

LTPBR WORKSHOP

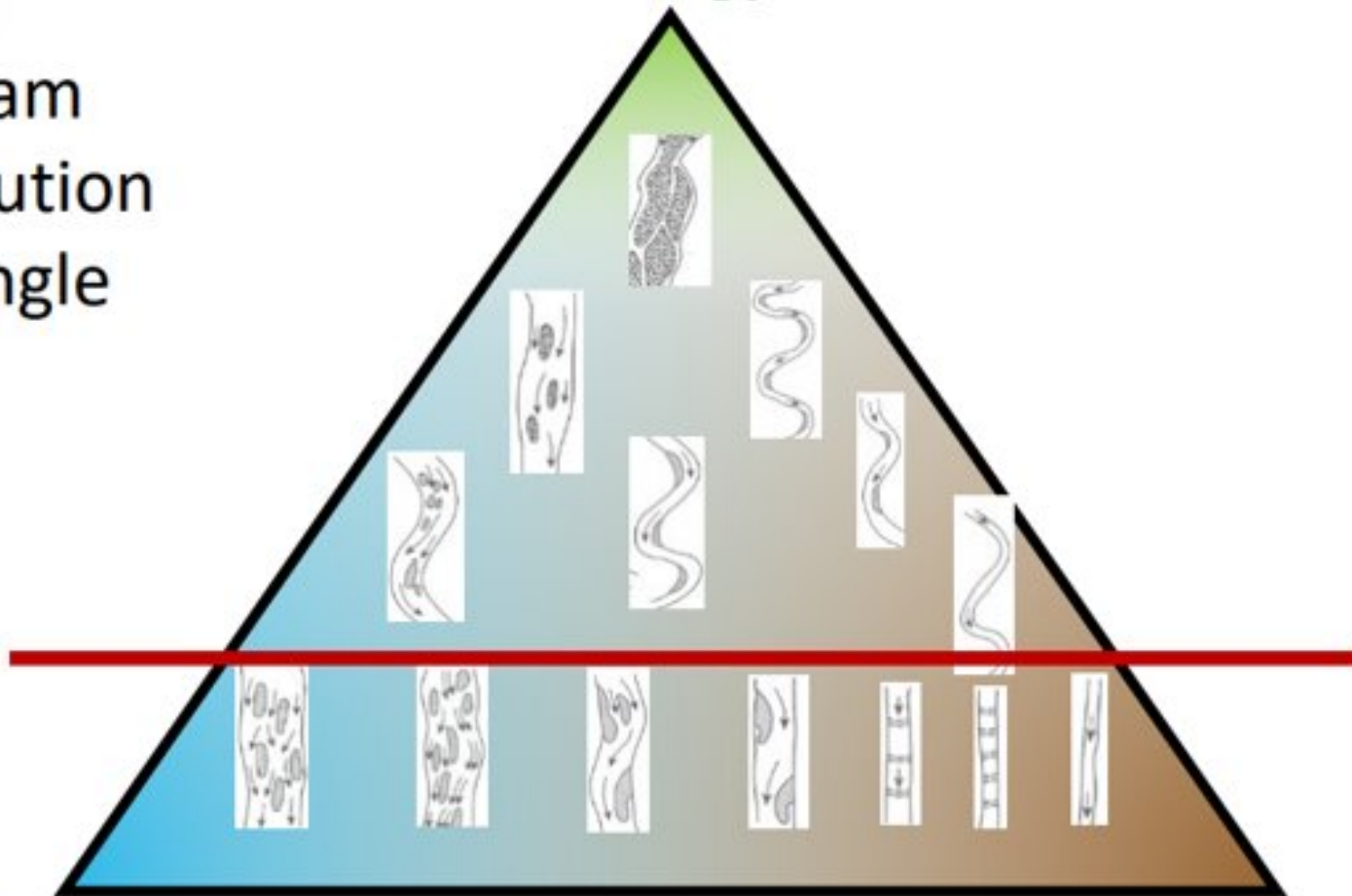


Why Partner with Beavers



The Stream Evolution Triangle

Biology



Hydrology

SET with the planform patterns defined by Schumm (1985).
Castro and Thorne (2019).

