

# Monitoring and Predicting Streambed Scour at Alaska Bridges

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Have you ever driven over a bridge and wondered what was holding you up? Most bridges are held up by streambed material around embedded bridge foundations. Scour refers to the loss of streambed material during floods, and it's the foremost cause of bridge failure in the United States. In Alaska, glacial rivers with shifting channels, outburst floods, ice jams, and debris all present challenges for scour prediction and design. A number of bridges within Alaska are considered "scour critical," meaning that either engineering calculations or observations have determined that there is a potential for the bridge to lose stability during a design flood. The USGS has been researching and monitoring streambed scour at scour-critical bridges in Alaska for about 15 years. This presentation will use case studies from Alaskan bridges to discuss what causes scour, how we predict scour and design floods, and how we monitor scour in real-time.

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