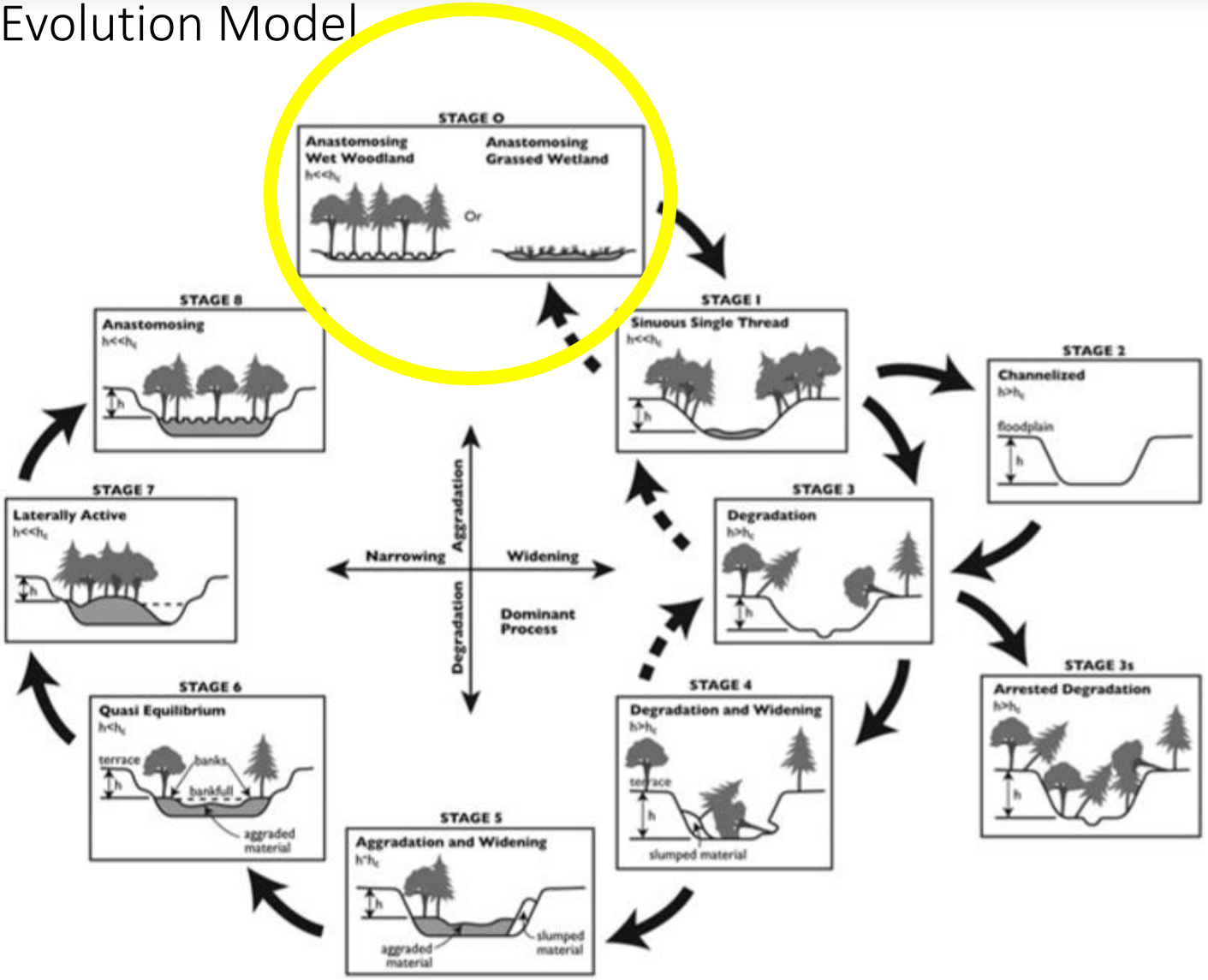
Convergence of concepts; trends and motivations in complex streamscape restoration

