

The Values of a Stream

*Employing the Land Ethic as a moral code
for stream management and restoration*

**That land is a community is the basic concept
of ecology, but that land is to be loved and
respected is an extension of ethics.**

Mark Beardsley



*Humans are now,
decisively, the
greatest geomorphic
force on the planet.*



Successful Outcome

As a whole, this combination of stream rehabilitation and infrastructure upgrades will make this vital stream reach more resilient to future storm events and protect the community center of Coal Creek Canyon.





2009/09/30











Values



Ecosystem



Services

Juxtaposing views at SCW Conference 2017

Principles and Strategies for Effective Stream Restoration

Peter Wilcock
Department of Watershed Sciences
Utah State University



*Stream
health?*



*People's
desires?*

Planning for Effective Stream Management
and Healthy River Outcomes

(not Dr.) Peter Skidmore, P.G.

Streams as infrastructure:

systems providing services and commodities that enable, sustain, and enhance society.

All goals – considered at the same time
What people *want*, not expert opinion
on what an ecosystem needs

Social Benefits HUGE!
Appearance, comfort, safety HUGE

Reconnect floodplain

Who wants that?
For what purpose? What services?

Increase habitat

So what?
A means to an end.
Don't you *want* more fish? birds? frogs?
Line objectives up with the actual goals

Healthy, functioning, & mostly native
aquatic & riparian ecosystem
For what purposes? What services?



Better for walking dogs

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Streams as ecosystems:

A biotic community that functions with nonliving components as an integrated natural system to sustain and perpetuate life.

what is a *'healthy'* river?

a healthy river is one that supports a full complement of native aquatic and riparian species, with a minimum of human intervention



"Rivers and aquatic ecosystems are the biological engines of the planet"

