Optimizing Riparian Forest Buffer Implementation for Climate Adaptation and Resilience

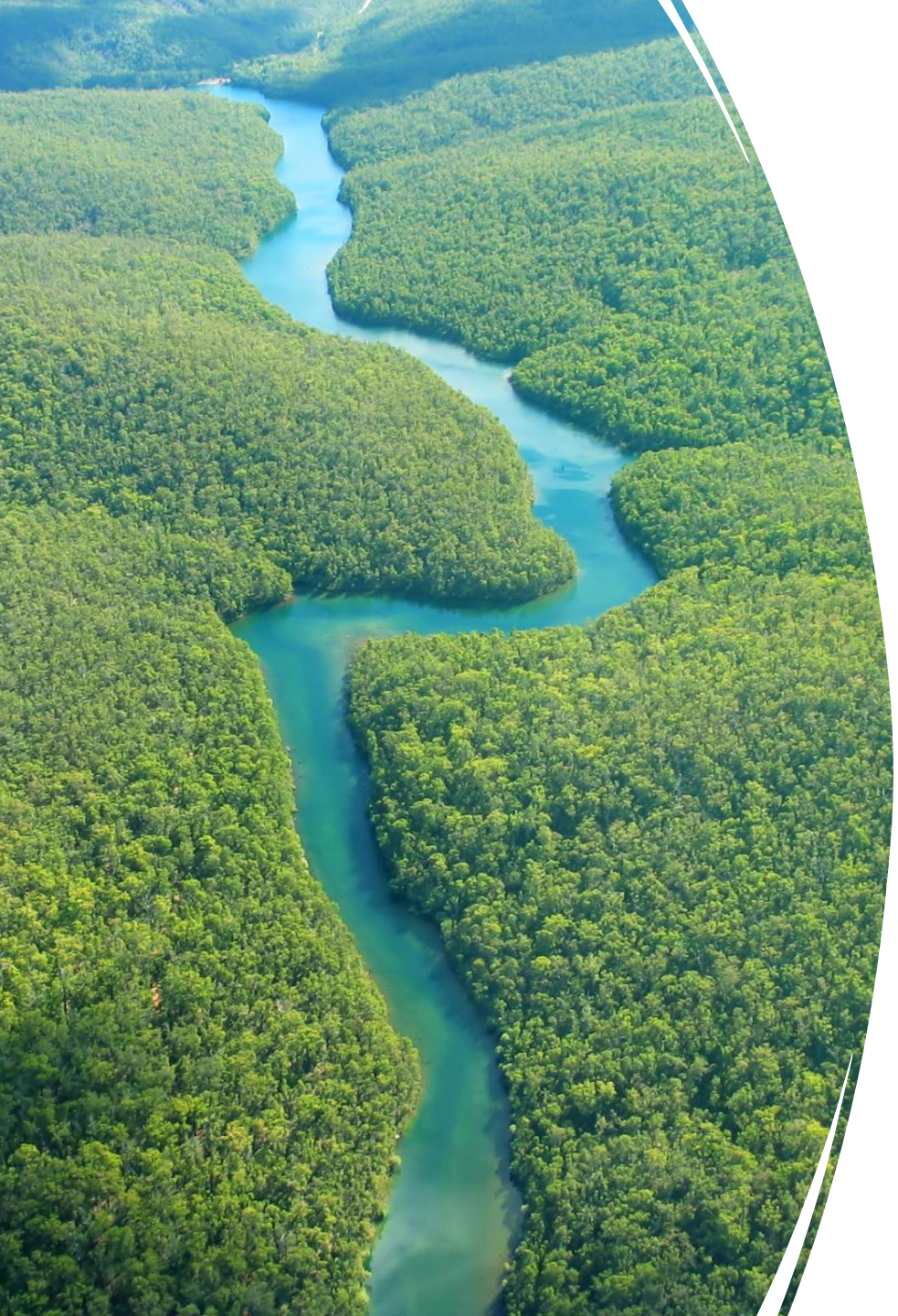
Katie Brownson, USFS

Project Overview

- Contractor: Chesapeake Conservancy
- Timeline: Summer 2023- February 2025
- **Goal: Increase and optimize RFB implementation by synthesizing and communicating information about the climate adaptation and resilience benefits of RFBs**

Project deliverables

- **Synthesis report**: Summarize literature regarding:
  - The extent to which riparian forest buffers can provide various climate adaptation benefits
  - Opportunities to maximize climate adaptation benefits of RFBs through project siting and design
- **StoryMap**: Communicate findings of Synthesis report in a more interactive format for state/local gov officials and practitioners, present information on ~8 local case studies

