

An aerial photograph showing a wide river with multiple sandbars and channels. The river is surrounded by dense green forest. The water is dark, and the sandbars are light brown. There is a lot of driftwood scattered across the sandbars and in the water.

***Hydrologic controls on the
recruitment of riparian plants and
the maintenance of floodplain
wildlife habitat***

FLOODS MATTER

Jason Mouw, Wildlife Biologist, Division of Sport Fish, ADF&G

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1. Flathead River (Mouw and Alaback 2003)
 2. Talkeetna River (Mouw et al. 2009)
 3. Susitna River (Mouw et al. in prep)
 4. Kwethluk River (Mouw et al. under review)
 5. Kitlope River
 6. Aniak River
 7. Mulchatna River

Acknowledgements:

Jack Stanford, FLBS

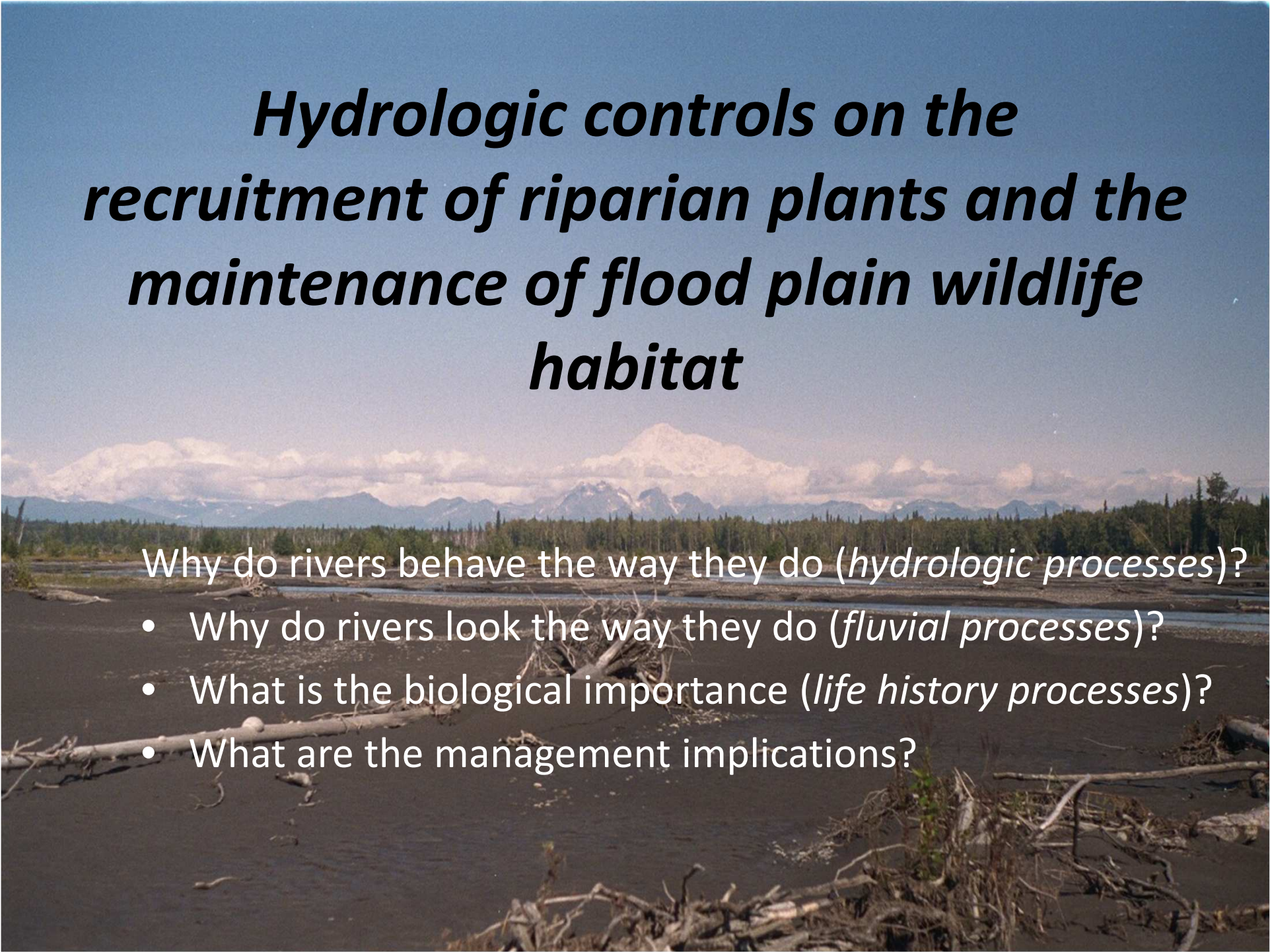
Diane Whited, FLBS

Jake Chaffin, BLM-Montana

Tyler Tappenbeck, FLBS

Phil Matson, FLBS

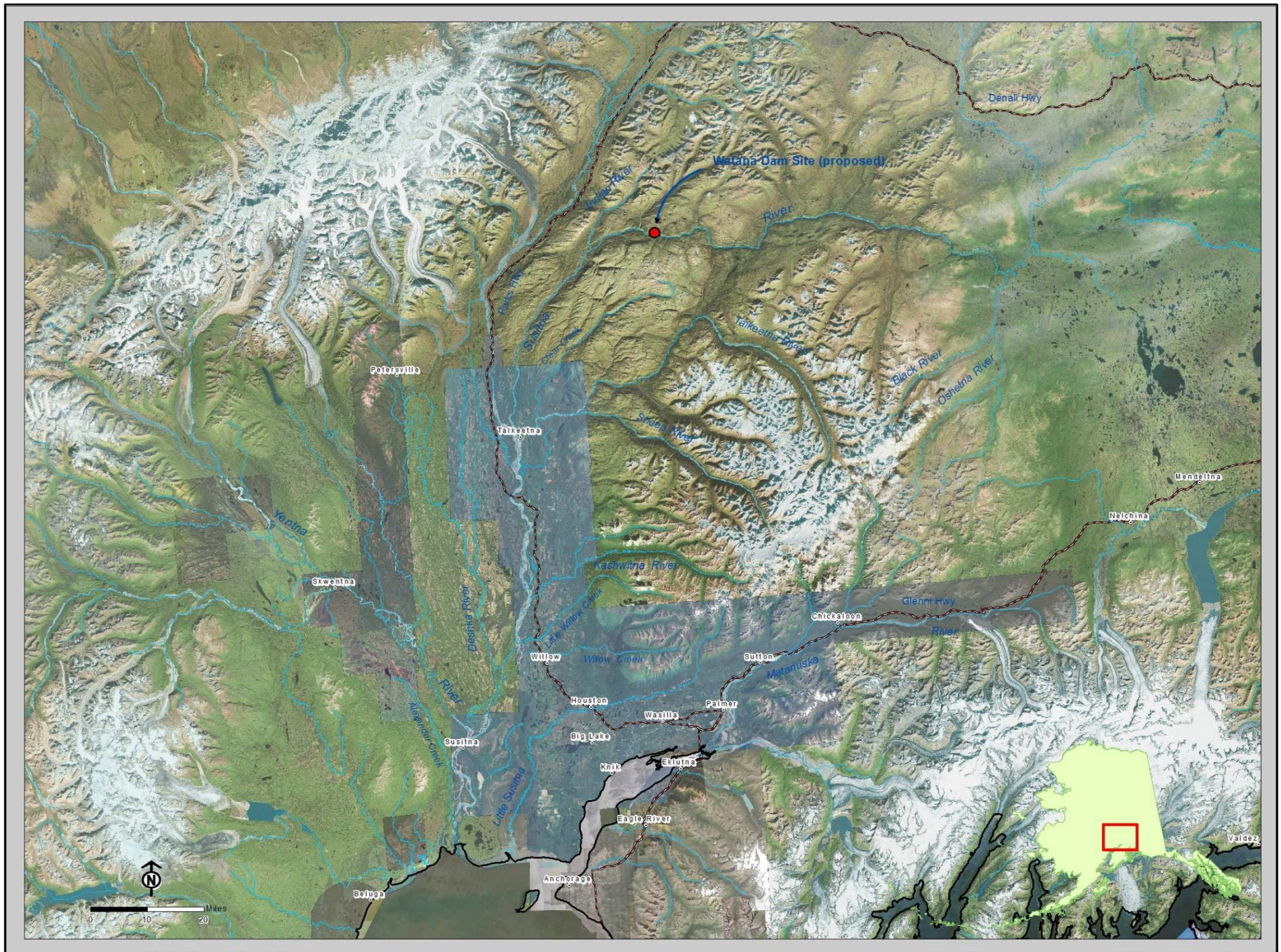
Ric Hauer, FLBS



Hydrologic controls on the recruitment of riparian plants and the maintenance of flood plain wildlife habitat

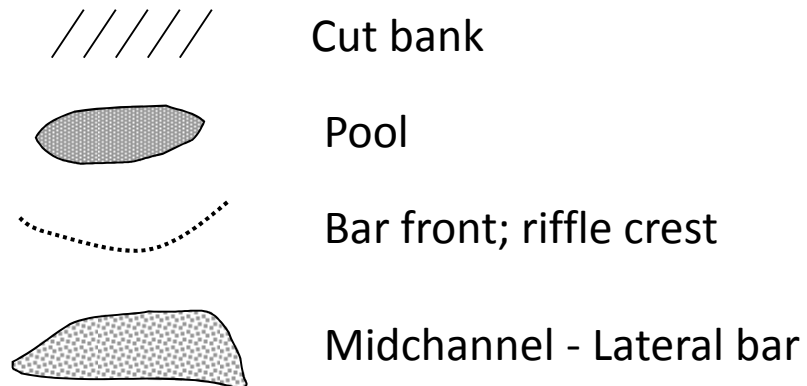
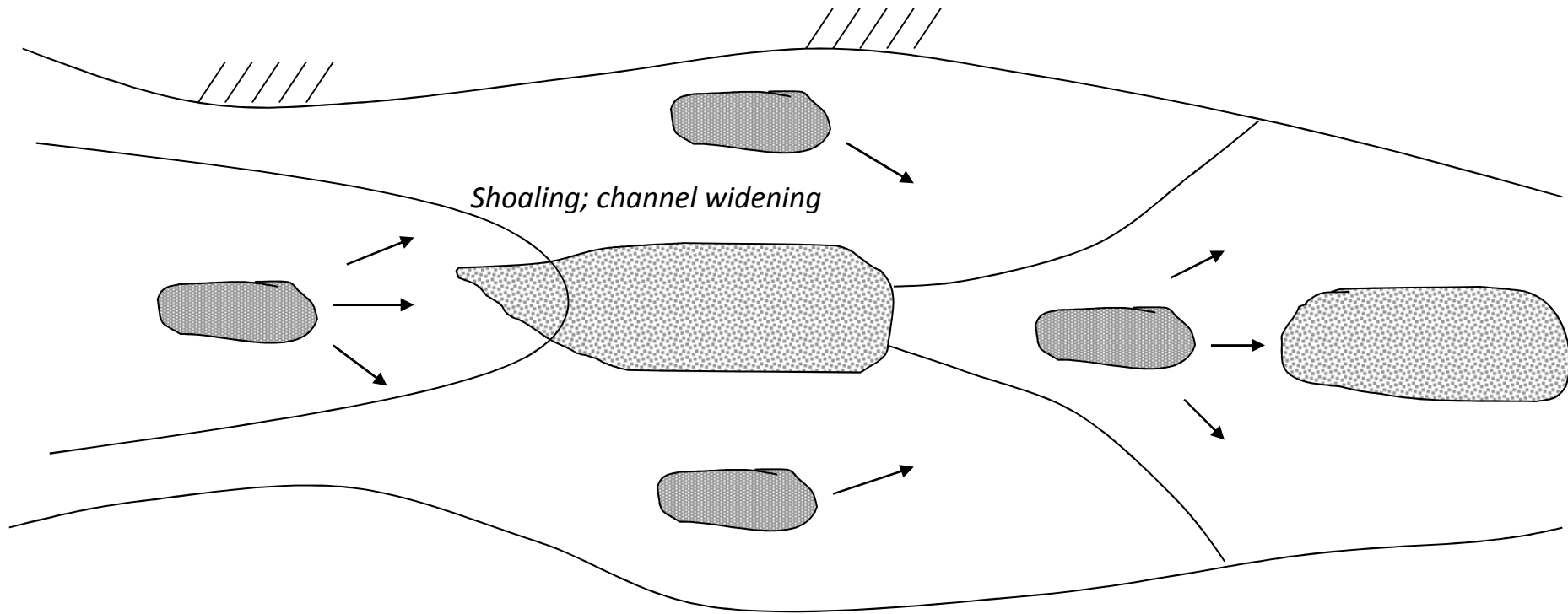
Why do rivers behave the way they do (*hydrologic processes*)?

- Why do rivers look the way they do (*fluvial processes*)?
- What is the biological importance (*life history processes*)?
- What are the management implications?





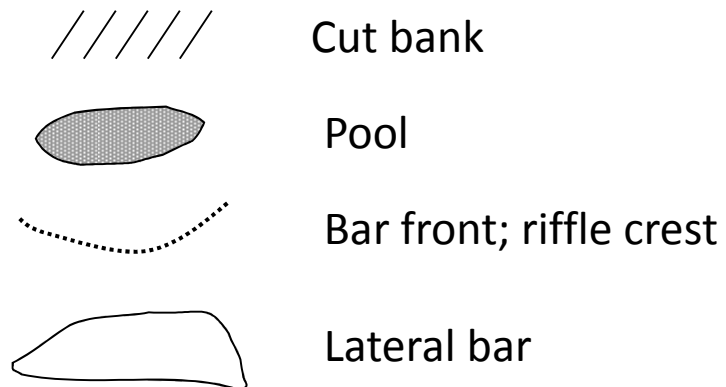
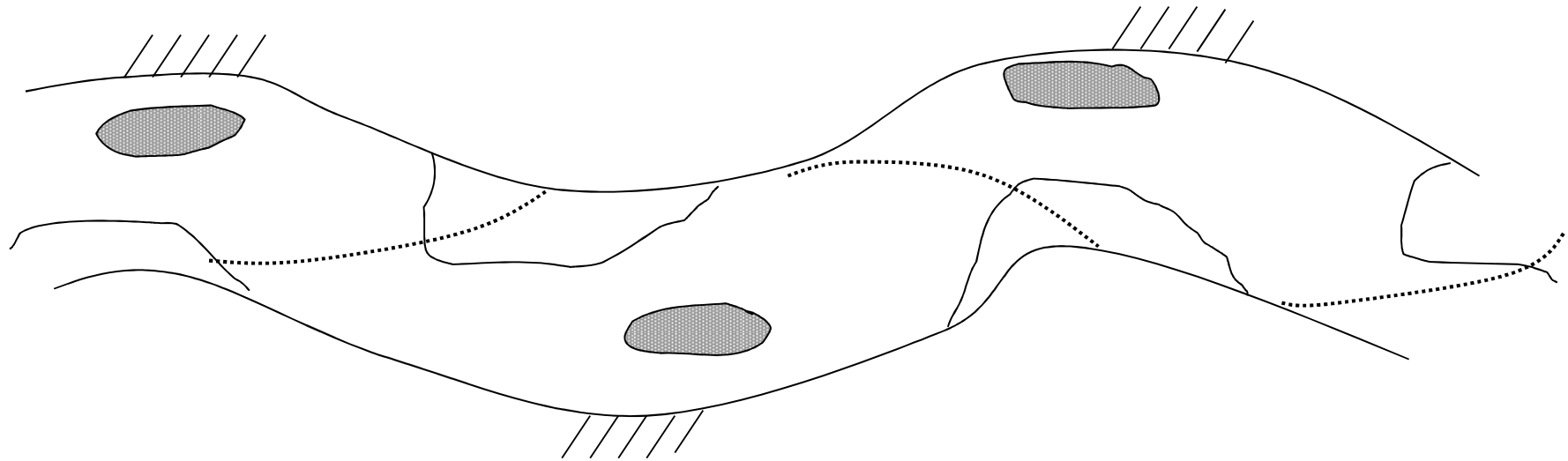
Braided



