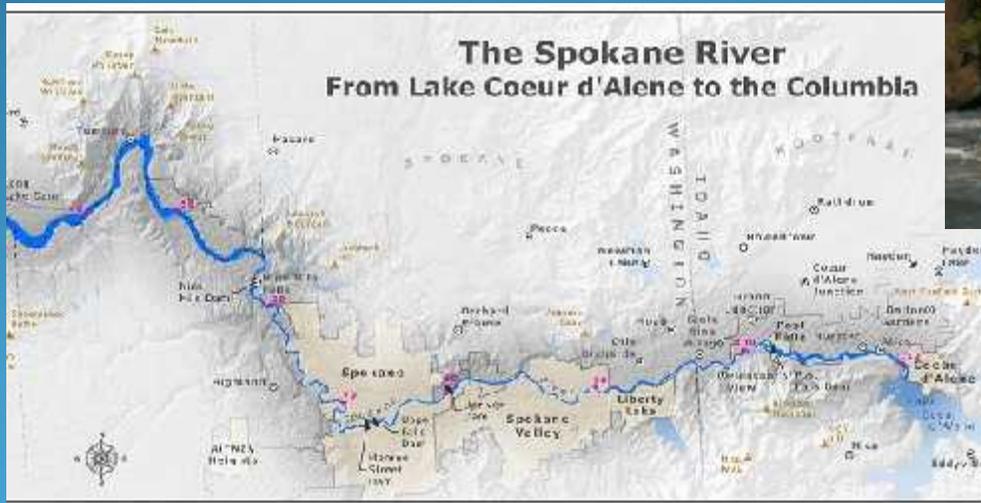
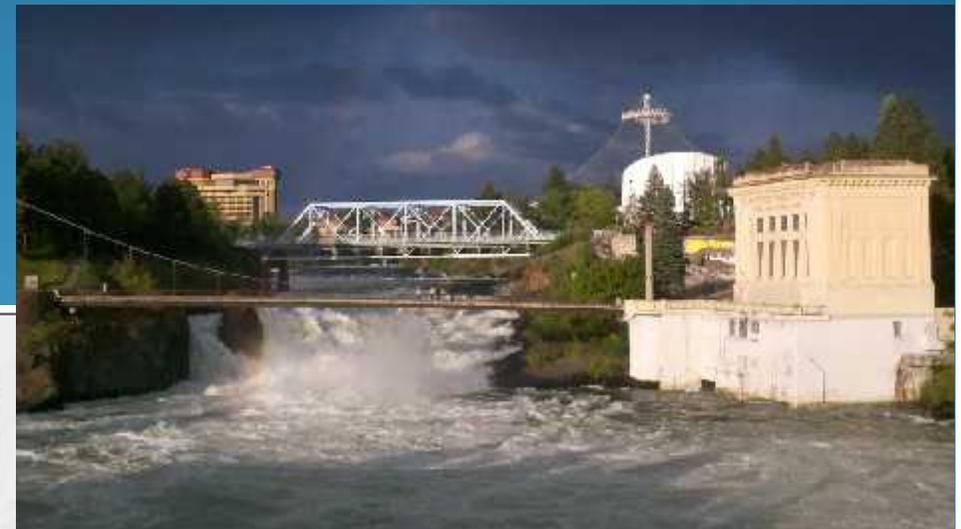


The Spokane River—A Novel Ecosystem Approach to “Restoration”

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Increasing human agency



Type of Ecosystem

Natural/Historical [Outside RHV] Hybrid [Threshold] Novel Designer
[wild] [Rewilding?]

Hybrid ecosystem: Retain characteristics of former state, but the composition and function now outside RHV. The ecosystem state remains but the species composition is different.

Novel ecosystem: Species composition and/or function completely transformed from historical state as a result of human action. Might be composed primarily of non-native species. Unlikely to return to historical condition as threshold has been crossed.

Designer ecosystem: Requires continual human maintenance, such as plantations, gardens, etc.



Key Characteristics of Novel Ecosystems:

- 1. Novelty: new species combinations and abundances.**
- 2. Human agency, often unintentional degradation of native systems or abandonment of managed systems.**
- 3. Not having continued human intervention—self-sustaining.**
- 4. Passed threshold of no return to historical condition.**
- 5. Often occur with major changes in abiotic environment.**

Assumptions about Native Ecosystems:

- 1. Better at performing ecosystem services**
- 2. More biodiverse**
- 3. More resilient**
- 4. More desirable**
- 5. More wild**



