

# Resilience of Susquehanna Flats SAV bed to flood events

Cassie Gurbisz, W. Michael Kemp, and  
Larry Sanford

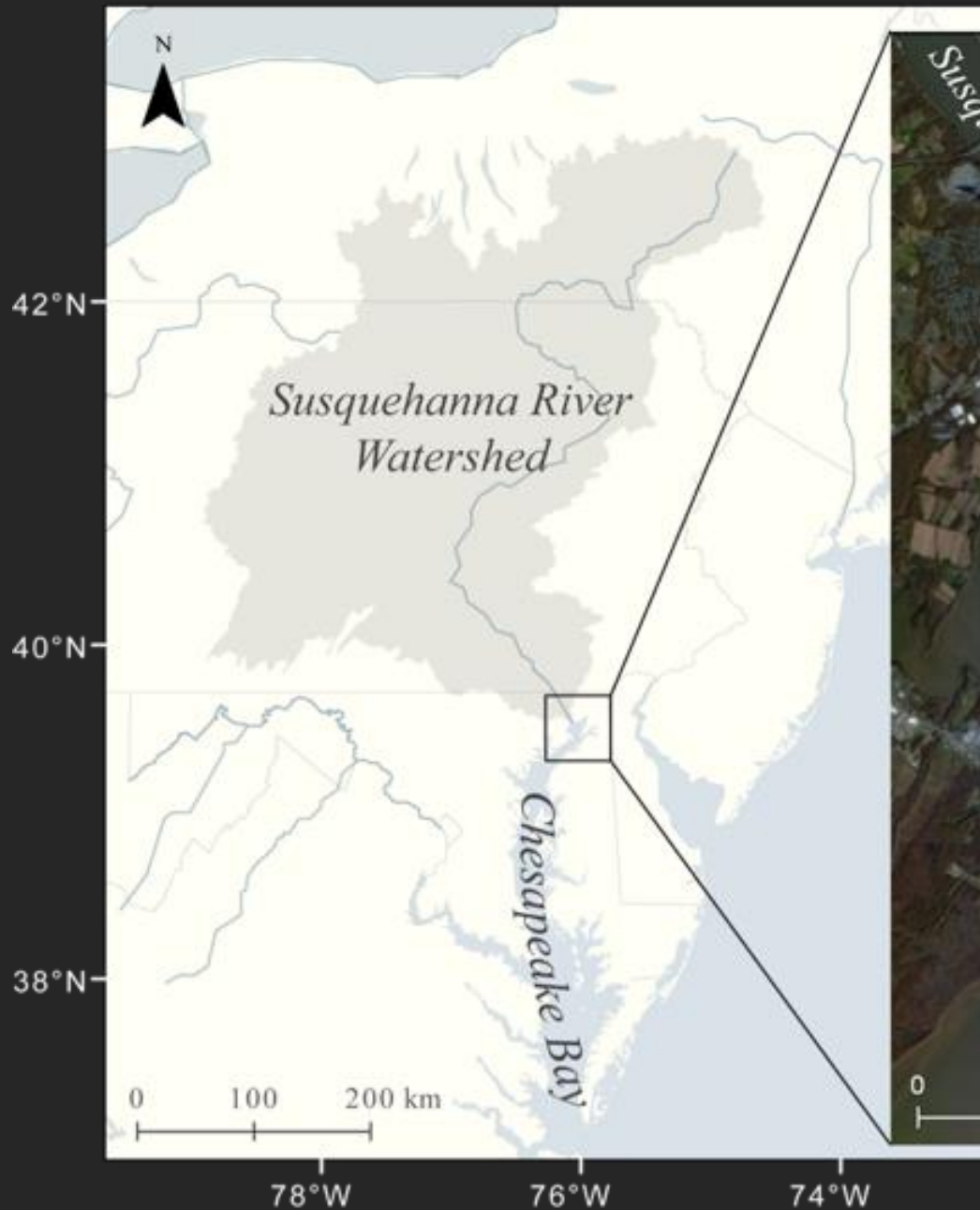
University of Maryland Center for Environmental Science  
Horn Point Laboratory

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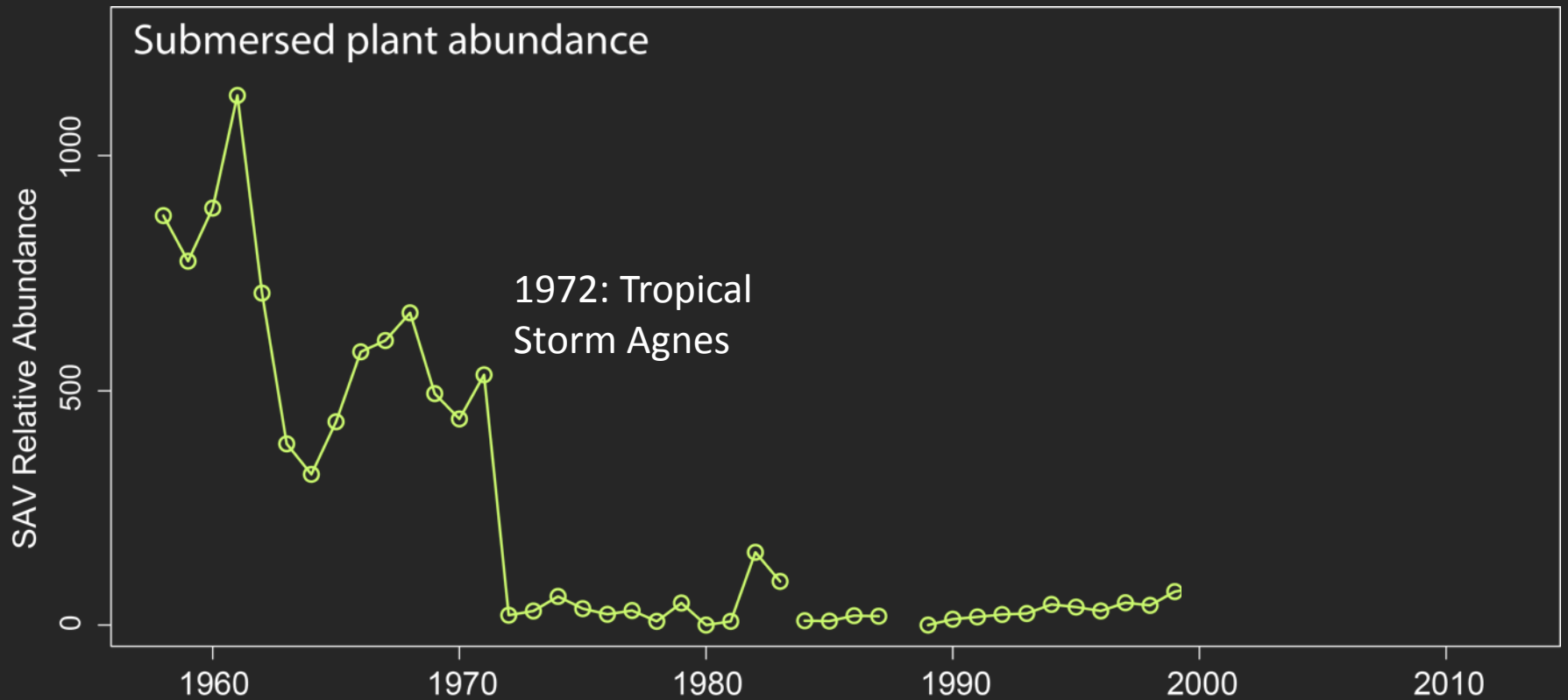
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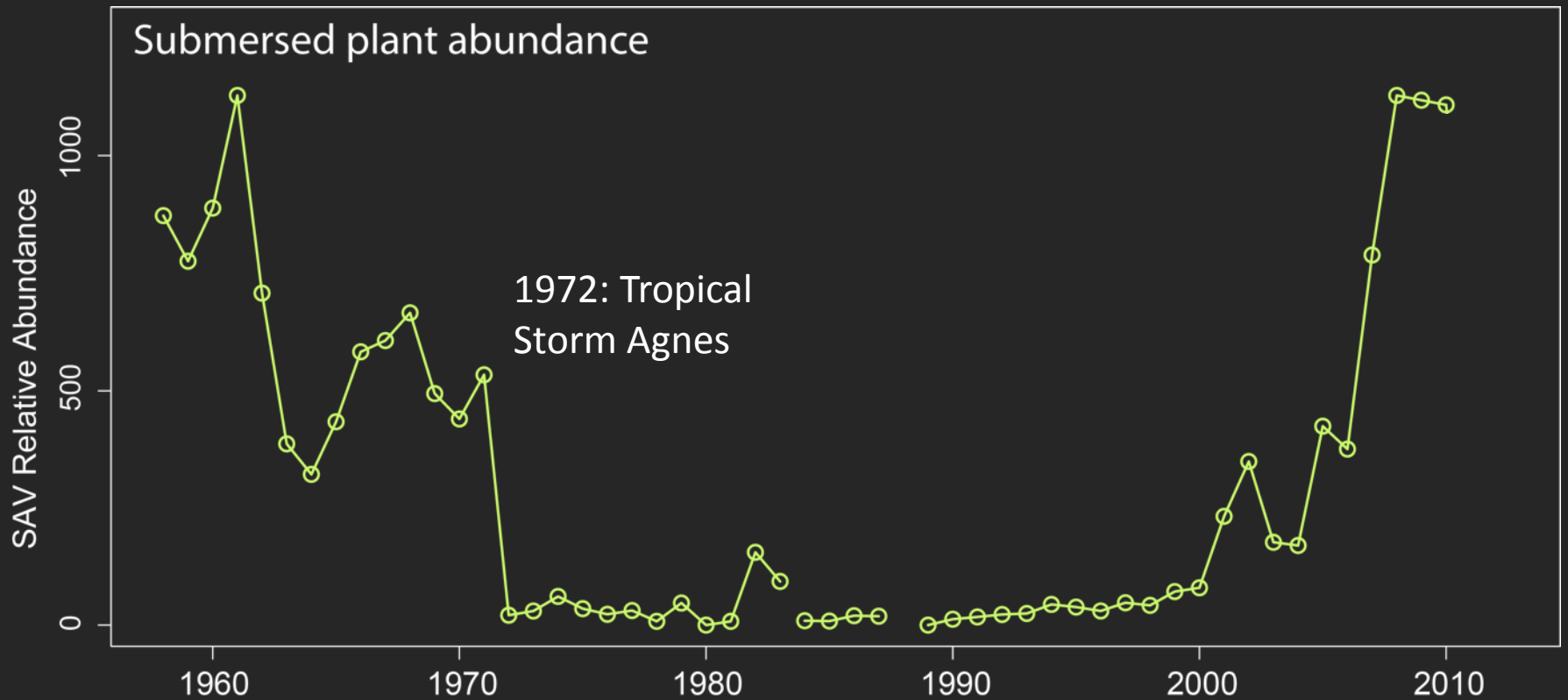