Jessica Doran

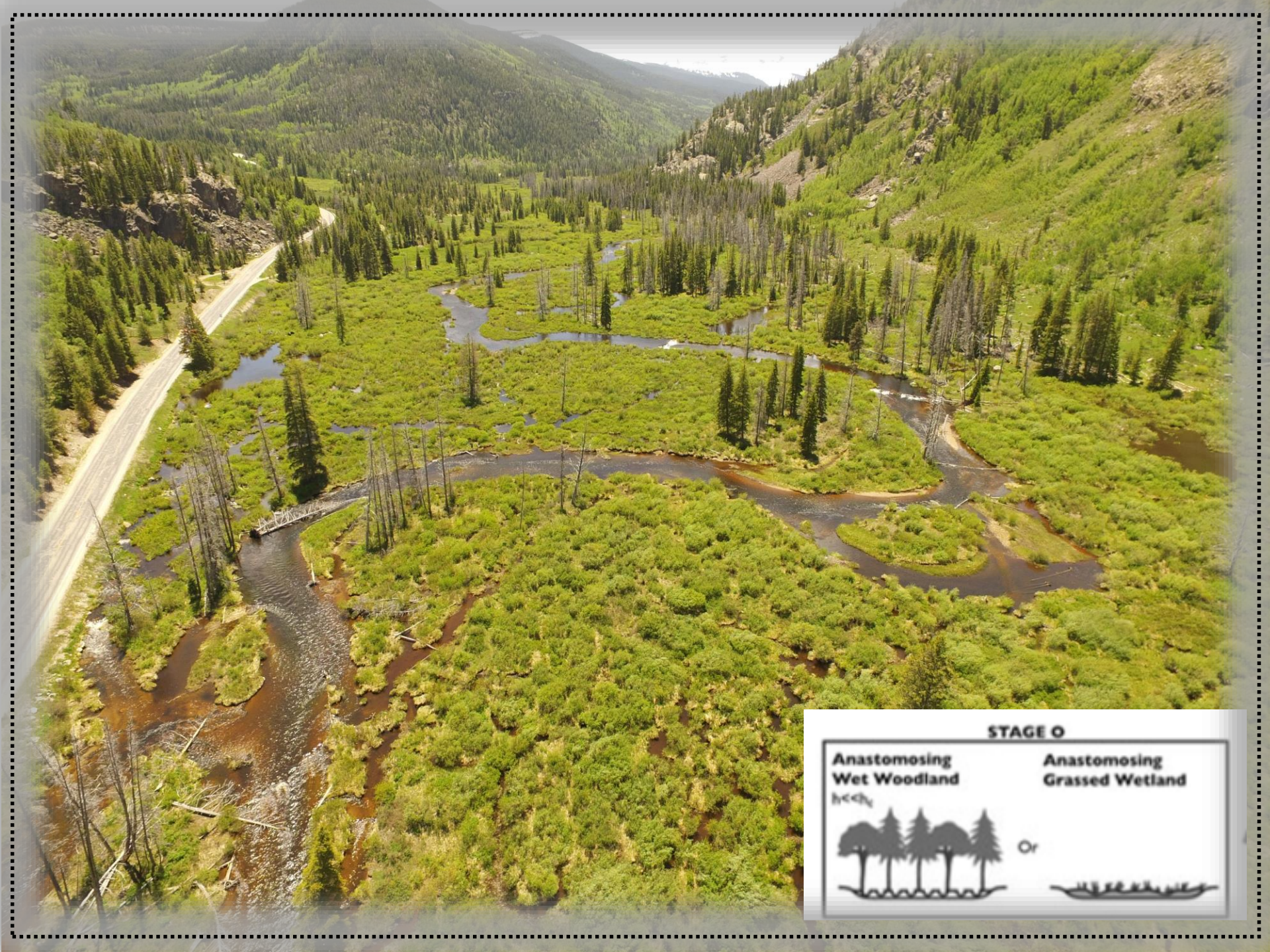
October 9, 2019

Popular Fads Over the Years
1950's
1960's
1970's
1980's
1990's
2000's
?