Common traits:

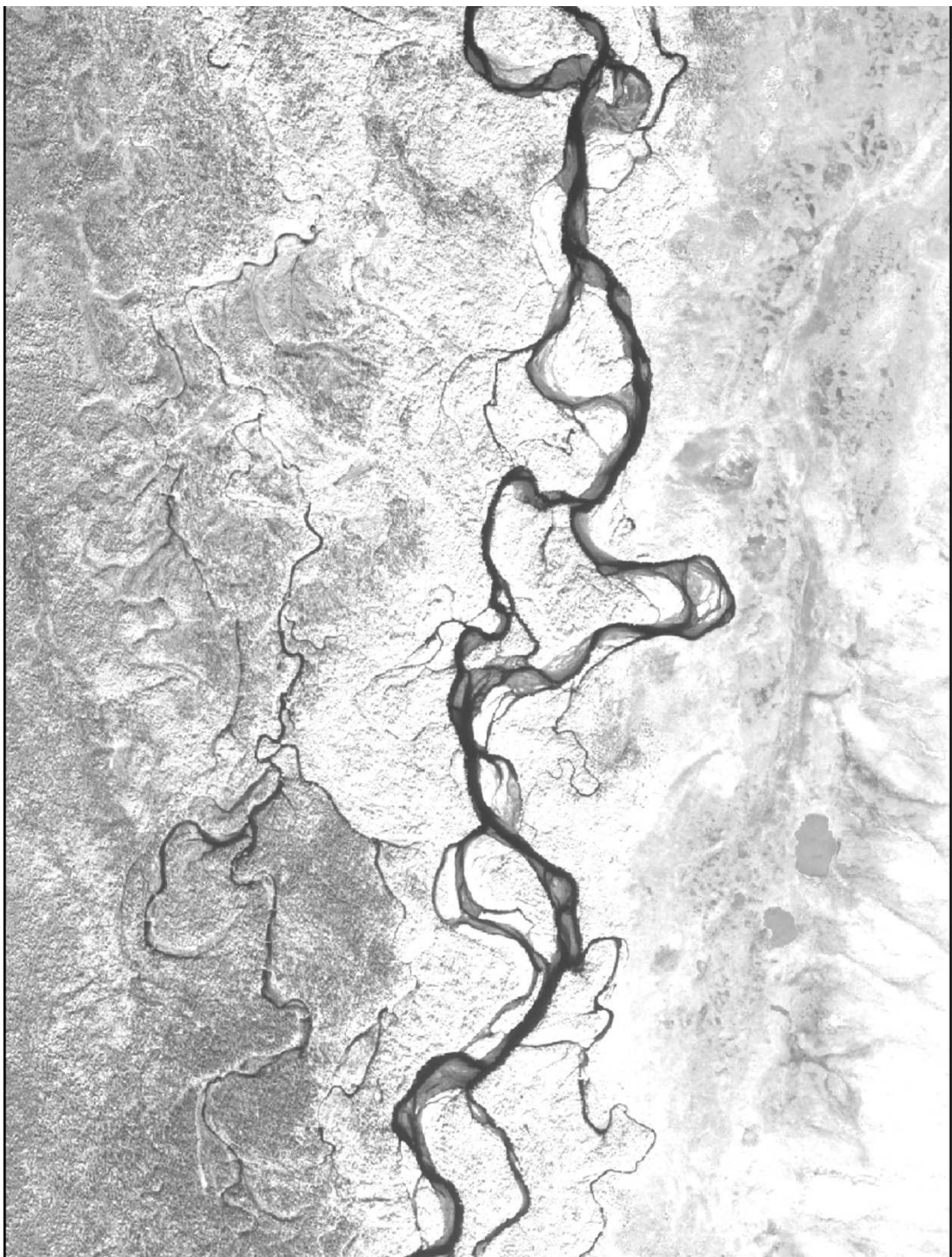
1. High gradient
2. High load
3. Erodible banks
4. Unstable bed

Meandering



Common Traits:

1. Erodible Banks
2. Low sediment load
3. Stable bed

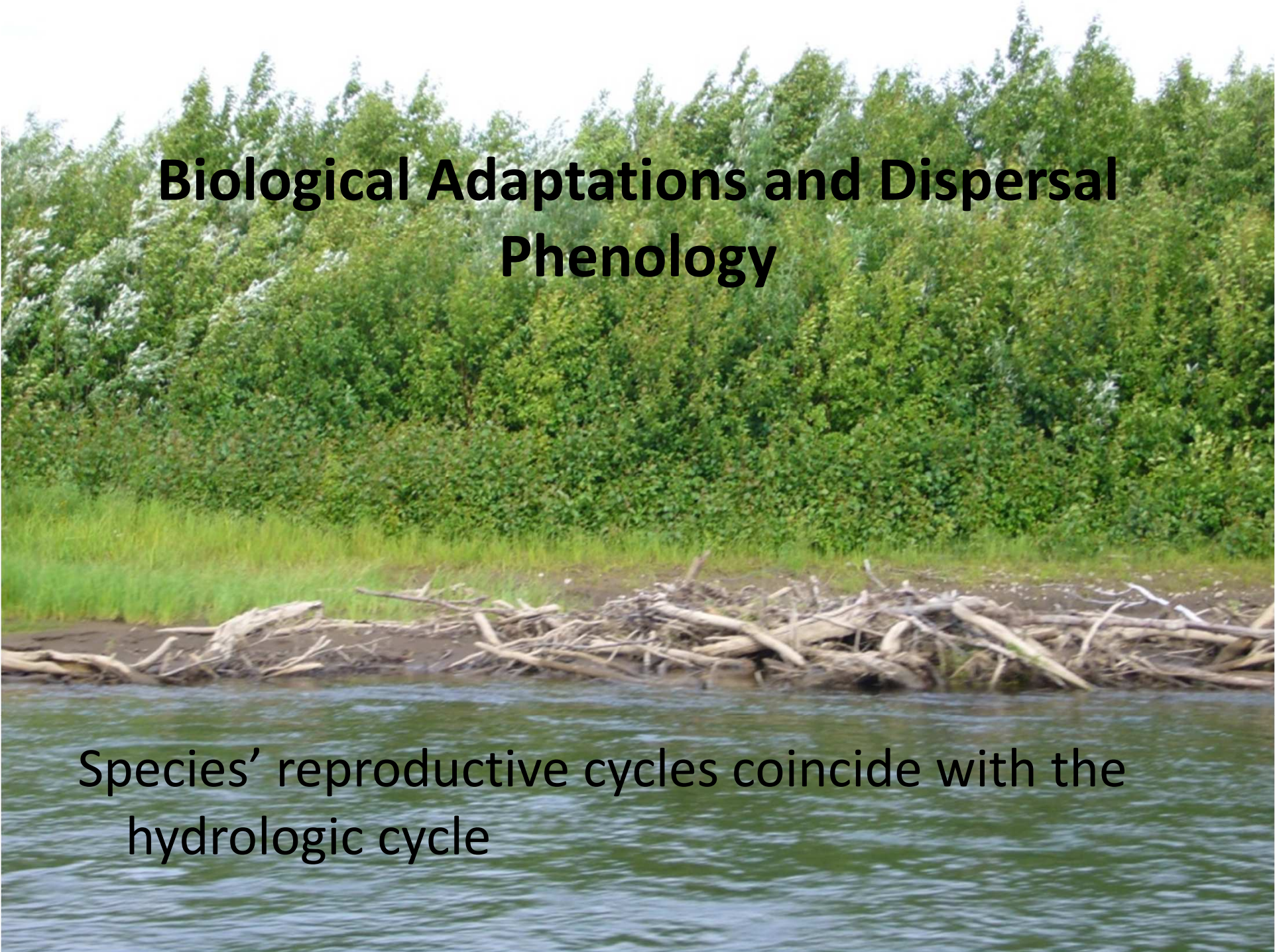










A photograph of a riverbank. In the foreground, there is a large pile of light-colored, weathered driftwood (logs and branches) resting on a dark, sandy or silty shore. Behind the driftwood is a dense, lush green forest of trees and shrubs. The water of the river is visible in the lower portion of the image, showing gentle ripples. The sky is not clearly visible, appearing as a bright, overcast area at the top.

Biological Adaptations and Dispersal Phenology

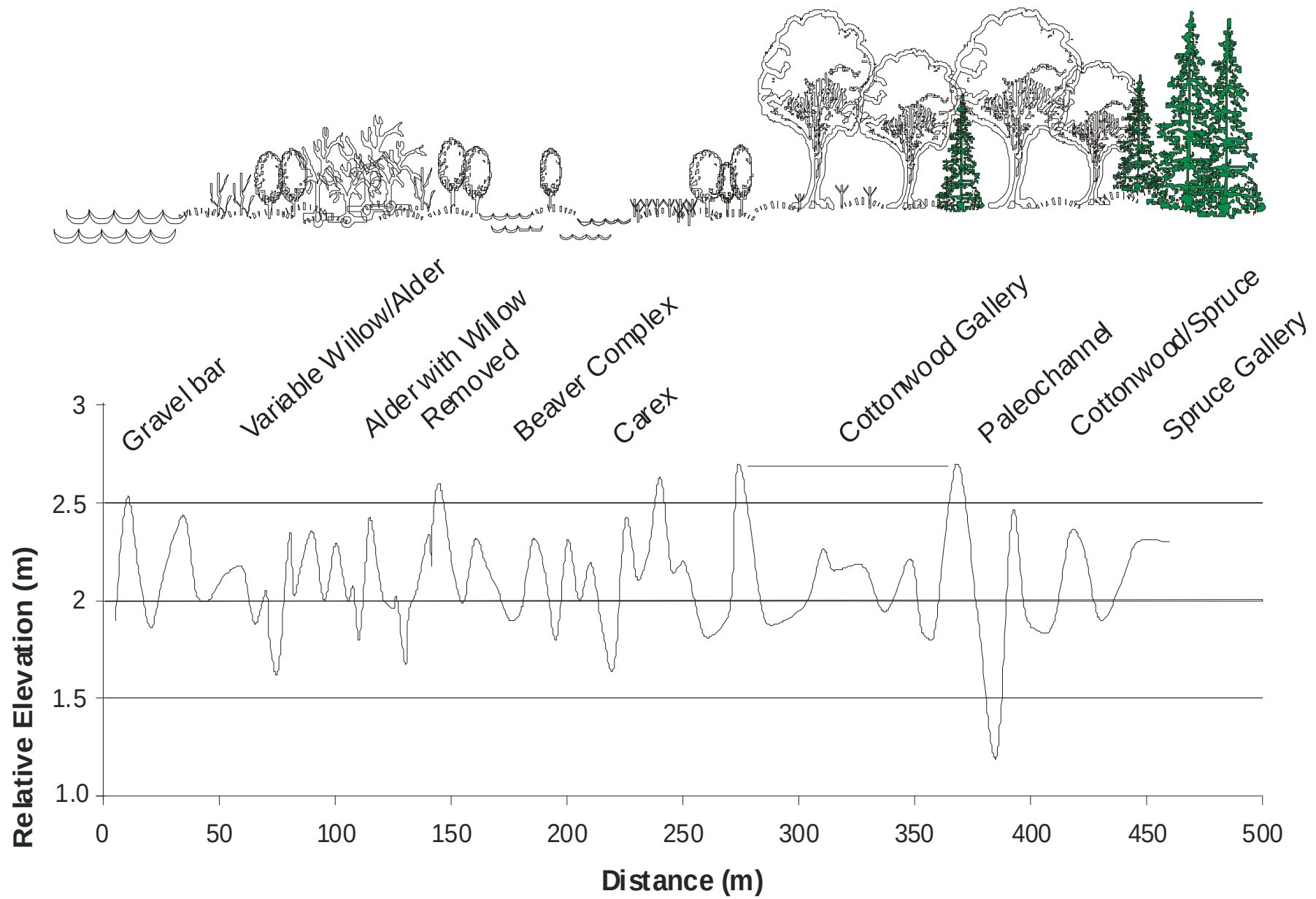
Species' reproductive cycles coincide with the hydrologic cycle

Biological Adaptations to Natural Flow Regimes

- Species composition tells us in what season a flood occurred.
- Ages of individuals within cohorts tell us how long ago a flood occurred.

57 Transects;
8 Rivers





Extent, Position Depends on Magnitude





A photograph of a shoreline. On the left, a body of water is visible. To its right is a dense patch of green plants, including tall grasses and a large, leafy shrub with serrated leaves. The text "Composition Depends Timing" is overlaid on the lower-left portion of the image.