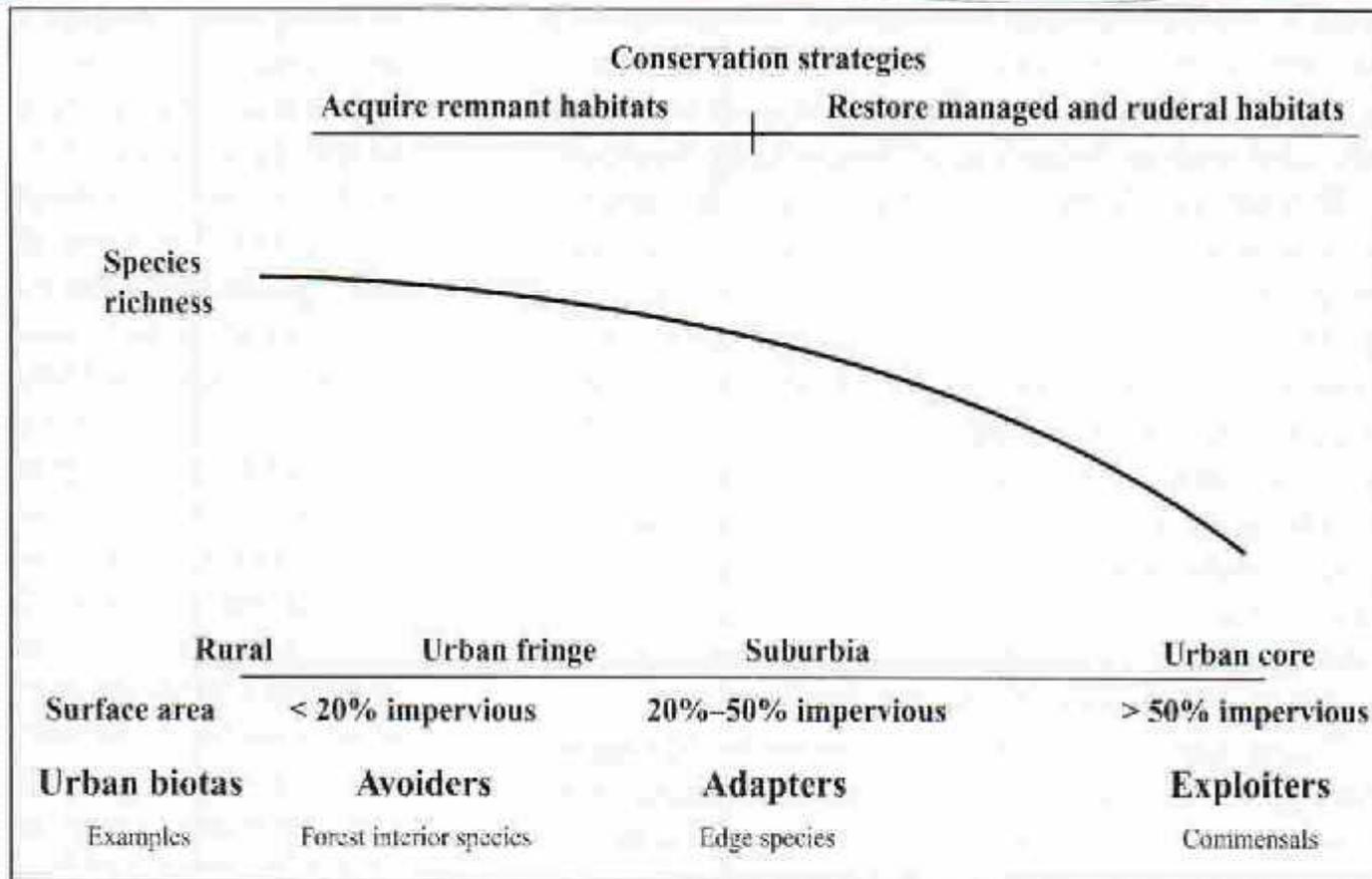


Figure 2. Urban–rural gradient. This is a very generalized and simplified depiction of changes in surface area, species richness, and composition, as compiled from a number of sources discussed in the text. Two basic conservation strategies with respect to urban sprawl are shown at the top.

From Michael McKinney, “Urbanization, Biodiversity, and Conservation,” *BioScience*, 2002

Questions to consider for the Spokane River:

- 1. Since it has crossed an ecological threshold, how should we manage it?**
- 2. What do we mean by “restoration?”**
- 3. Should novel ecosystems be valued primarily for ecosystem services rather than for biodiversity?**
- 4. Are other social and intrinsic values, such as beauty, stability, wildness appropriate for novel ecosystems?**
- 5. Can hybrid and novel ecosystems help functional connectivity between historical patches? Or do they facilitate the spread of invasive species to core reserves?**
- 6. If novel ecosystems are relatively stable and resilient, how do we manage exotic species?**

“Renaturalization”

Infrastructure investments

Expensive

Landscape architecture

Increased biodiversity

Increased aesthetic appeal

Gentrification

<http://landscapeperformance.org/case-study-briefs/cheonggyecheon-stream-restoration>

The Los Angeles River Today



The future Los Angeles River (artist's conception)



- <http://www.lariver.org/index.htm>





GOALS Dearborn and Kark “motivations

EXAMPLE

Benefits to nature

Rewilding

Preserve Biodiversity

Conservation Futures

Create corridors
Or stepping stones

Bluff/Riverside Park

Understand ecological responses
to environmental change

Lake Arthur

Ecosystem Services

L. A. River

Environmental Education

L. A. River

Benefits to humans

Improve human well-being

Cheonggyecheon

Renaturalizing