Stream Evolution Model

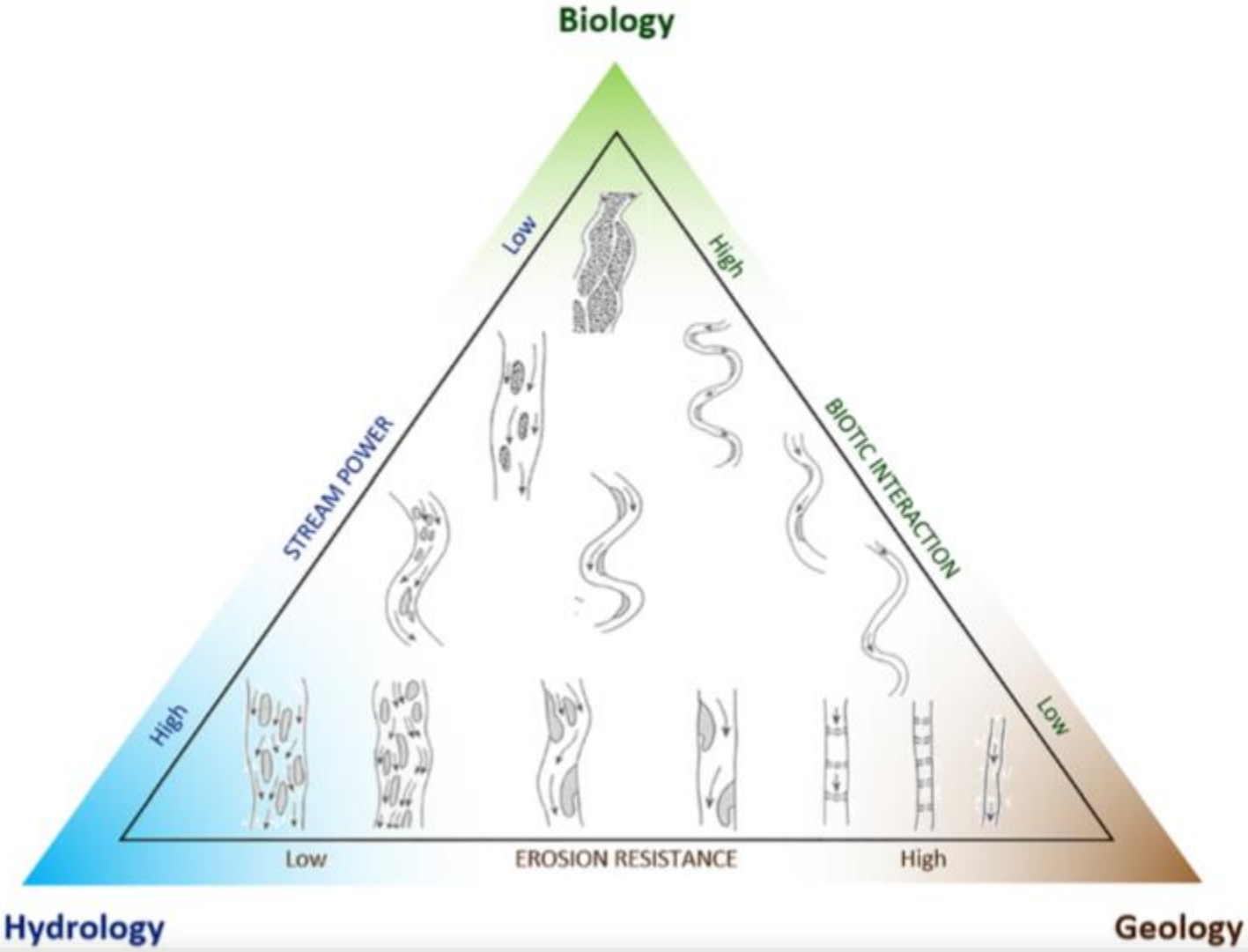


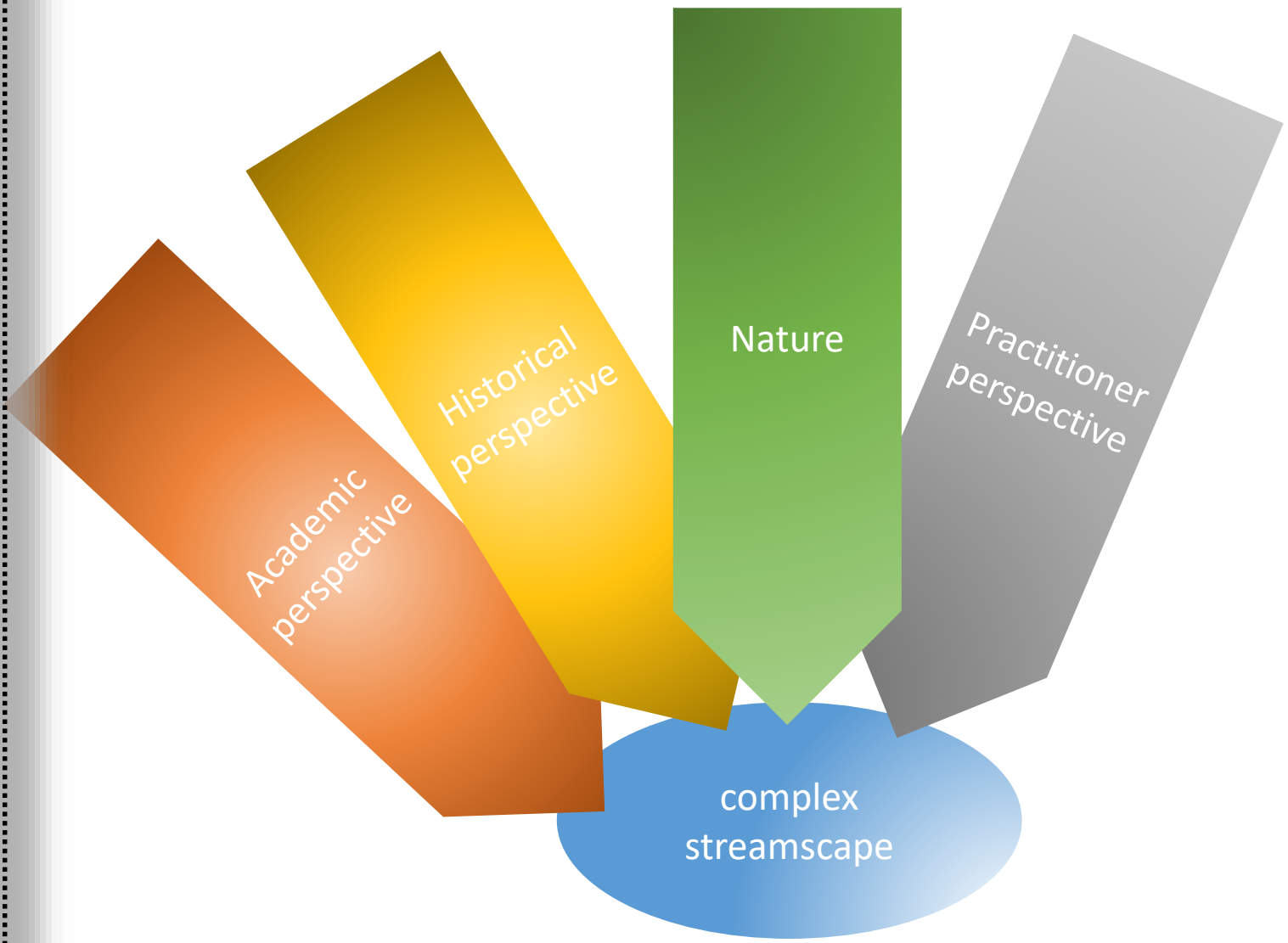
Cluer and Thorne 2013. A Stream evolution model integrating habitat and ecosystem benefits