- World Commission on Dams, 2000

Planning for Effective Stream Management and Healthy River Outcomes

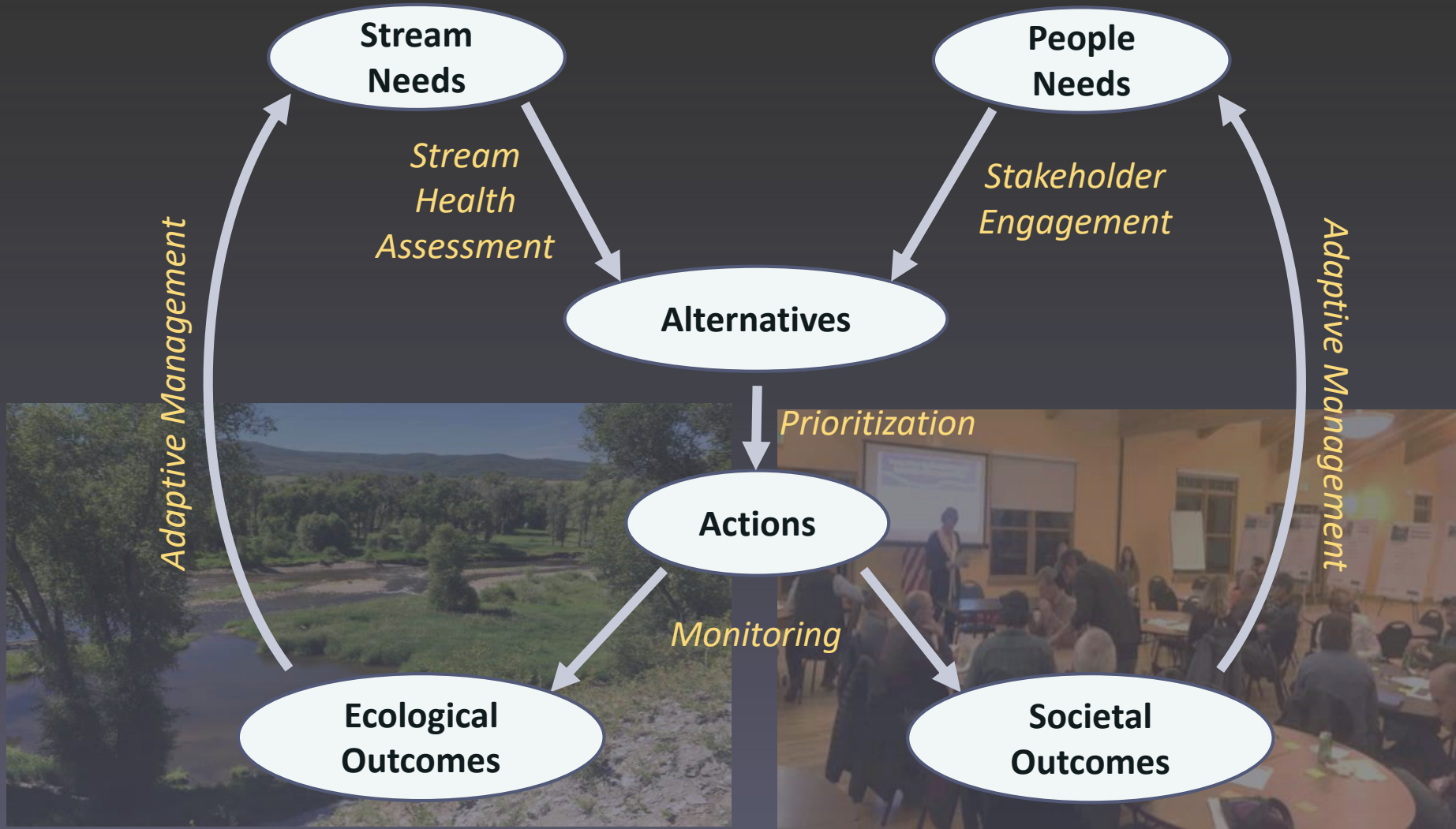
Values



Natural values



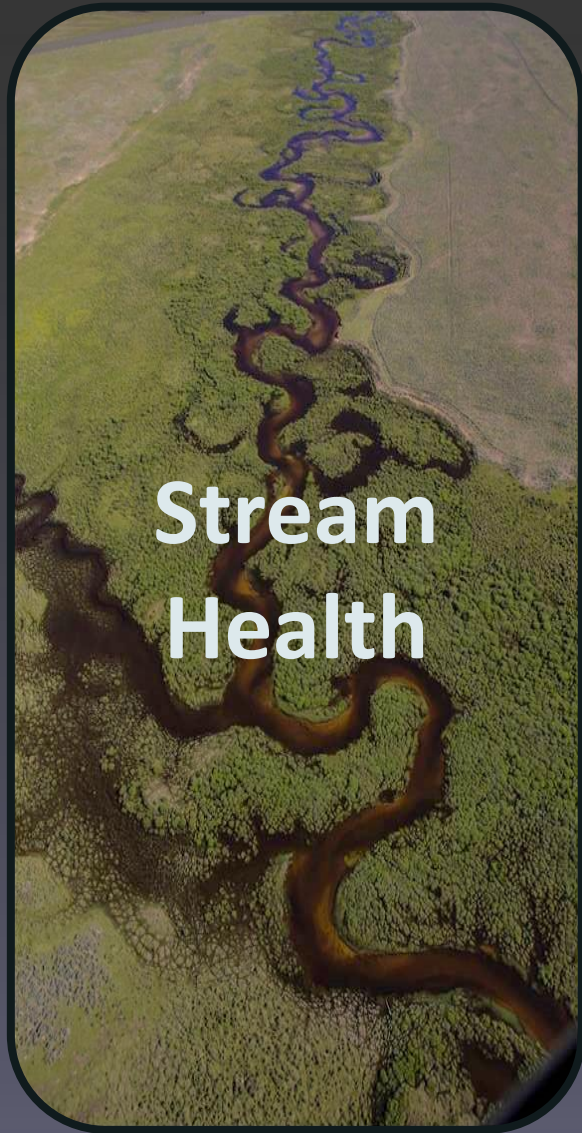
People values



**Ecosystem
health**



**Services to
people**



It's a two-way street

Streams provide ecosystem services

Conveyance

Water storage

Water quality

Fire/flood resilience

Recreation

Aesthetics

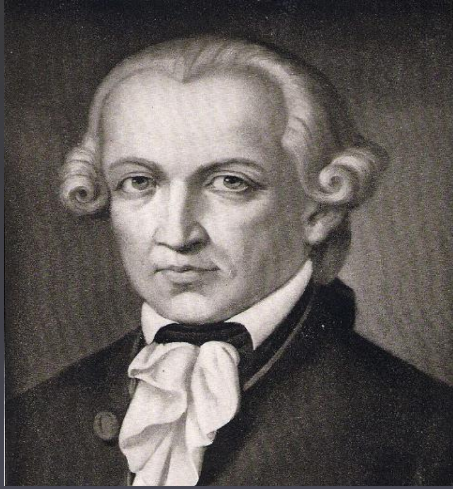
Our actions affect ecosystem health

Ecosystem health



Services to people

Bring in the ethicists!



Immanuel Kant (1700s)



Holmes Rolston III (now)

