

# Alaska FHP's Support Partnering for Conservation

Heather Hanson, P.E., *US Fish and Wildlife Service*



Credit: Liebich, K., USFWS

# OUTLINE

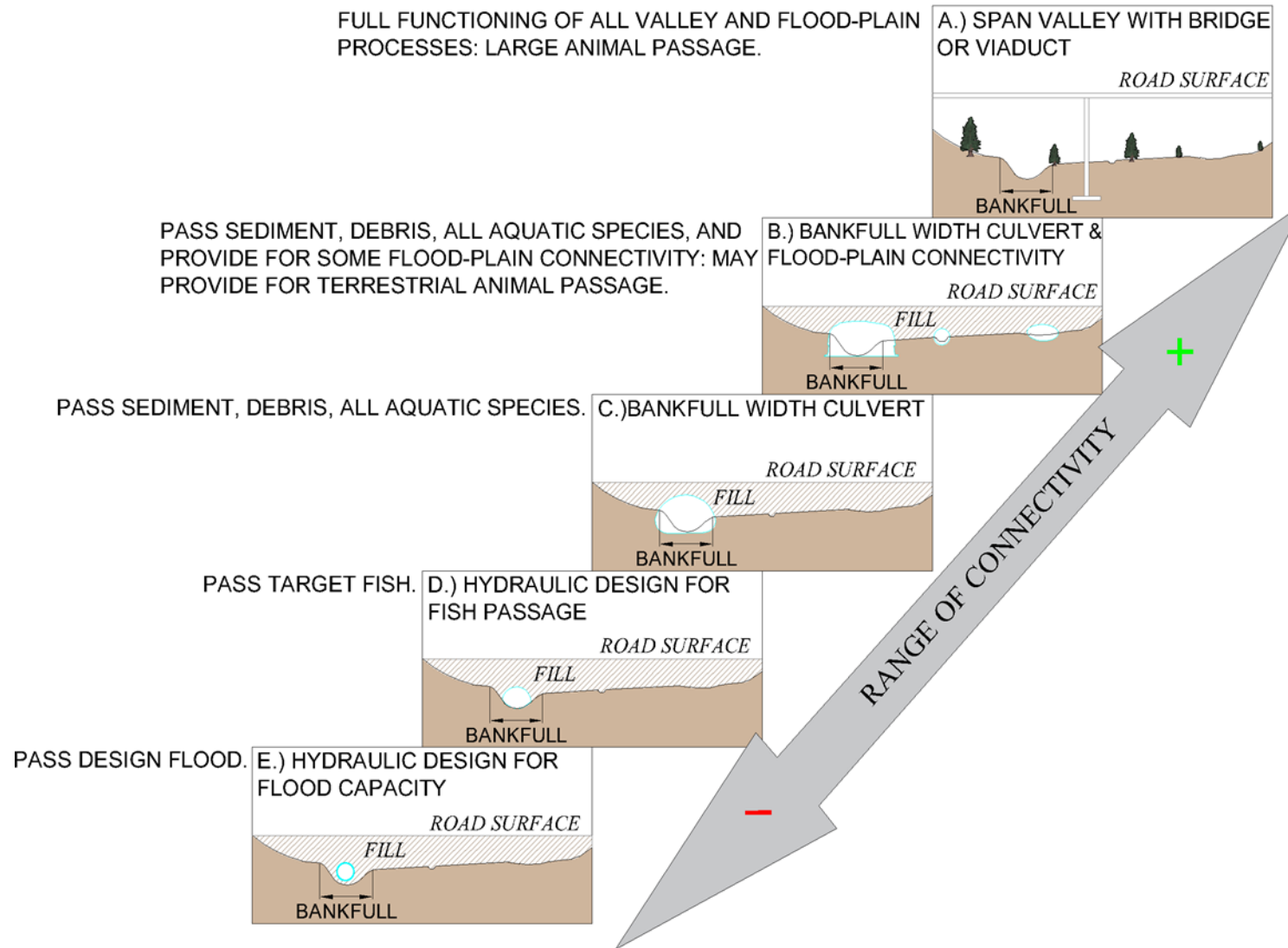
- Aquatic Connectivity in Alaska
- Scientific Collaboration
  - Stream Crossing Workshop & Videos
- Partnerships between local, state, federal and tribal entities
  - Bipartisan Infrastructure Law (BIL) Outreach and Coordination



# AQUATIC CONNECTIVITY— FHP SUPPORT



# CROSSING STRUCTURES & CONNECTIVITY



Source: U.S. Forest Service. 2008.

