

*A panel session*

# Deep enough, wide enough: What makes a river legally navigable?

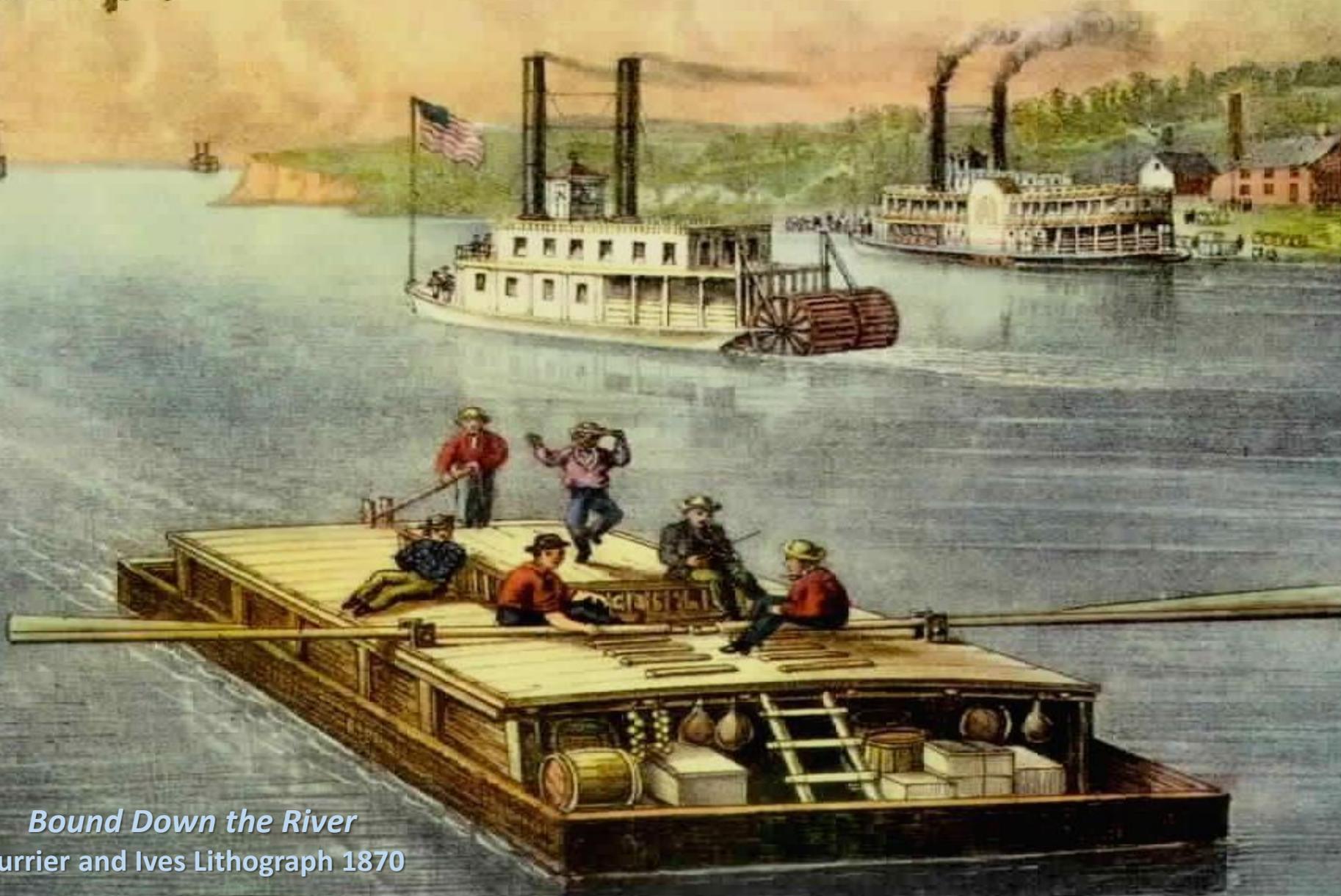


# Historical roots of navigability



*Scene from a Navigable River*  
John Constable 1816

# Navigable-in-fact = Navigable-in-law



*Bound Down the River*  
