

What is the Problem with Culverts and Road-Crossings?

Nathaniel Gillespie
U.S. Forest Service
Biological & Physical Resources,
Fisheries Program
Washington, DC Headquarters



What is a culvert?



Road-crossings can be all shapes and sizes



Most road-crossings use a hydraulic design



Streams change over time



An aerial photograph of a mountainous landscape. The terrain is characterized by rolling hills and valleys. The hillsides are covered with a mix of dense evergreen forests and large, light-brown, eroded areas that appear to be bare soil or sand. A network of small streams and rivers is visible, winding through the valleys and down the slopes. The overall scene depicts a natural, rugged environment.

A river network is mostly small streams

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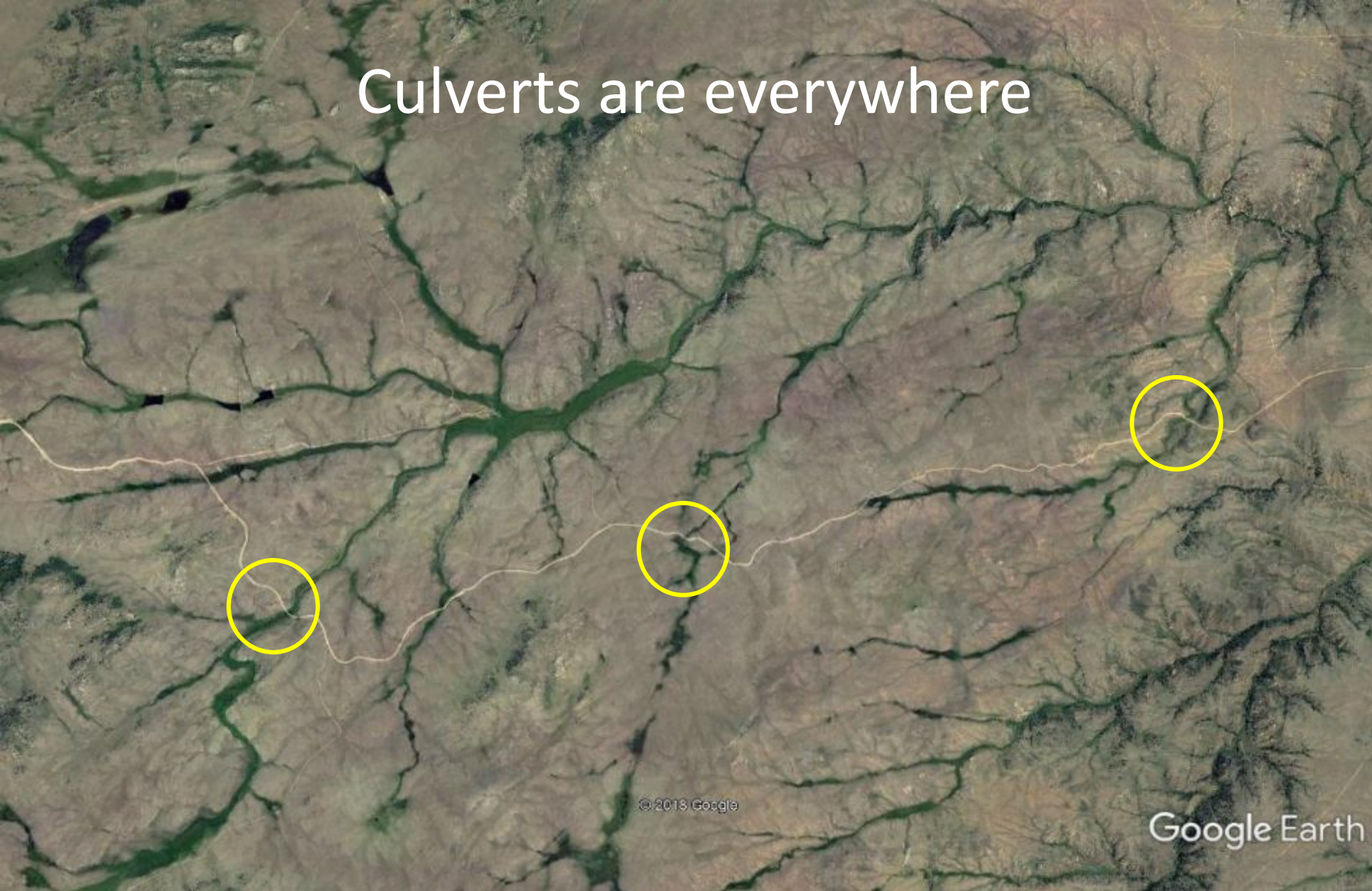
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Culverts are everywhere



An underwater photograph of several salmon swimming in a river. The fish are silvery with dark spots and are swimming towards the left. The water is slightly murky with some green algae visible on the riverbed.