STAGE 0
Anastomosing
Wet Woodland
Anastomosing
Grassed Wetland
Or

Stream Evolution Triangle (Castro and Thorne, 2019)

(with stream types from Cluer and Thorne, 2013)




Academic perspective
Historical perspective
Nature
Practitioner perspective
complex streamscape

Alteration of North American Streams by Beaver

The structure and dynamic… recolonize…

Robert J. Naiman, Ca…

Beaver (*Castor canadensis*) mitigate the effects of climate on the area of open water in boreal wetlands in western Canada

Glynnis A. Hood[a,b,*], Suzanne E. Bayley[a]

The beaver meadow complex revisited… the role of beavers in post-glacial floodplain development

Lina E. Polvi* and Ellen Wohl
Colorado State University, Geosciences Campus Delivery 1482, Fort Collins, CO, USA

Biomic river restoration: A new focus for river management

Matthew F. Johnson[1] | Colin R. Thorne[1] | Janine M. Castro[2] |
G. Mathias Kondolf[3] | Celeste Searles Mazzacano[4] | Stewart B. Rood[5] |
Cherie Westbrook[6]

The persistence of beaver-induced geomorphic heterogeneity and organic carbon… corridors

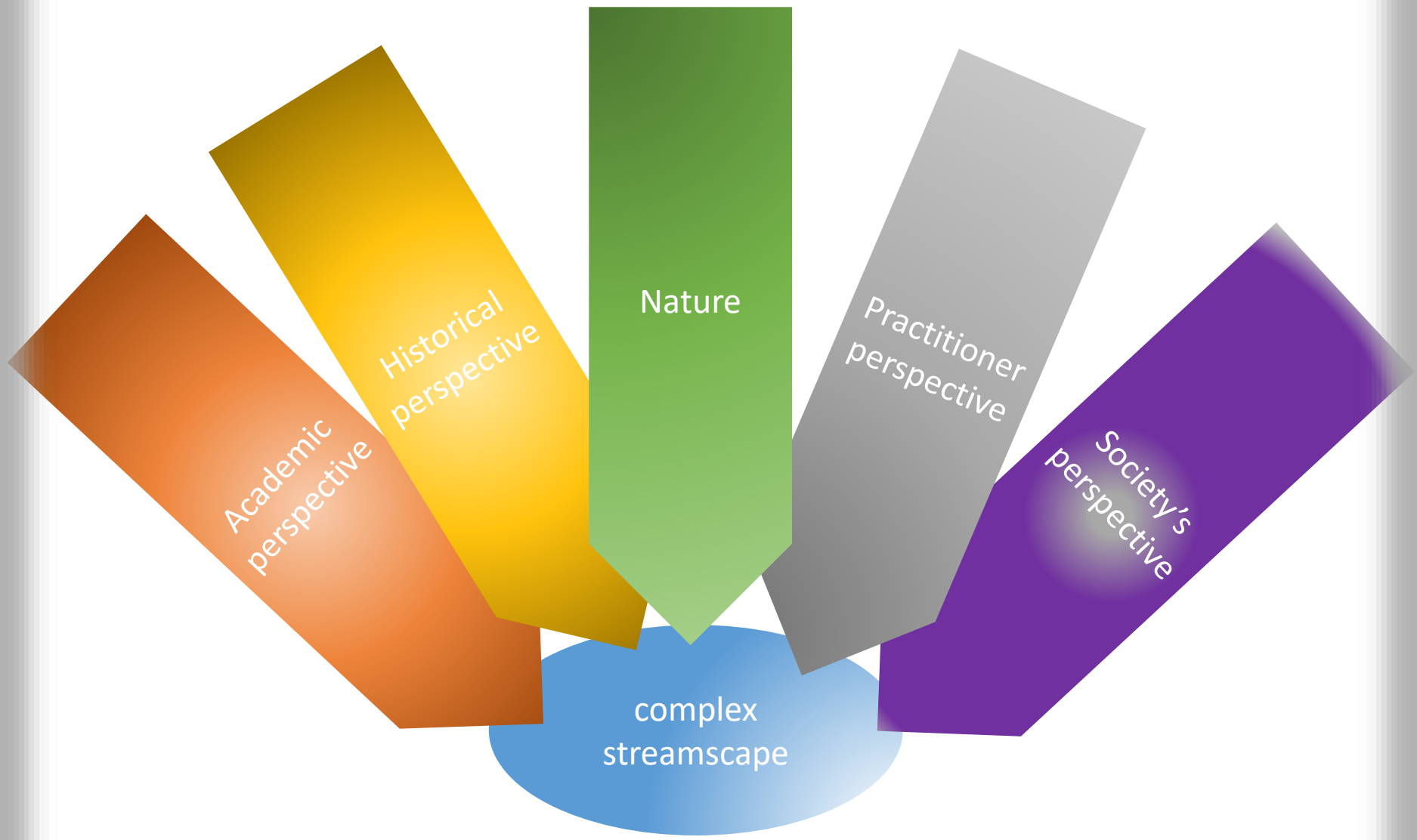
DeAnna Laurel and Ellen Wohl*
Department of Geosciences, Colorado State University, Fort Collins, CO USA