Currier and Ives Lithograph 1870

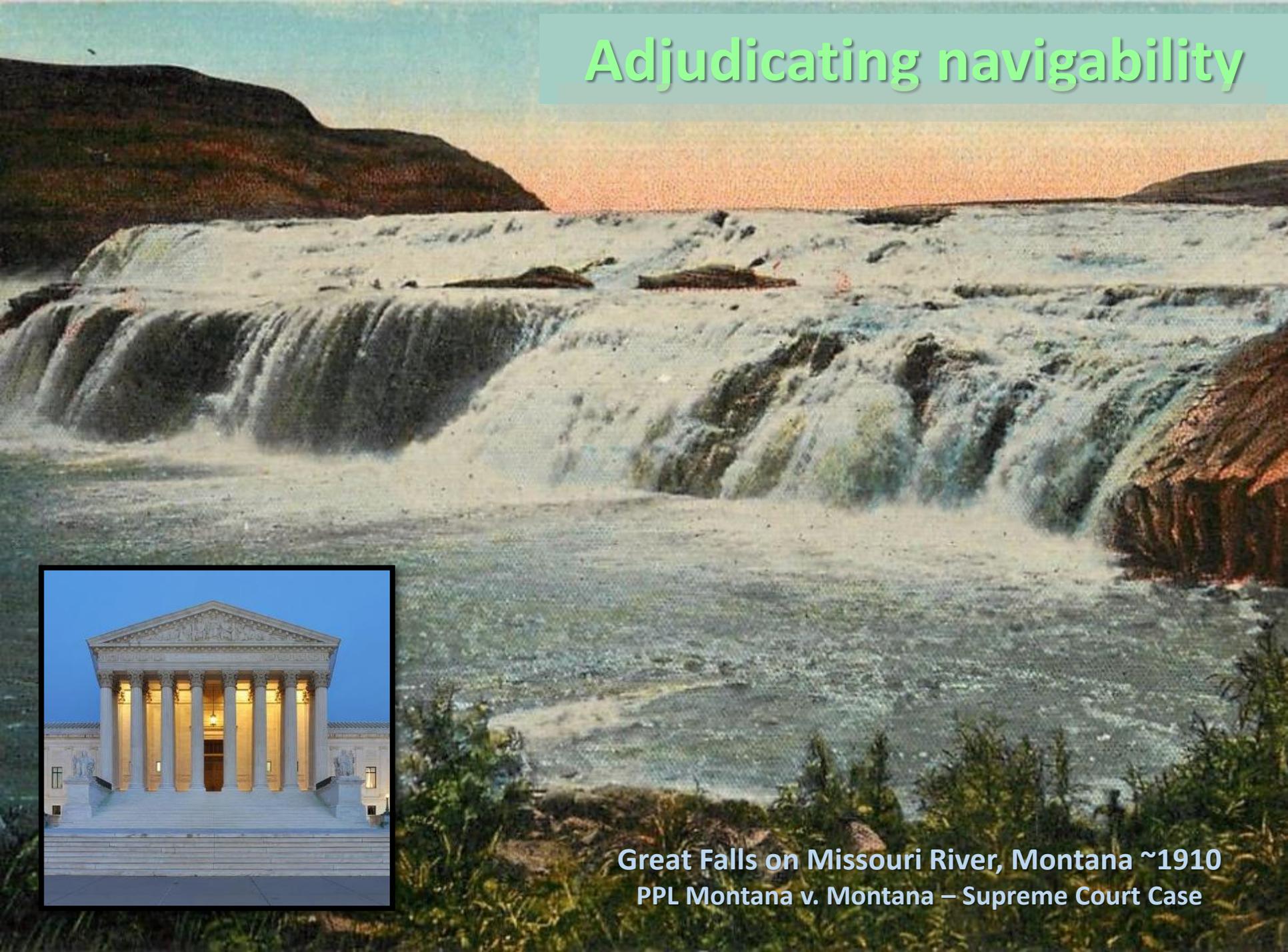
# Assessing navigability



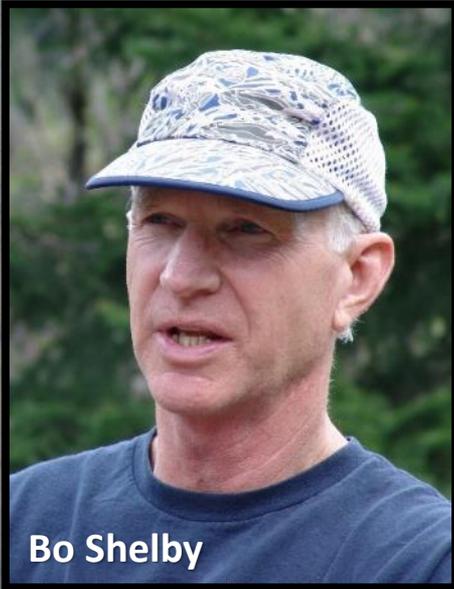
Mosquito Fork of the Fortymile River, Alaska



# Adjudicating navigability



Great Falls on Missouri River, Montana ~1910  
PPL Montana v. Montana – Supreme Court Case



