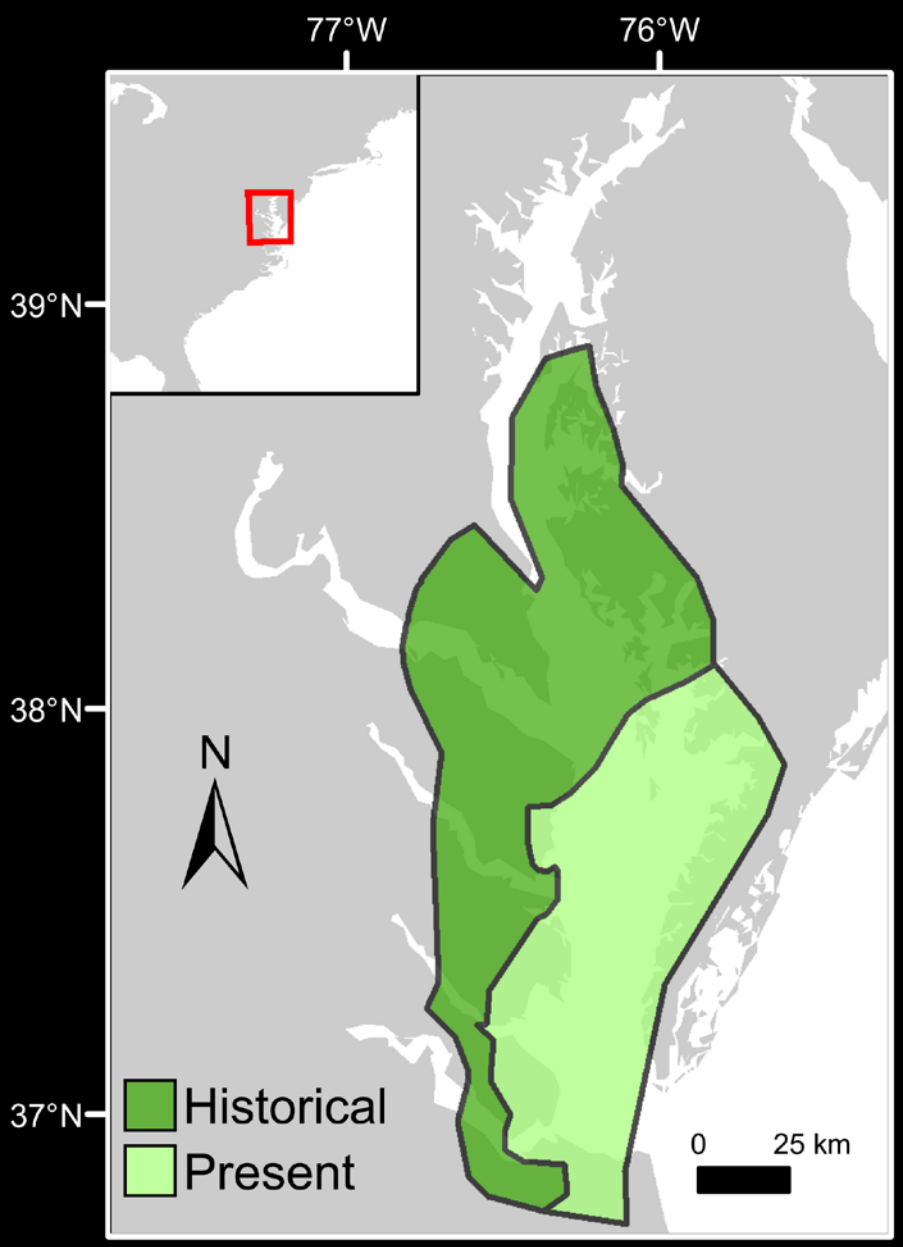
> Historical loss of eelgrass (*Zostera marina*)



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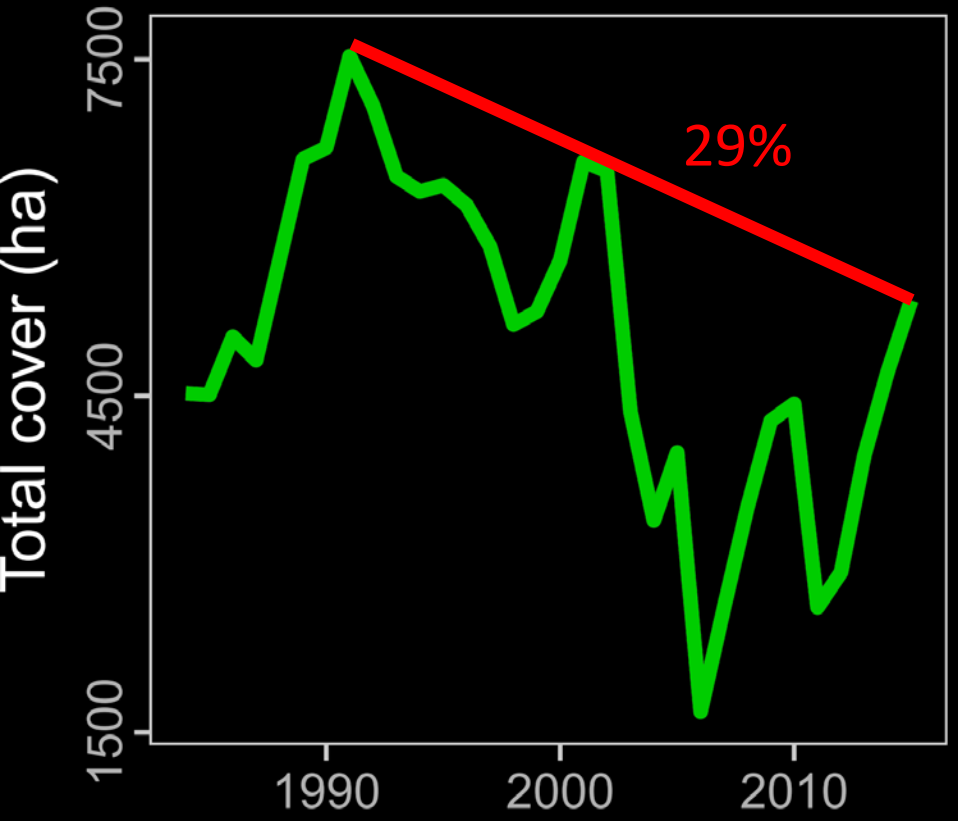
> 29% decline since 1991