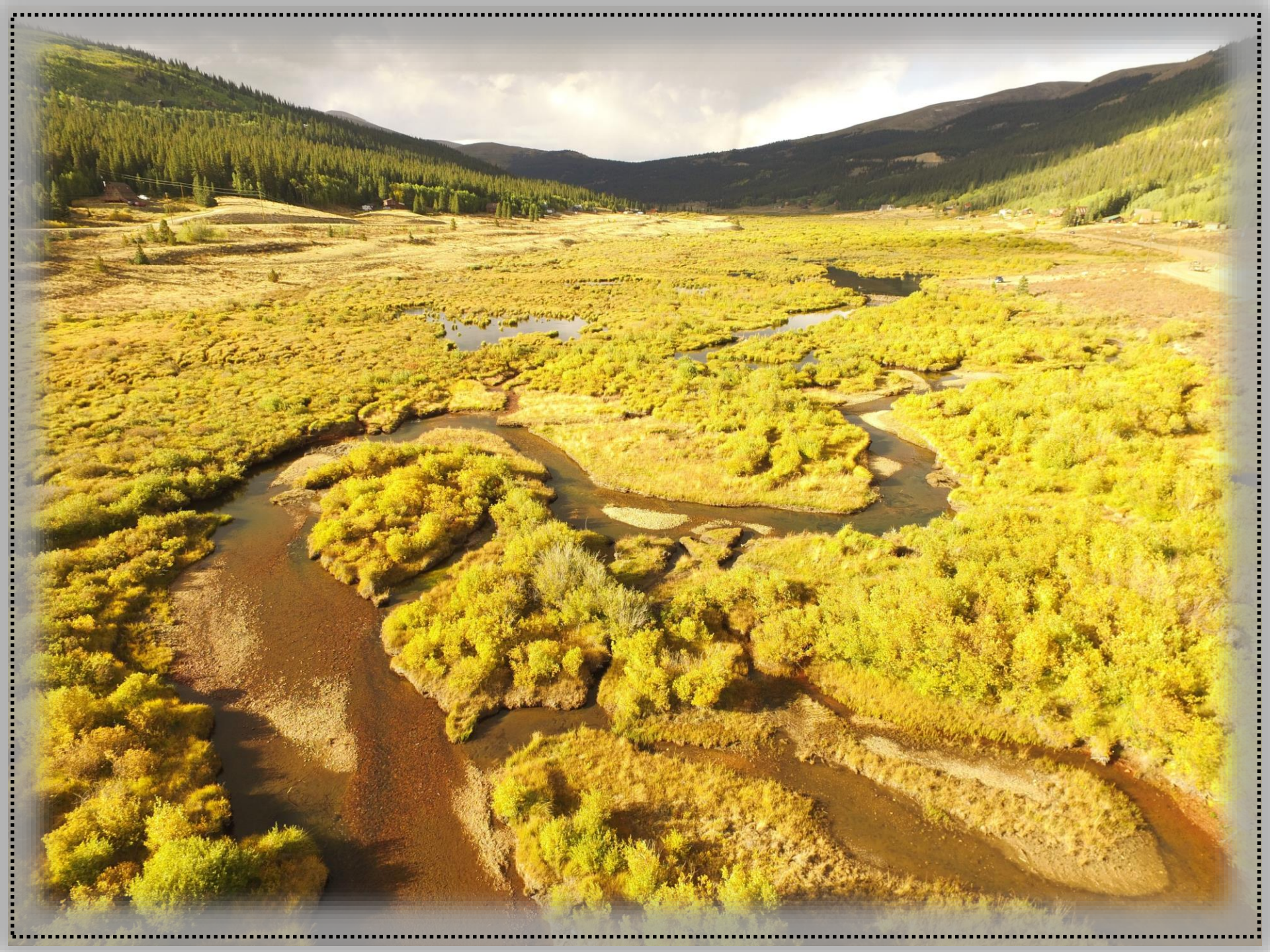
Including wildlife habitat in the definition of riparian areas: The beaver (*Castor canadensis*) as an umbrella species for riparian obligate animals

Patricia Stoffyn-Egli and J.H. Martin Willison

Cumulative Hydrologic Impact of Wetland Loss: Numerical Modeling Study of the Rideau River Watershed, Canada

Ferdous Ahmed[1]


Academic perspective
Historical perspective
Nature
Practitioner perspective
Society's perspective
complex streamscape