**Bo Shelby**



**Jon Fuller**



**Mike Kellogg**



**Doug Whittaker**

# Panelists



Delta River, Alaska

# Navigability and time travel



Time

Before human settlement

At or around statehood

Now

The future



# Doug Whittaker

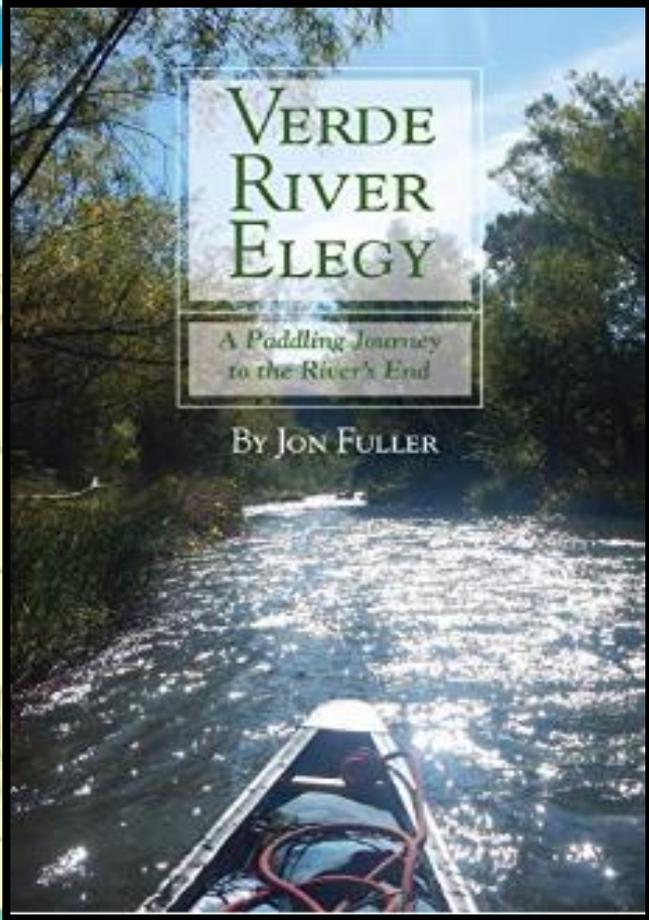


The Narrows, North Umpqua River, Oregon



**AZ Cases Since 1992**  
**Statewide Assessments in AZ**  
**(89,000 Stream Segments)**  
**Statewide Assessments in AK**  
**Other Cases in NW & East Coast**