[https://www.fs.fed.us/eng/pubs/pdf/StreamSimulation/hi\\_res/%20FullDoc.pdf](https://www.fs.fed.us/eng/pubs/pdf/StreamSimulation/hi_res/%20FullDoc.pdf)



# FISH PASSAGE – HYDRAULIC METHODS



# STREAM SIMULATION - NON-GEOMORPHIC



*Credit: Hanson, H., USFWS*



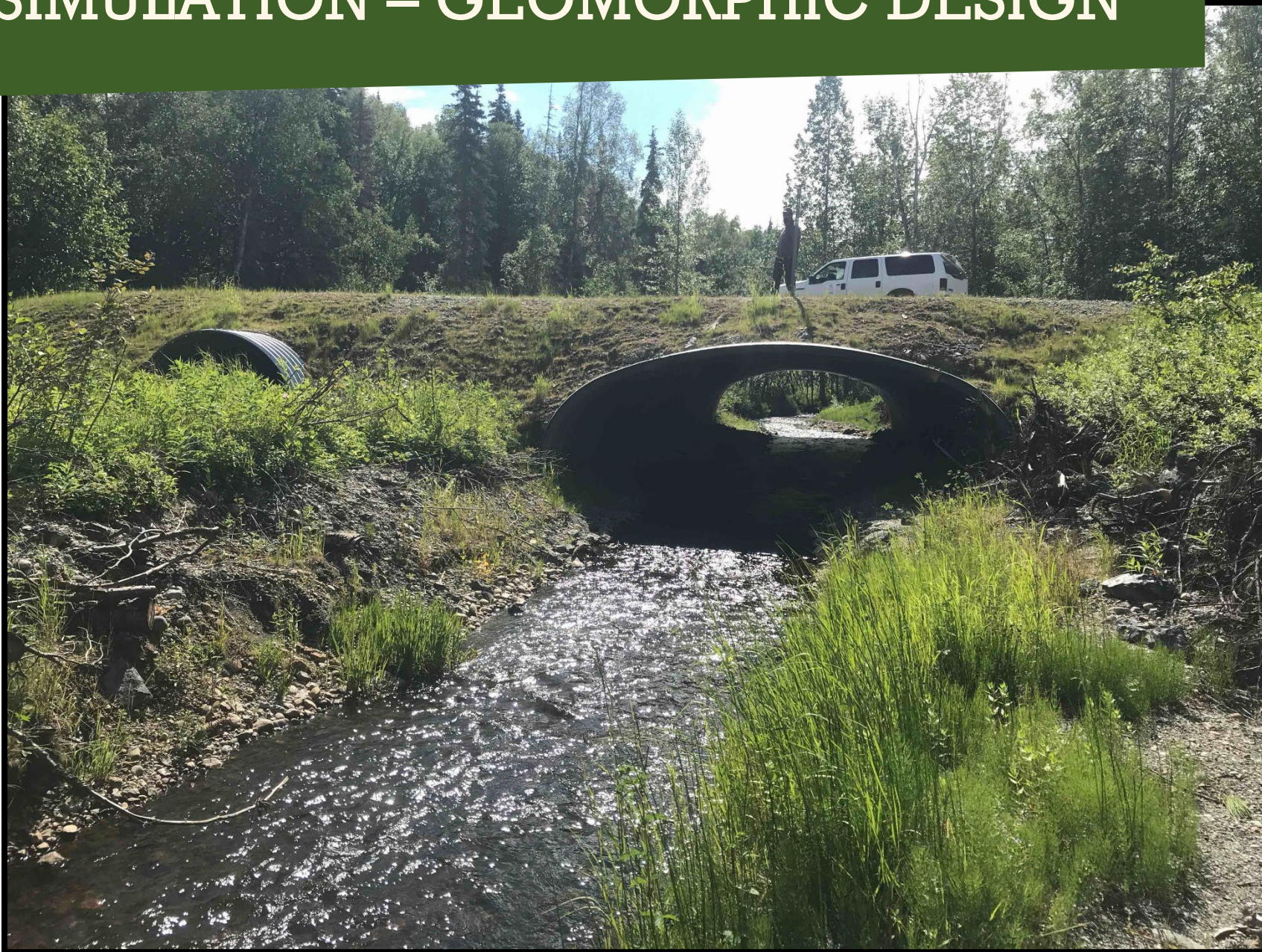
# STREAM SIMULATION – GEOMORPHIC DESIGN



*Credit: Hanson, H., USFWS*



