



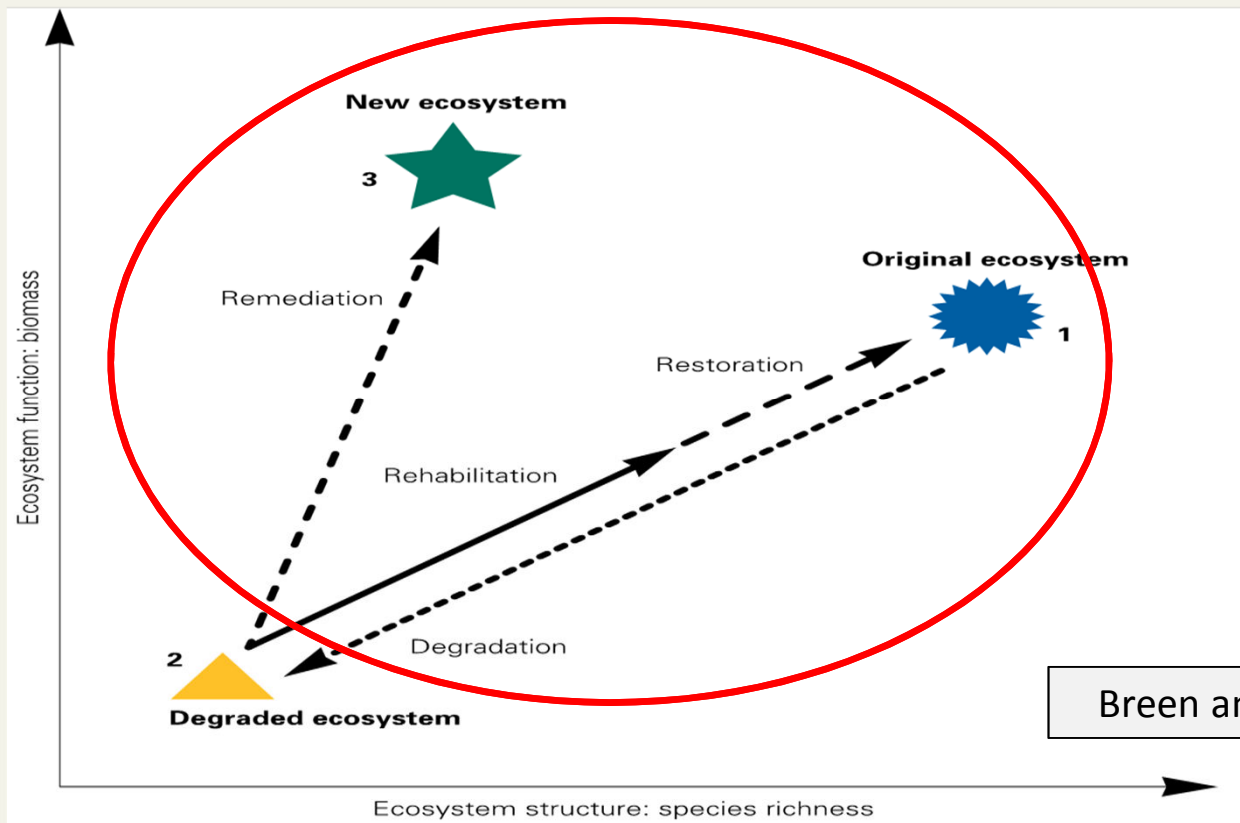
River restoration: a strategic approach

Dave Tickner
World Water Congress XV
March 2015





River restoration



Breen and Walsh (1996)