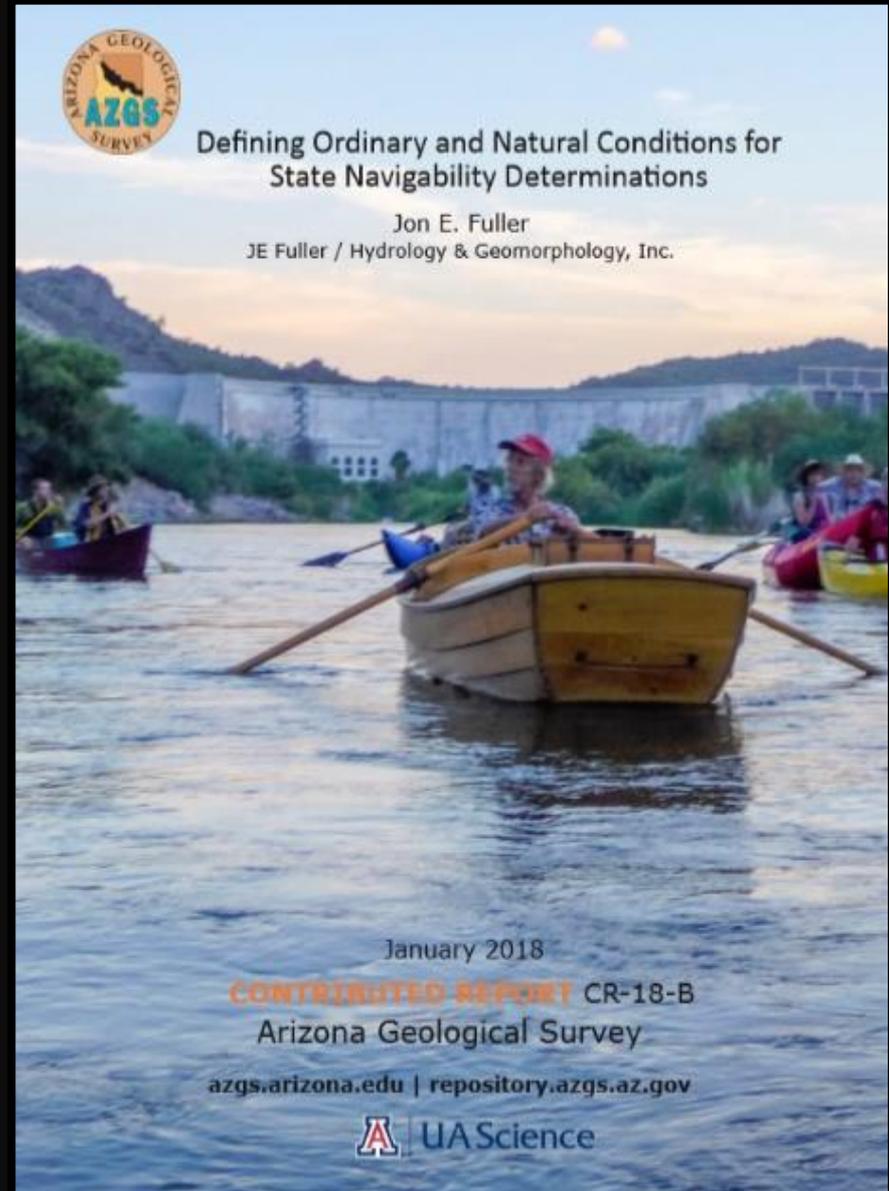
**Delta River Gorge, Alaska**



\*Available on Amazon

**Navigability Investigations #**  
**Rivers Boated #**

- **Daniel Ball Test: Ordinary & Natural River Condition**
  - **What is “Natural”?**
    - **Absent Impact of Man**
    - **Is River Still Natural?**
    - **When was Natural Condition?**
  - **What is “Ordinary”?**
    - **Not Flood**
    - **Not Unusual Drought**
- **Daniel Ball Test: Highways of Commerce vs. Susceptibility**
  - **What is Commerce?**
  - **What Type of Boat Necessary**
  - **Susceptibility & Difficulty**





# Dugouts, driftboats, drafts, and difficulty



Chetco River, Oregon

# Bo Shelby



The Narrows, North Umpqua River, Oregon

On to the panel questions

Delta River, Alaska



# 1. Ordinary and natural



Bettles River, Alaska

# Defining ordinary

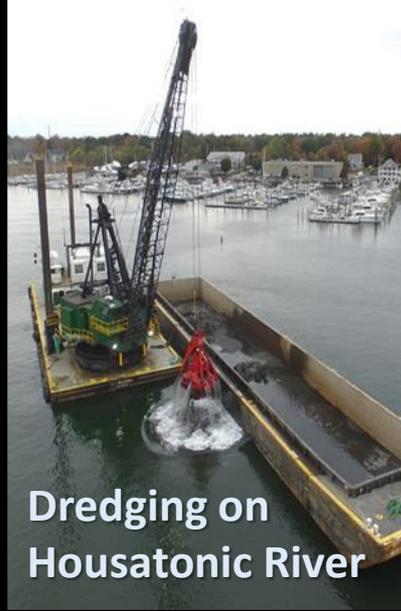


John Day River, Oregon

# Defining natural



Channelized section of Okanagan River, BC



Dredging on Housatonic River



Mine tailings, Tuluksak River, Ak



Pistol Creek log jam, Middle Fork , ID



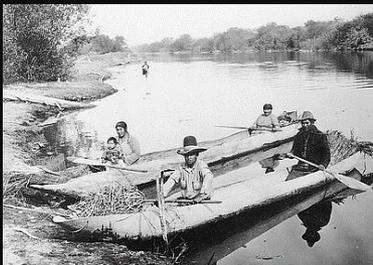
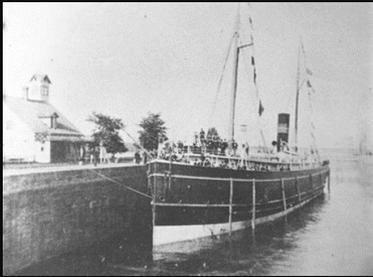
Sweeper cutting, Mosquito Fork, AK

How often and  
for how long?

