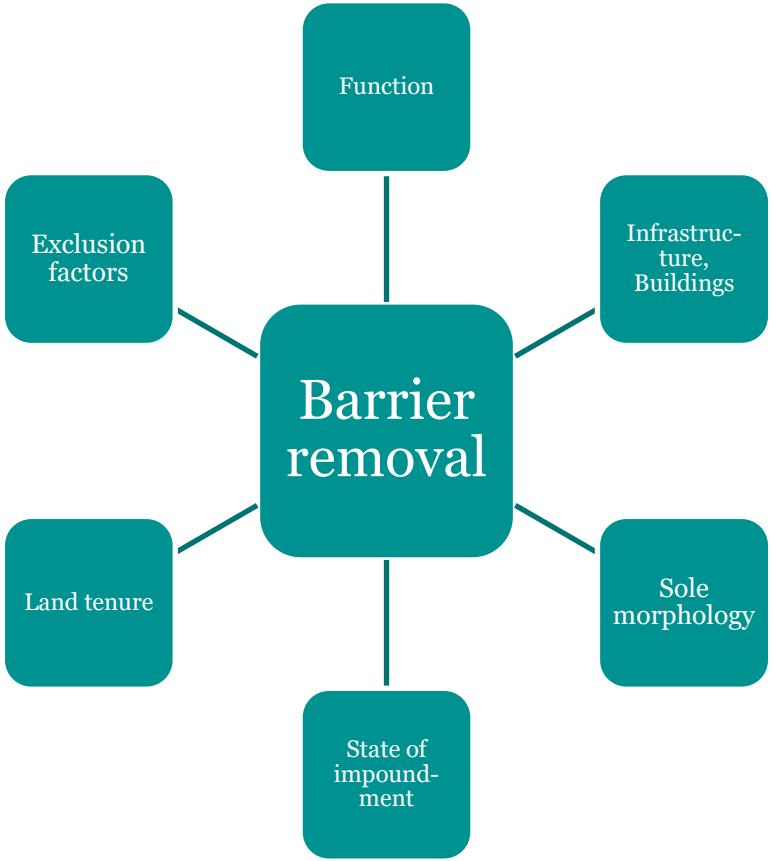
Photo by Bavarian Fishing Association

- Barrier removal is a very **cost effective** way to restore river continuity (King et al. 2021)
- It has the potential to restore fish populations and hydromorphological conditions in relativelly short periods (Catalano et al. 2007, Gardner et al. 2013)
- Bavarian example: „Mitternacher Ohe“ change of WFD fish status from **„moderate“ to „very good“** between 1. and 2. WFD cycle

Barrier removal potential



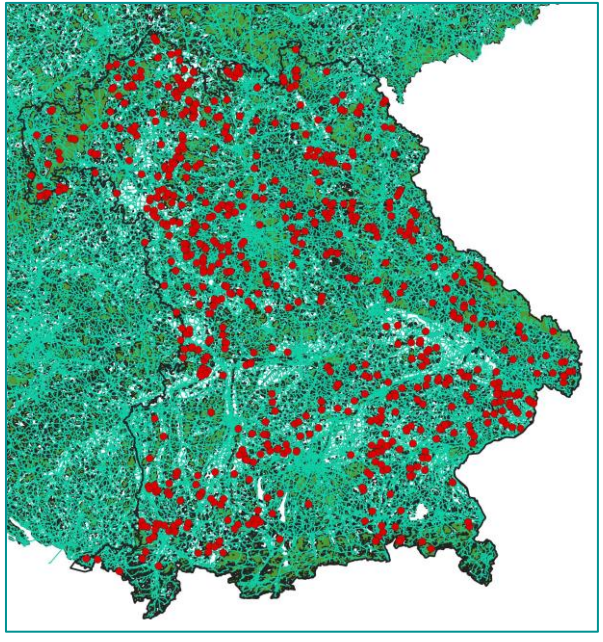
Barrier removal potential



Example: GIS preassessment

Infrastructure, Buildings

Function



816 barriers are dilapidated, not passable and more than 50 m away from infrastructure and settlements.

Our way forward

Creating awareness and acceptance

- Video clips, photographs, interviews

Exemplary removals

- Crowdfunding campaign, Funds

In preparation

Political mind shift

- No-additional hydropower, DR funding

Barrier removal potential

- Planned cooperation with WWF SUI

Support and cooperation welcomed!

Thank you! Questions!?

Webseite einfügen

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Geben Sie unten die URL ein.

https:// ossyssek.shinyapps.io/History_of_Dam_Removal ×

Hinweis: Viele beliebte Websites ermöglichen den sicheren Zugriff. Klicken Sie auf die Vorschauschaltfläche, um zu überprüfen, ob auf die Webseite zugegriffen werden kann.

Vorschau

Literature

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Appendix

Object type	Anzahl	Fish passability							
		Not passable		Defectively passable		Constrictedly passable		Freely passable	
		N	%	N	%	N	%	N	%
Barrier	56.792	18.964	**33.4%**	13.616	**24.0%**	17.910	**31.5%**	6.302	**11.1%**
Drop	12.258	4.166	34.0%	3.517	28.7%	3.474	28.3%	1.101	9.0%
Drop in Series	2.965	1.547	52.2%	774	26.1%	527	17.8%	117	3.9%
Culvert	12.146	4.944	40.7%	3.407	28.1%	3.136	25.8%	659	5.4%
Bed pitch	7.130	653	9.2%	1.349	18.9%	3.453	48.4%	1.675	23.5%
Bed ramp	13.351	1.835	13.7%	3.321	24.9%	6.270	47.0%	1.925	14.4%
Piping	2.352	1.323	56.3%	557	23.7%	363	15.4%	109	4.6%
Weir	6.590	4.496	68.2%	691	10.5%	687	10.4%	716	10.9%