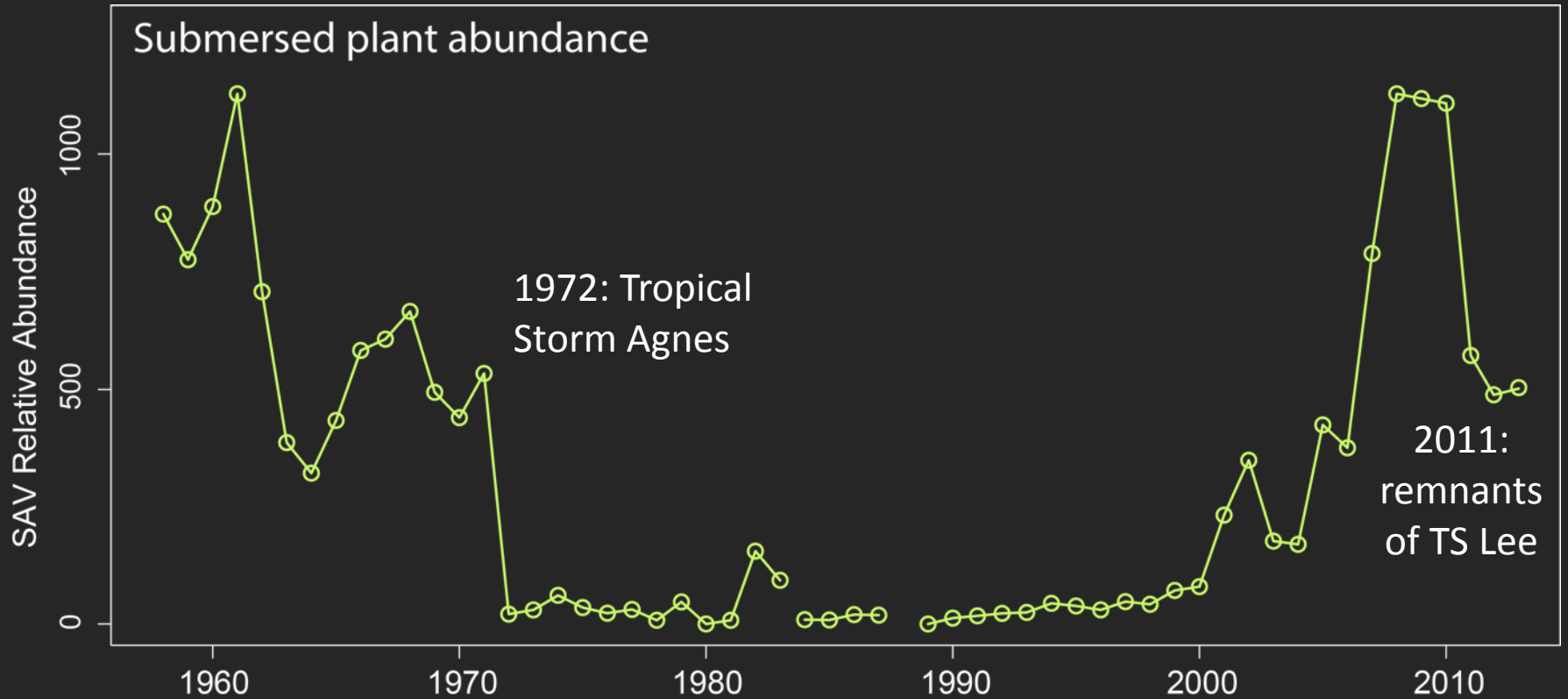
# The SAV bed suddenly recovered in early 2000's



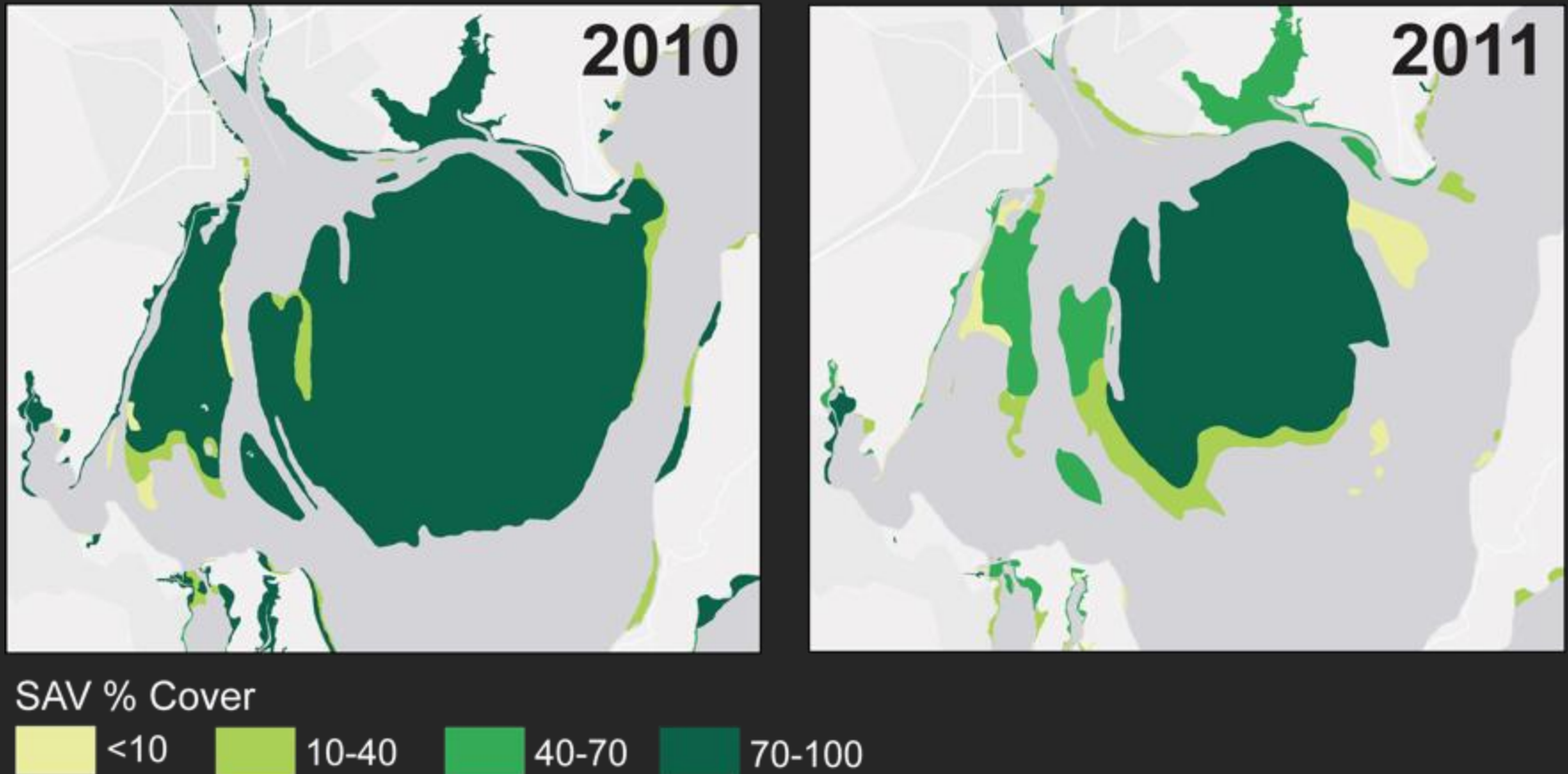
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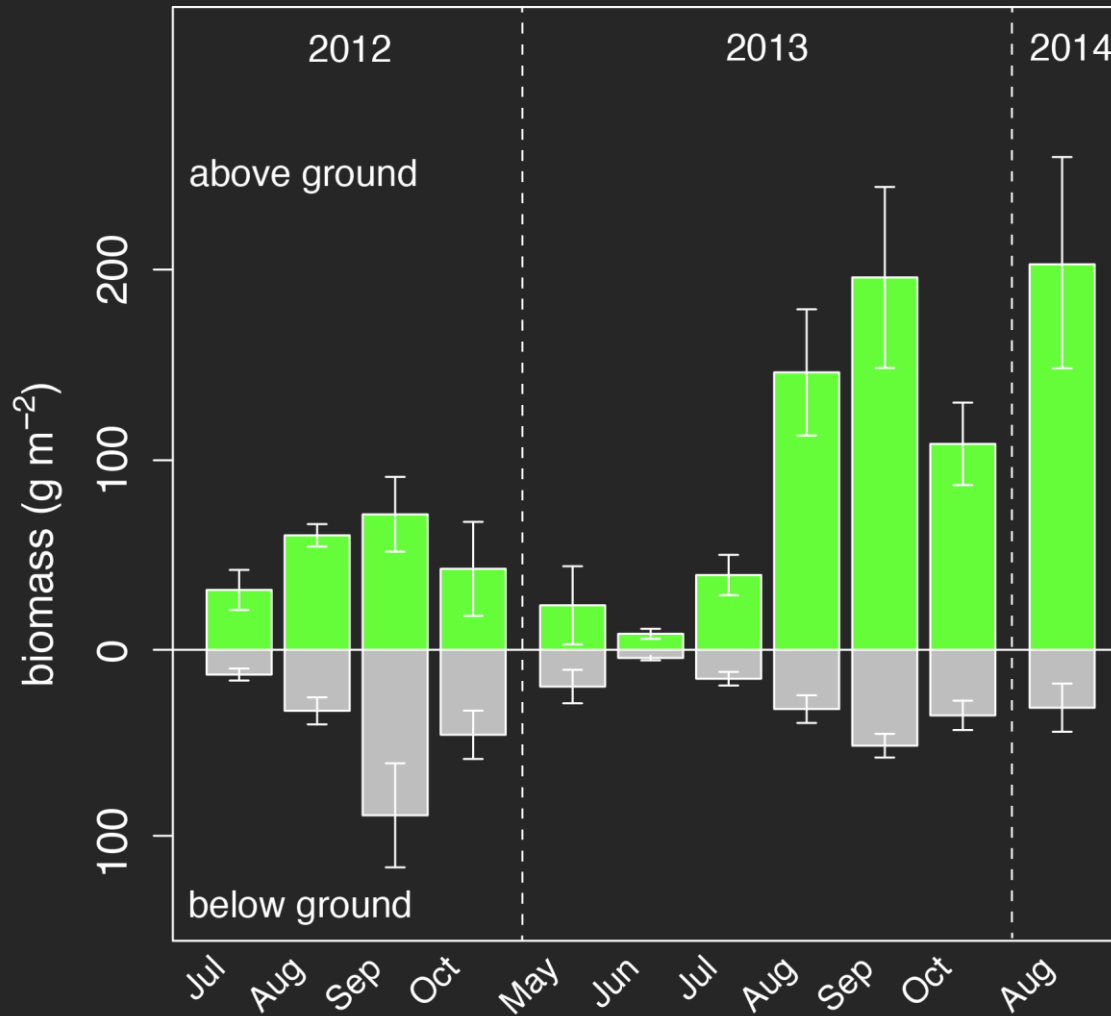
# The bed declined by half in 2011



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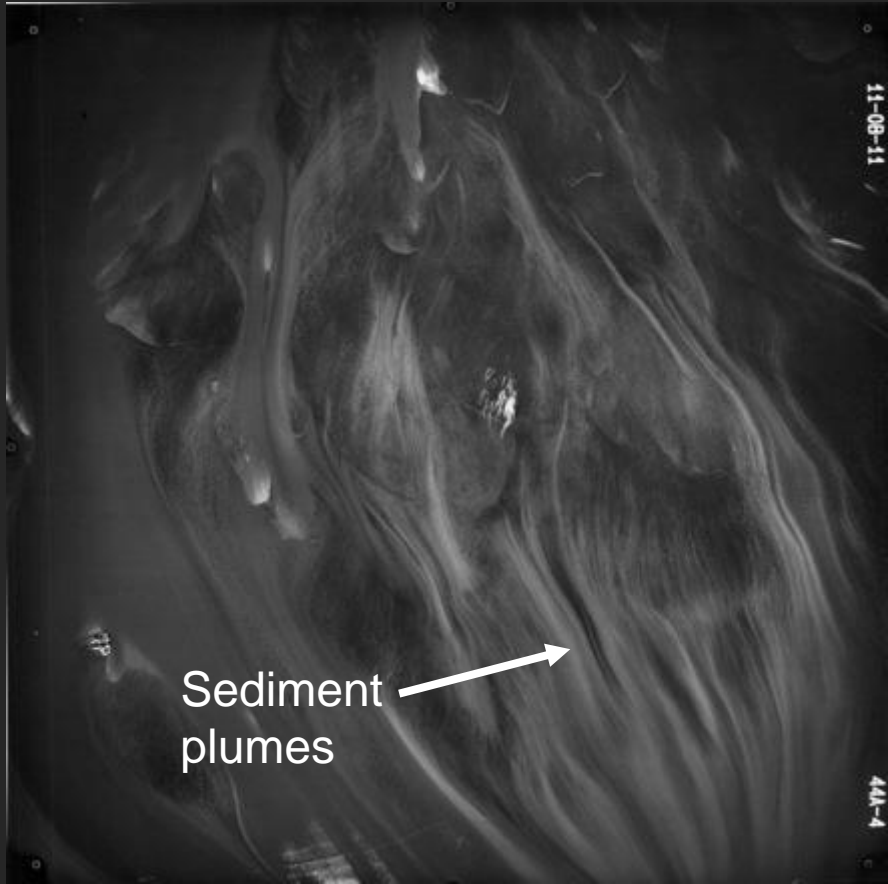