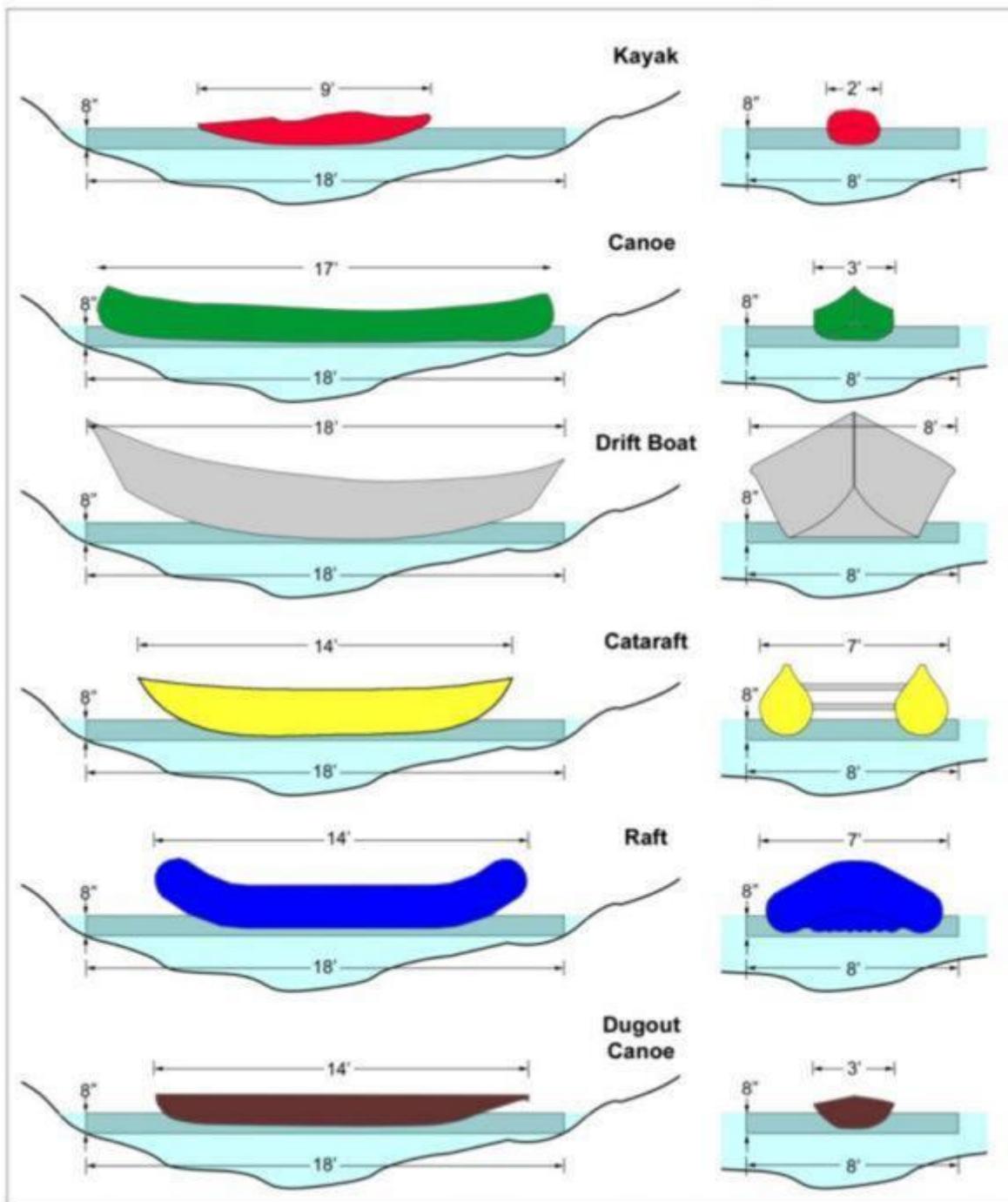


O'Brien Creek, Fortymile River Basin, Alaska

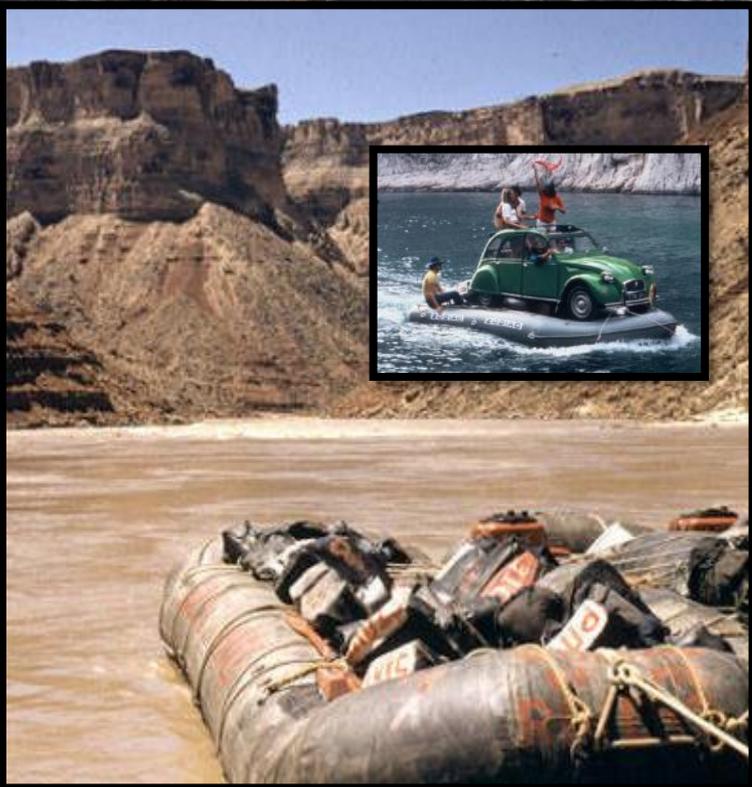
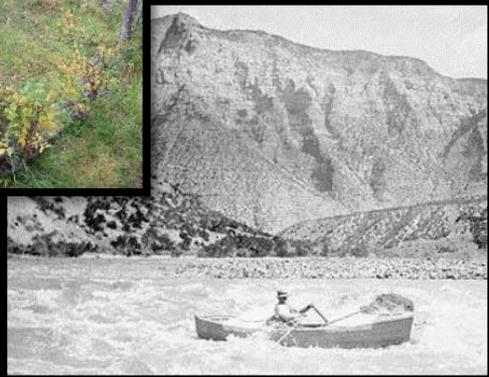
## 2. Criterion craft and “meaningfully similar”



