

Examining the roles of beavers and time in driving recovery following stream channel restoration

Ben Colman¹, Alyssum Ahler-Mull¹, Daylen Egger¹, Klemensas Krasaitis¹, Danielle Novotny¹, Eamon Peterson¹, Claire Shady¹, Kory Shoja-Chaghorvand¹, Shawnalee Voyles¹, Paul Parson²

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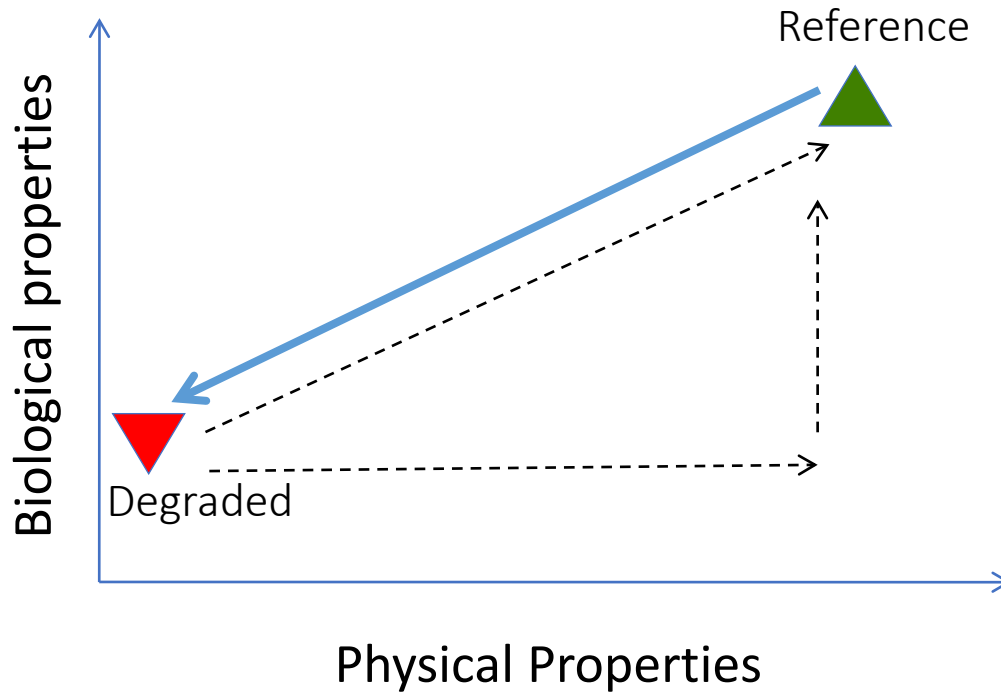
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THANK YOU!