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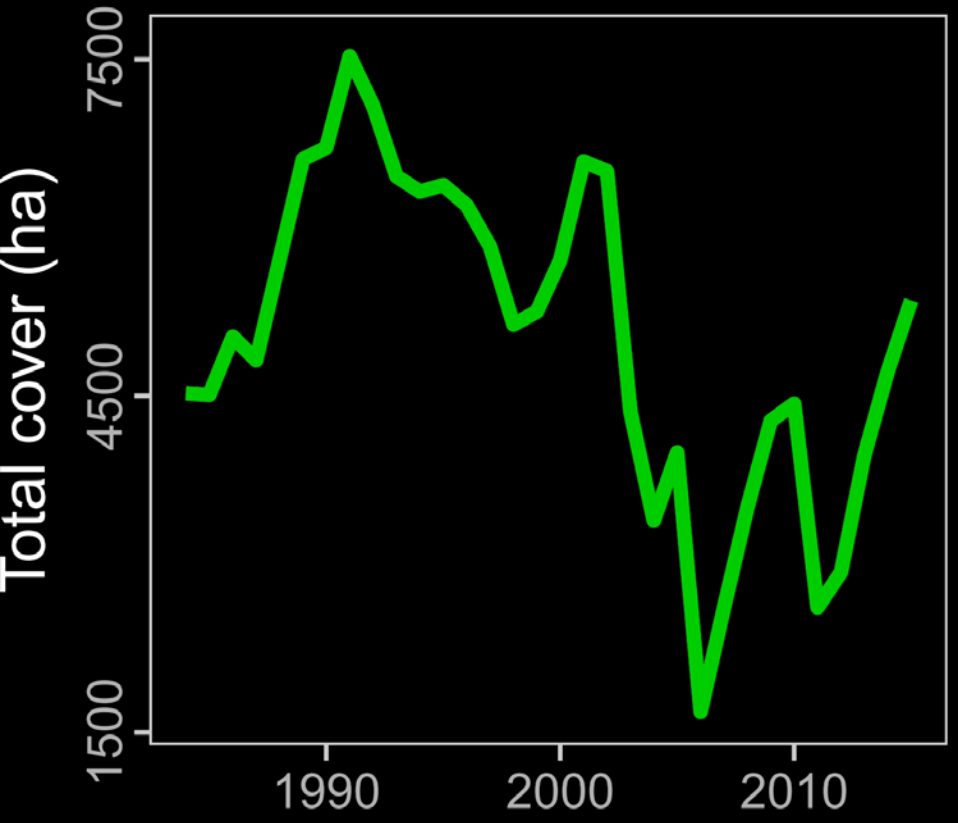
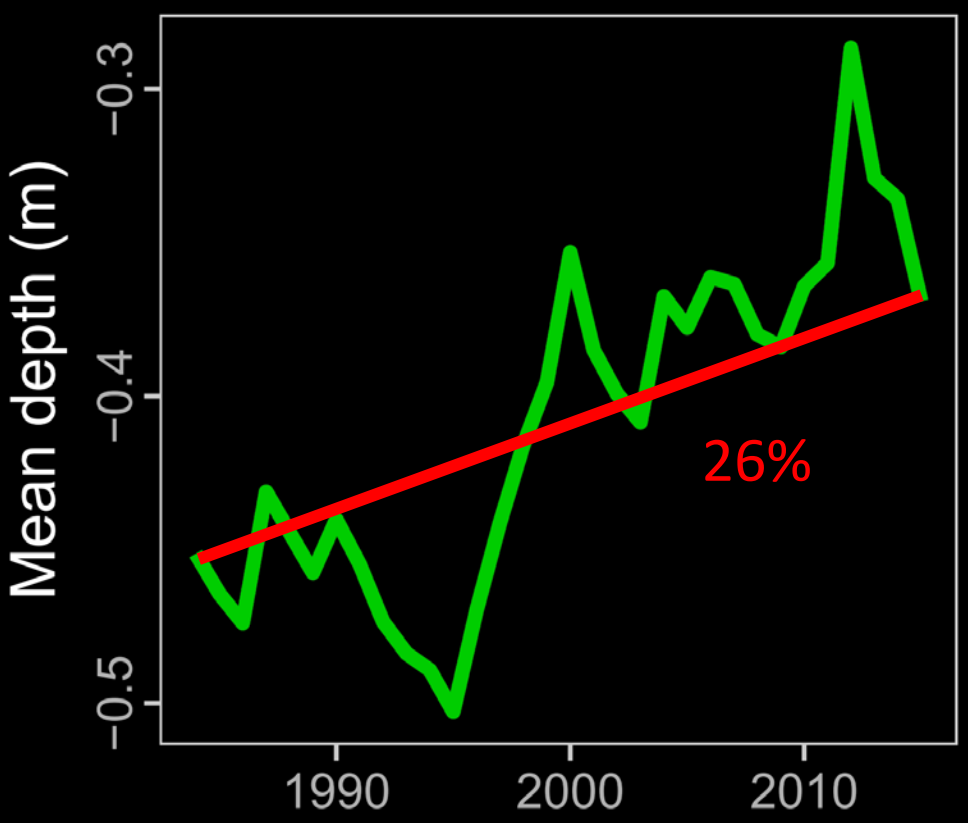
> 29% decline since 1991