# Channel dimension needs?



# Durability



### 3. Difficulty

More difficult – less difficult

Not navigable:  
Missouri River at Great Falls  
17 miles & > 1 day portage



Navigable:  
McKenzie River  
30-50 day log drives

*“Need not be without difficulty,  
extensive, or long and continuous”*

*Oregon v. Riverfront Protection Association (McKenzie, 1982)  
Argued before 9<sup>th</sup> Circuit Court of Appeals*

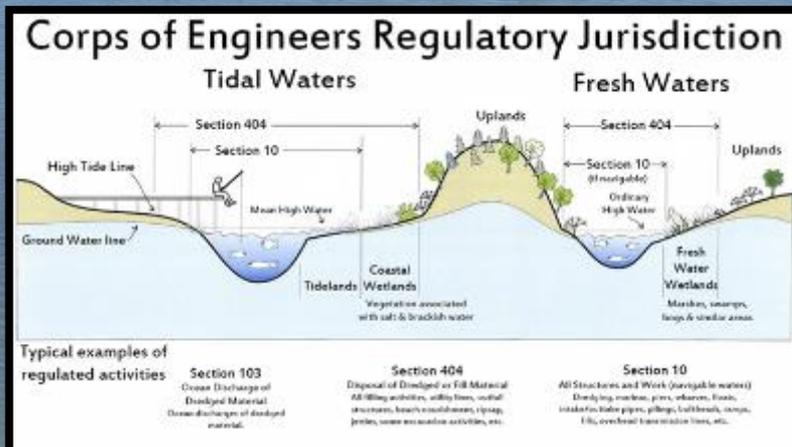