Culverts have ecological impacts

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Culverts disconnect rivers and streams




Culverts disconnect rivers and streams



Culverts disconnect rivers and streams



An underwater photograph showing a variety of fish swimming over a rocky riverbed. In the foreground, there are several large, brownish-grey fish with white spots, likely trout or salmon. They are surrounded by many smaller, colorful fish, including bright orange and yellow ones. The water is clear, and the rocks are dark and smooth.

Culverts can reduce biodiversity

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Culverts can impact fish and other organisms

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Culverts can impact communities



Increasing vulnerability to climate change



Fortunately, we have solutions





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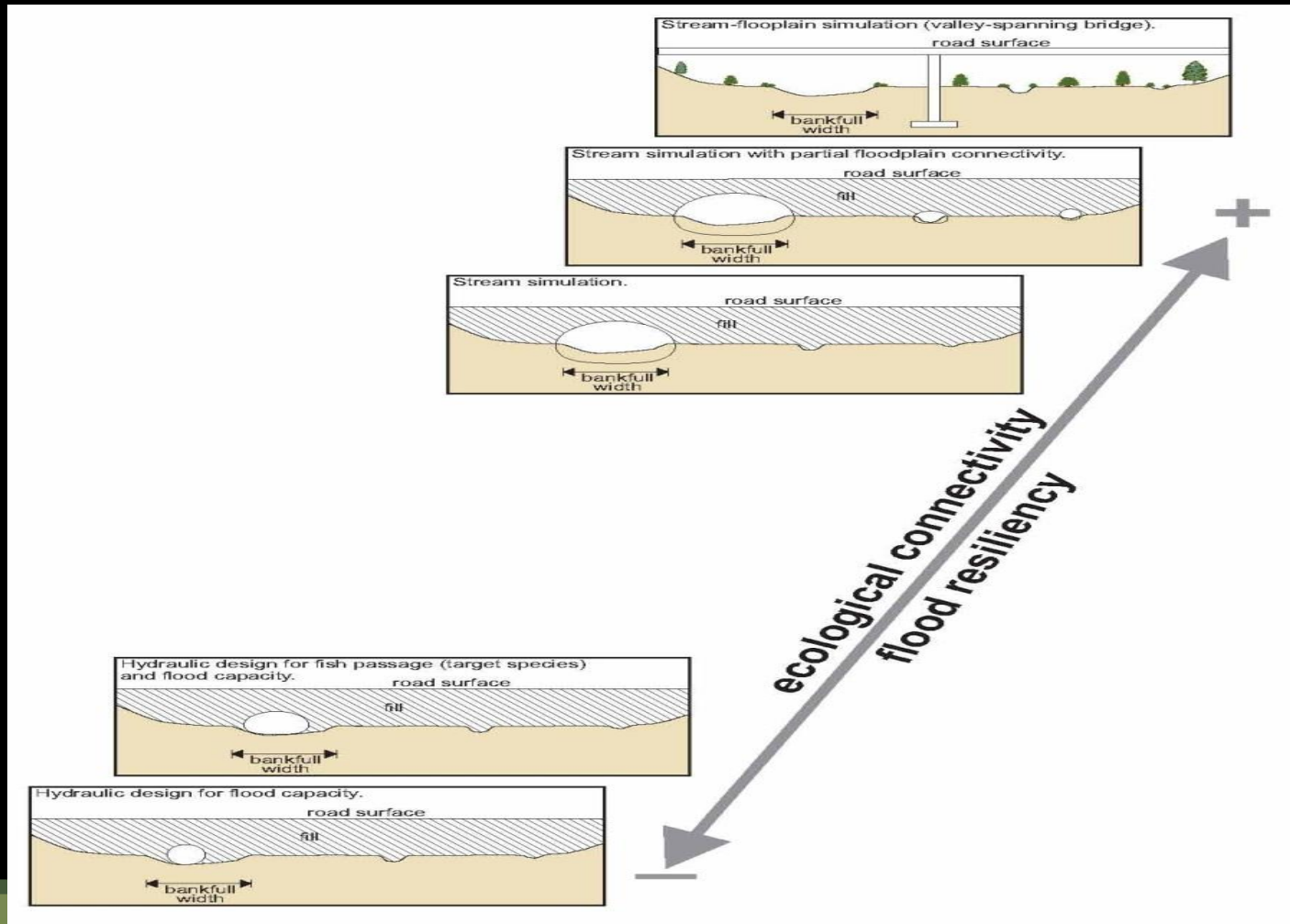
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The Connection between ecological connectivity & flood resiliency





Typical Post TS Irene Culvert Failure
Non-Stream Simulation Design



Typical Post TS Irene Culvert Success
Stream Simulation Design