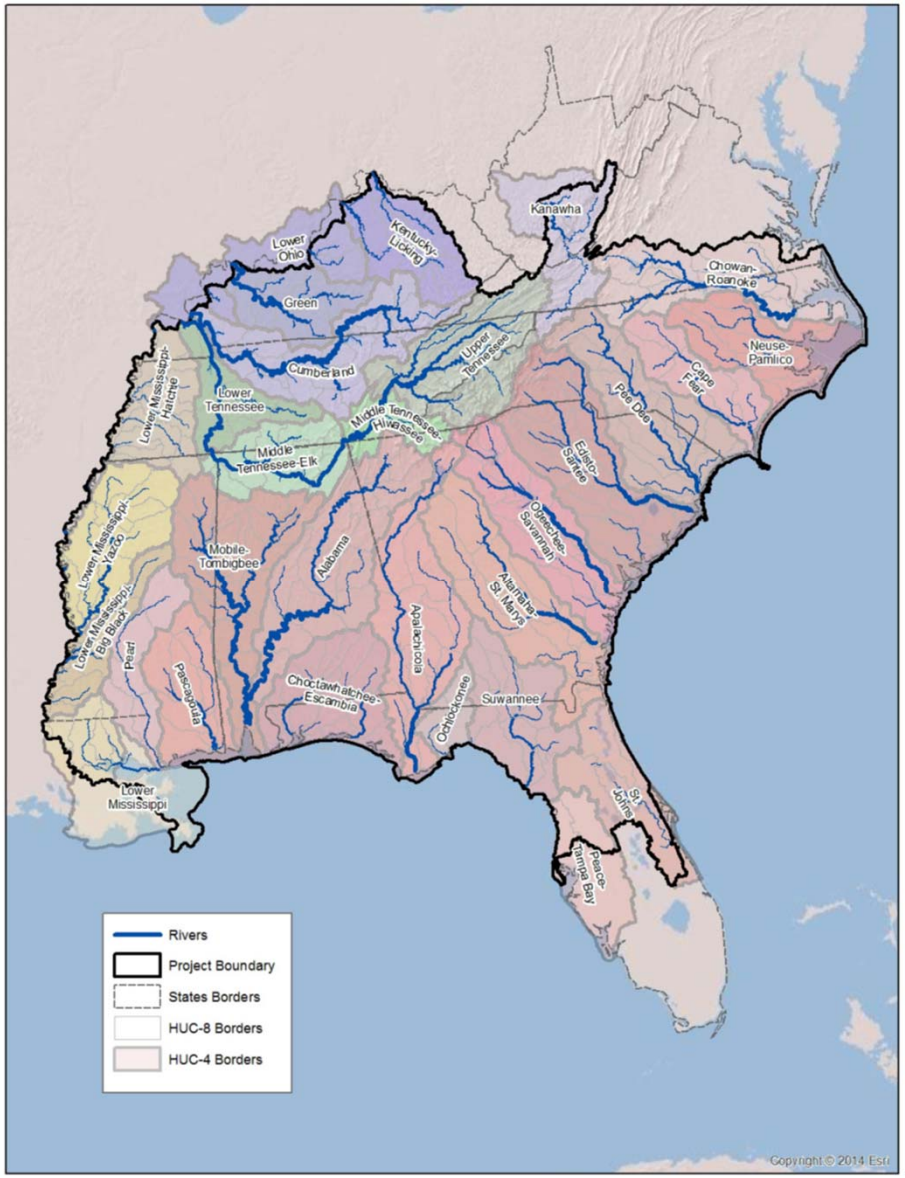
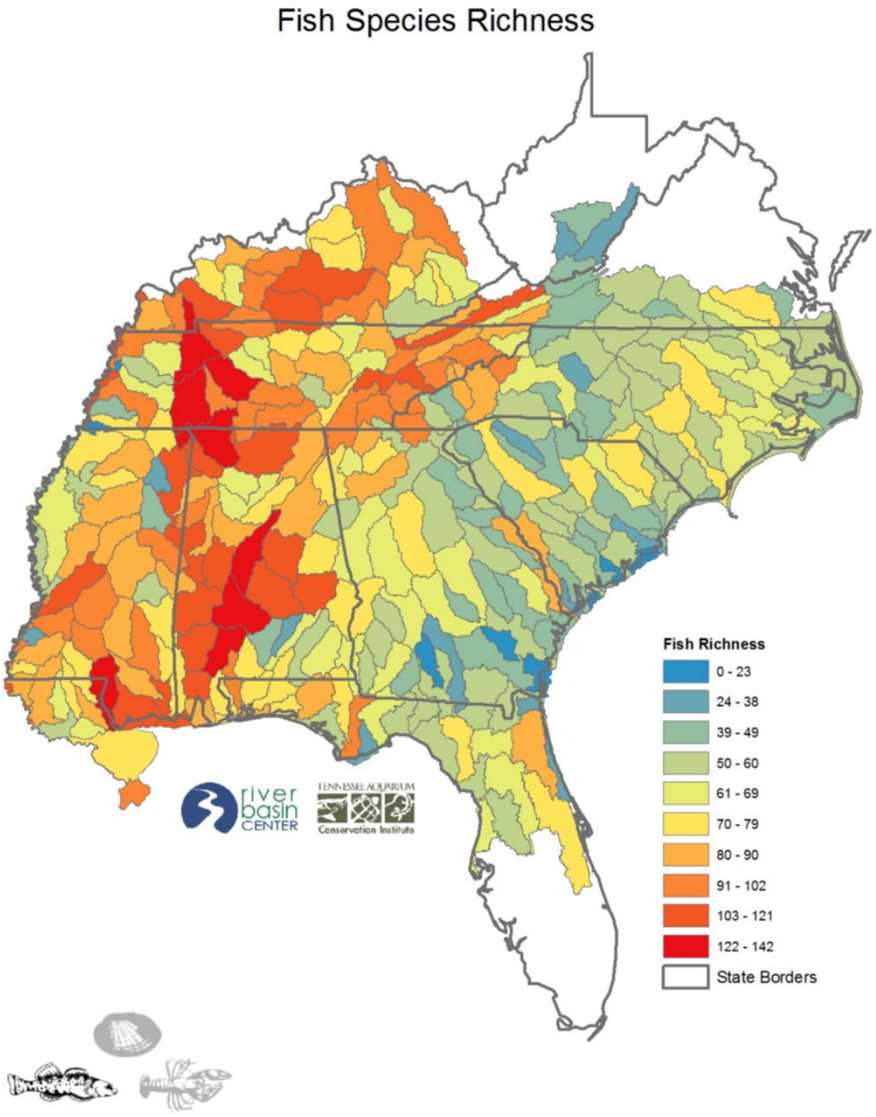