# Defining difficulty



Boat drags



# 4. Boundary determination



Knik River, Alaska

**So...your river is officially Navigable. Now what?**

**Colorado River  
Channelization, 1965**

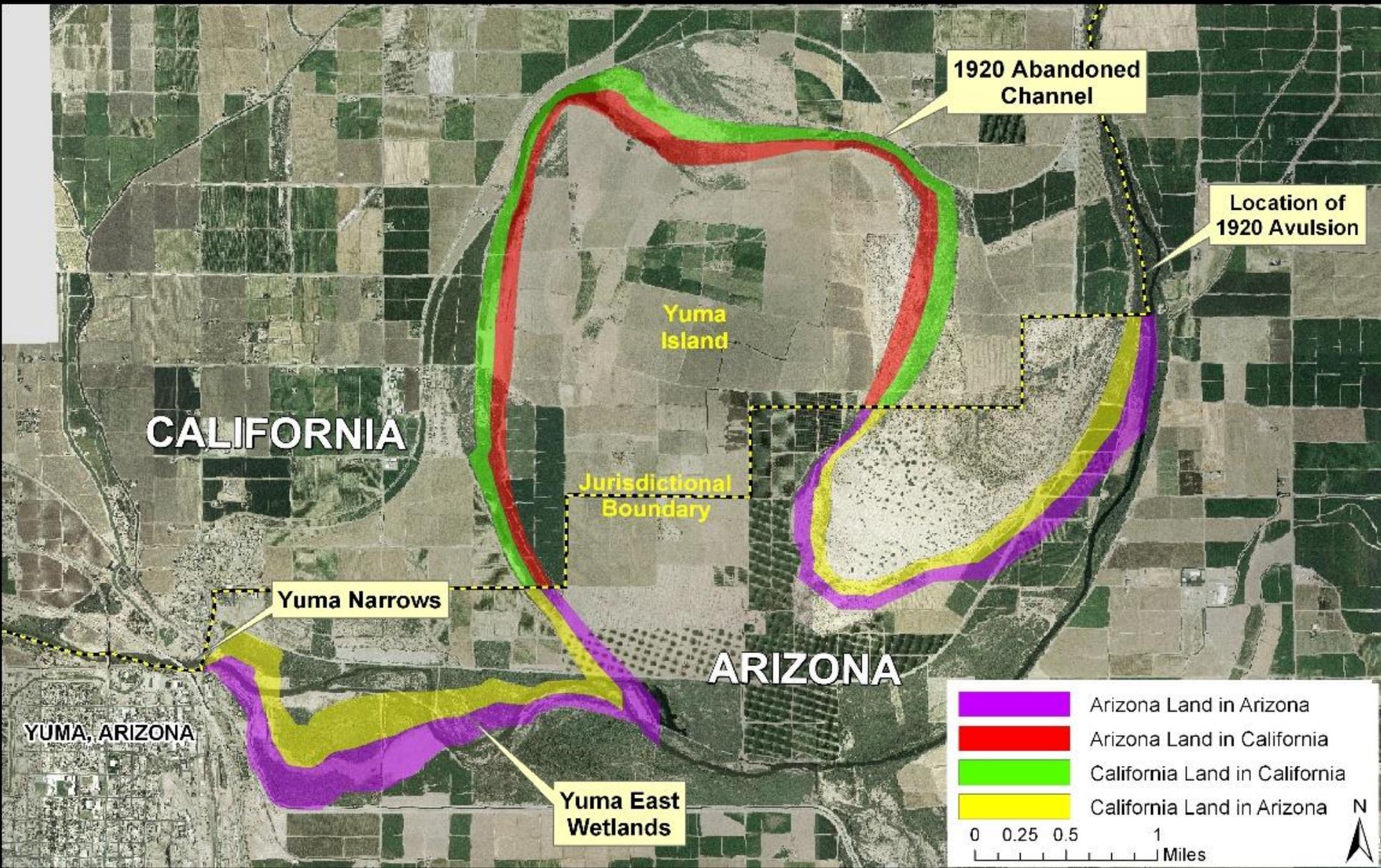


1930

1942

No island

Left channel braid

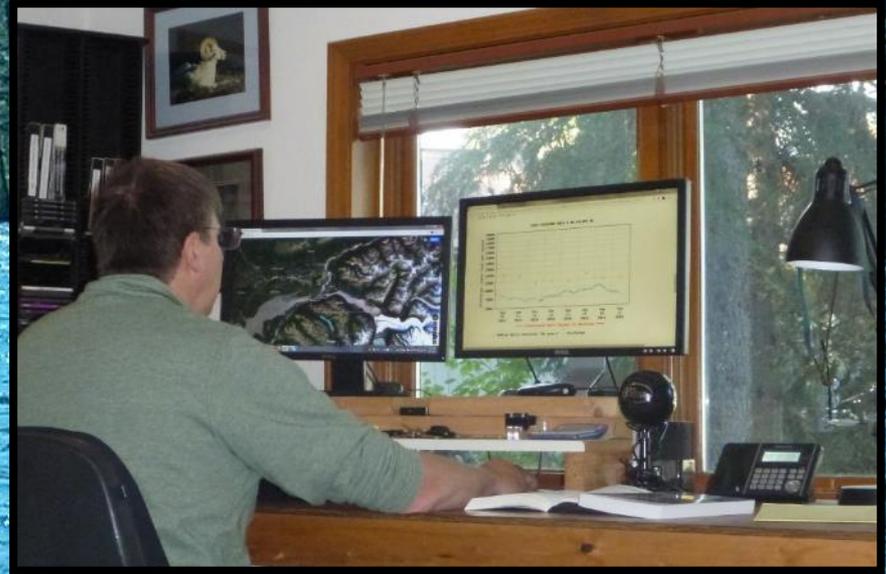


# 5. Post-navigability

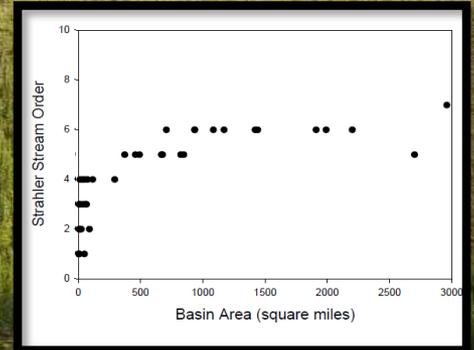
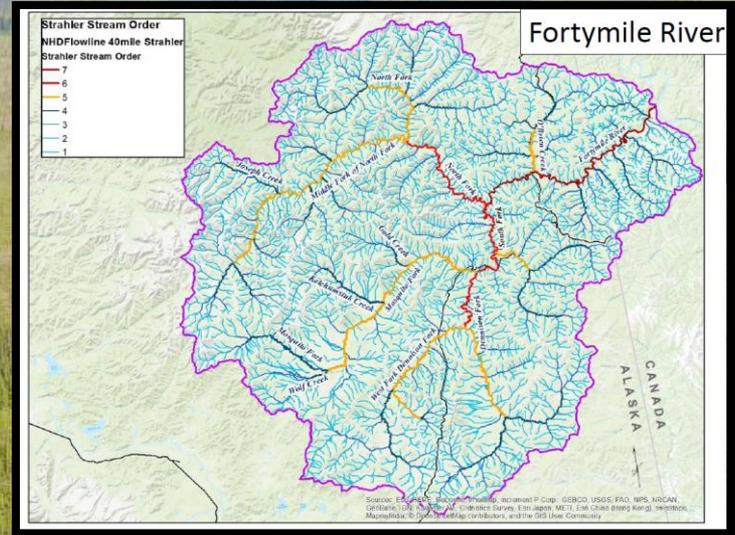
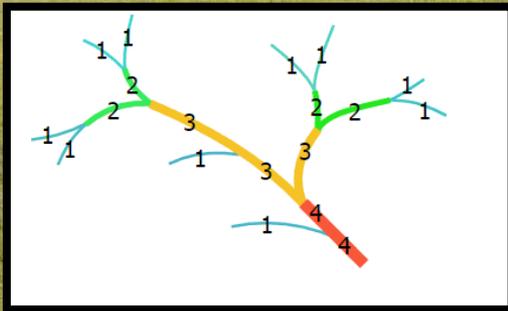