Geology

Castro, J.M. and Thorne, C.R. 2019. The Stream Evolution Triangle: linking Geology, Hydrology and Biology, *River Research and Applications*. <https://doi.org/10.1002/rra.3421>

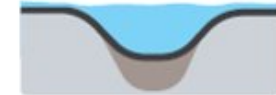




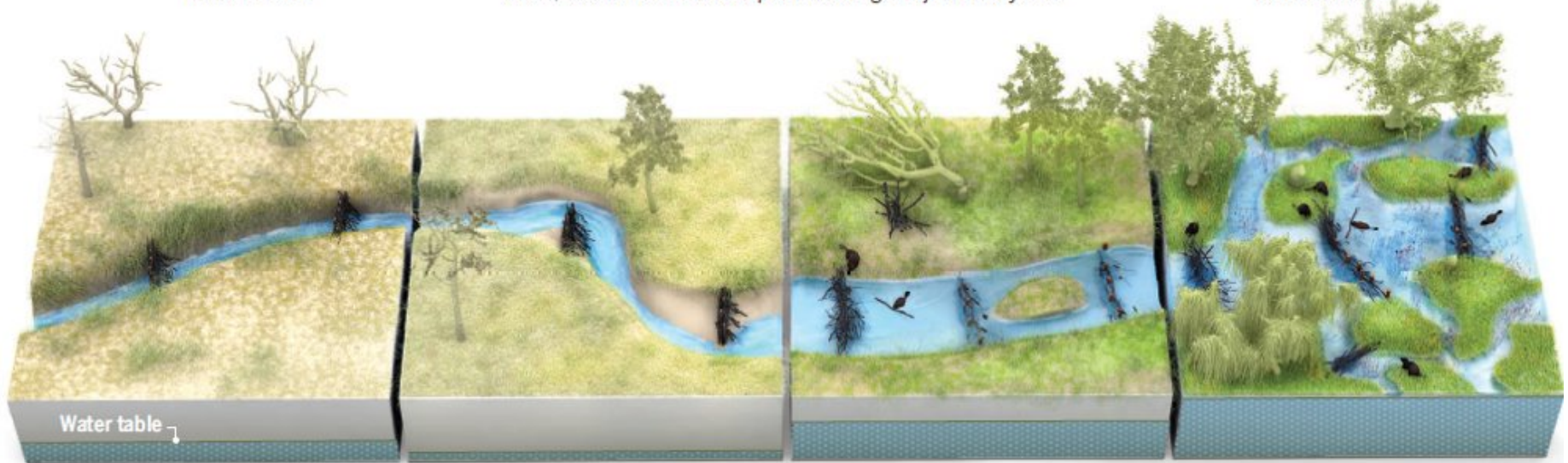
Incised stream

A stream comes back to life

Across the U.S. West, scientists and land managers are using beaver dam analogs (BDAs) to heal damaged streams, re-establish beaver populations, and aid wildlife. In some cases, researchers have seen positive changes in just 1 to 3 years.



Restored stream



Adding dams

Beaver trapping and overgrazing have caused countless creeks to cut deep trenches and water tables to drop, drying floodplains. Installing BDAs can help.

Widening the trench

BDAs divert flows, causing streams to cut into banks, widening the incised channel, and creating a supply of sediment that helps raise the stream bed.

Beavers return

As BDAs trap sediment, the stream bed rebuilds and forces water onto the floodplain, recharging groundwater. Slower flows allow beavers to recolonize.

A complex haven

Re-established beavers raise water tables, irrigate new stands of willow and alder, and create a maze of pools and side channels for fish and wildlife.

www

FEATURES

1058 8 JUNE 2018 • VOL 360 ISSUE 6393

sciencemag.org SCIENCE

Published by AAAS



BEAVERS, REBOOTED

Artificial beaver dams are a hot restoration strategy, but the projects aren't always welcome

By Ben Goldfarb, in the Scott Valley, California

Mimic → Promote → Sustain

From Goldfarb (2018) Science:

<http://science.sciencemag.org/content/360/6393/1058>



Ranch Management

Getting on board with beavers

Here's how four-legged engineers help restore an Idaho ranch.

BY BRIANNA RANDALL

Jay Wilde summarizes ranching simply: "Cows need two things — something to eat and something to drink."

He speaks from experience. In 1965, when Wilde started ranching his family's high-elevation property in Idaho's Rocky Mountains, both food and water were hard to come by for livestock.

Today this ranch is wealthy in forage and flowing streams, thanks to Wilde's determination, many helpful partners ... and beavers.

Wilde was raised on the property with his siblings, where his parents grow grains. Jay had always dreamed of running a cattle operation, and he began putting in place conservation projects that would

provide his livestock with reliable sources of forage and water.

The ranch backs up to public land managed by the U.S. Forest Service (USFS), where Wilde grazes cattle during the summer. But the pastures weren't very productive when he took over.

In 2005, he mapped out an innovative high-intensity, short-du-



Personnel from state and federal conservation agencies came together to build an artificial beaver dam on the portion of Birch Creek that runs through Jay Wilde's Idaho ranch. The EDA's — or Beaver Dam Analogues — encouraged the beavers released in the watershed to stay around. The artificial beaver dams worked, and the four-legged engineers soon created habitat conditions that benefitted the entire landscape.

BEEF®

"When you see the results, it's almost like magic. It makes the effort worthwhile."

~ Jay Wilde

http://capstone.restoration.usu.edu/Course_Topics/WATS_5350/Low-Tech/Projects/birch/