# Plant production was lower in 2012

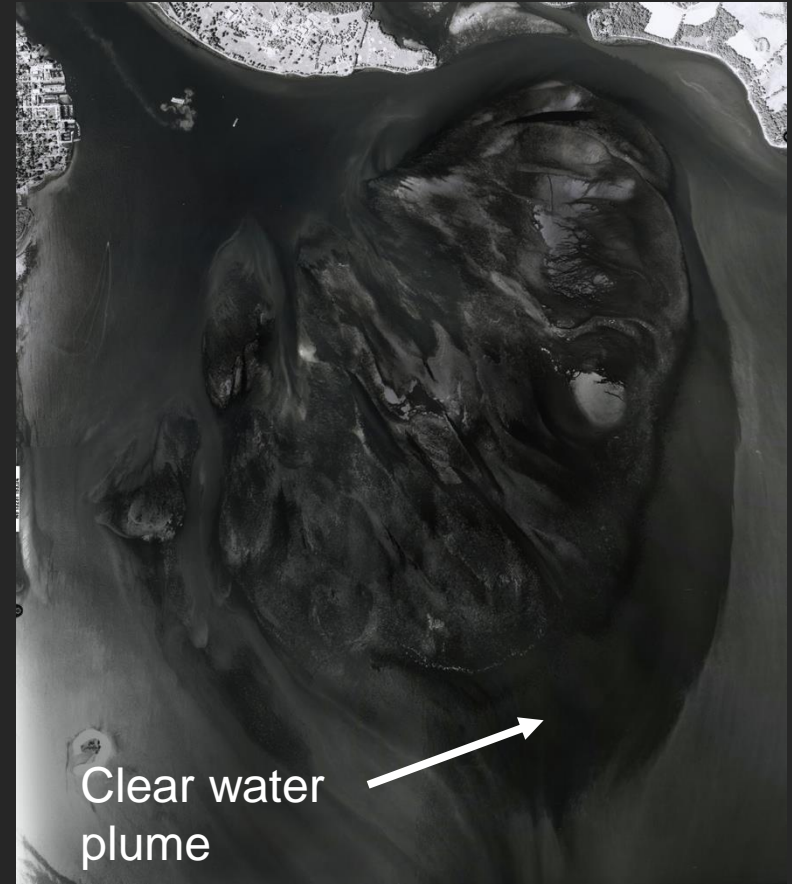




November 2011



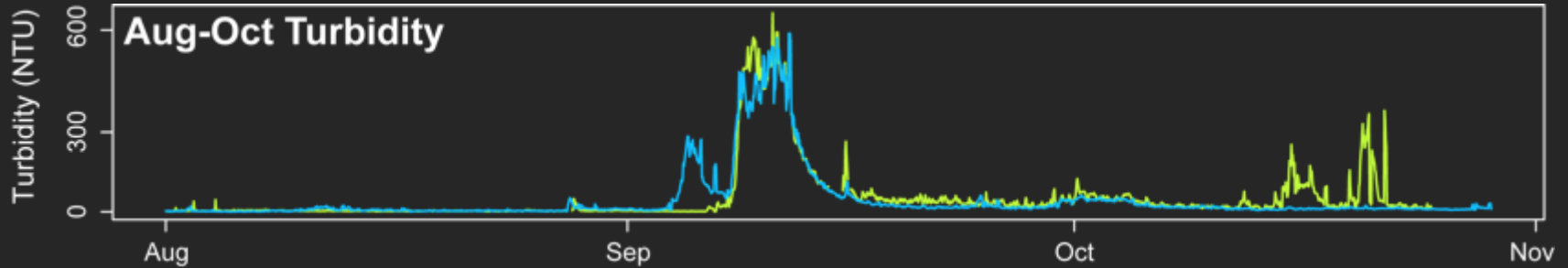
August 2013



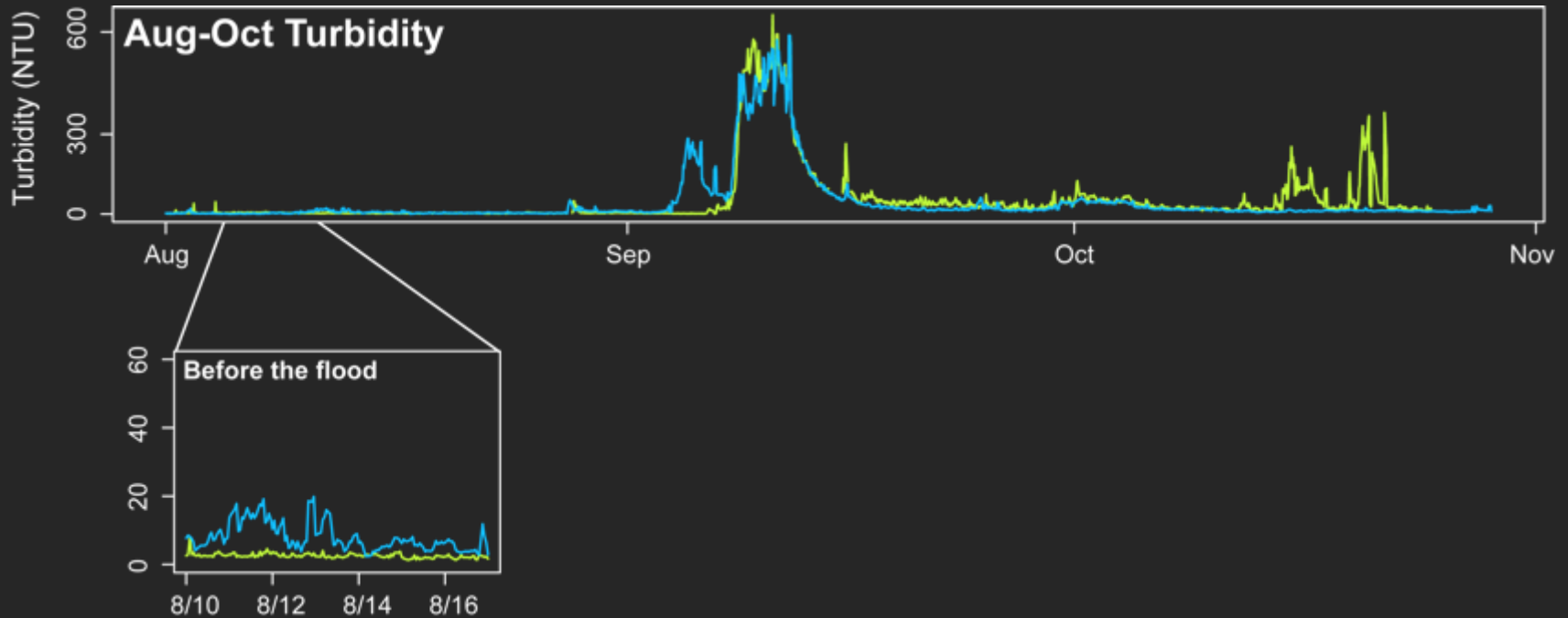
# Inside the bed turbidity increased after the flood event