John Day River, Oregon

# 6. Desktop methods



# Strahler stream order and basin area size

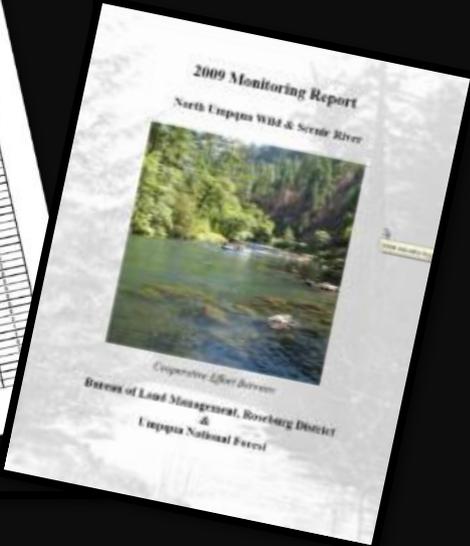


Confluence of the West Fork and Dennison Fork of the Fortymile River, Alaska

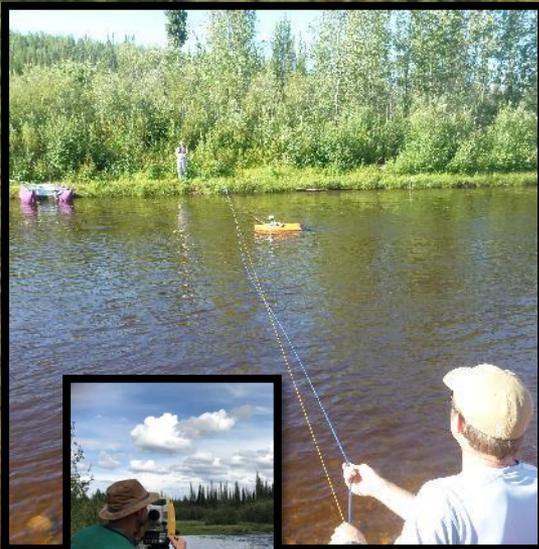
# Existing use & published information

2009 WDFW water standard and survey on North Umpqua River  
 Provided by: Holly Trampert 01/2010

City	Site	Location	Water Type	# of Salmon	Significance
Alsea	1	Alsea River	Stream	1	High
Alsea	2	Alsea River	Stream	1	High
Alsea	3	Alsea River	Stream	1	High
Alsea	4	Alsea River	Stream	1	High
Alsea	5	Alsea River	Stream	1	High
Alsea	6	Alsea River	Stream	1	High
Alsea	7	Alsea River	Stream	1	High
Alsea	8	Alsea River	Stream	1	High
Alsea	9	Alsea River	Stream	1	High
Alsea	10	Alsea River	Stream	1	High
Alsea	11	Alsea River	Stream	1	High
Alsea	12	Alsea River	Stream	1	High
Alsea	13	Alsea River	Stream	1	High
Alsea	14	Alsea River	Stream	1	High
Alsea	15	Alsea River	Stream	1	High
Alsea	16	Alsea River	Stream	1	High
Alsea	17	Alsea River	Stream	1	High
Alsea	18	Alsea River	Stream	1	High
Alsea	19	Alsea River	Stream	1	High
Alsea	20	Alsea River	Stream	1	High
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Alsea	24	Alsea River	Stream	1	High
Alsea	25	Alsea River	Stream	1	High
Alsea	26	Alsea River	Stream	1	High
Alsea	27	Alsea River	Stream	1	High
Alsea	28	Alsea River	Stream	1	High
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Alsea	92	Alsea River	Stream	1	High
Alsea	93	Alsea River	Stream	1	High
Alsea	94	Alsea River	Stream	1	High
Alsea	95	Alsea River	Stream	1	High
Alsea	96	Alsea River	Stream	1	High
Alsea	97	Alsea River	Stream	1	High
Alsea	98	Alsea River	Stream	1	High
Alsea	99	Alsea River	Stream	1	High
Alsea	100	Alsea River	Stream	1	High



# Hydraulic geometry measurements & 2-D modeling



# 7. Fieldwork



Boulder Garden – representative rapid on Mosquito Fork of Fortymile River, AK



Final thoughts?