Ecological restoration is helping an ecosystem recover from degradation

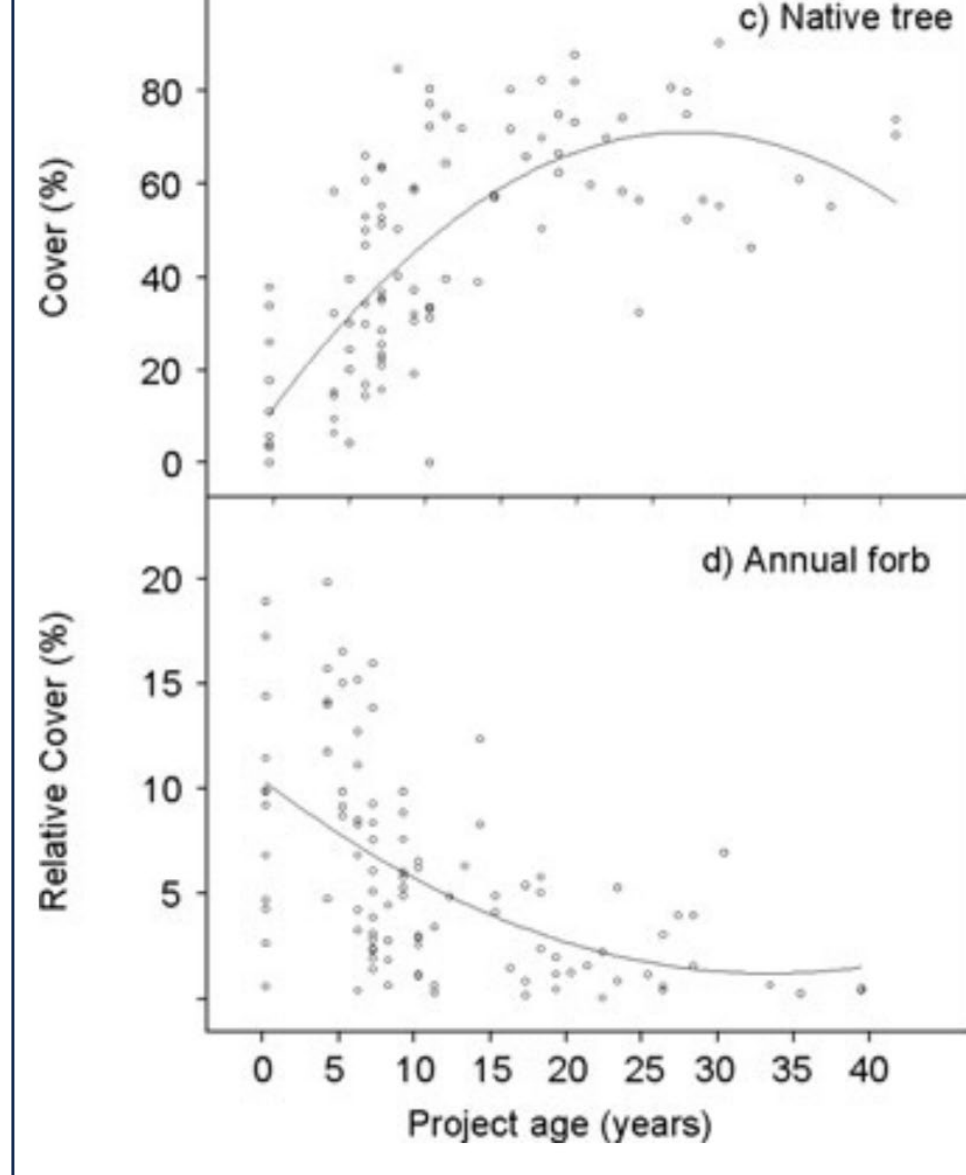


Things get worse before they get better



Making ecosystems better is time intensive