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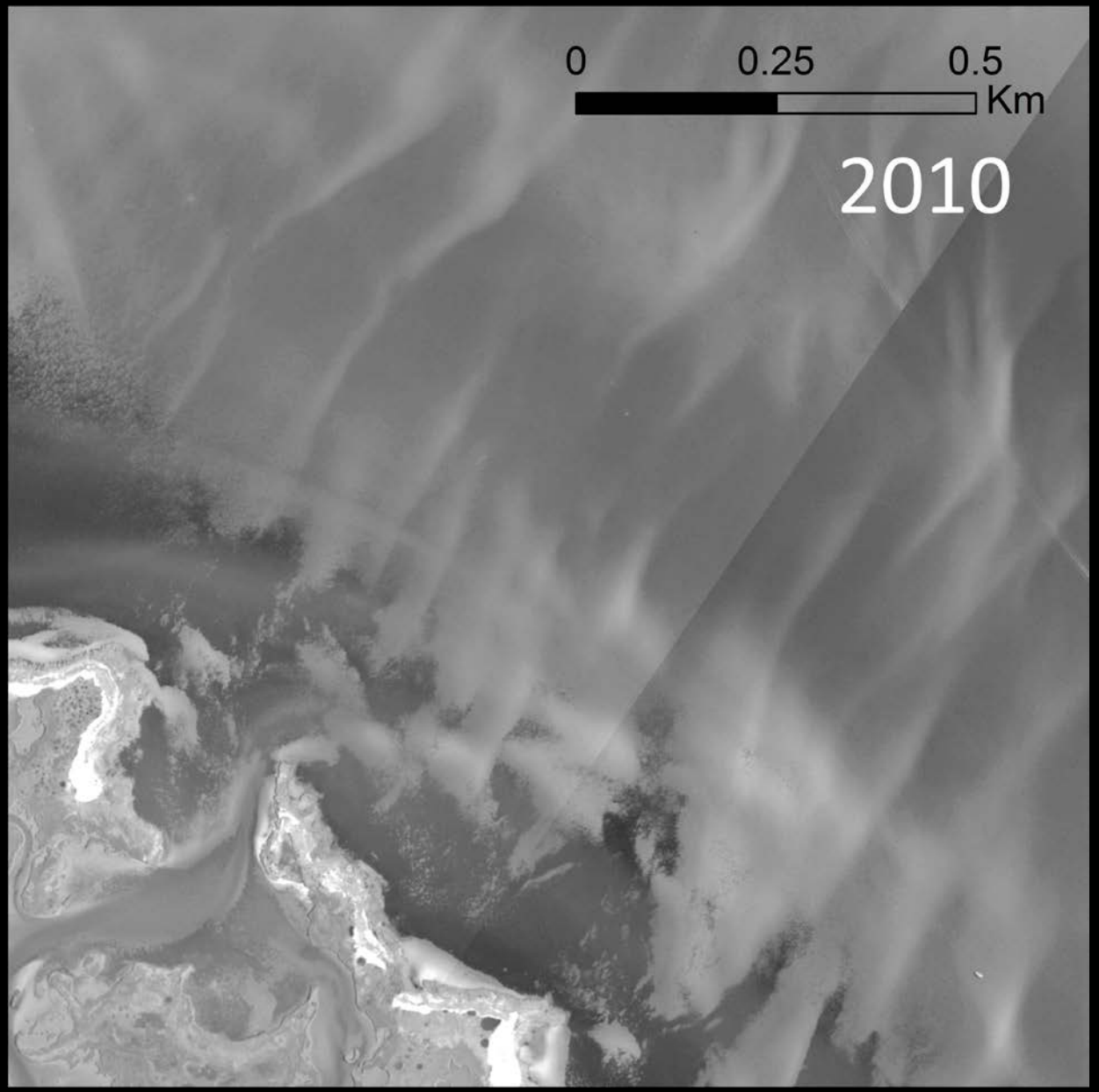
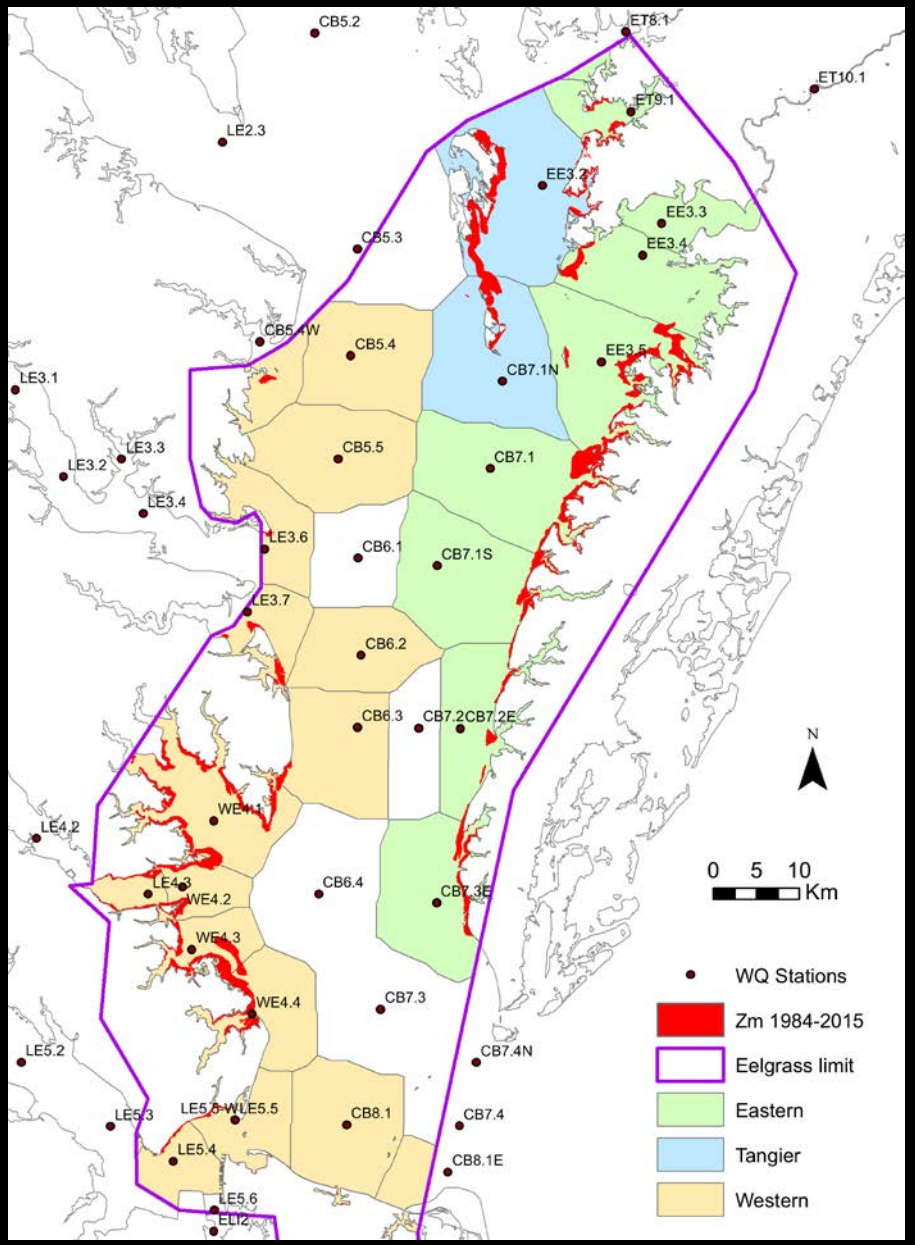
> Loss of beds deeper than 0.5 m