# STREAM SIMULATION – GEOMORPHIC DESIGN

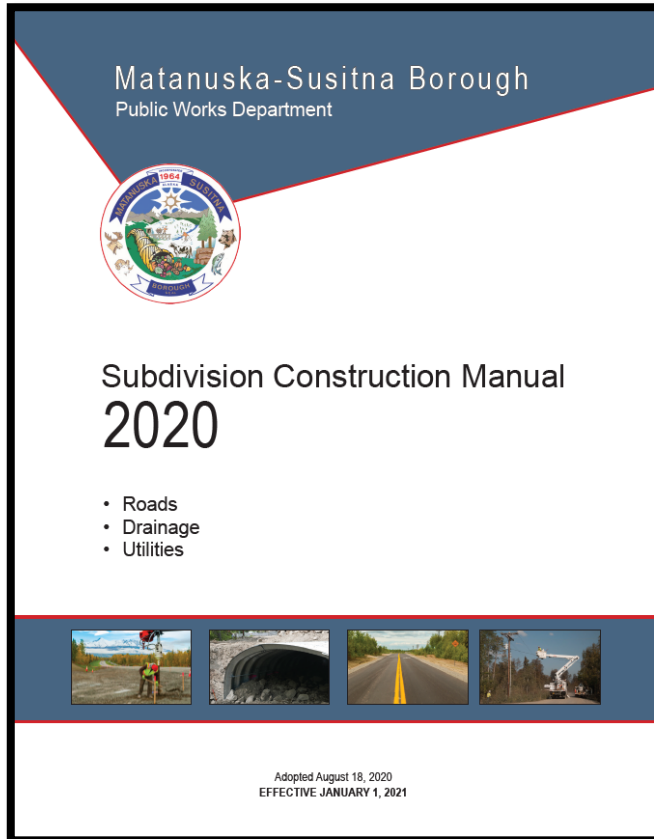


*Credit: Hanson, H., USFWS*

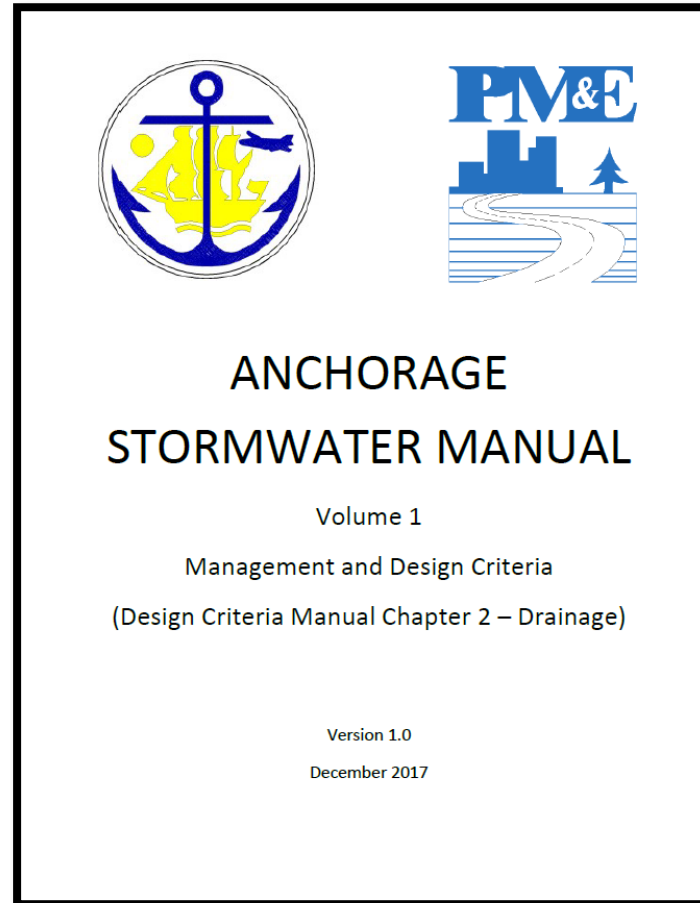




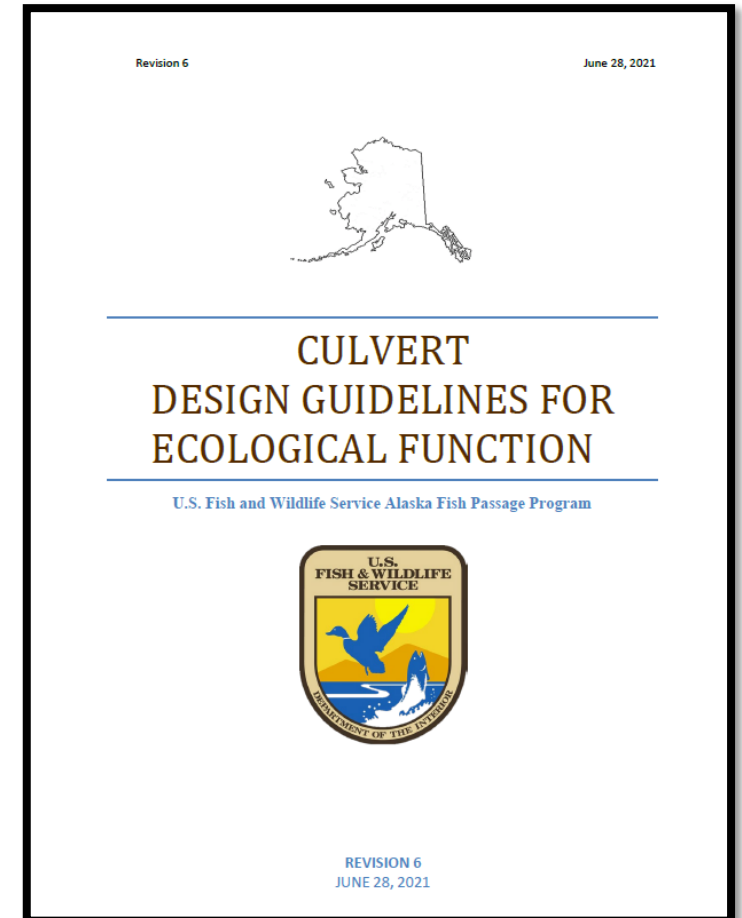
# ALASKA GEOMORPHIC DESIGN GUIDELINES



<https://www.matsugov.us/docs/general/21522/Subdivision-Construction-Manual-2020.pdf>



[https://www.muni.org/Departments/project\\_management/Documents/ASM\\_Volume1\\_Final\\_December2017.pdf](https://www.muni.org/Departments/project_management/Documents/ASM_Volume1_Final_December2017.pdf)



<https://www.fws.gov/alaska-culvert-design-guidelines>



# FLOODING & MAINTENANCE COSTS



*Credit: Rice, B., USFWS*



*Credit: Hanson, H., USFWS*



*Credit: Hanson, H., USFWS*



# LIFE CYCLE BENEFITS

Culverts sized at 1.1 x bankfull width resulted in fiscal lifetime net benefits to 58% of the culverts sampled