- 105 sites
- Range in project age



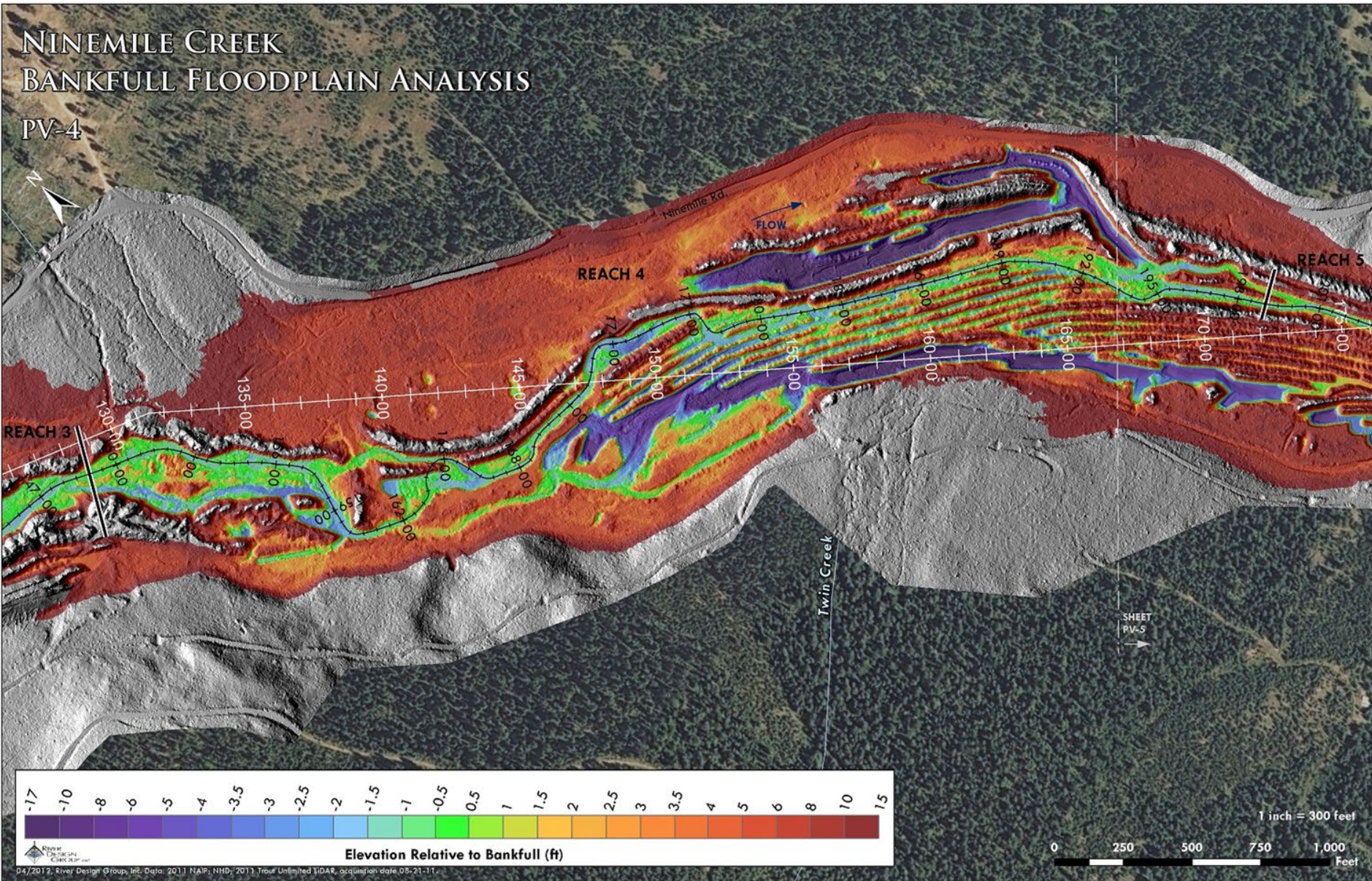
Placer mining physically disruptive



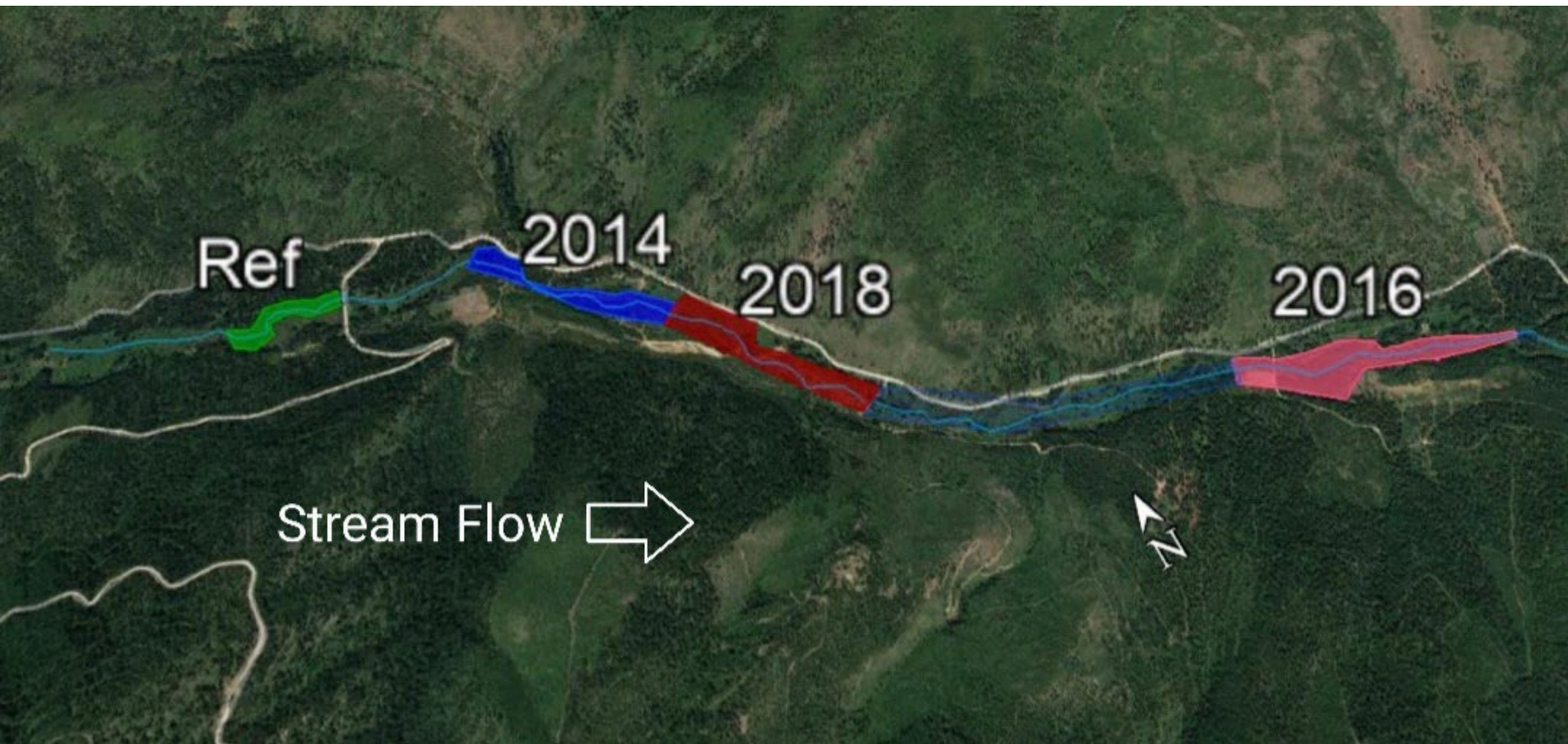
Ninemile Creek was placer mined and is being restored