Price

Instrumental value

Dignity

Intrinsic value

Systemic value

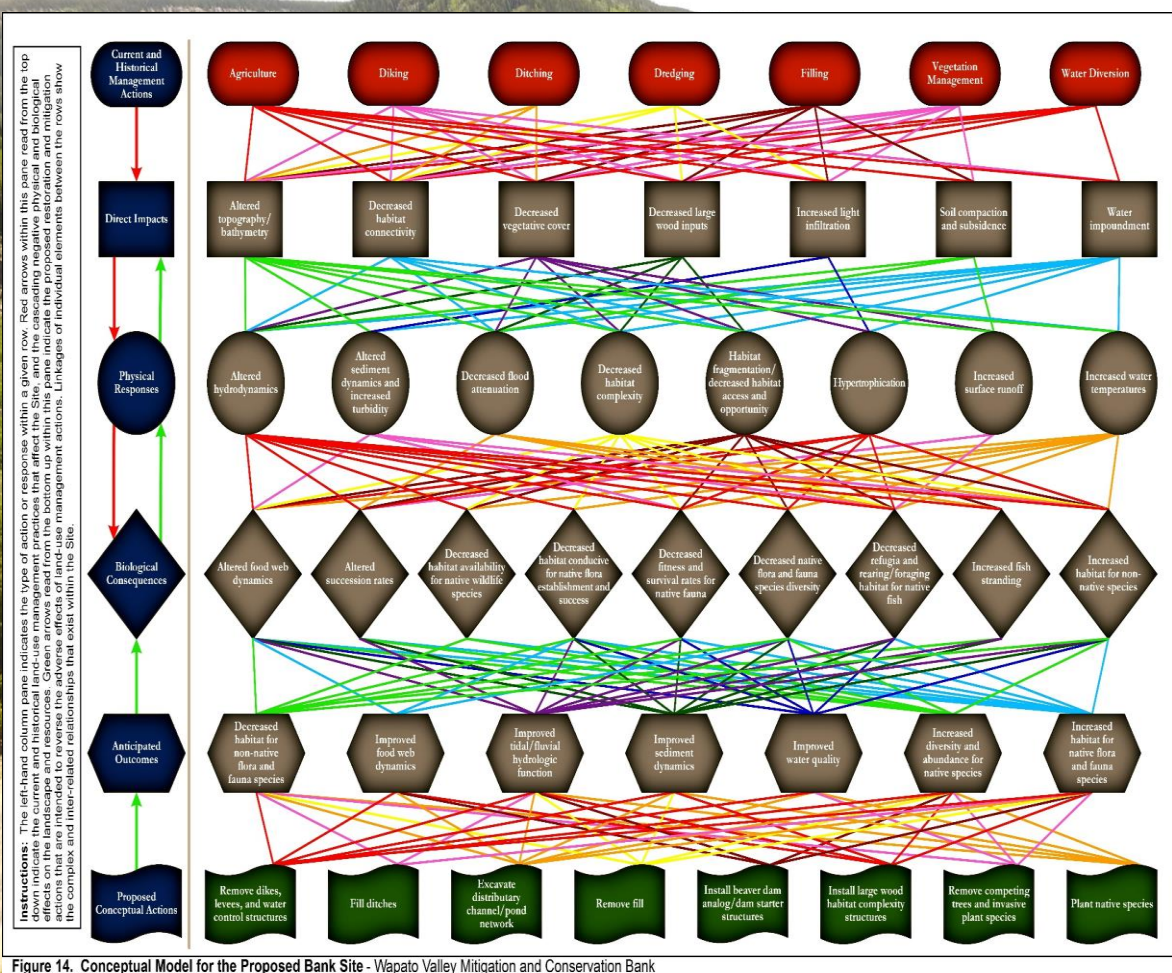
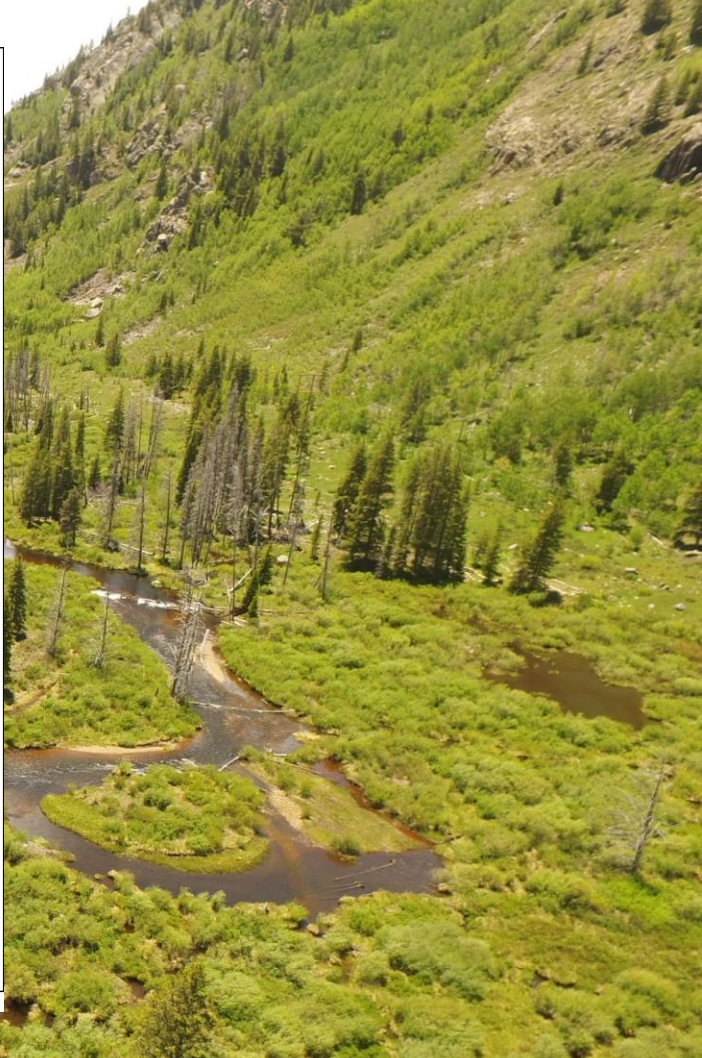


Figure 14. Conceptual Model for the Proposed Bank Site - Wapato Valley Mitigation and Conservation Bank



The ordinary citizen assumes that science knows what makes this clock tick; the scientist is equally sure that he does not. He knows that the biotic mechanism is so complex that its workings may never be fully understood.