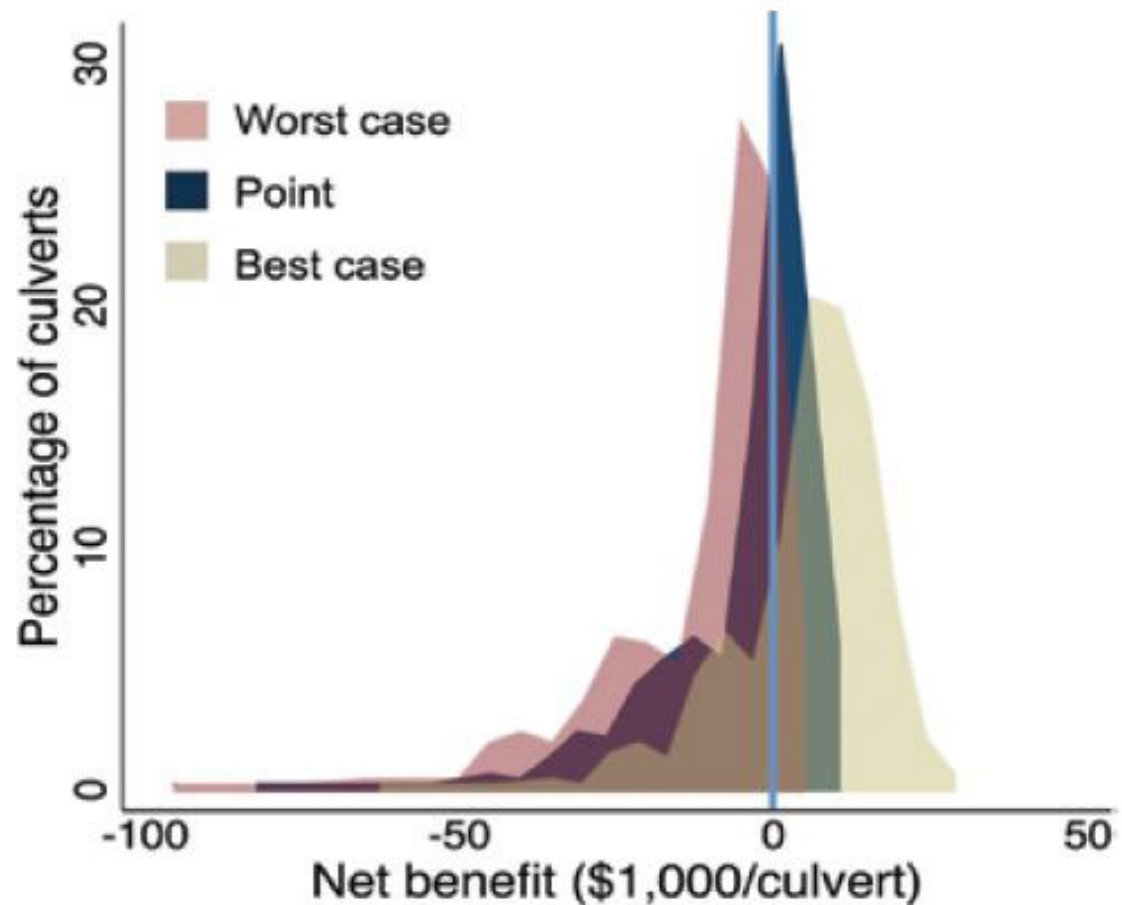
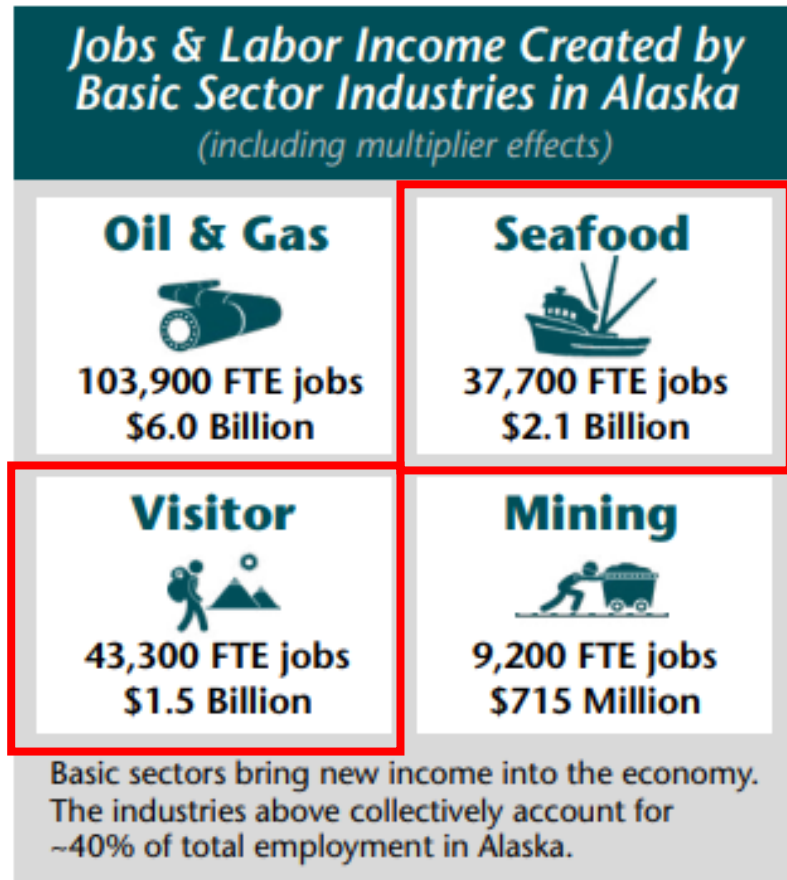


Figure 2. Area plot histograms of fiscal net benefits (\$1,000/culvert) for the point estimate, worst-case scenario, and best-case scenario.