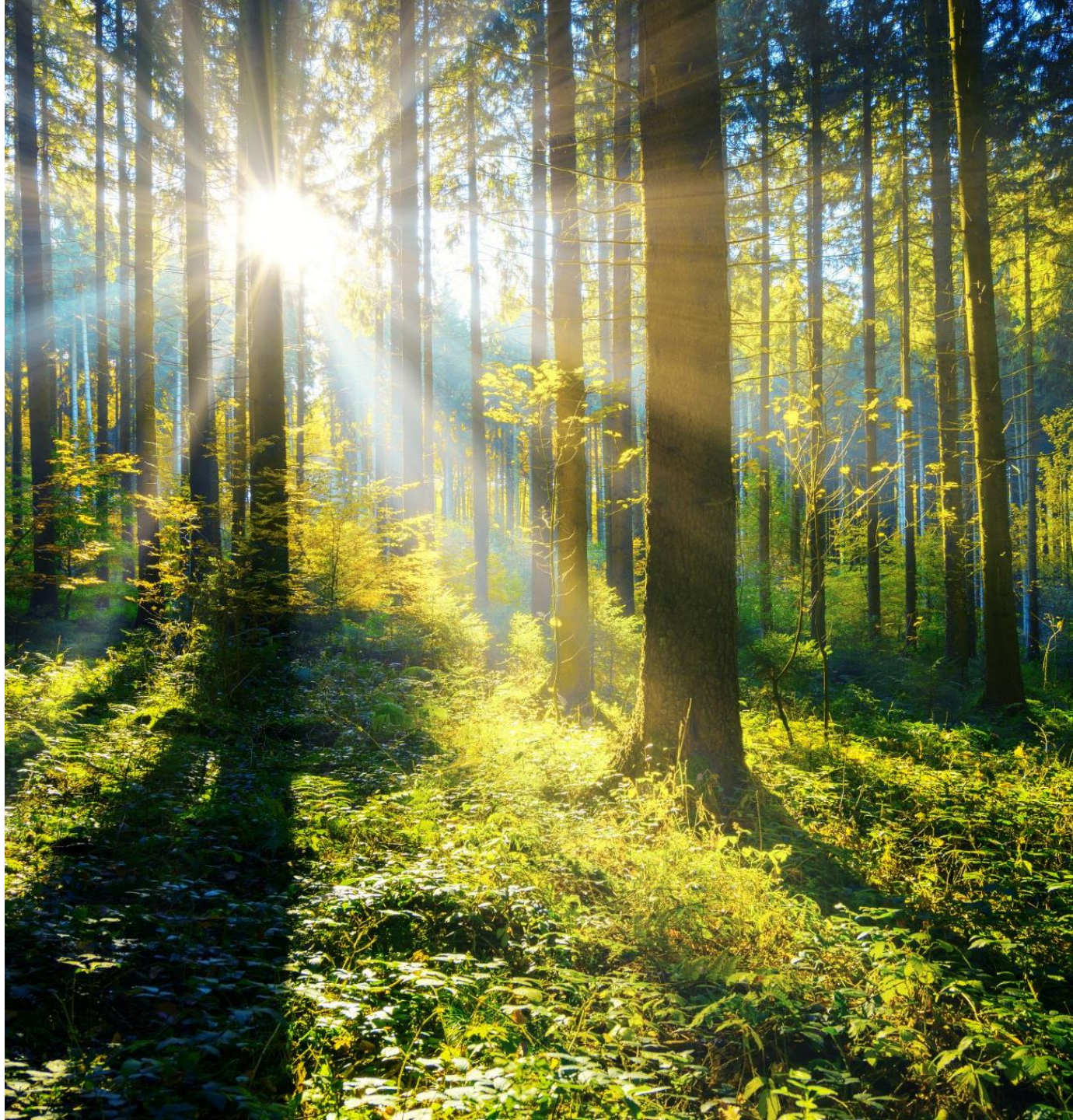


Climate threats that can be mediated by forest buffers

- Flooding and storm events
  - Flood peak- RFBs increase infiltration, slow the flow and desynchronize the flood hydrograph
  - Bank erosion- RFBs reduce erosion and sediment delivery
- Impacts to fish and wildlife
  - Water temperature- RFBs provide thermal refugia
- Impacts to local waters
  - Water quality- RFBs can buffer against contaminant flushes in storm events
  - Groundwater recharge – RFBs increase infiltration
- Community health impacts
  - Air temperature- RFBs provide shade and thermal refugia for people too!

Maximizing benefits of forest buffers

- Siting
  - Where can RFBs deliver the greatest adaptation benefits?
  - Where are RFBs most likely to thrive under climate change?
- Design considerations
  - Buffer width
  - Species selection
  - Environmental justice considerations



Questions or suggestions?

Katherine.brownson@usda.gov