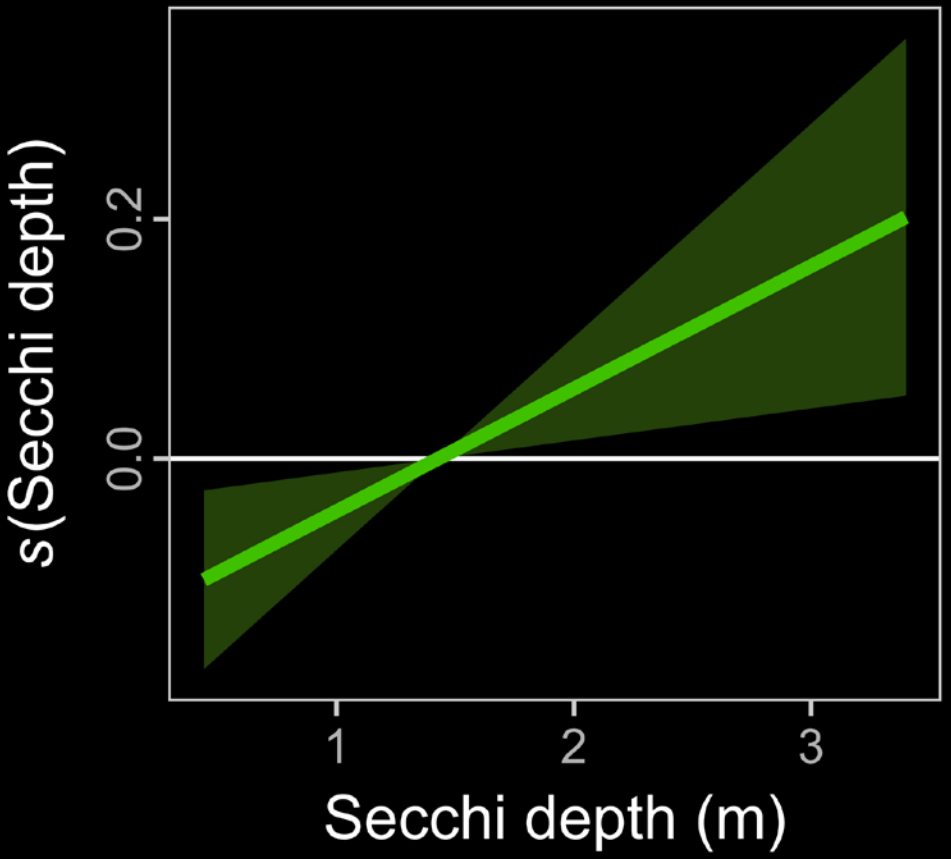
> CBP Water Quality Monitoring (1984)