Case studies & literature review

Overview

The changing nature of river restoration

Benjamin Smith,^{1*} Nicholas J. Clifford¹ and Jenny Mant²



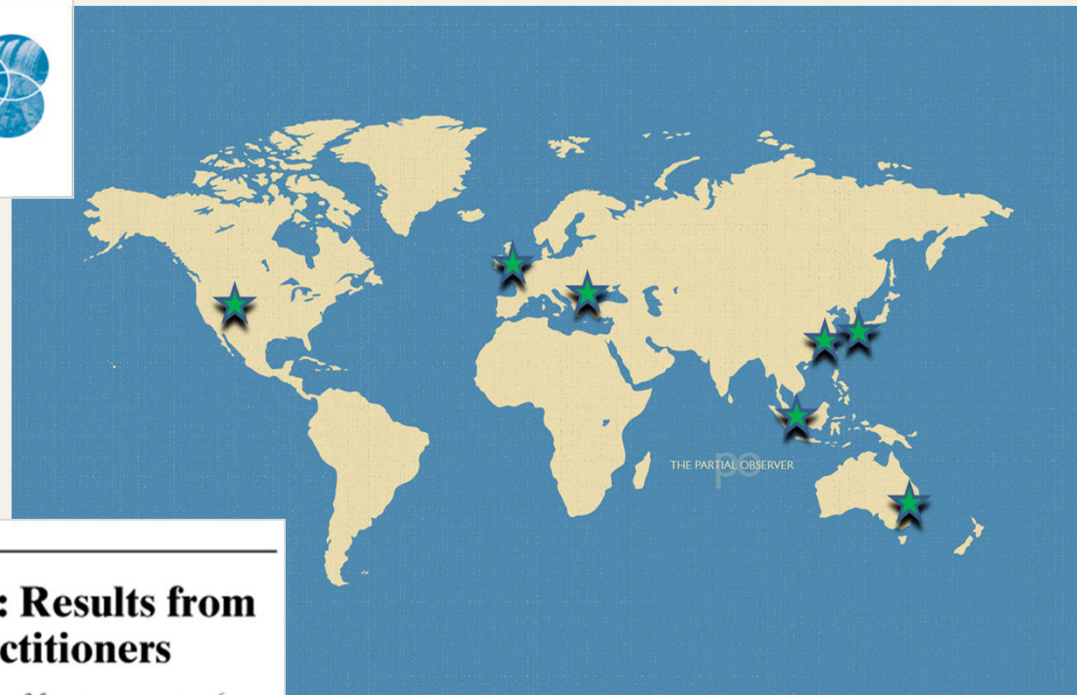
Ecological Restoration of Streams and Rivers: Shifting Strategies and Shifting Goals

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Restoring Rivers One Reach at a Time: Results from a Survey of U.S. River Restoration Practitioners

Emily S. Bernhardt,^{1,2,3} Elizabeth B. Sudduth,^{1,4} Margaret A. Palmer,^{3,5} J. David Allan,⁶ Judy L. Meyer,⁴ Gretchen Alexander,⁵ Jennifer Follastad-Shah,^{1,7} Brooke Hassett,^{1,3} Robin Jenkinson,⁸ Rebecca Lave,⁹ Jeanne Rumps,¹⁰ and Laura Pagano⁹





ABC Waters Programme, Singapore



Before



After (View from bridge 5)

ATELIER DREISEITL



Lower Danube Green Corridor





Triggers for river restoration

- Impact & emergency
- Expectations & values
- Incremental progress
- Local imperative