NINEMILE CREEK BANKFULL FLOODPLAIN ANALYSIS

PV-4



Phased restoration approach = chronosequence

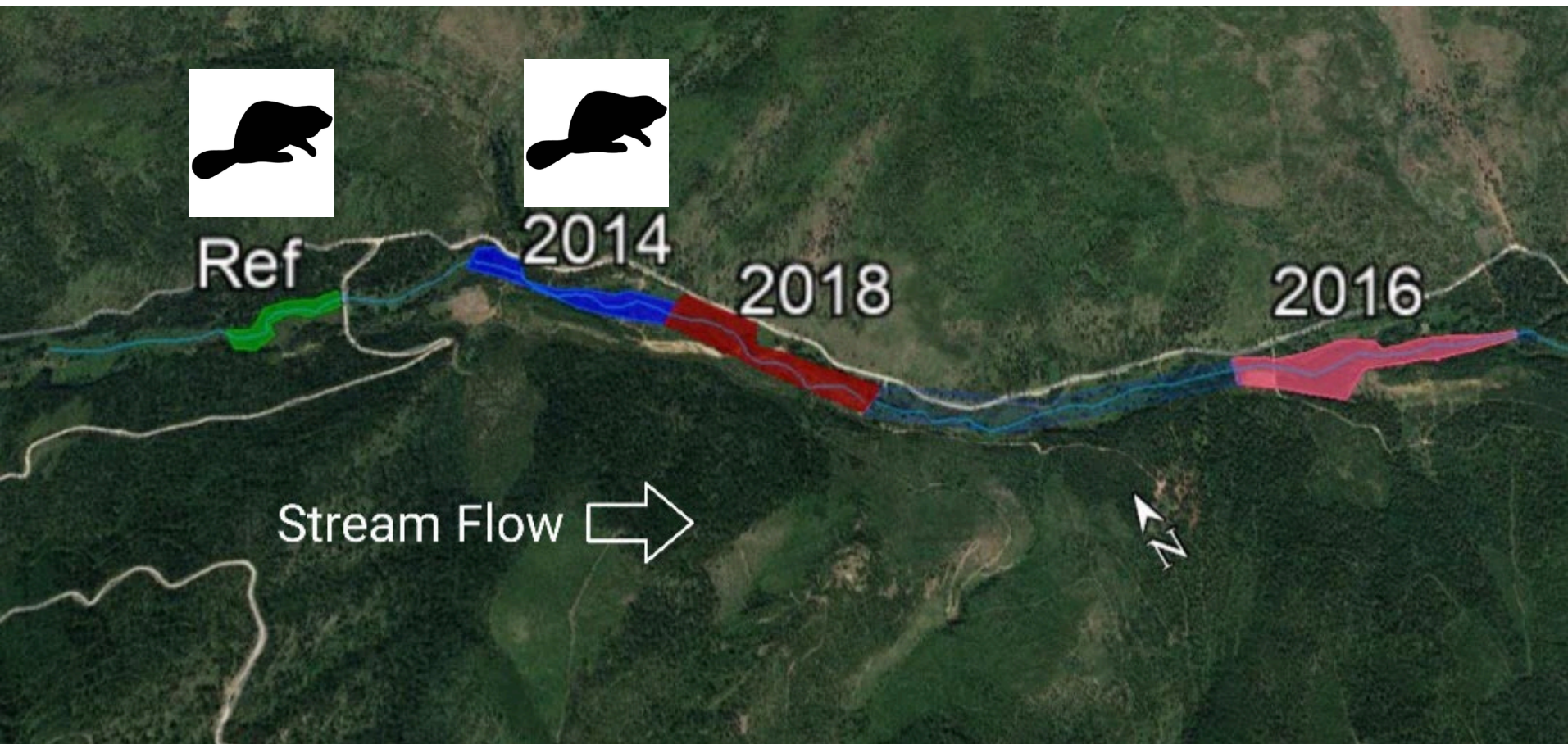


Research Question:

- Original question:
 - How quickly after restoration do riparian soils and vegetation begin resembling reference conditions?



Phased restoration approach = chronosequence



Research Questions:

- Original question:
 - How quickly after restoration do riparian soils and vegetation begin resembling reference conditions?
- Emerging question:
 - What is the influence of beavers on ecosystem recovery?

Assessing riparian recovery

Sampled Fall of 2019 and 2021

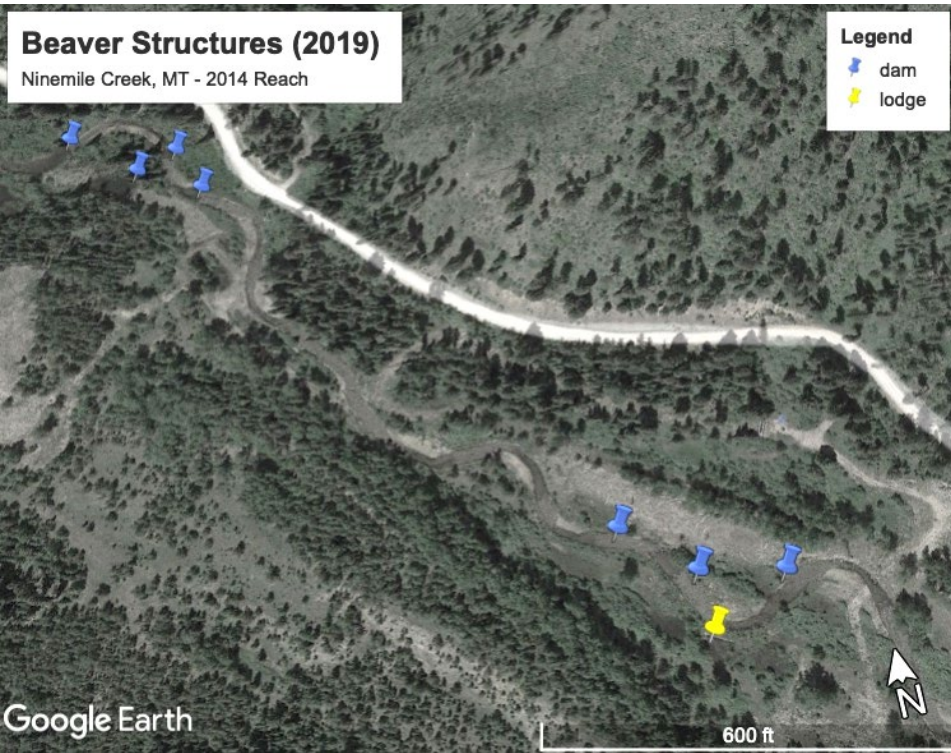
- Beaver structures
 - Dams and lodges
- Soils
 - Surface cover gravel
 - Soil organic matter concentration
- Surface water cover
- Vegetation
 - Woody vegetation (Shrubs and trees)