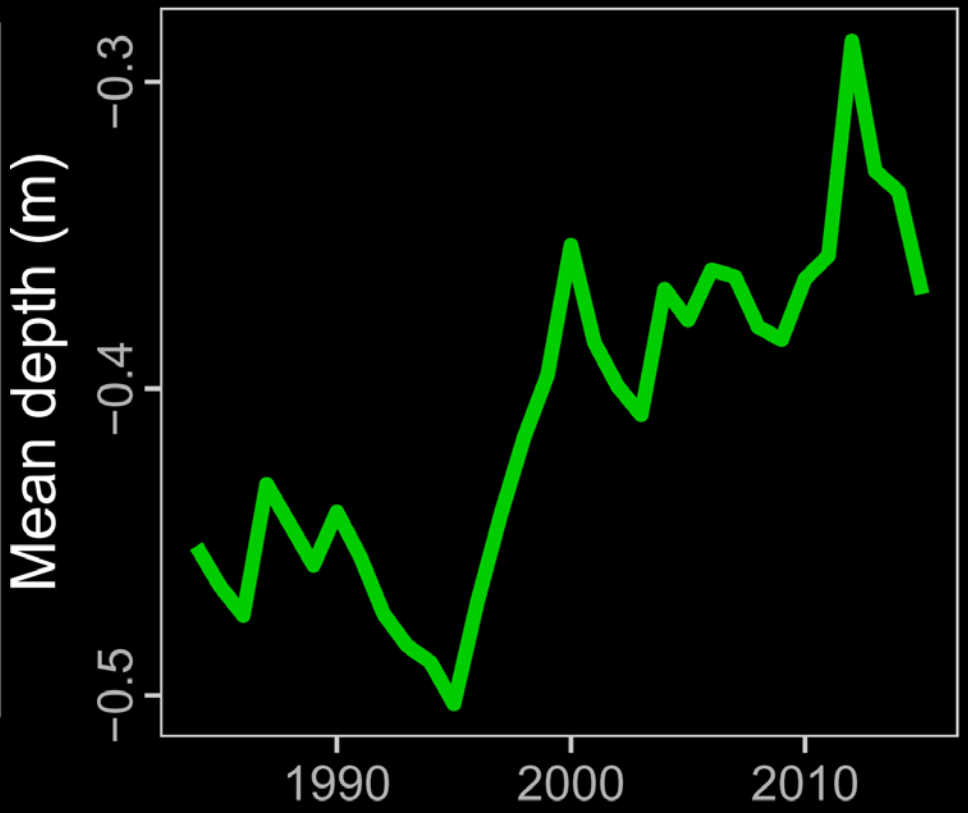


Chesapeake Bay Program

Science. Restoration. Partnership.

> Driven by warming and turbidity





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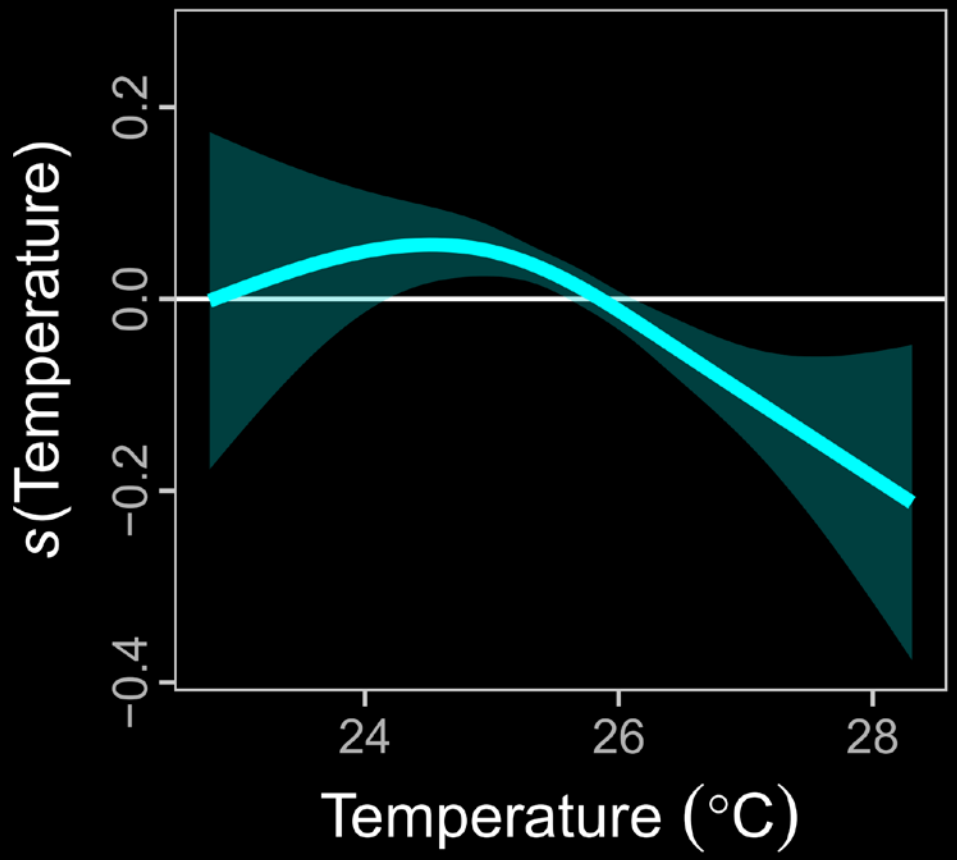
> Driven by warming and turbidity