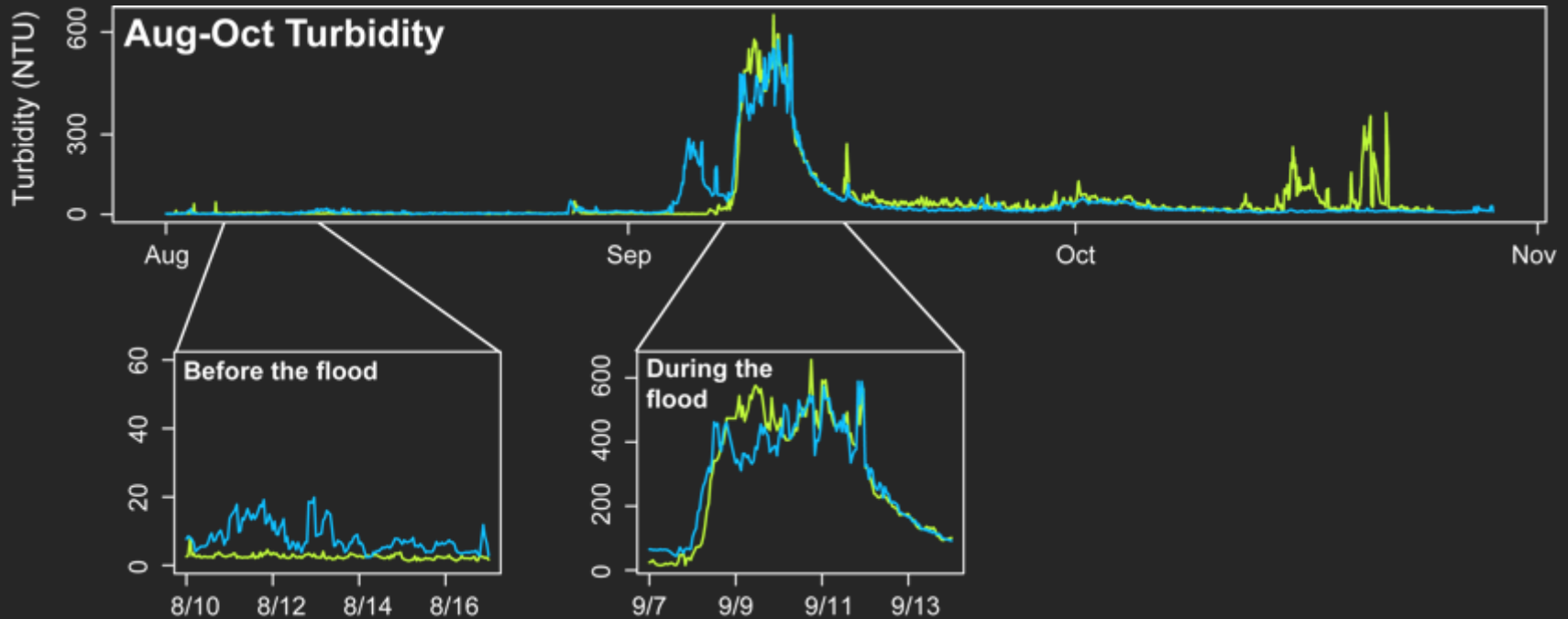
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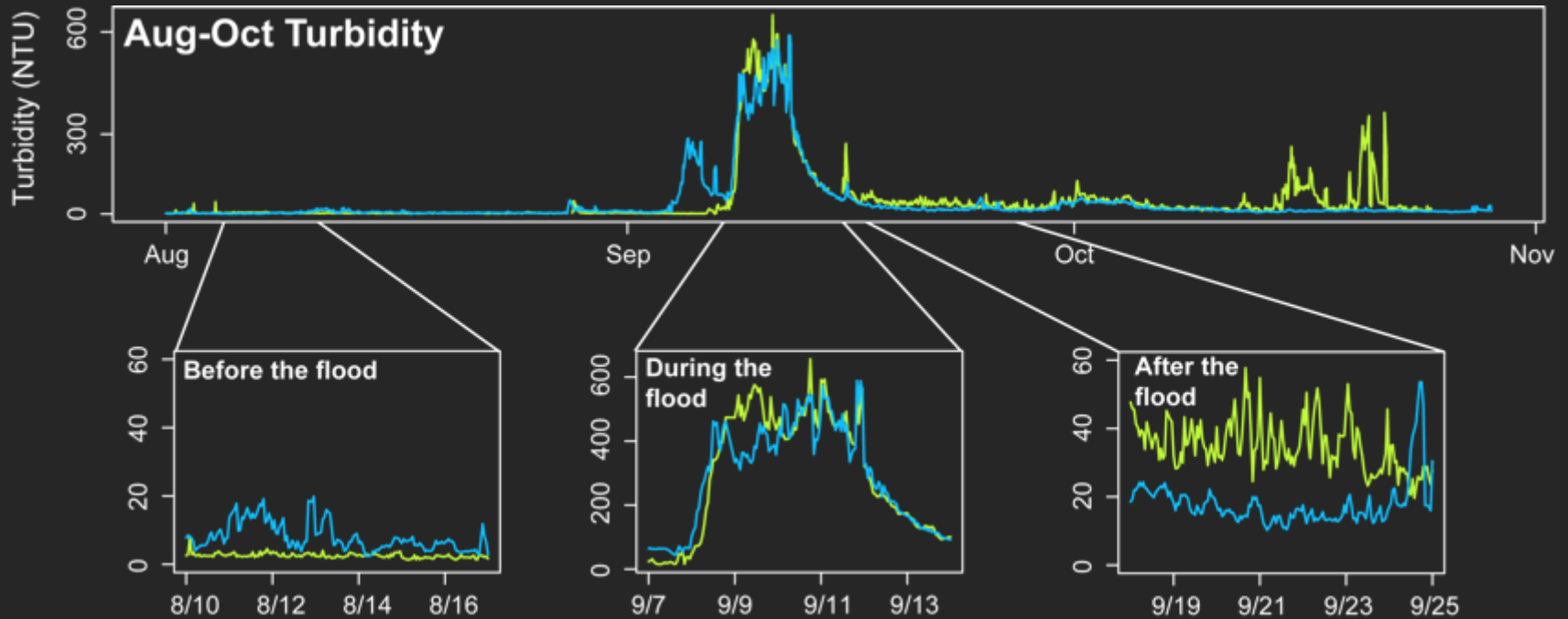
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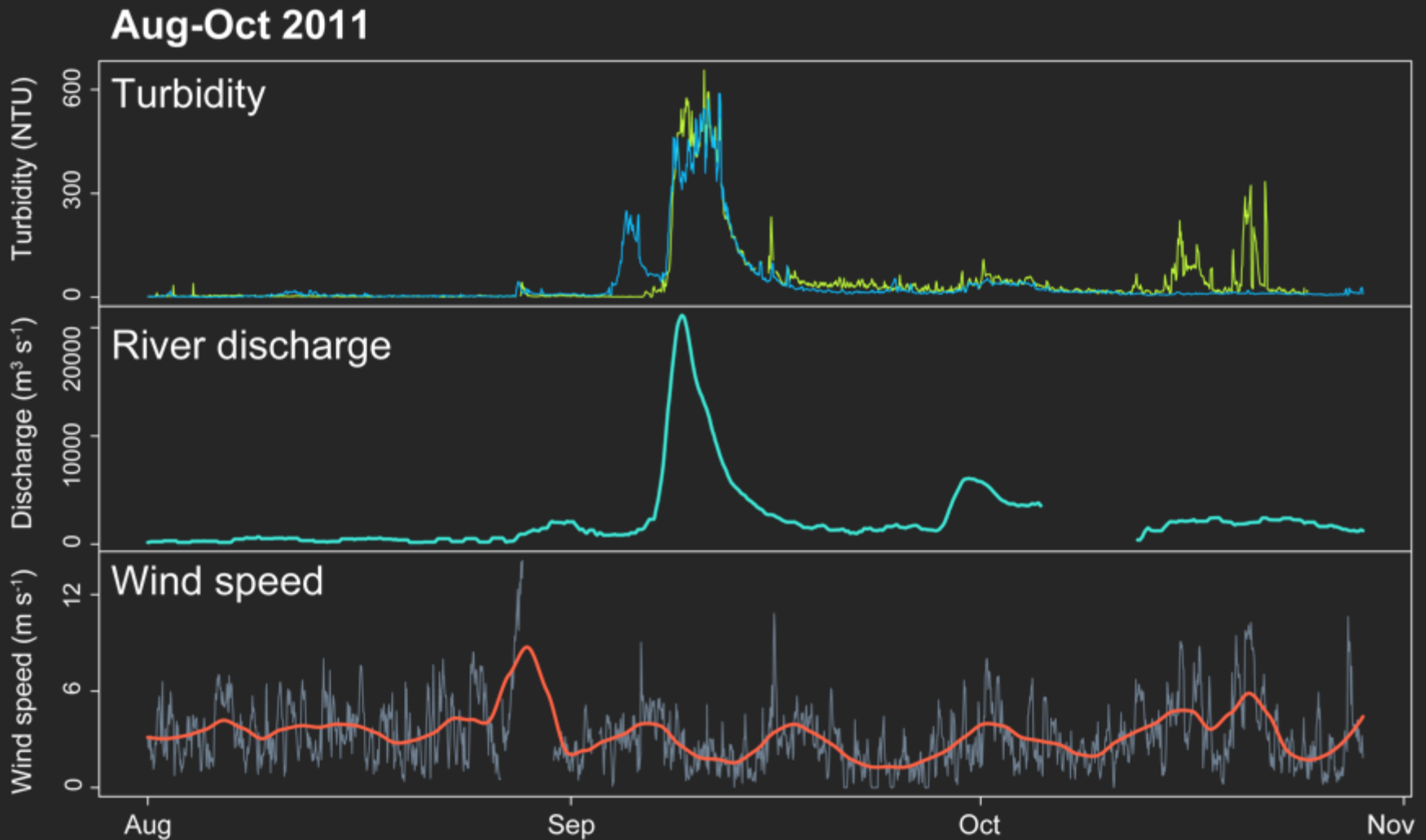
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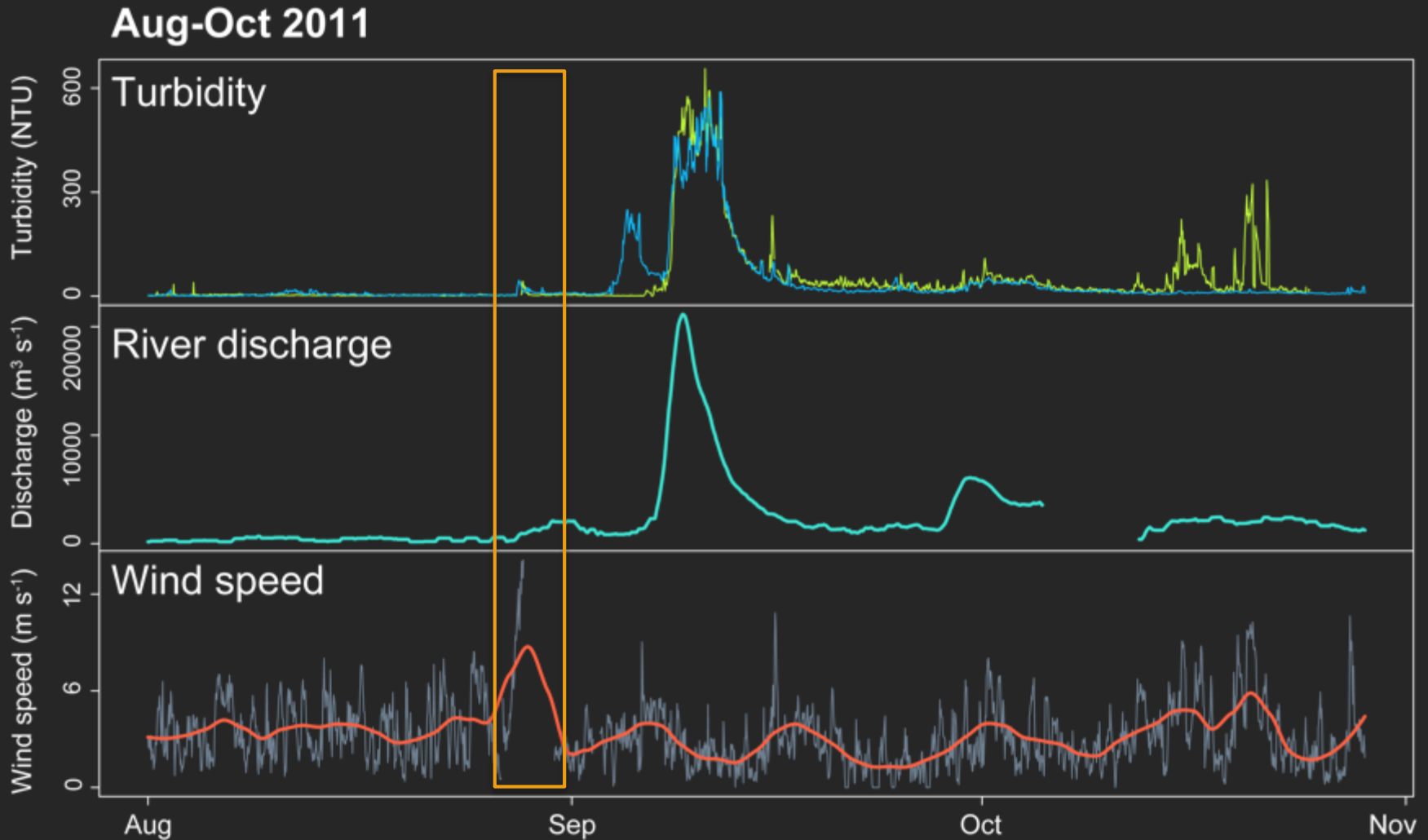
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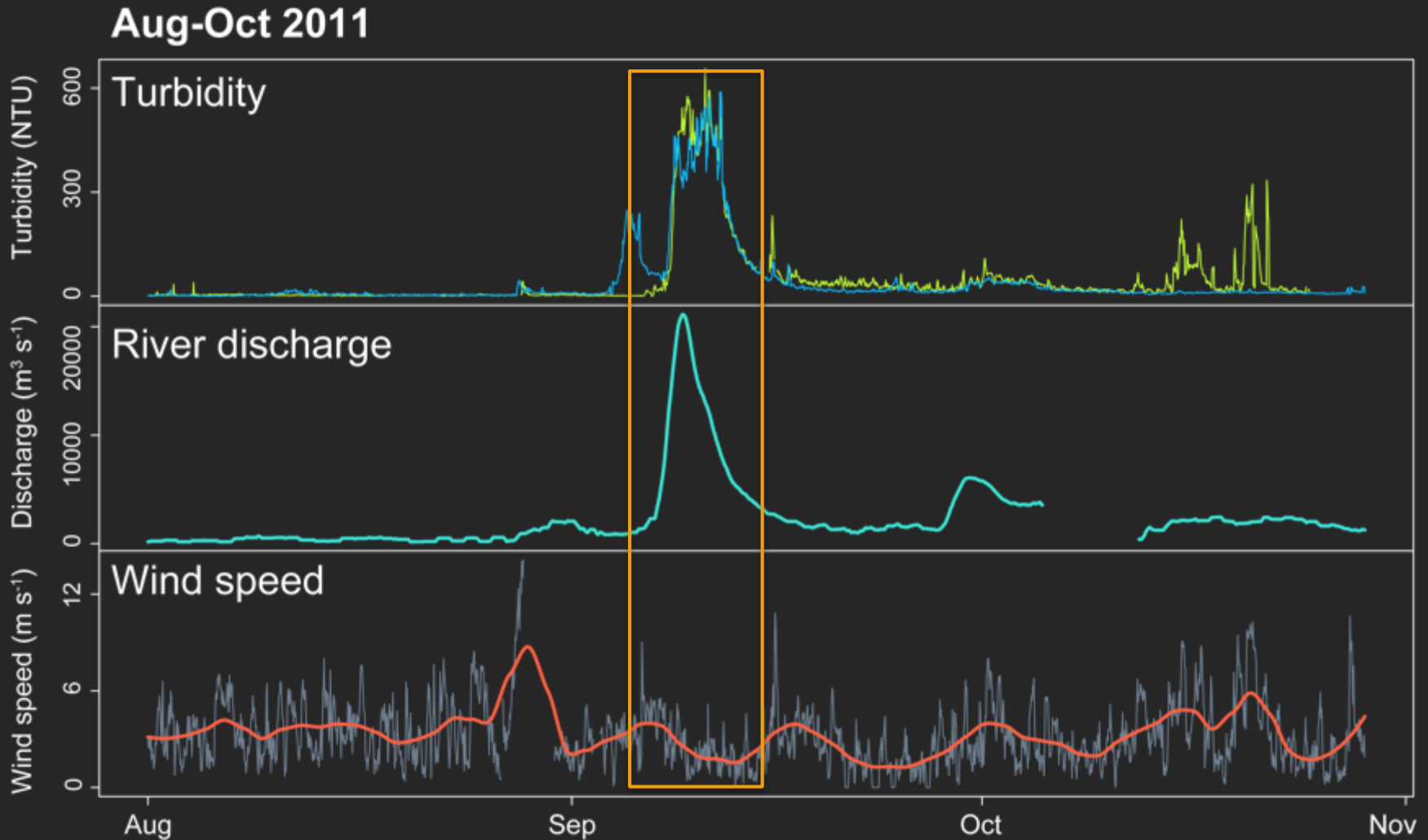