Line Point Intercept:

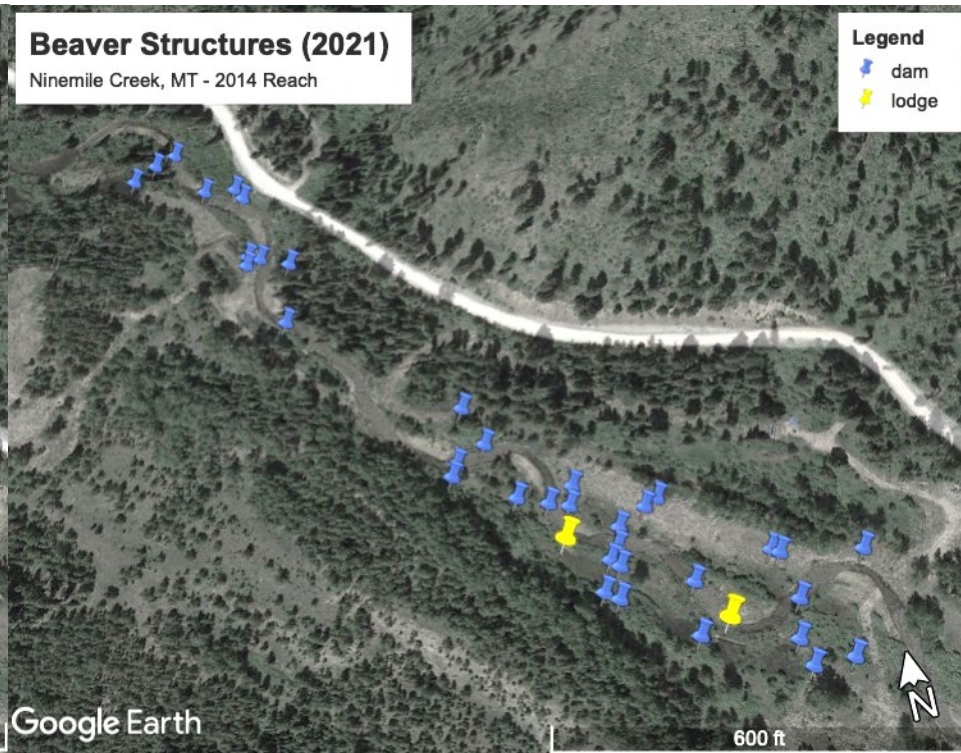
10 transects/reach

25 points/transect