# ECONOMIC BENEFITS

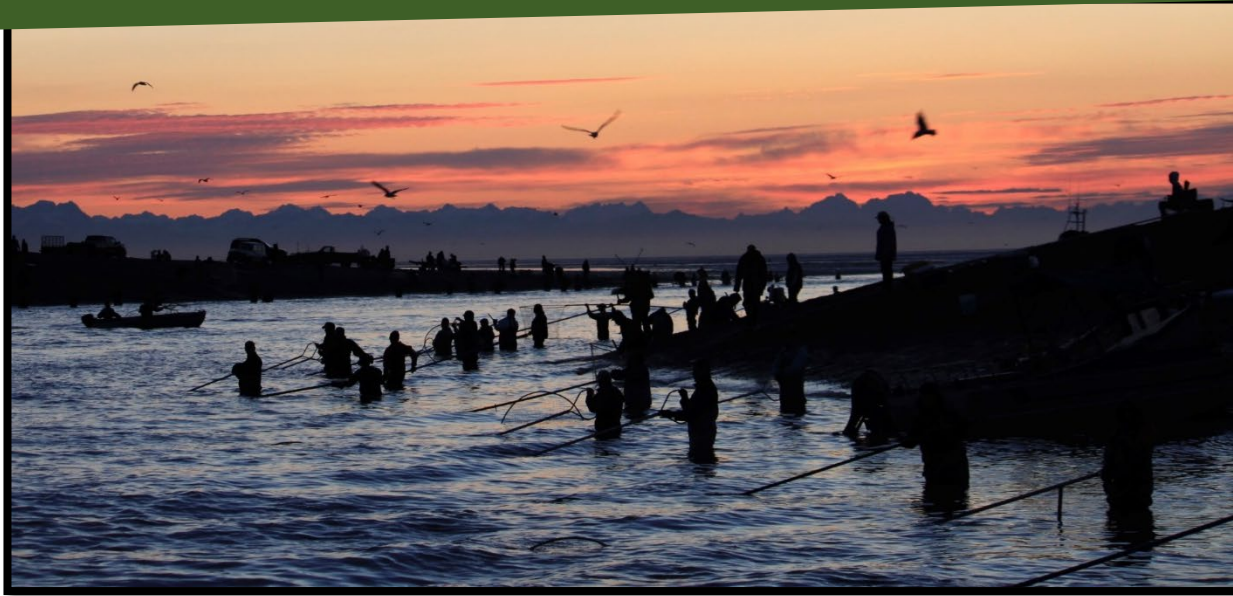


Source: McDowell Group economic impact studies (2017-2019)

- ~5.7 billion pounds of seafood worth **\$2 billion at the docks** in 2017-2018
- **Salmon** was the most valuable catch for fishermen at **\$744 million**
- Processors produced 2.8 billion pounds of seafood products worth **\$4.7 billion**



# SOCIAL & CULTURAL BENEFITS



Credit: USFWS,  
[https://www.flickr.com/photos/usfws\\_alaska/albums](https://www.flickr.com/photos/usfws_alaska/albums)

# STREAM CROSSING WORKSHOP – MARCH 2022

## DESIGN, REVIEW, AND CONSTRUCTION OF STREAM CROSSINGS FOR ECOLOGICAL FUNCTION

**Workshop Dates:** March 15-18, 2022;  
10:00 am to 2:30 pm daily with 1 hour for lunch

**Format:** Online - Zoom Webinar hosted by  
Southeast Alaska Fish Habitat Partnership (SEAKHP)  
*Content will be recorded.*

**Moderators:** Debbie Hart (Southeast Alaska Fish Habitat  
Partnership), Kim Clark (Alaska Department of Fish and  
Game), Heather Hanson, Andy Stevens & Jess Straub  
(US Fish and Wildlife Service)



Image by: Katrina Liebich USFWS



# STREAM CROSSING WORKSHOP VIDEOS

**Functional Processes of Streams & Riparian Areas**  
An introduction to key concepts

Matthew LaCroix  
U.S. Environmental Protection Agency  
Region 10

March 15, 2022

Video player controls: 0:01 / 20:20, CC, settings, full screen, and share icons.