wetland
wetland

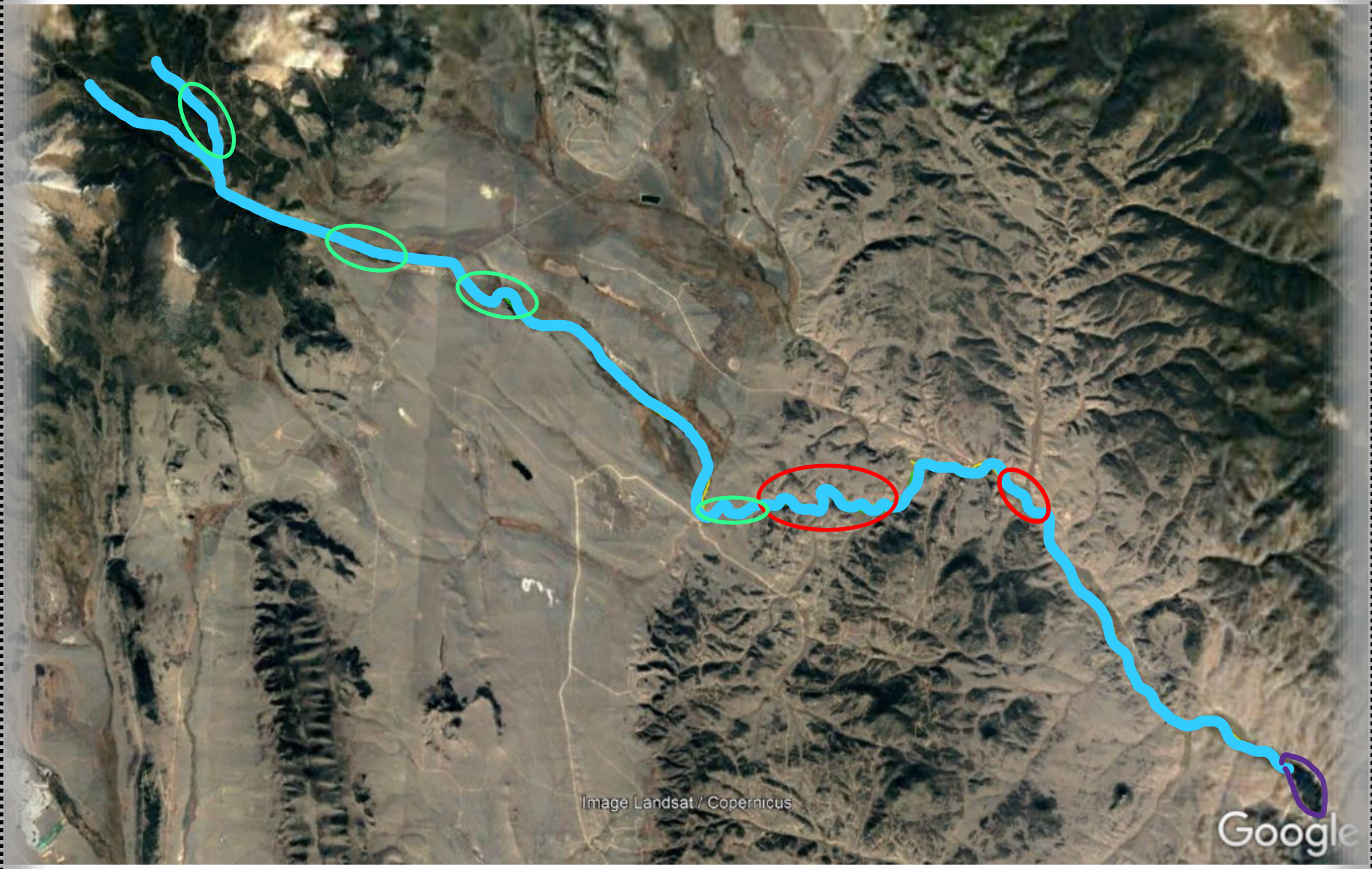
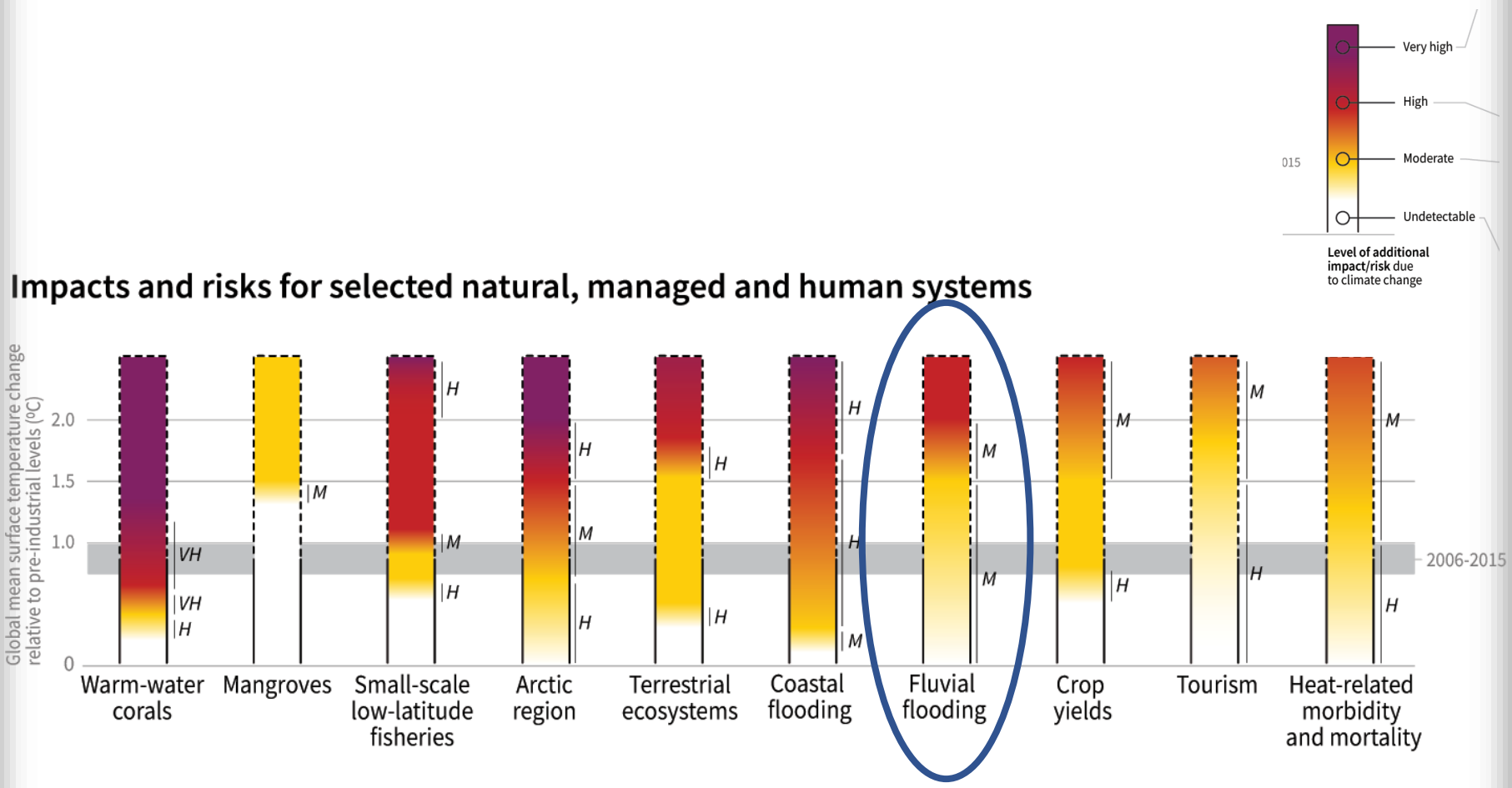