Beavers are enterprising

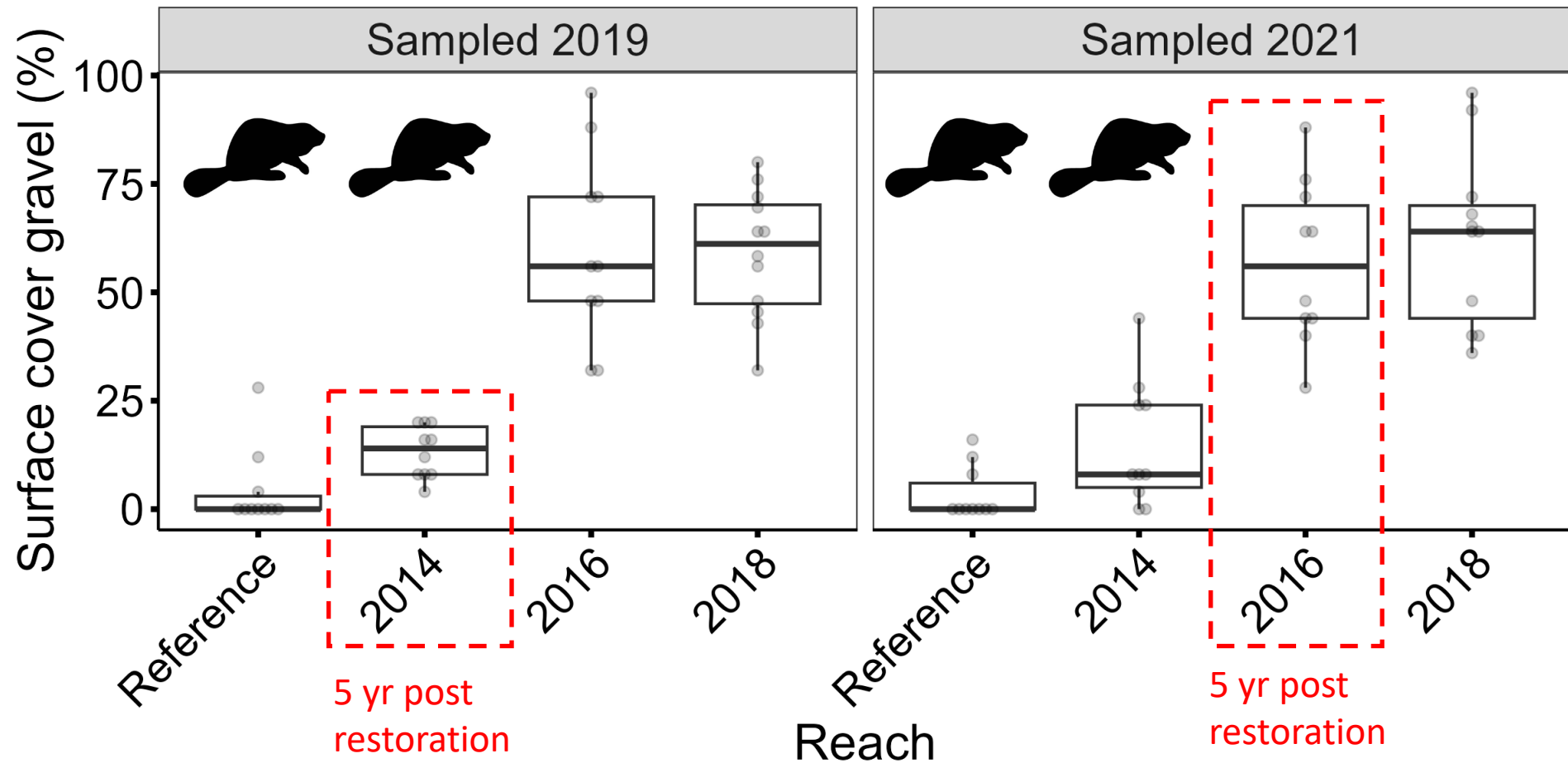


7 Dams
1 Lodge

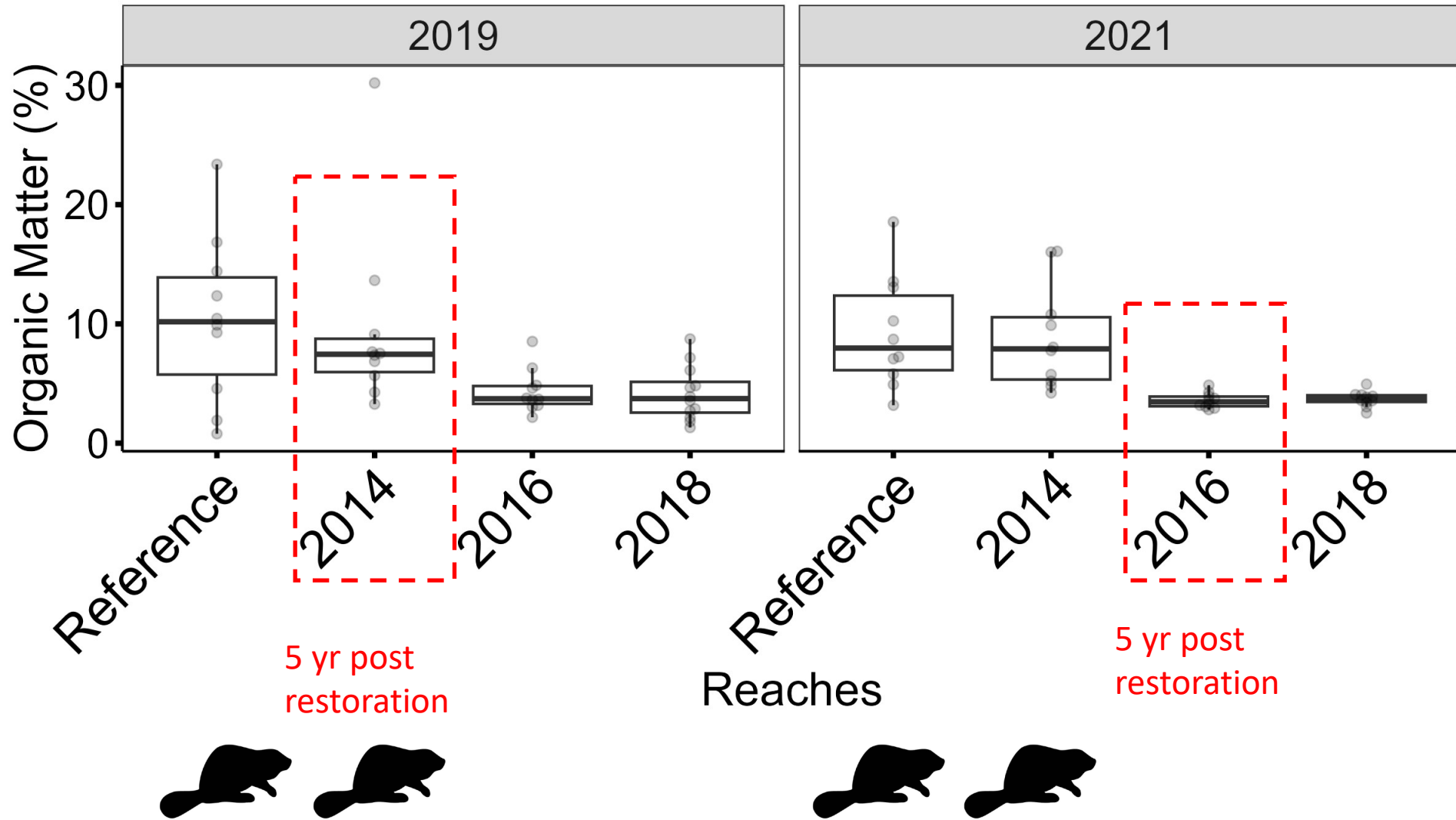