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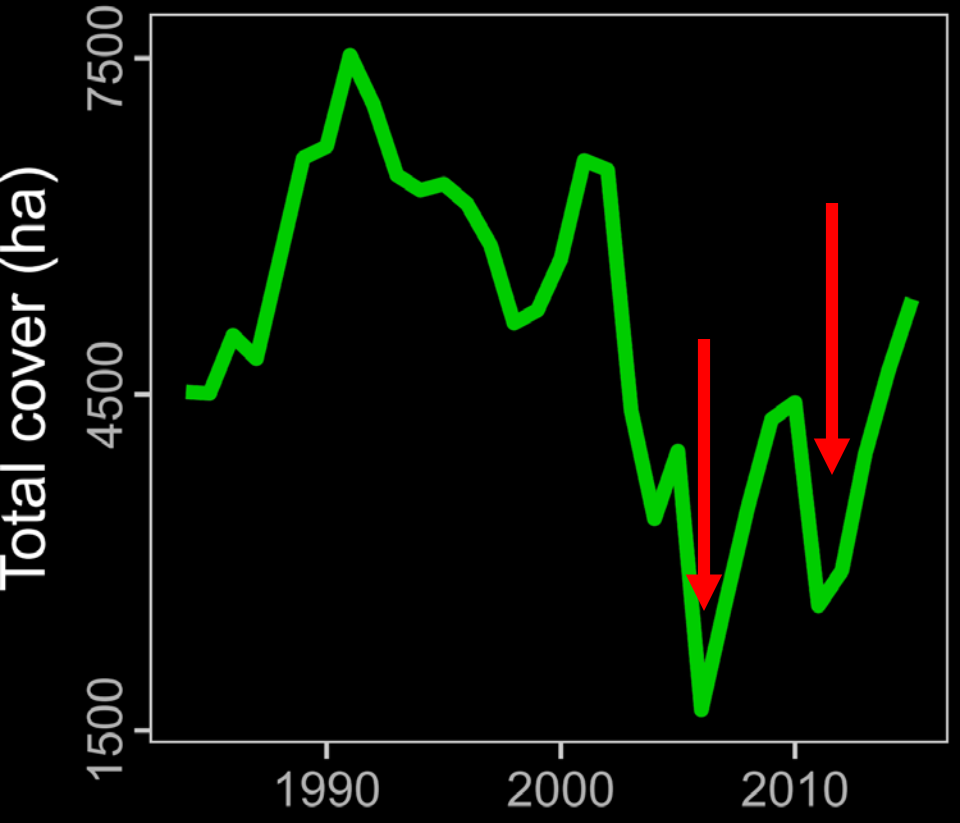
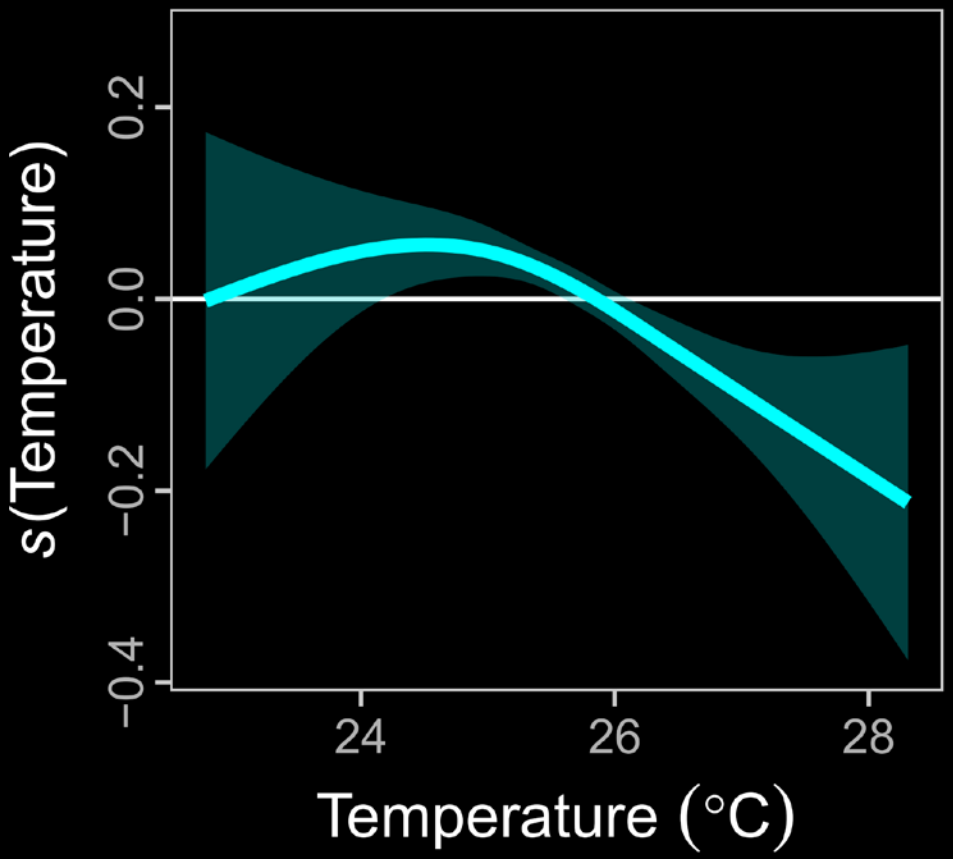
> Driven by warming and turbidity





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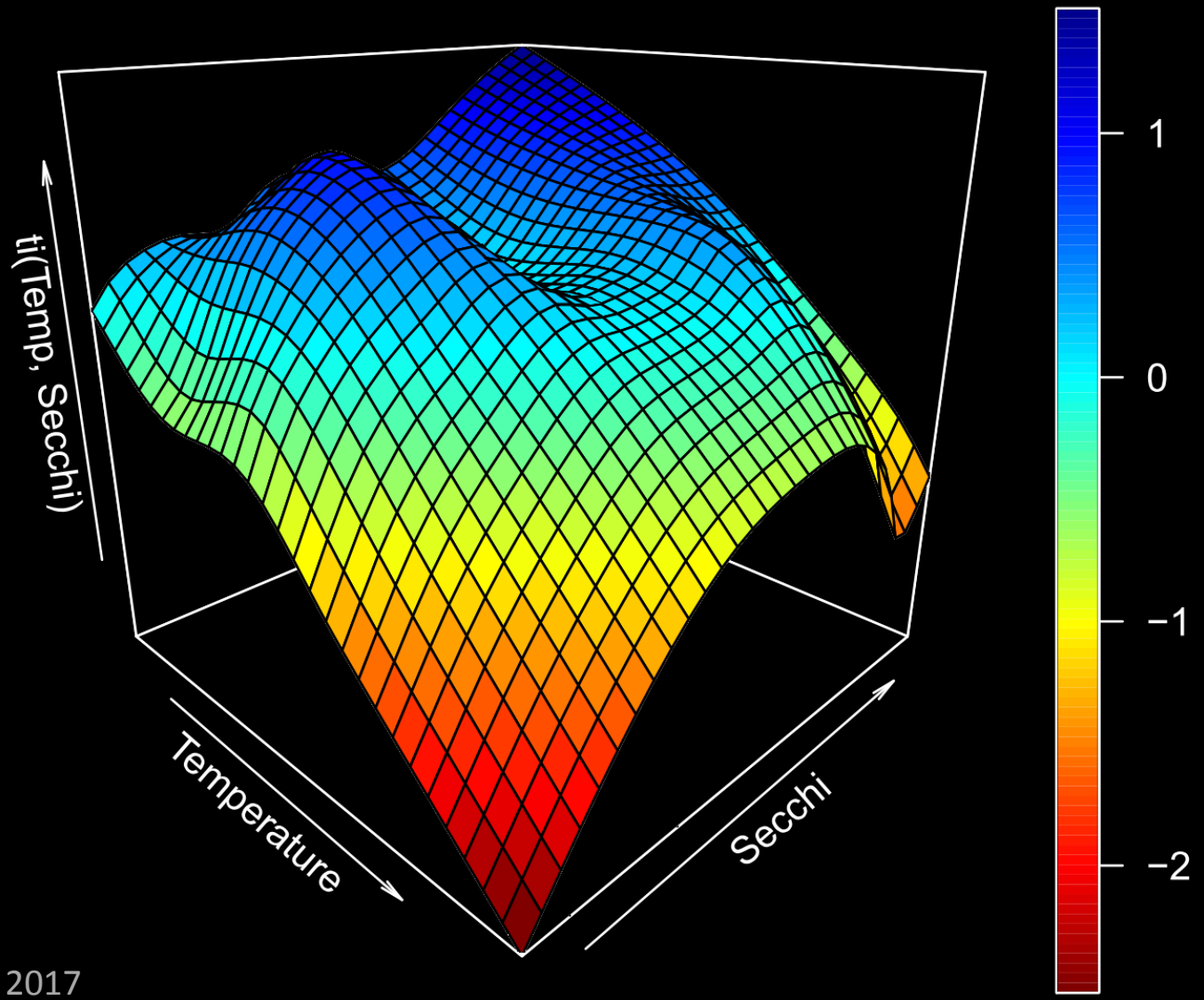
> Interactive effects