Image Landsat / Copernicus
Google

Beavers, Water, and Fire—A New Formula for Success

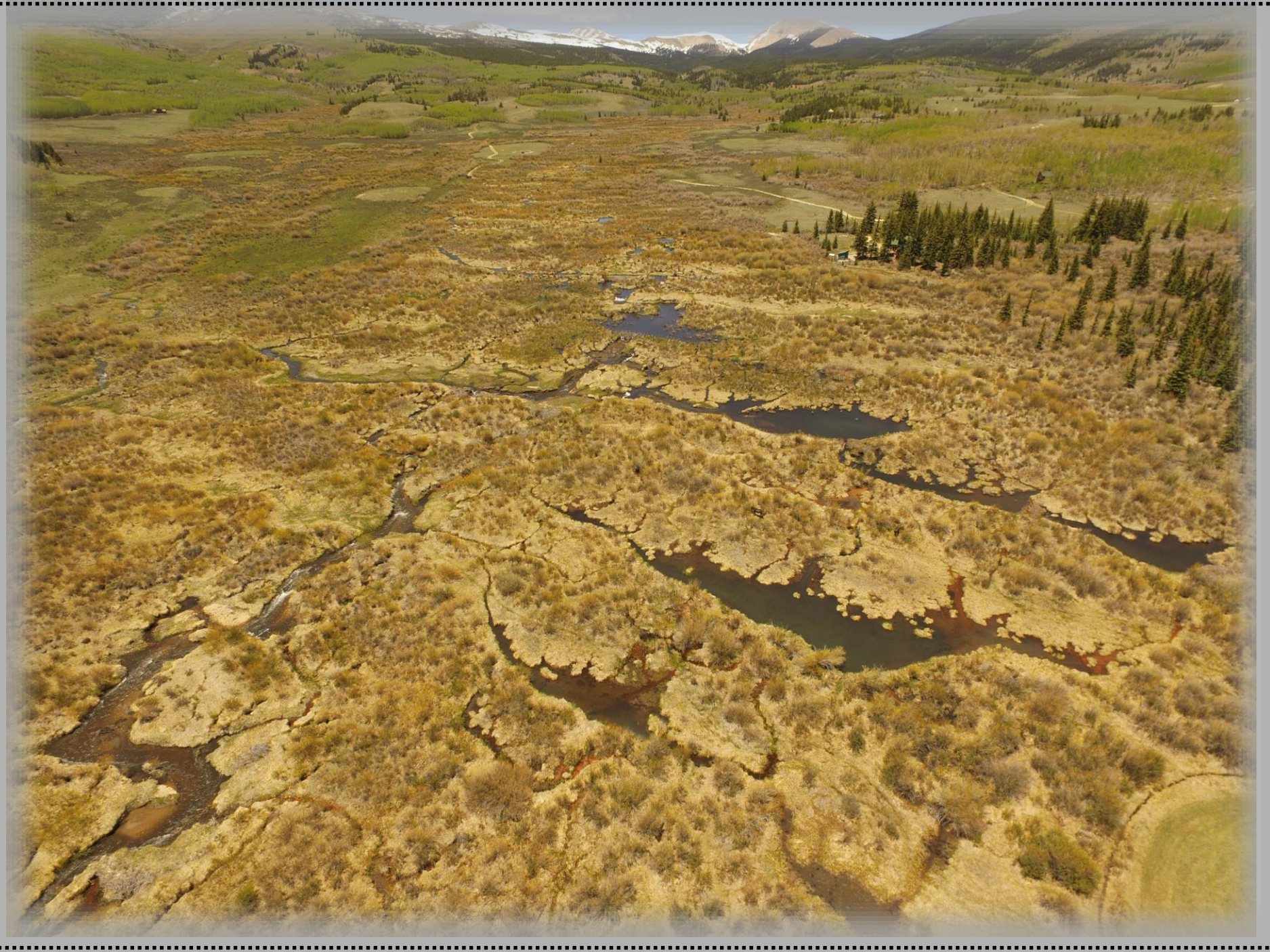
Brianna Randall | October 30, 2018

“Beaver ponds provide an “emerald refuge” in a landscape burned by the Sharps Fire, ID.” (photo by Joe Wheaton)



IPCC 2019 Special Report Global Warming of 1.5C^{0}

https://www.ipcc.ch/sr15/