36 Dams
2 Lodges

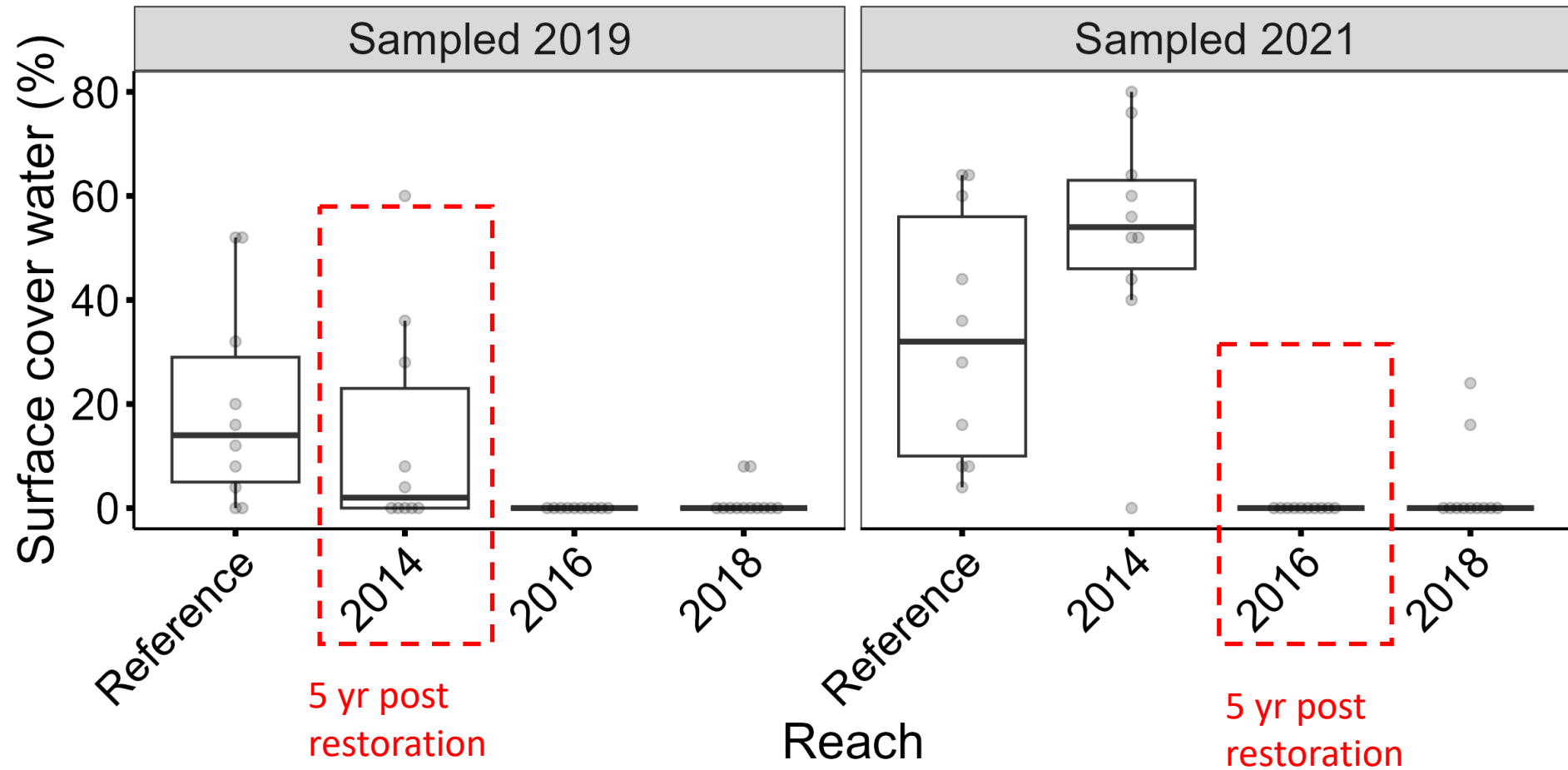
Less gravel with beavers (more fine sediment)