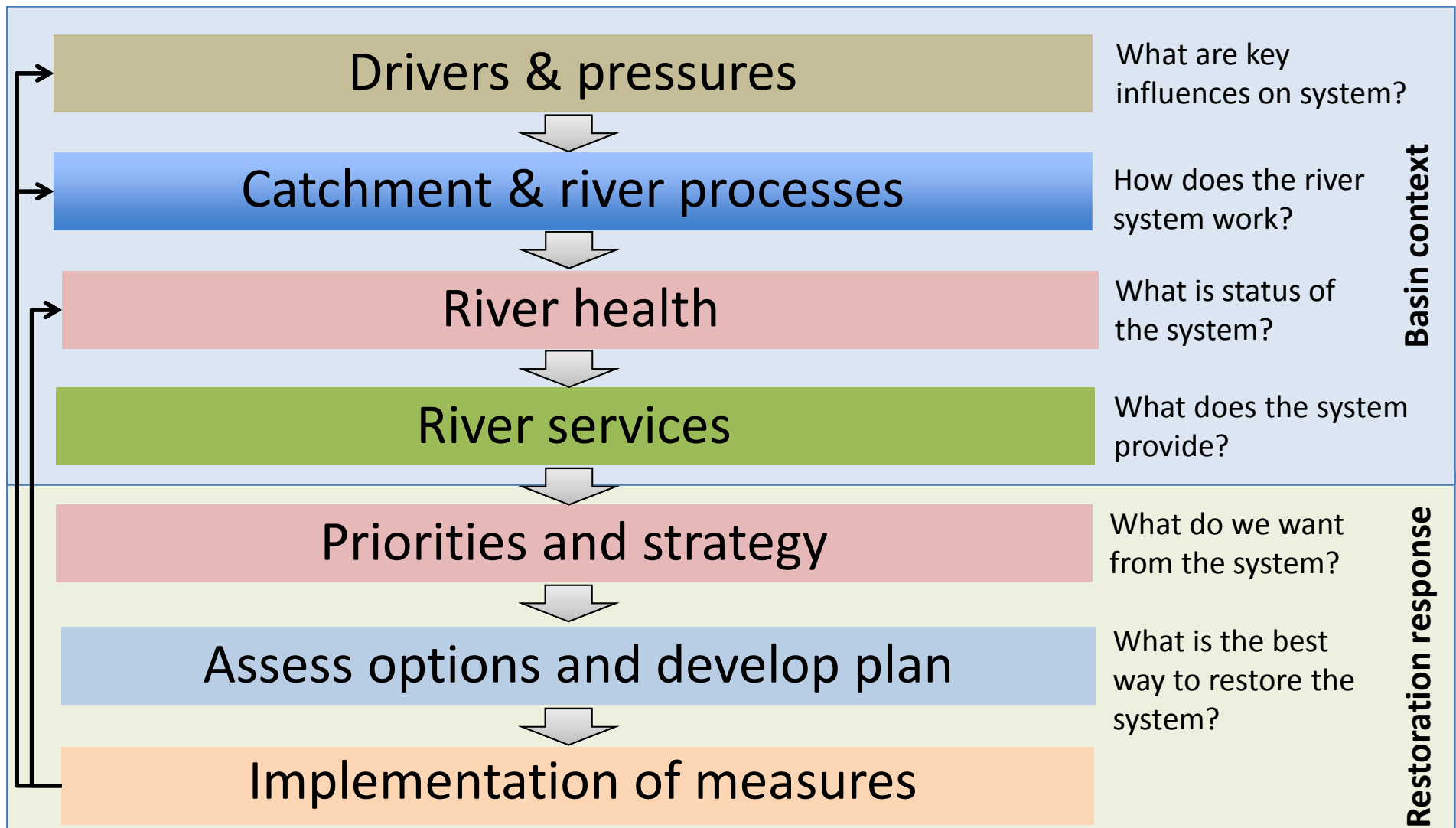




Emerging challenges

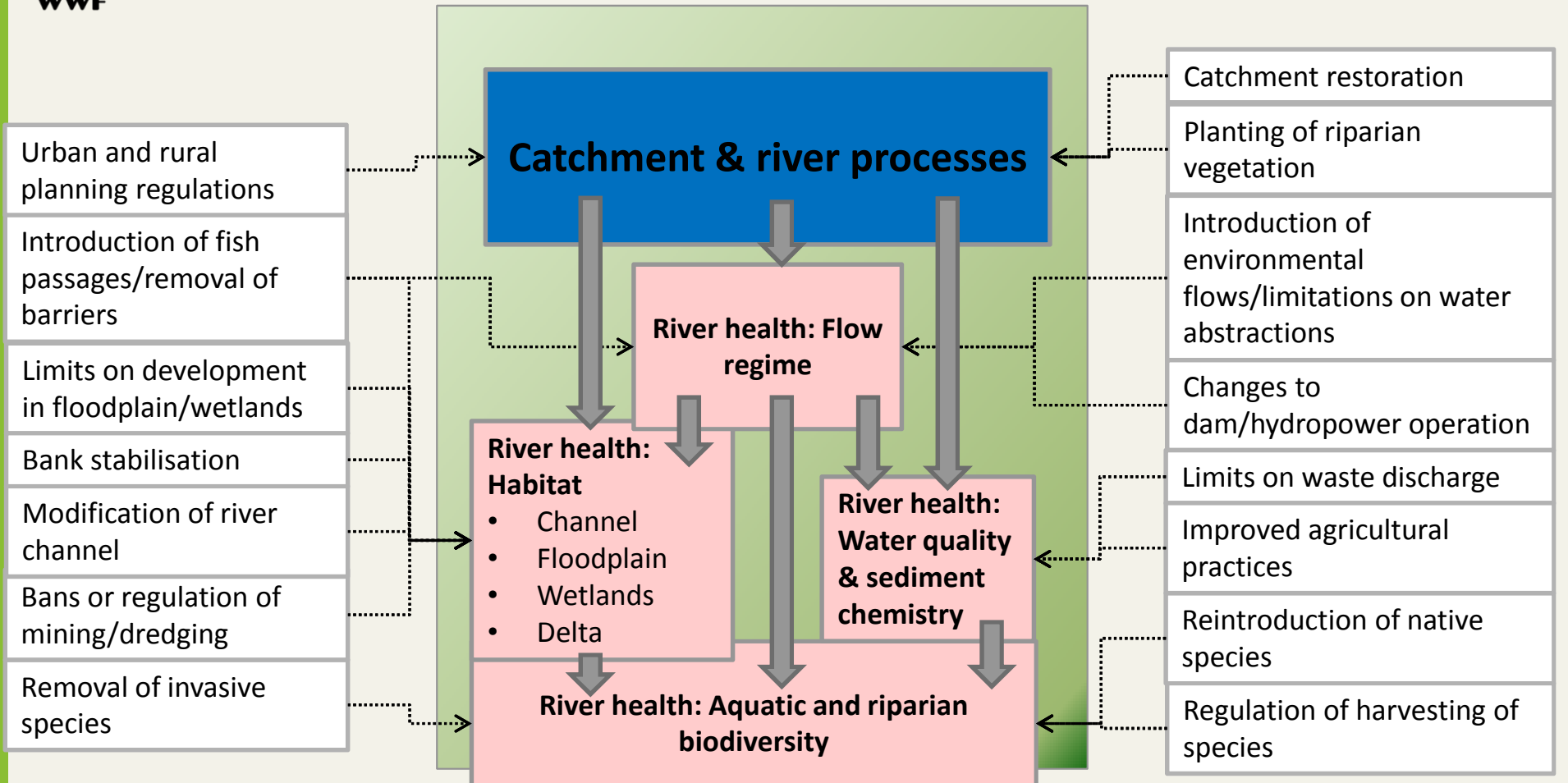
- Feasibility
- Balance
- Scale
- Uncertainty
- Sustainability
- Science