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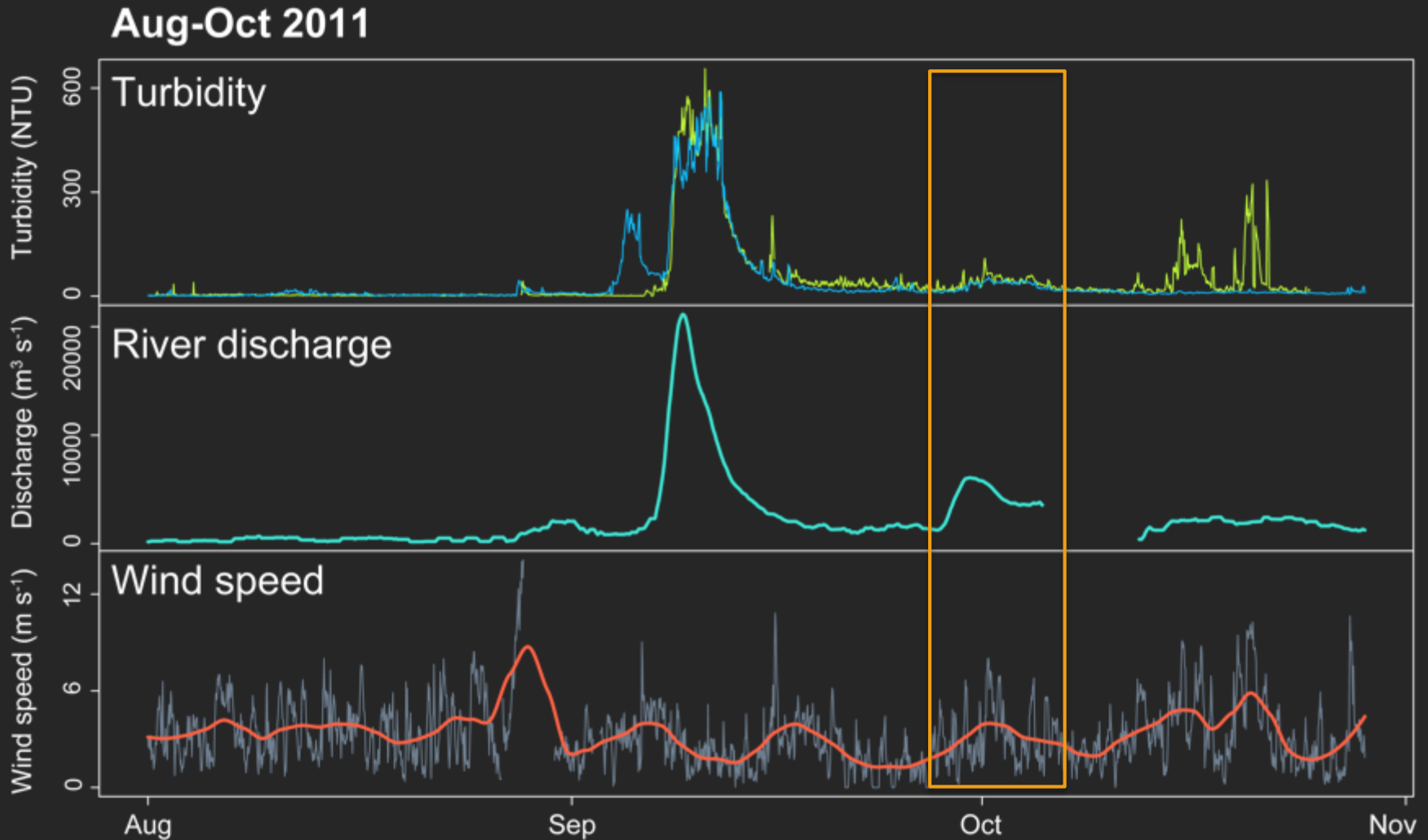