**Composition Depends
Timing**

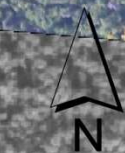




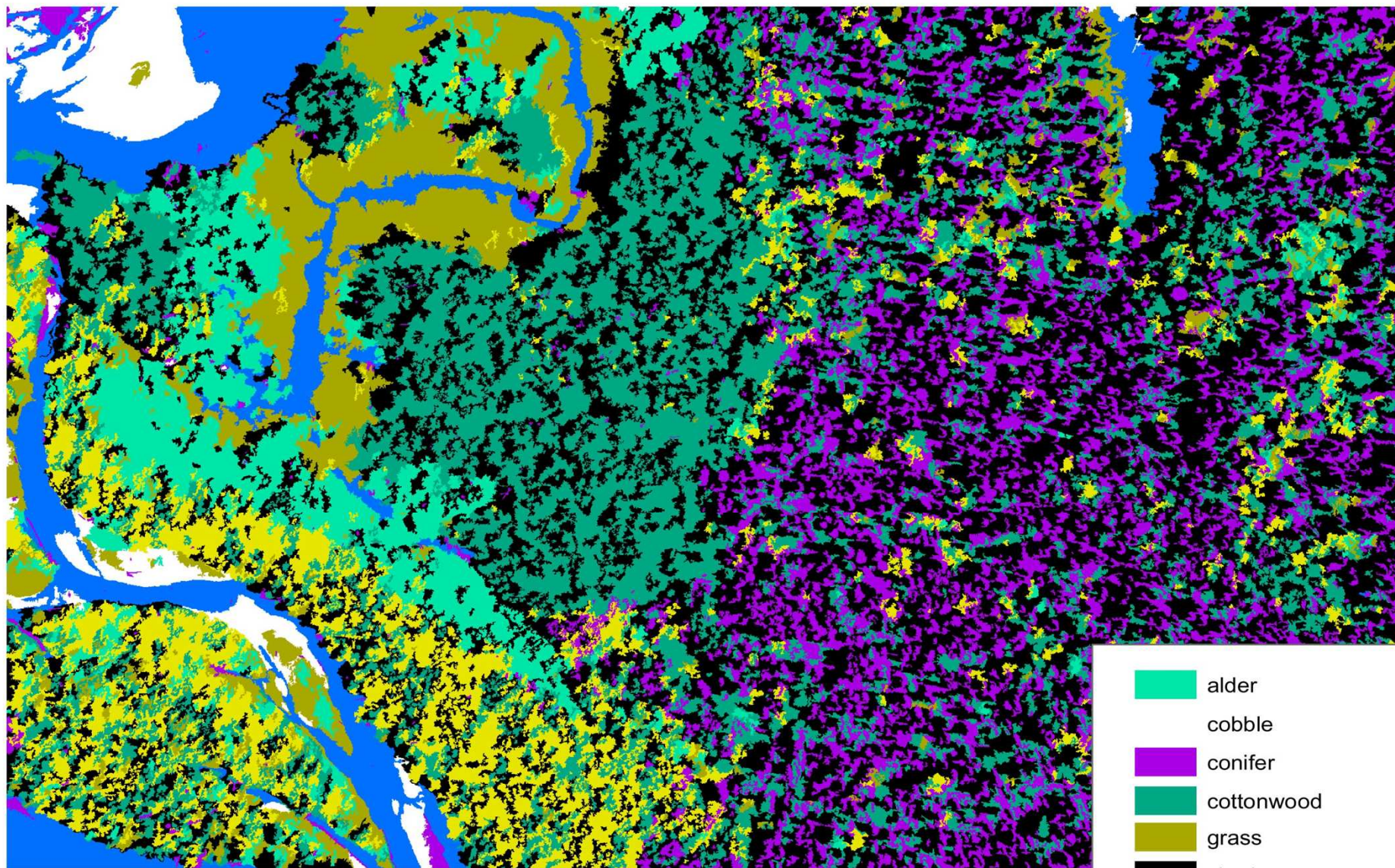








0 50 100 200
Meters



- alder
- cobble