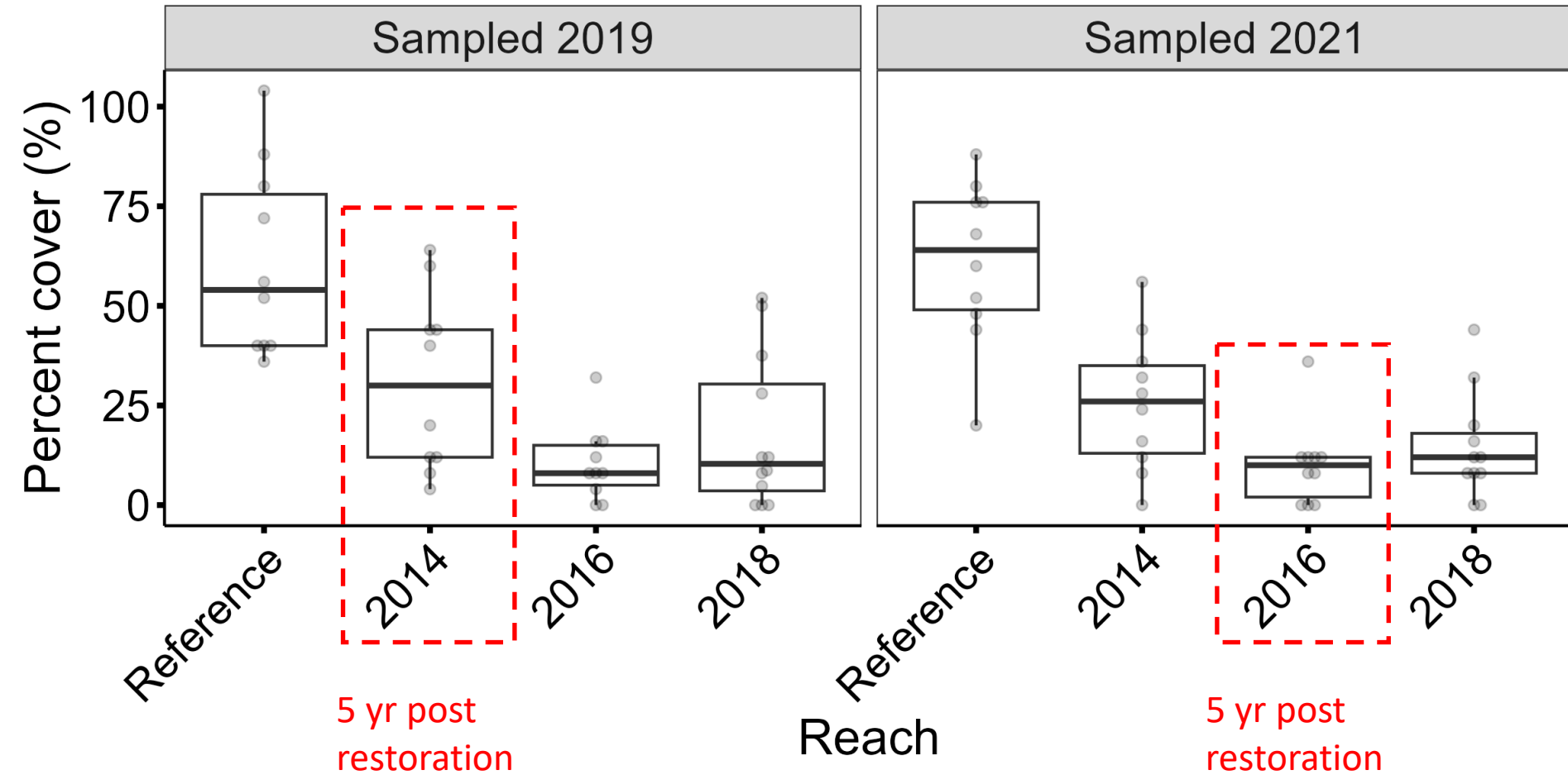
Elevated soil organic matter with beavers



More surface water with beavers



Woody vegetation cover greater with beaver



Take home messages

- Restoration takes time
- Beavers can help accelerate recovery
 - Decrease in gravel/increase in fine sediment
 - Increase in organic matter
 - Increase surface water on floodplain
 - Increase in woody vegetation
- Emerging question:
 - To what extent does beaver mimicry have similar effects?