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> Scaling up to the whole Chesapeake

> Cascading effects of human impacts

% Agro

\+

Fertilizer

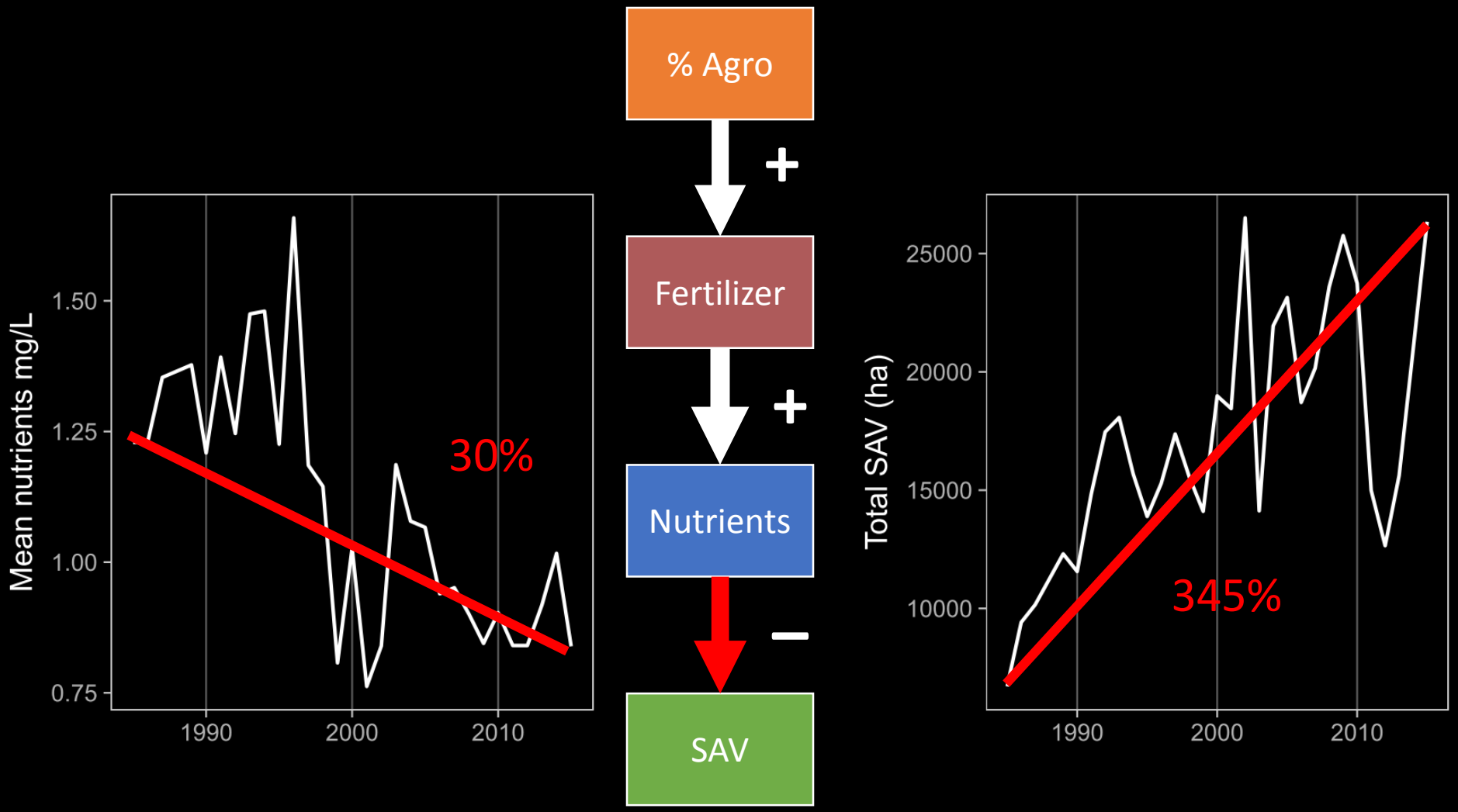
\+

Nutrients

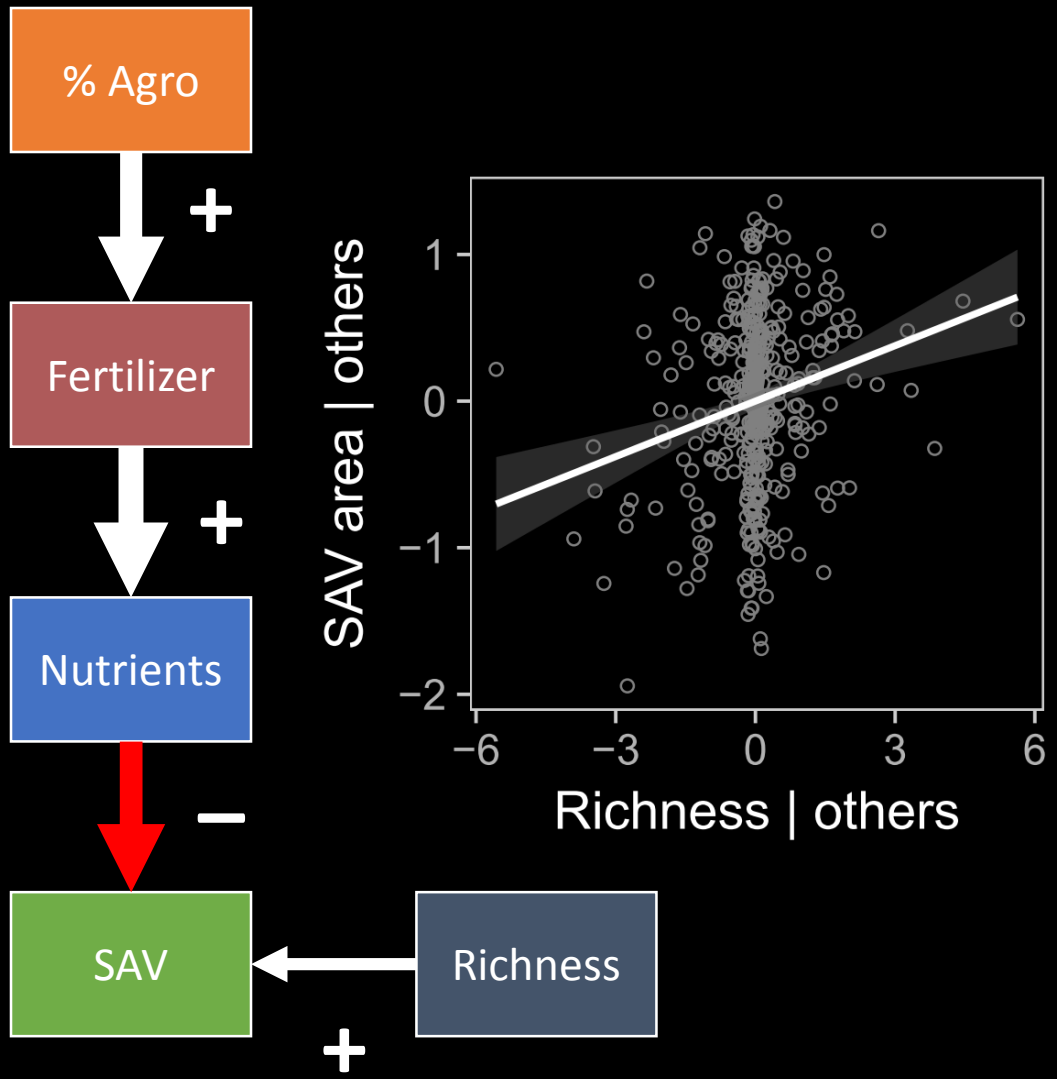
−

SAV

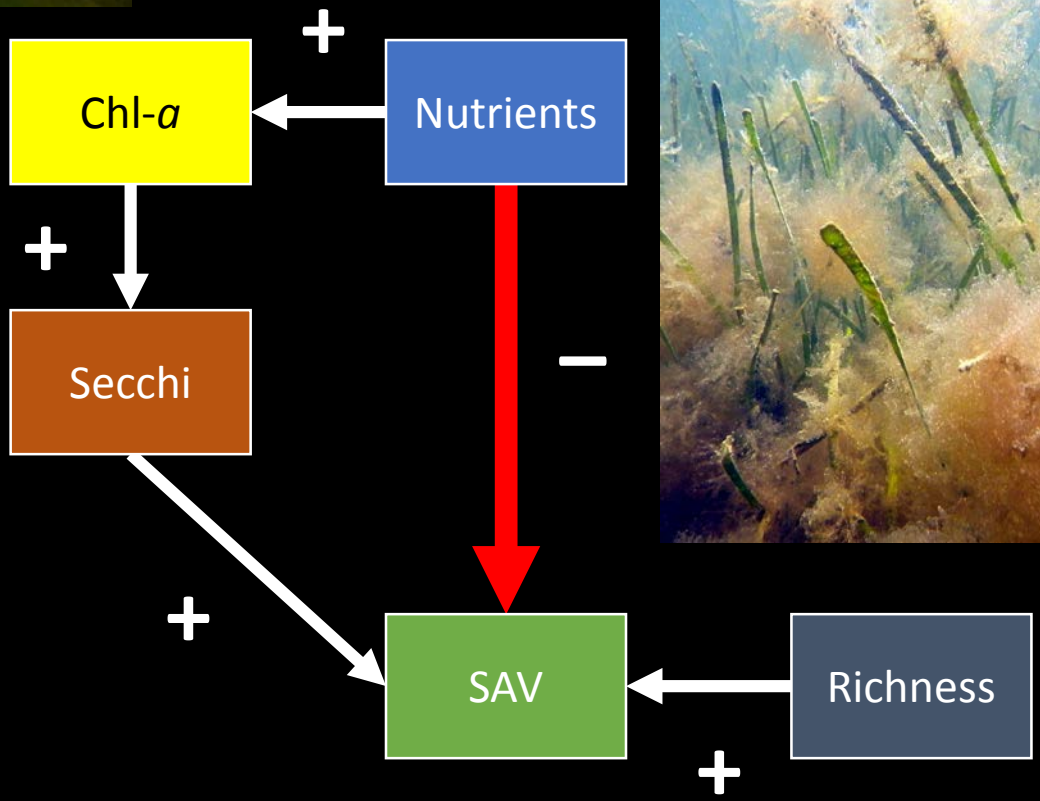
> Cascading effects of human impacts



> Biodiversity is important



> Nutrient pathways



> Conclusions

- Eelgrass has declined by 30% since 1984
  - A combination of warming and turbidity
- SAV has more than doubled in Chesapeake Bay since 1984
  - Primarily controlled by nutrients
  - Nutrients a function of human activities
  - Affect SAV directly & indirectly by reducing water clarity