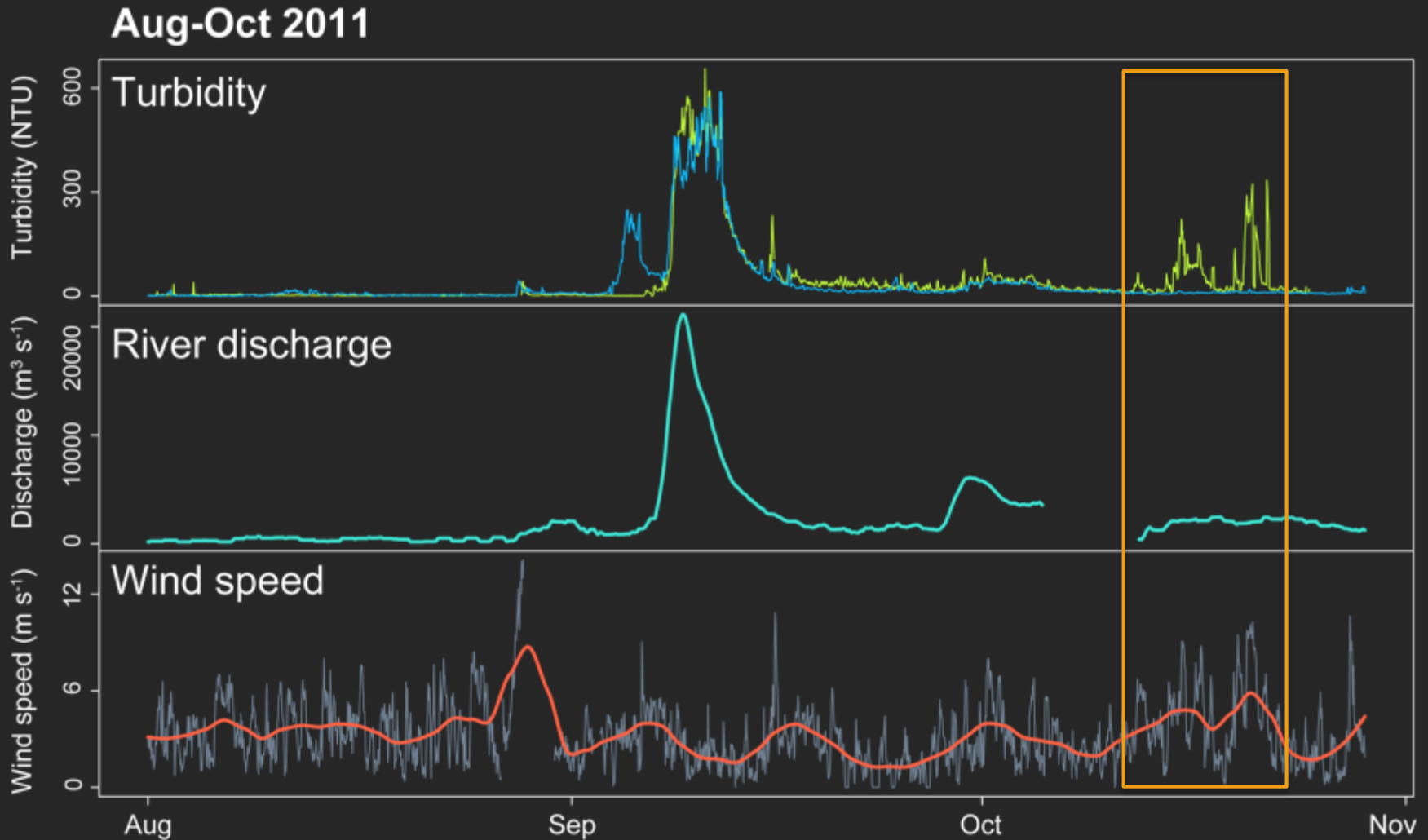
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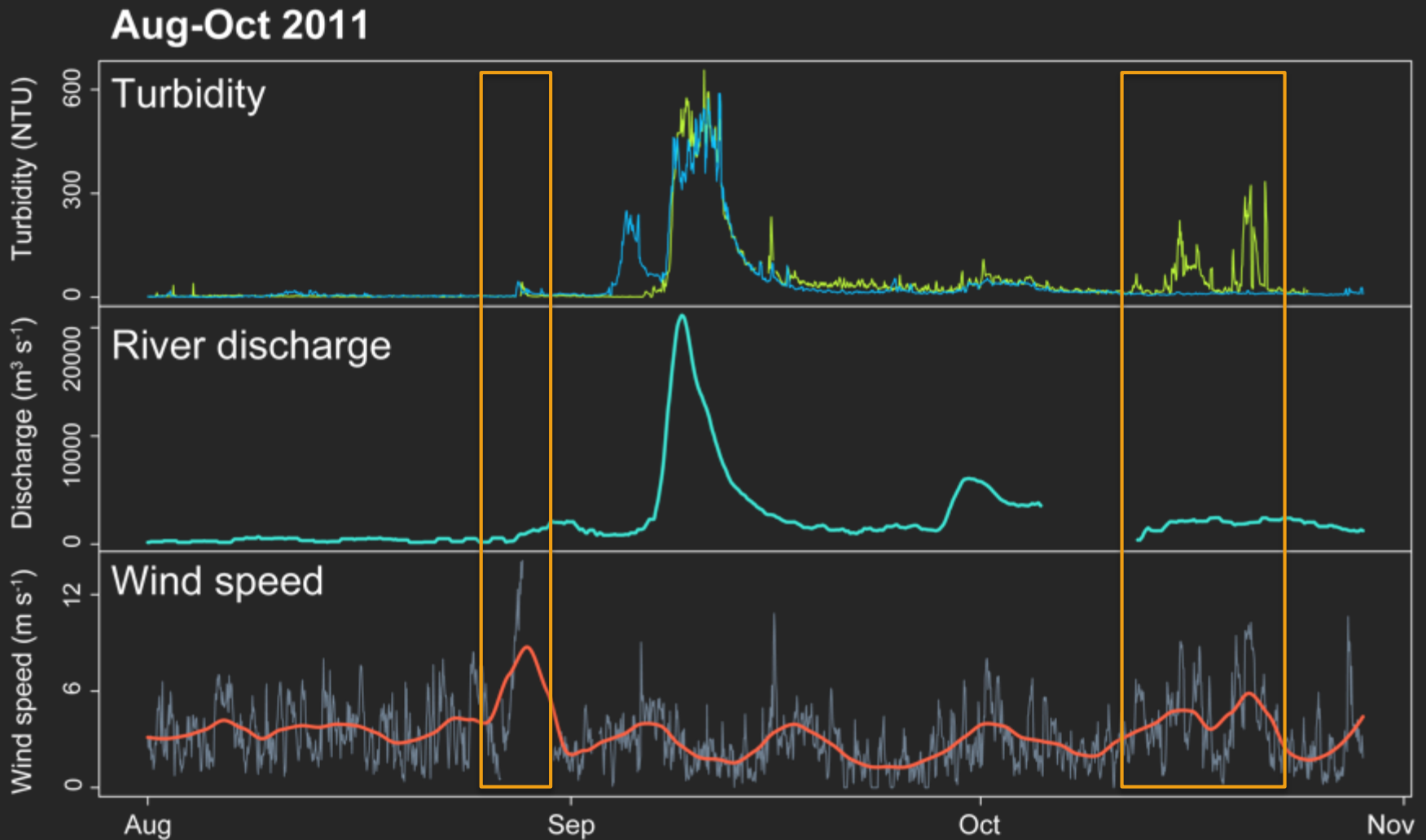
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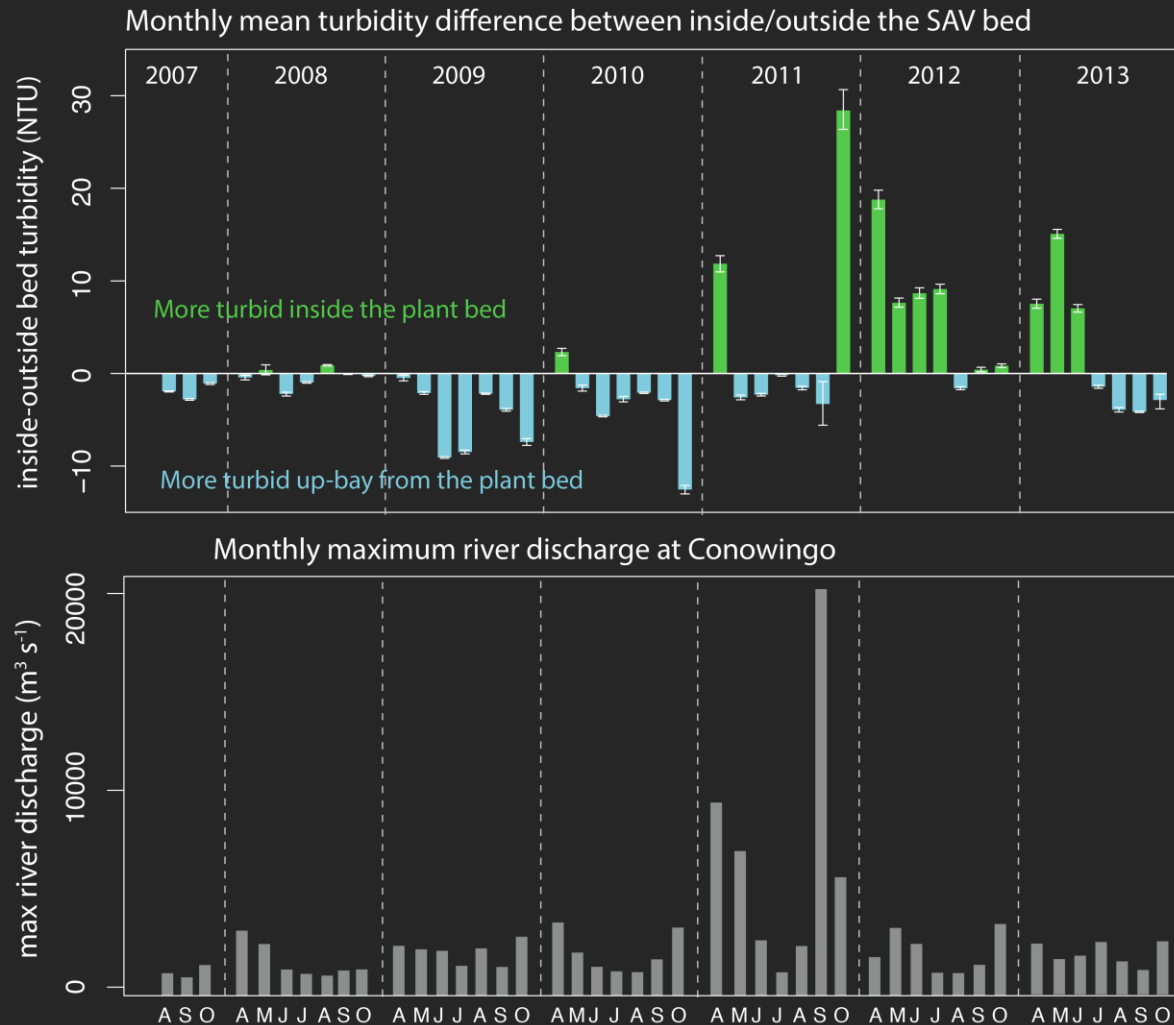
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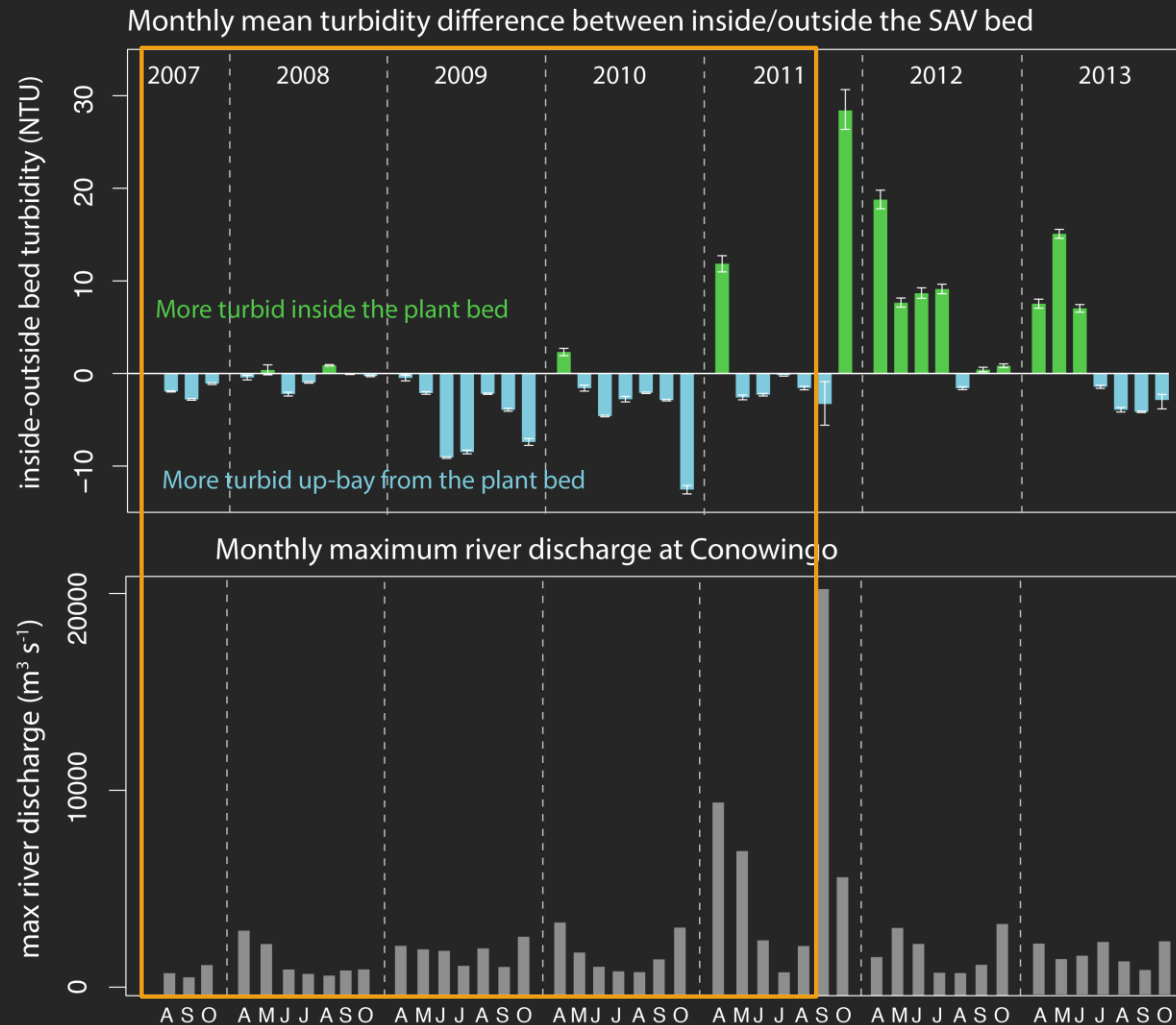
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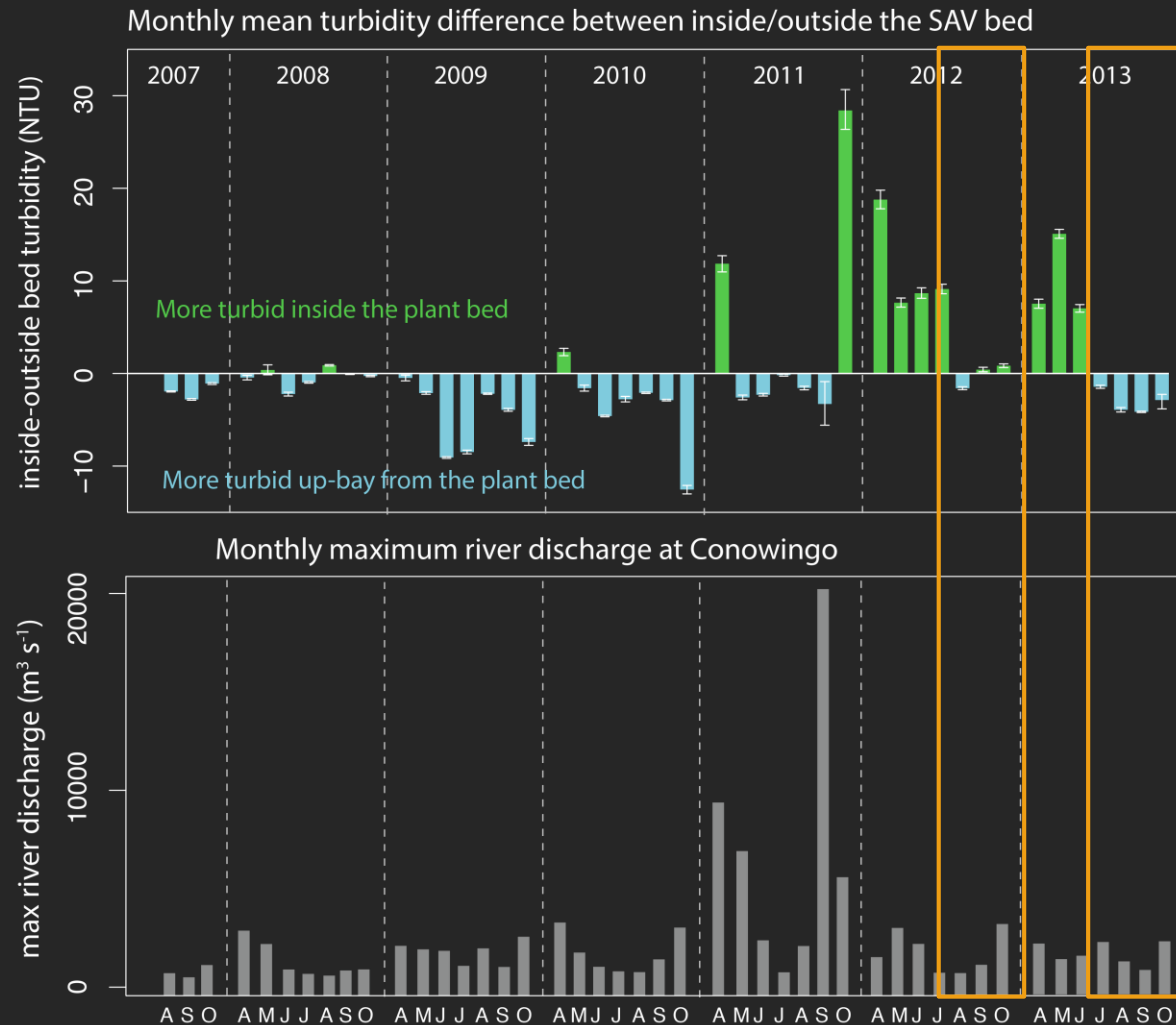