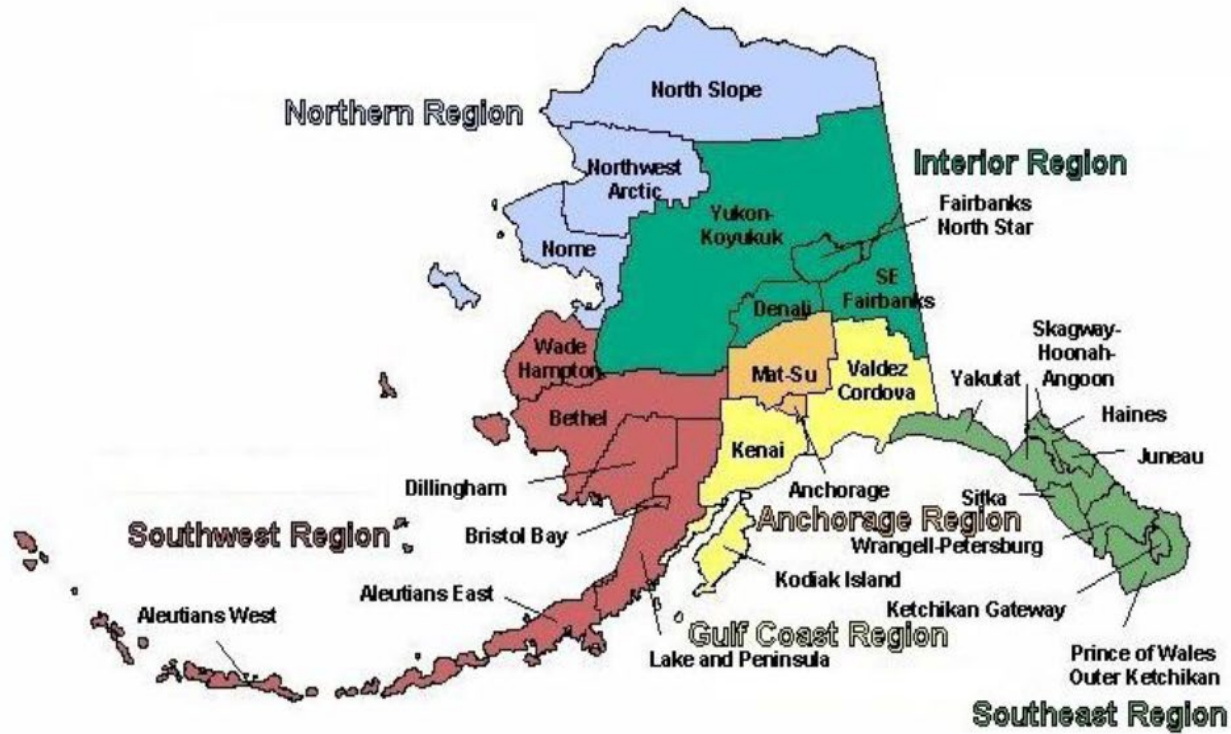
Stream Crossing Workshop - March 2022, Alaska  
U.S. Fish & Wildlife Service - 1 / 24

- 1 Functions and Functional Processes of Streams and... U.S. Fish & Wildlife Service 20:21
- 2 Aquatic Organism Passage and Wildlife Corridors - Erika... U.S. Fish & Wildlife Service 17:43
- 3 Wetland Connectivity and Beavers - Kirsti Jurica U.S. Fish & Wildlife Service 23:22
- 4 Stream Temperature and Erosion- Sean Eagan U.S. Fish & Wildlife Service 23:11
- 5 The Fish Passage Inventory Database Mapper:... U.S. Fish & Wildlife Service 17:55
- 6 The Stream Function Pyramid and the Alaska Stream... U.S. Fish & Wildlife Service 28:26
- 7 Fluvial Geomorphology and Regional Curves- Matt Varner U.S. Fish & Wildlife Service 36:05
- 8 Hydrology at Road Crossings - Franklin Dekker U.S. Fish & Wildlife Service 54:09
- 9 Geomorphic Analog Design Method - Heather Hanson U.S. Fish & Wildlife Service 1:13:29

<https://www.youtube.com/c/usfws>



# BIL COORDINATION & COMMUNITY OUTREACH



Source: Shaw, Jennifer, March, 2013. *Navigating At A Crossroads: The Role Of Subsistence Culture in The Subjective Wellbeing of Dena'ina Athabascan Youths in Alaska*





# CONCLUSION



*Fish Habitat Restoration Project, Tyonek, AK Credit: Cincotta, C., Tyonek Tribal Conservation District*