- conifer
- cottonwood
- grass
- shadow
- water
- willow



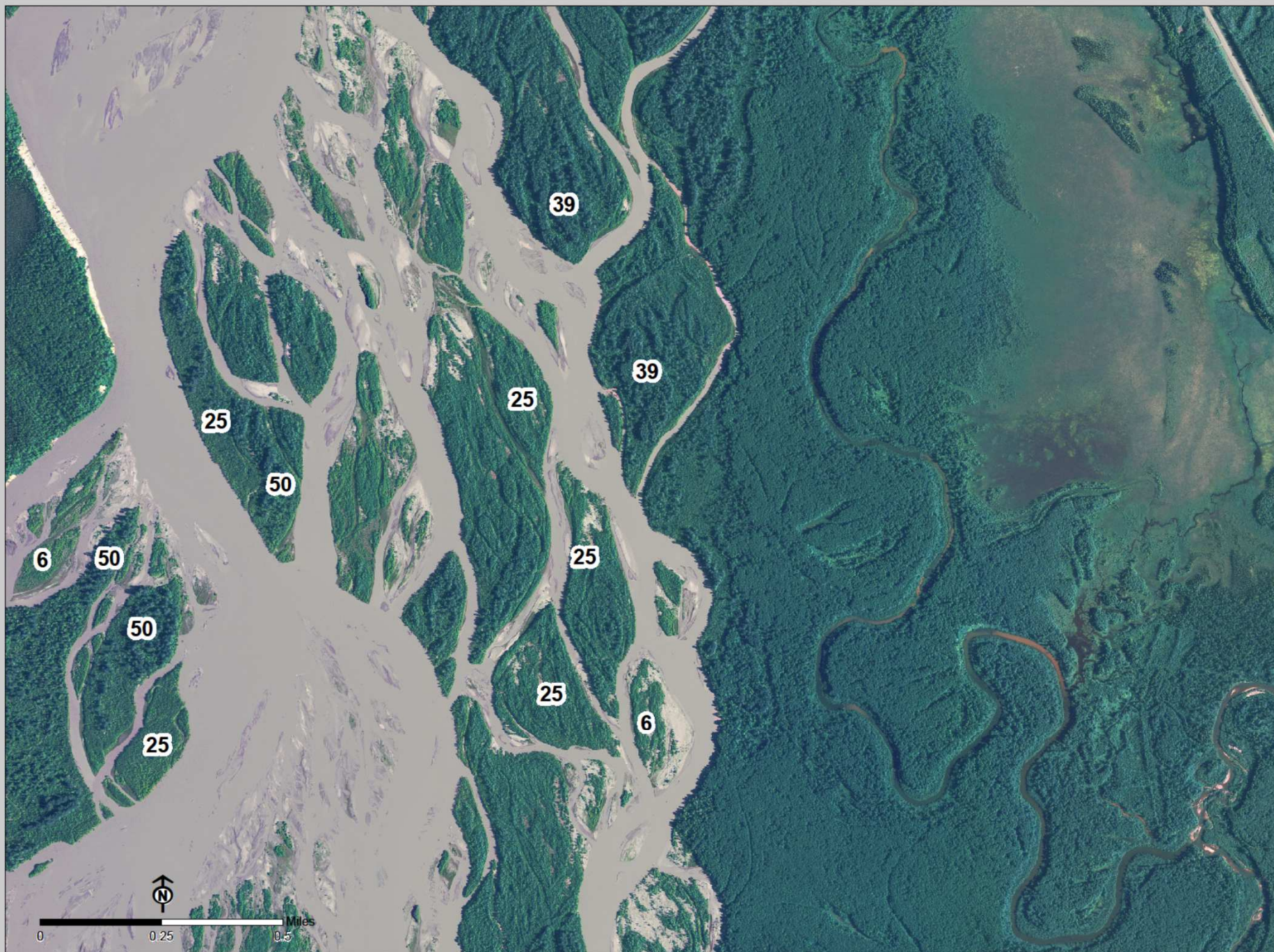
185yrs

120yrs

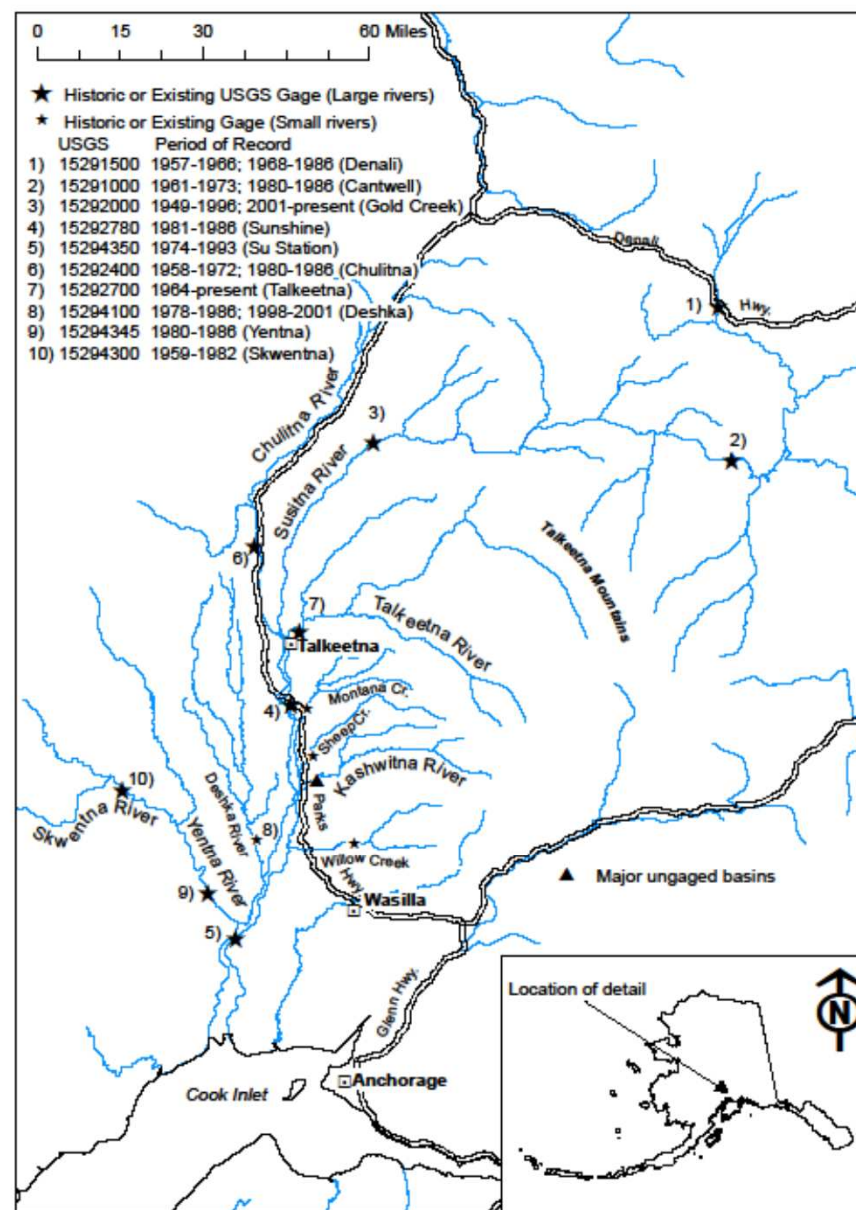
37yrs

5yrs