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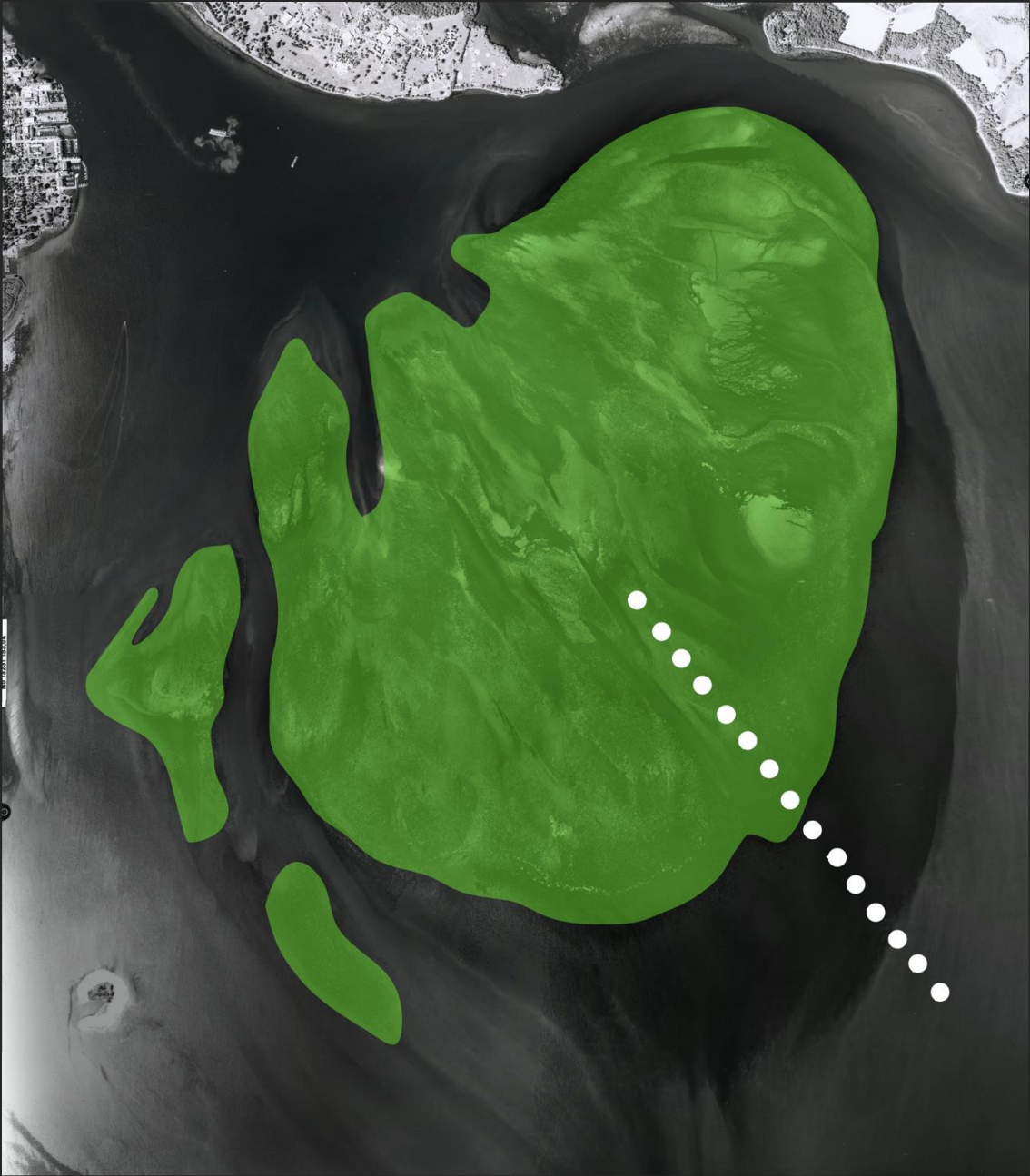




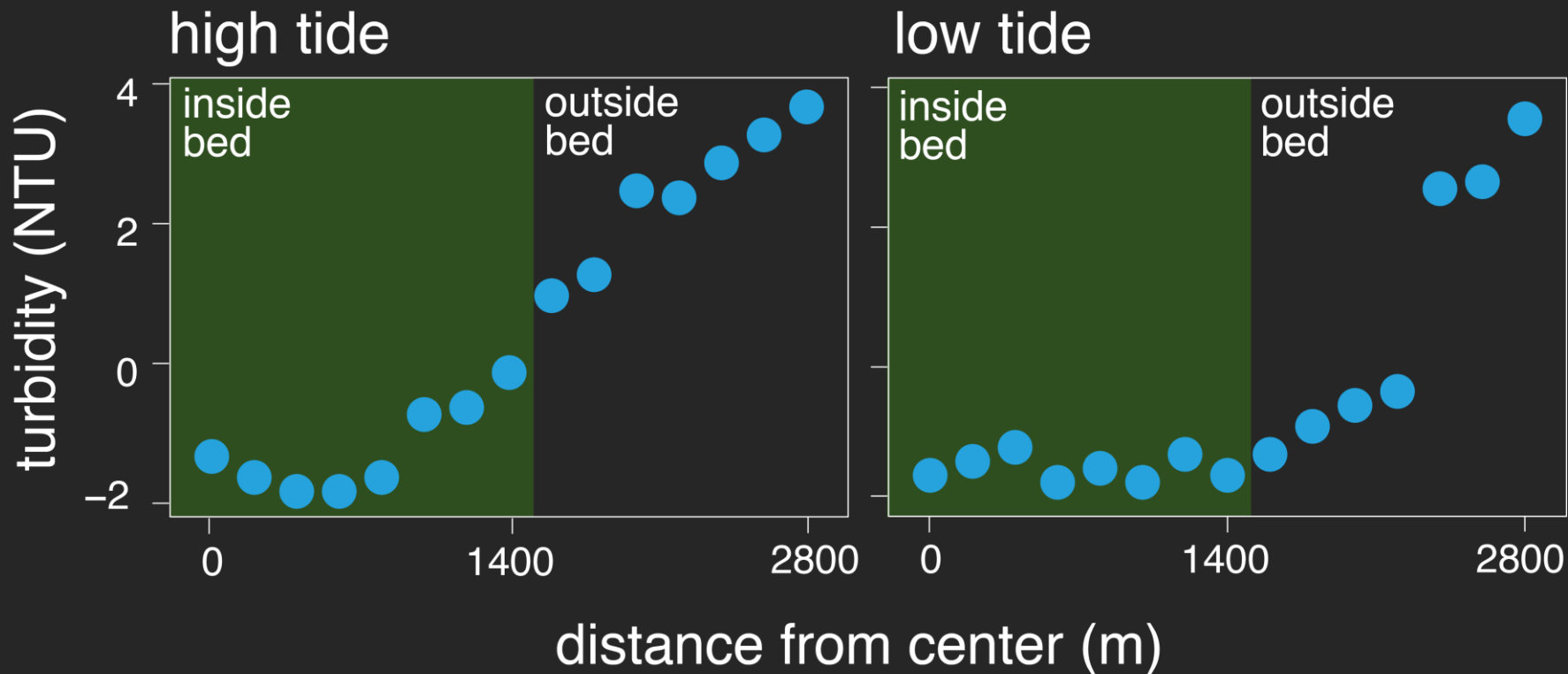
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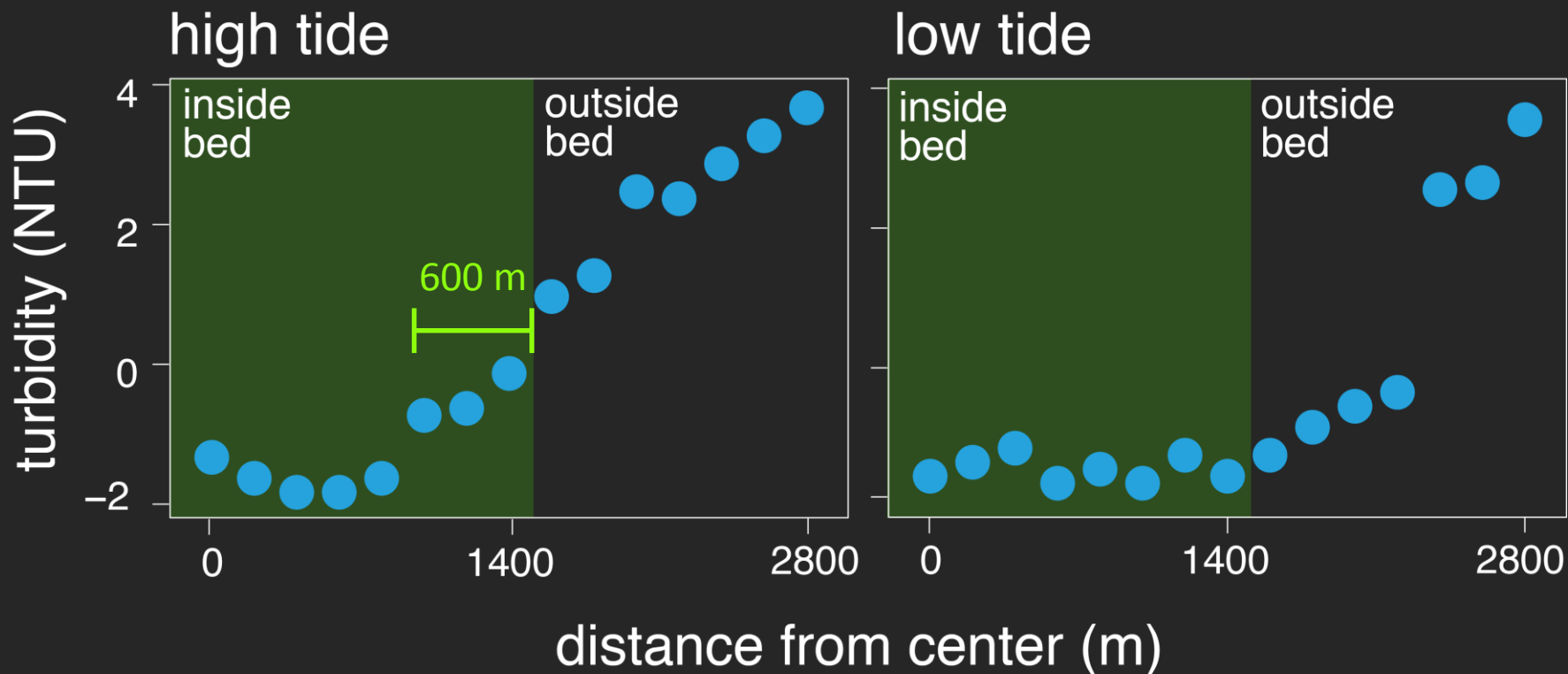




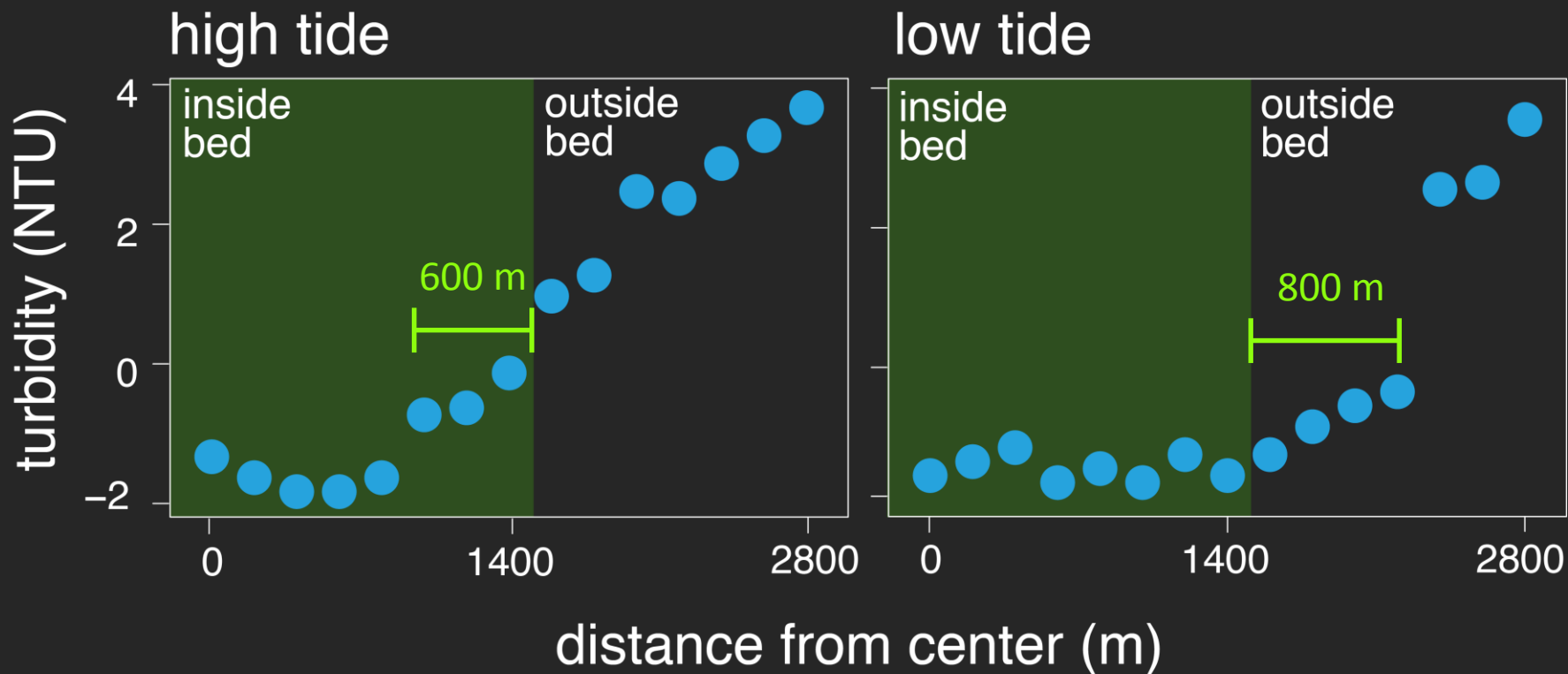
# Clear water “spilled over” into deeper down-bay waters