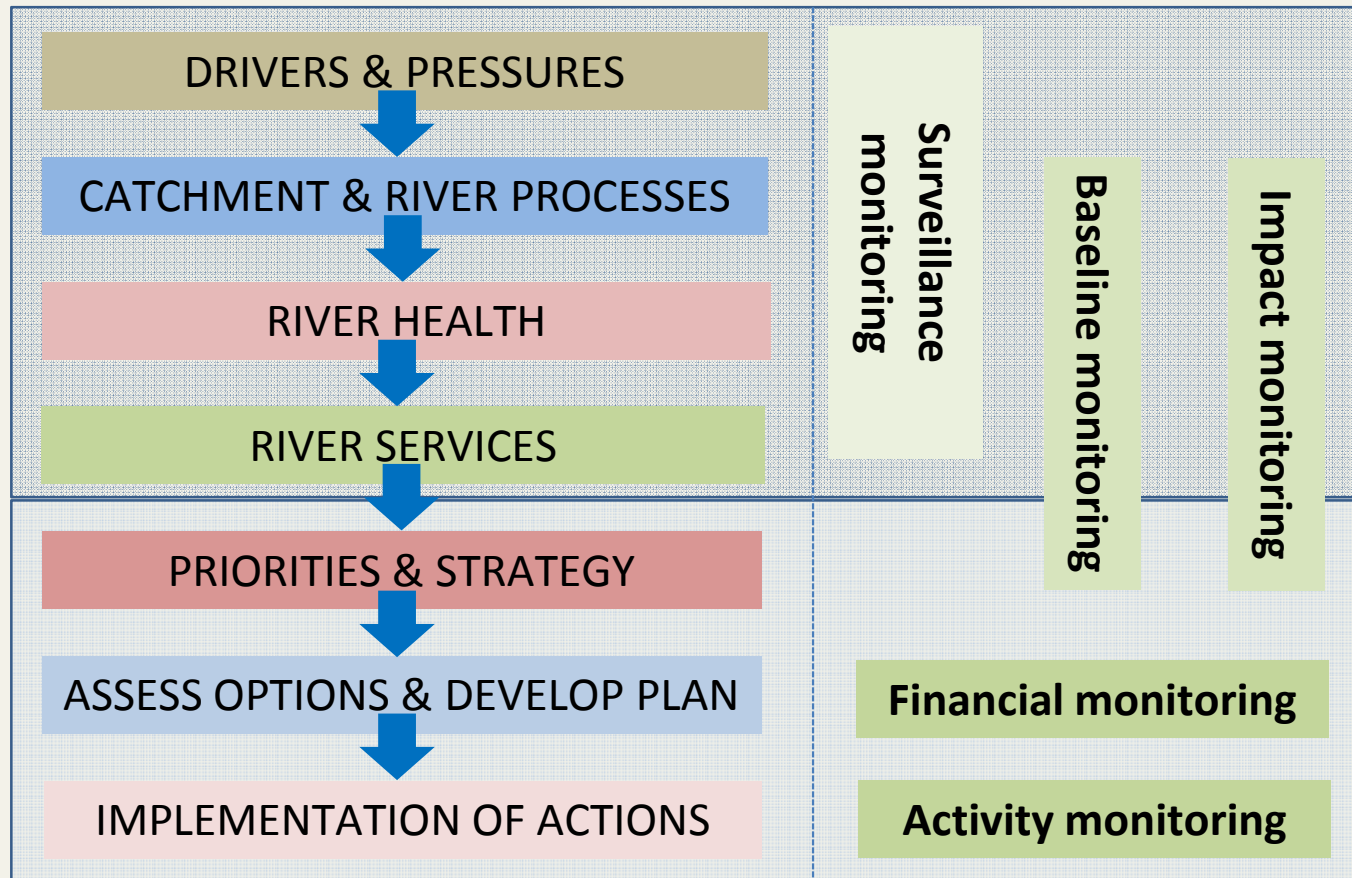


River restoration measures





Monitoring framework





Golden rules for river restoration

1. Identify, understand & work with natural functions & processes
2. Link to socio-economic objectives, broader planning & development activities
3. Identify limiting factors to river health & restore ecological and function, working at the appropriate scale
4. Restore for resilience to future conditions
5. Develop clear, achievable & measurable goals at the appropriate time & spatial scales
6. Ensure a sustainable financing method, including for maintenance
7. Collaborative action is critical
8. Monitor, report, learn & adapt



Thank you

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