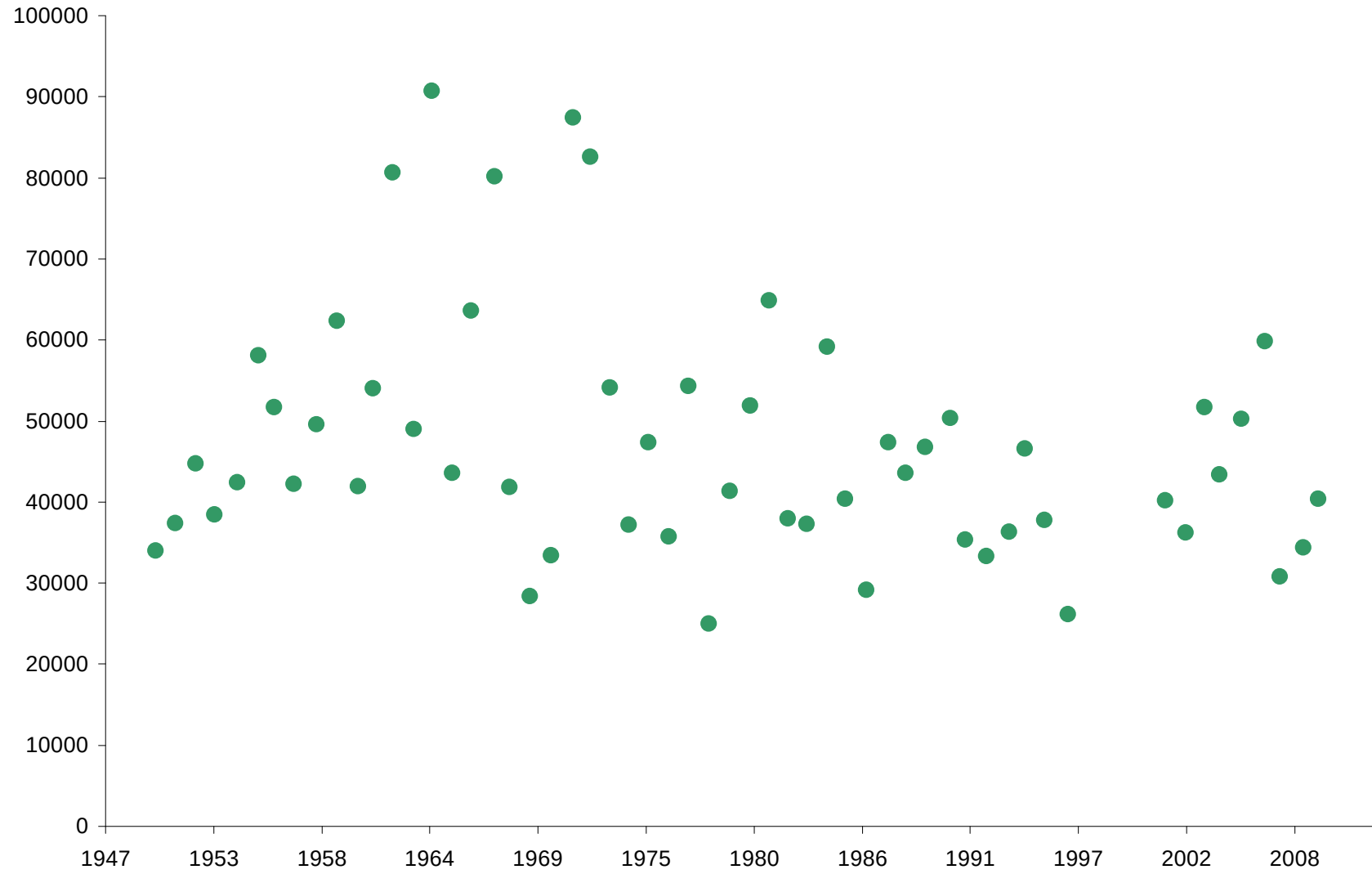
25yrs



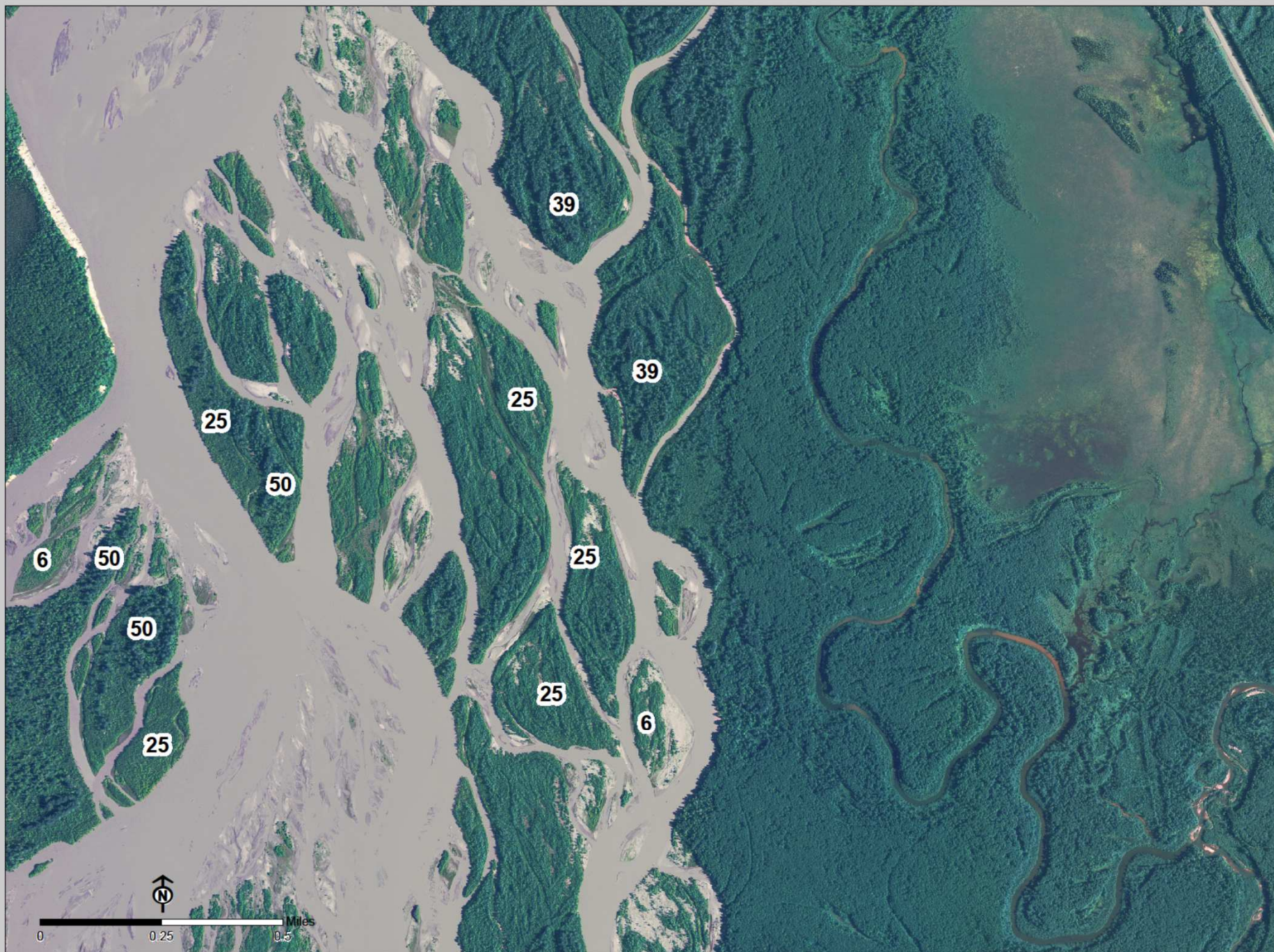


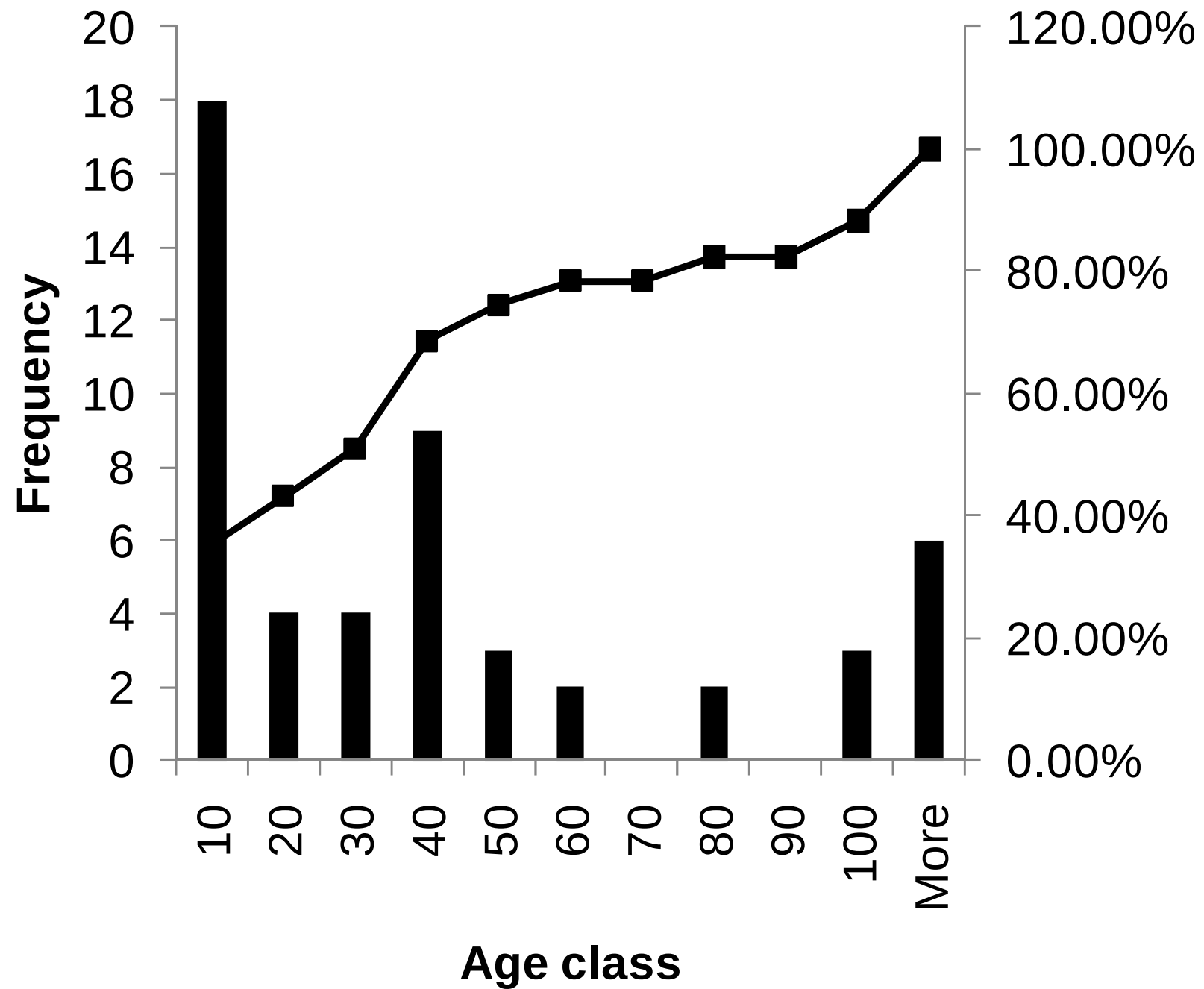


Susitna Flood Series (15292000)