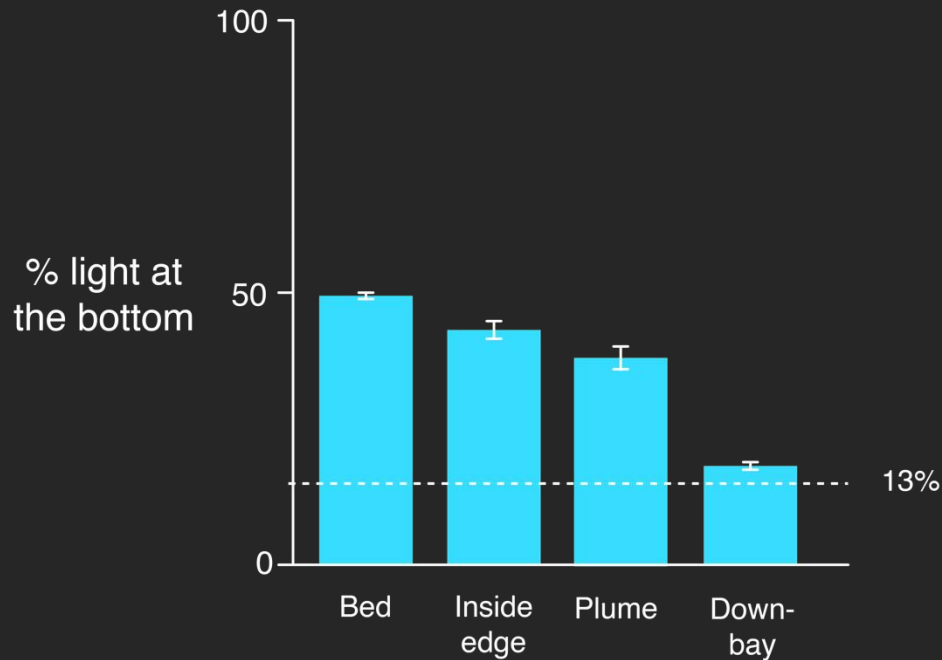
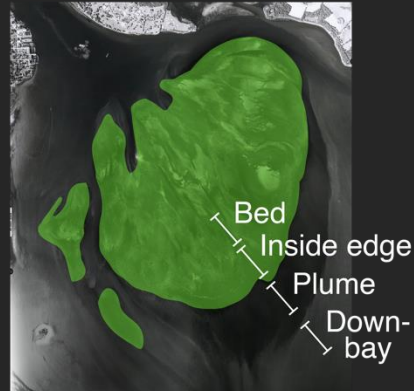
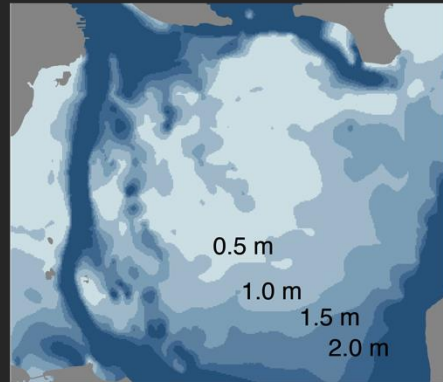
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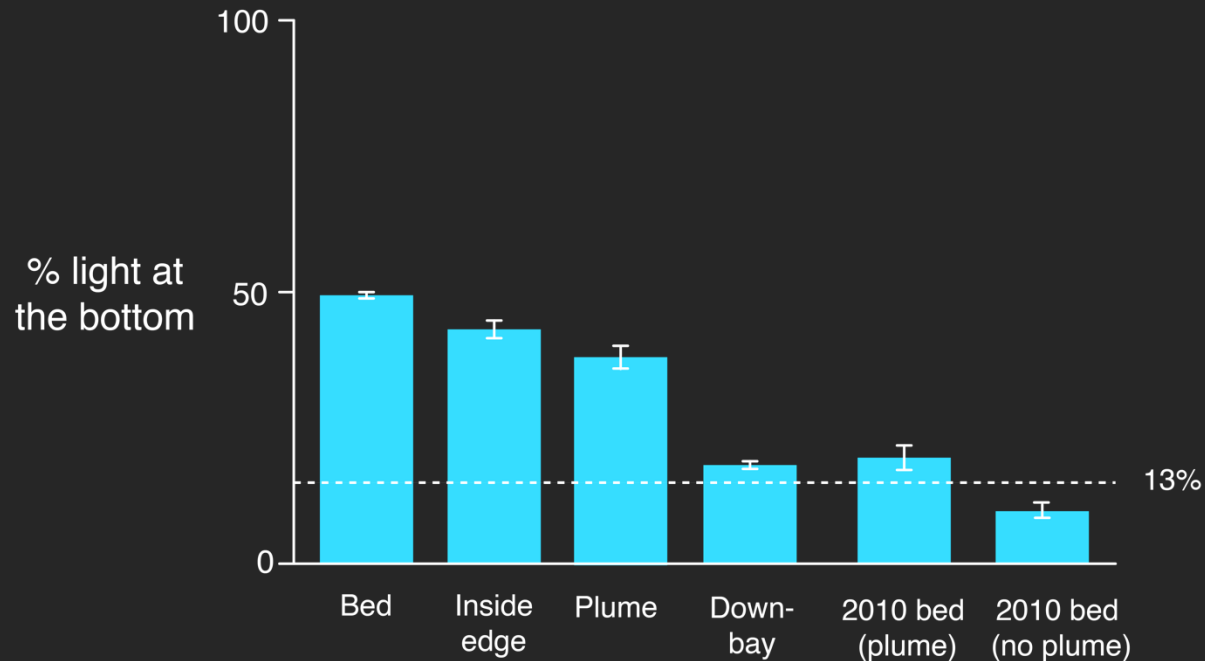
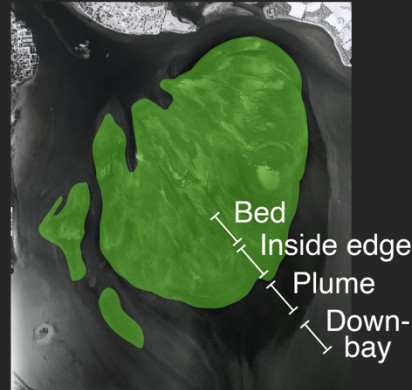
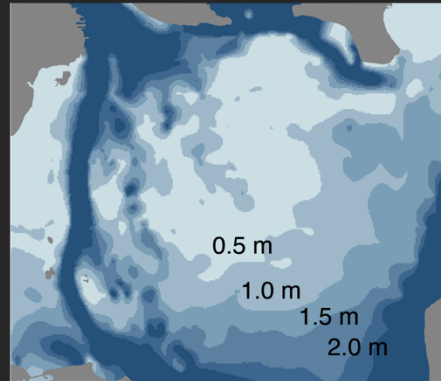
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# Key points:

- Sediment pulse had detrimental effect on SAV bed
  - Bed trapped and retained particles, which decreased water clarity and, thus, plant production
- The bed was resilient to the flood event
  - Improved water clarity can help plants resist and recover quickly from the disturbance
- Scour is also important: paper forthcoming

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# Acknowledgements

## Funding

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## Field and lab assistance

Emily Russ

Connor Reyer

## Monitoring data

VIMS

MDDNR

NOAA CBIBS

USGS

## Graduate committee members

Lora Harris

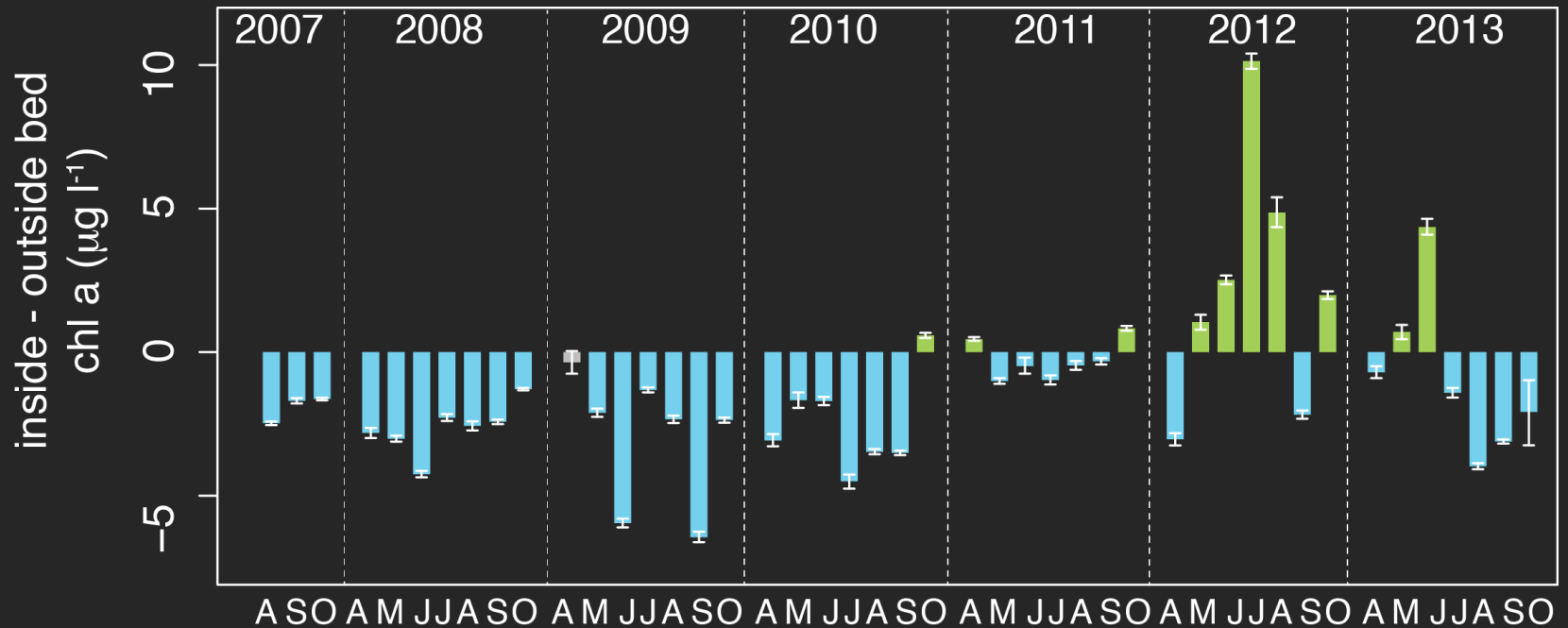
Jeff Cornwell

Laura Murray



# Inside the bed chl a increased after the flood event

Monthly mean difference btw. Inside and outside the bed chl a



# Nitrate inside the bed increased after the flood event