Instrumental value — green infrastructure

Intrinsic value — biotic community

Systemic value — source of life

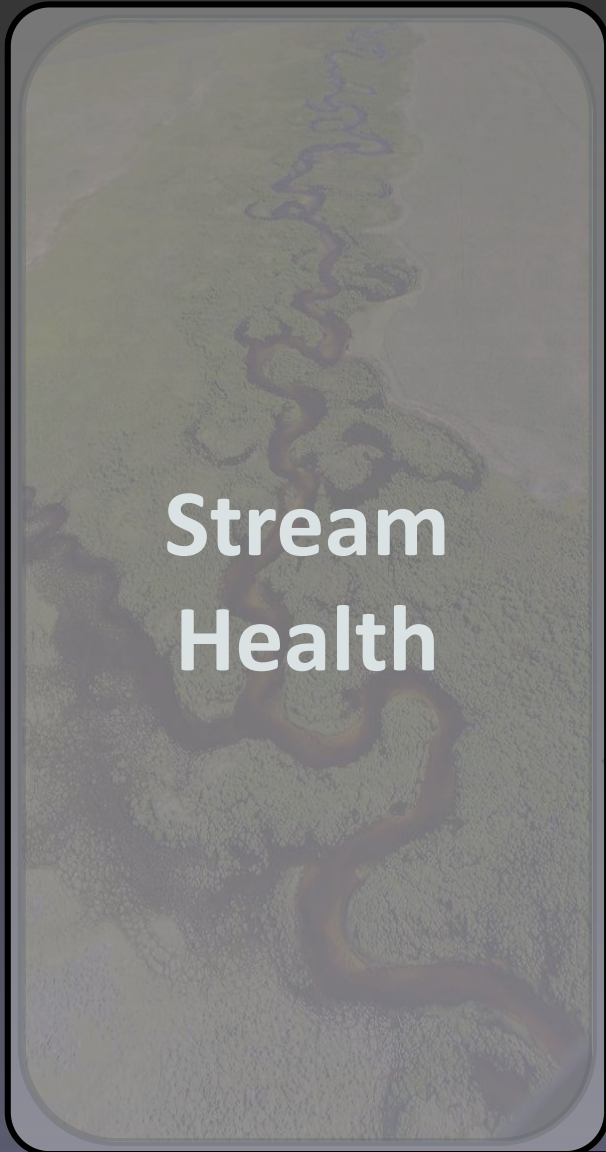


ECO
BY GREEN CULTURE

SHAMPOO

SHAMPOOING

Ecologically respectful



**Stream
Health**

**Streams provide
ecosystem services**

**Our actions affect
ecosystem health**

- Conveyance
- Water storage
- Water quality
- Fire/flood resilience
- Recreation
- Aesthetics

Ecosystem

People

A Land Ethic



Aldo Leopold

Examine each question in terms of what is ethically and esthetically right, as well as what is economically expedient.

A thing is right when it tends to preserve the integrity, stability, and beauty of the biotic community. It is wrong when it tends otherwise.

A Land Ethic

An aerial photograph of a lush, green valley. A winding river flows through the center of the valley, surrounded by dense evergreen forests. A road or path runs along the left side of the valley. The background shows rolling hills and mountains under a clear sky.

All ethics so far evolved rest upon a single premise: that the individual is a member of a community of interdependent parts. The land ethic simply enlarges the boundaries of the community to include soils, waters, plants and animals, or collectively, the land.

A Land Ethic

In short, a land ethic changes the role of Homo sapiens from conqueror of the land-community to plain member and citizen of it. It implies respect for his fellow-members, and also respect for the community as such.



Nature

Culture

A Land Ethic

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Nature

Culture

A Land Ethic

When we see land as a community to which we belong, we may begin to use it with love and respect. There is no other way for land to survive the impact of mechanized man, nor for us to reap from it the aesthetic harvest it is capable.

Nature

Culture

A Land Ethic

A land ethic of course cannot prevent the alteration, management, and use of these 'resources,' but it does affirm their right to continued existence, and, at least in spots, their continued existence in a natural state.

river management spectrum



Spectrum of constraints, opportunities and goals

We shall never achieve harmony with the land, any more than we shall achieve absolute justice or liberty for people. In these higher aspirations, the important thing is not to achieve but to strive.

river management spectrum



Spectrum of constraints, opportunities and goals