"The Southeastern United States is a global hotspot of freshwater biodiversity, supporting almost two-thirds of the country's fish species, over 90% of the US total species of mussels and nearly half of the global total for crayfish species. More than a quarter of this region's species are found nowhere else in the world.



Unfortunately, this region is also a hotspot for imperilment. The number of imperiled freshwater fish species in the Southeast has risen 125% in the past 20 years."(*Elkins et al. 2016*)

TWO BRIDGES
TWO OUTCOMES
LESSONS LEARNED

DILL CREEK, GA
OLD CCC CAMP ROAD CROSSING, 2005

CULVERTS UNDERSIZED

PERCHED OUTLET

INLET DROP

DEBRIS ACCUMULATION

DILL CREEK AOP PLANNING

Undersized crossing

Barrier to aquatic species including federally listed blue shiner (T)

Just above confluence with Holly Creek (5 T/E aquatic species)

Multiple road failures

Stream Bkf measured width: 21.6’

Stream Simulation Model Calculation:27.92 minimum bridge span

Pre-fab bridge ordered


BIG R
Manufacturing LLC
Greeley, Colorado
800-234-0734
SERIAL #: BR4234
DATE of MFG: Oct. 2005
WIDTH: 24'
SPAN: 32'
DESIGN: HS-20
FABRICATED FOR: Murray County Public Works Department

ABUTMENT DESIGN

Originally designed by Big R Engineer (massive and too expensive)

Local landowner's firm redesigned pro bono

County public works department has oversight on crossing

Redesign was not shared with nor approved by the Service prior to construction


2010


2018

PEGAMORE CREEK
LEE ROAD CROSSING

PEGAMORE CREEK AOP PLANNING

Undersized, six barrel low water crossing

Barrier to aquatic species including federally listed Etowah (E) and Cherokee (T) darters

Tributary to Raccoon Creek

Flooding isolates local residents

Stream Bkf width: 23.9’

Stream Simulation Model Calculation: 30.68 minimum bridge span

Pre-fab bridge


BIG R
Manufacturing LLC
Greeley, Colorado
800-234-0734
SERIAL #: BR4234
DATE of MFG: Oct. 2005
WIDTH: 24'
SPAN: 32'
DESIGN: HS-20
FABRICATED FOR: Murray County Public Works Department

ABUTMENT DESIGN

County road, public works oversight

Project team met with design engineer and contractor during planning phase

The importance of maintaining bridge span over channel explained ad nauseam

Design shared with and approved by technical team

Project implementation monitoring shared among stakeholders


2015


2018

WHY THE DIFFERENCE?