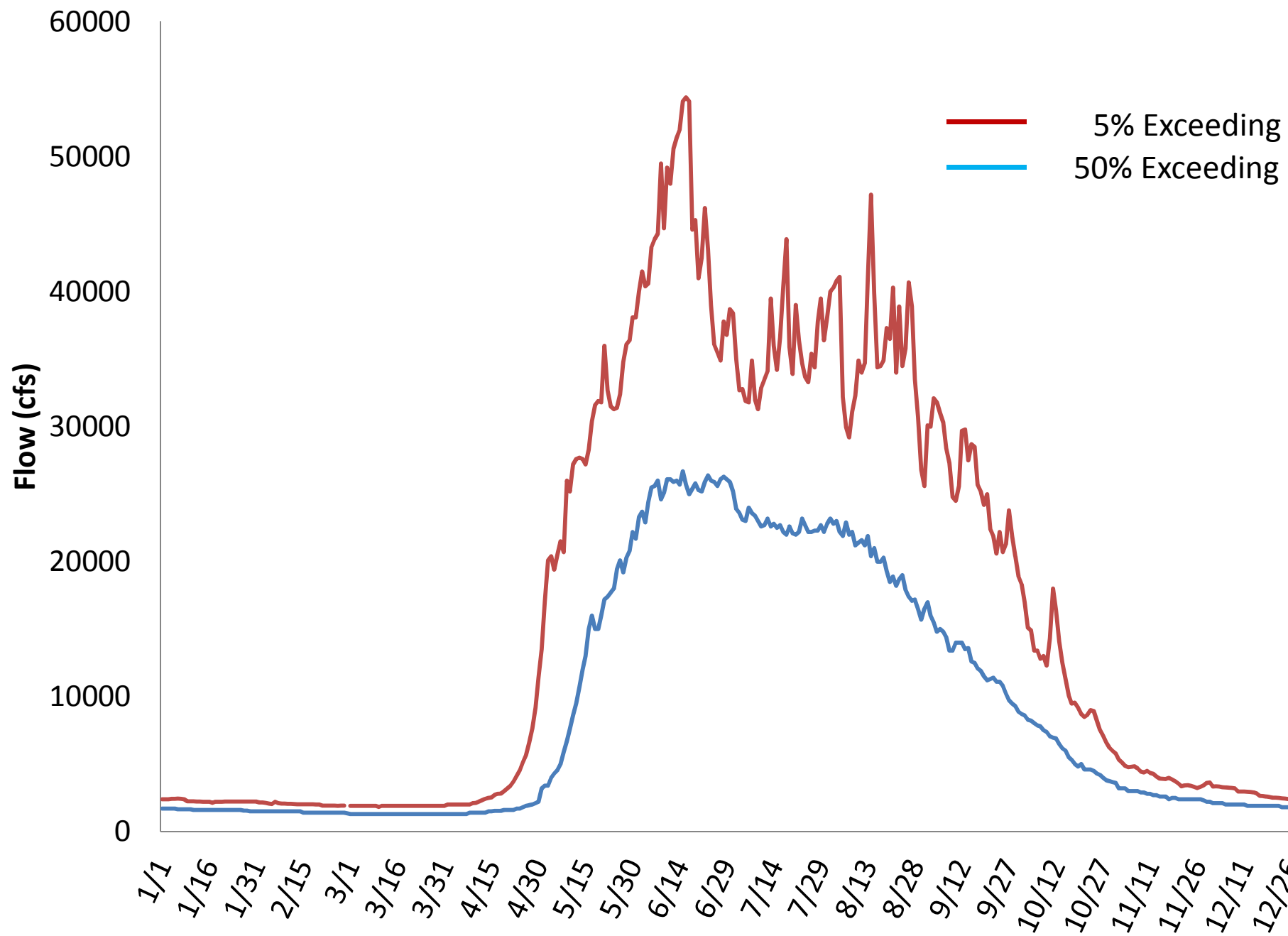


8/26/1955	58100	
6/9/1956	51700	
8/25/1959	62300	
6/23/1961	54000	Cottonwood
6/15/1962	80600	Cottonwood
6/7/1964	90700	
6/6/1966	63600	
8/15/1967	80200	
8/10/1971	87400	
6/17/1972	82600	Cottonwood
6/16/1973	54100	
6/15/1977	54300	
7/29/1980	51900	
7/12/1981	64900	
6/17/1984	59100	Cottonwood
9/15/1990	50300	Alder
7/28/2003	51700	
6/19/2005	50200	Cottonwood
8/20/2006	59800	Alder

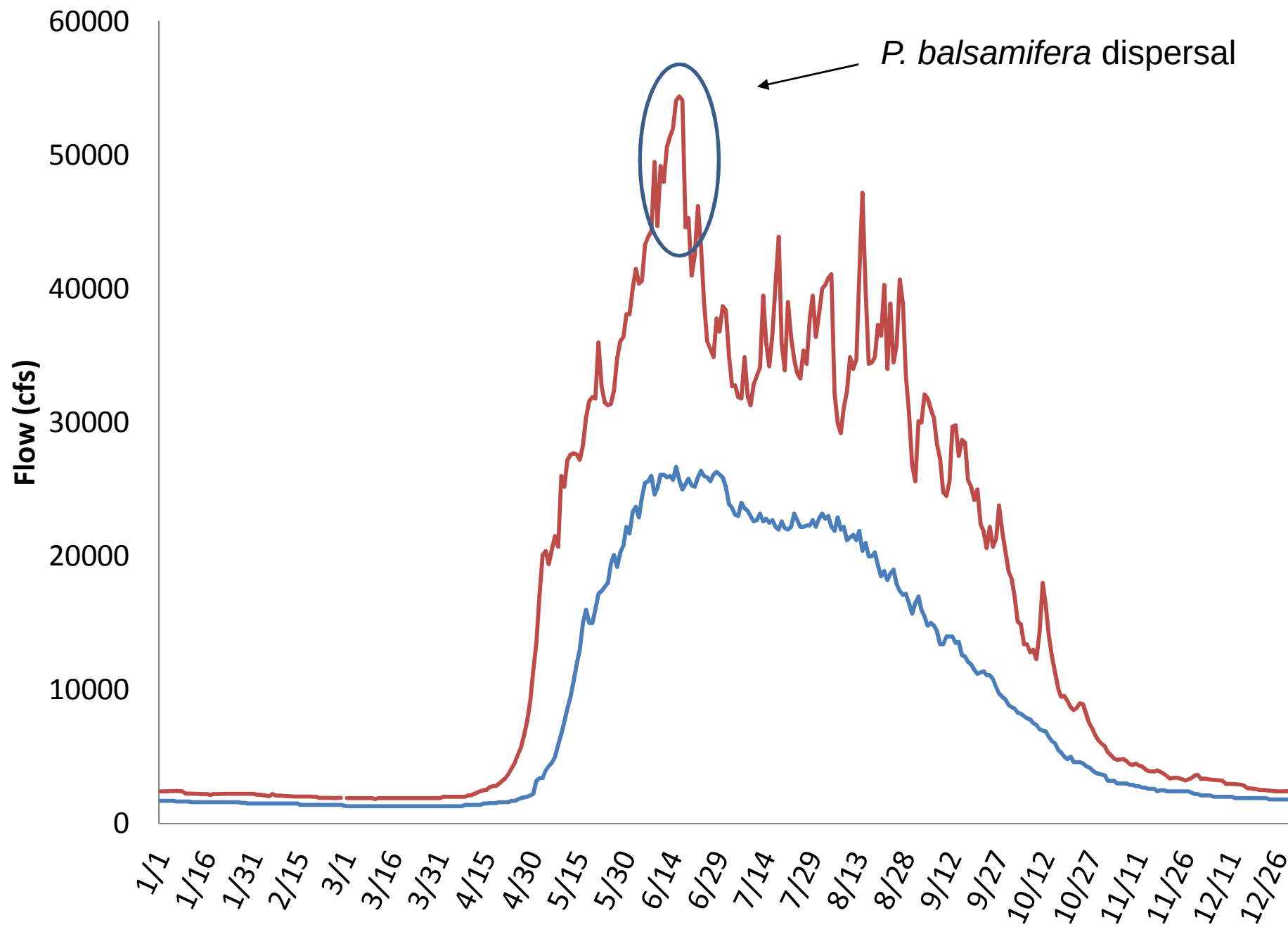




Sustina River at Gold Cr.



Sustina River at Gold Cr.



Questions?