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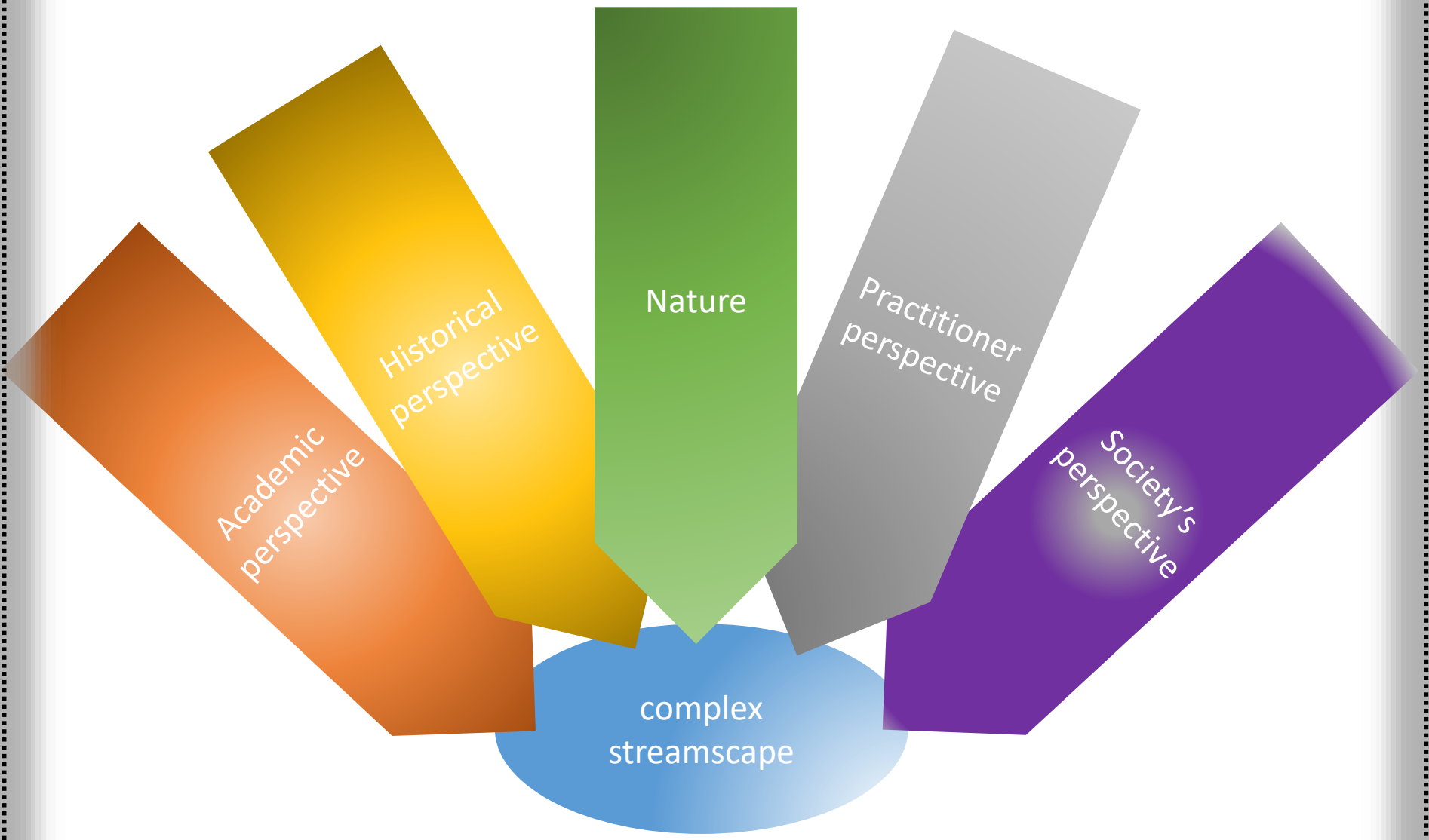
PC900 COVERT PRO
2016-04-22 7:50:05 AM M 3/3


Academic perspective
Historical perspective
Nature
Practitioner perspective
Society's perspective
complex streamscape

Challenges –

Fears and perceptions

Definitions of success

Stability - at a new scale

Overpromising

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