Dill Creek AOP

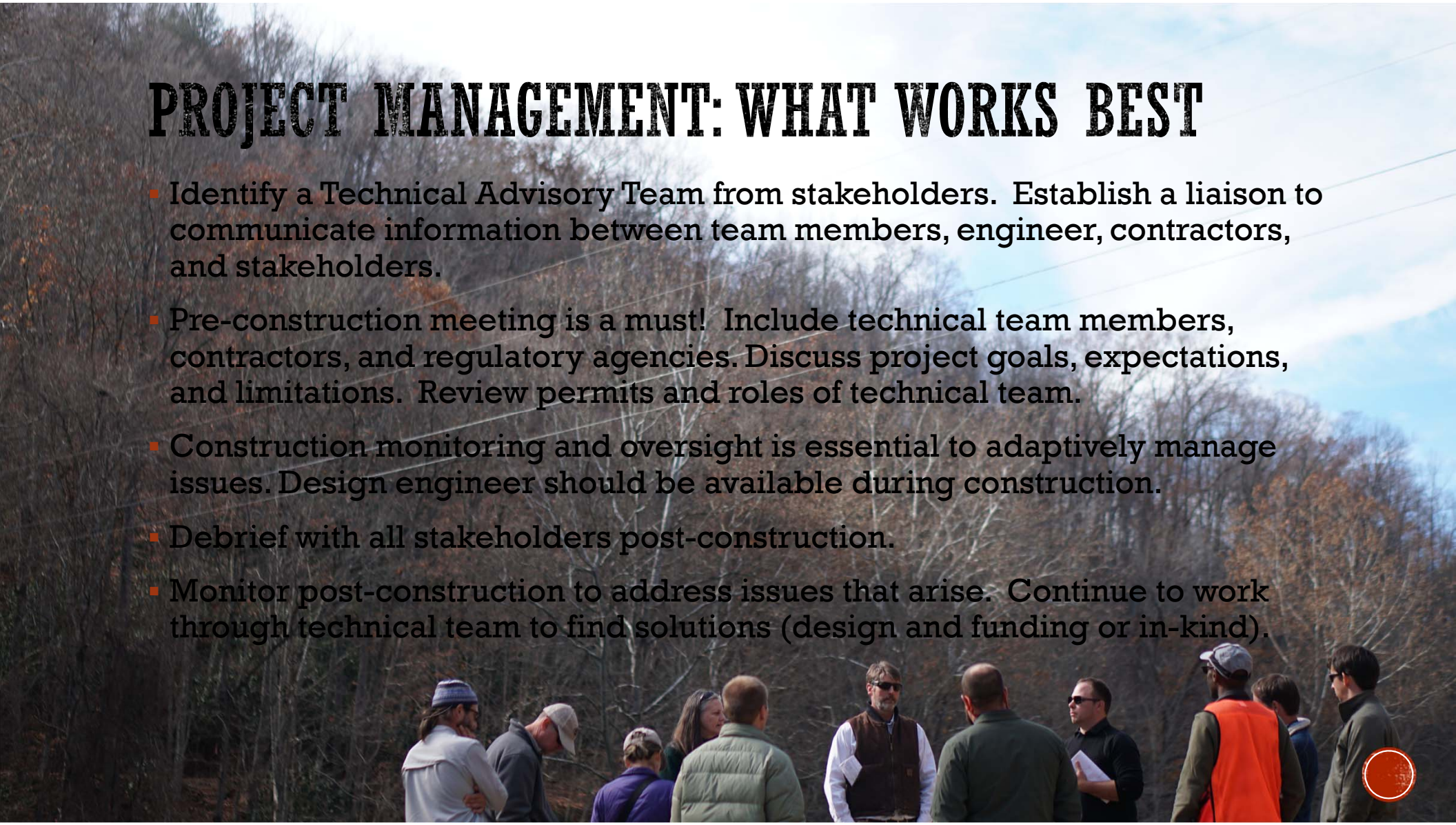
- Multiple stakeholders, no established liaison nor open communication between stakeholders and engineer/contractors
- Abutment design not shared with all team members
- No preconstruction meeting to discuss project goals, design, review permits, answer questions
- Design engineer not available during construction
- Contractor refused to make changes/implement adaptive management (not supportive of project goals/just getting job done according to plans)

Pegamore Creek AOP

- Multiple stakeholders with established liaison and clear communication
- Abutment draft design reviewed and approved by technical team
- Preconstruction meeting to discuss project goals, permit requirements, conservation measures, etc.
- Technical team on site almost daily during construction
- Contractor understood and was supportive of project goals and willing to adaptively manage project

PROJECT MANAGEMENT: WHAT WORKS BEST

- Identify a Technical Advisory Team from stakeholders. Establish a liaison to communicate information between team members, engineer, contractors, and stakeholders.
- Pre-construction meeting is a must! Include technical team members, contractors, and regulatory agencies. Discuss project goals, expectations, and limitations. Review permits and roles of technical team.
- Construction monitoring and oversight is essential to adaptively manage issues. Design engineer should be available during construction.
- Debrief with all stakeholders post-construction.
- Monitor post-construction to address issues that arise. Continue to work through technical team to find solutions (design and funding or in-kind).




Let the rivers teach us.
and biota