Linked for Life:
The importance of sustaining hidden connections for conservation in streams

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Imperiled FW Biota

- FW Mussels: 36%
- FW Fish: 69%
- Amphibians: 51%

Crayfishes
FW Snails
FW Mussels
FW Fish
Amphibians
Reptiles
Birds
Mammals

Percent Extinct to Vulnerable

Calculated from Wilcove & Master 2005
Gowan et al. 1994, Fausch and Young 1995, Gowan and Fausch 1996b

N. Fk. Cache la Poudre R., CO

Middle Fork John Day River, OR; C Torgersen image
Riverscapes: the intermediate scale

Fausch et al. 2002
Linked Stream-Riparian Ecosystem

Baxter et al. 2005
Illustrations by Jeremy Monroe

Human Stressors: Habitat Alteration and Invasion

Effects of Grazing on Prey Input to Streams
Saunders & Fausch (2007; in review)

Rotational vs. Season-long grazing

Saunders & Fausch (2007; in review)
Nonnative brook trout invasion

Does species replacement matter?

Ecosystem consequences

Benjamin, Fausch, and Baxter 2011

Figures by J. Monroe
Effects on Emergence & Spiders

Benjamin et al. 2011, and unpublished

Arikaree River, Colorado
Habitat loss from pumping

Half of trout habitat in the West will be gone by 2080

Wenger et al. (2011)
Conserving streams

- No new streams
- More protection
  - A gift, not a right
- A mix of environments
  - Protected, productive, urban, compromise
- Process restoration
  - hydrology, disturbance, connections…

Yellowstone River, eastern MT
We shall never achieve harmony with the land, any more than we shall achieve justice or liberty for people.

In these higher aspirations the important thing is not to achieve, but to strive.

……a disturbance of the emotions.

Conservation may then follow.        Aldo Leopold (1953)

for we will not fight to save what we do not love…..

…..we must have visceral contact in order to love

Stephen J. Gould (1991)
“And when the dawn-wind stirs through the ancient cottonwoods, and the gray light steals down from the hills over the old river sliding softly past its wide brown sandbars …

…what if there be no more goose music?”

Aldo Leopold