

Hoosier Dam Removal Project: Sediment Management Before, During, and After Removal

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Project Team

Project Funded
by National Fish
and Wildlife
Foundation Grant



Hoosier Dam / Woody Dam

- Chatham County, NC
- Built in 1922
- Hydroelectric dam
- Concrete and buttress dam with hydroelectric powerhouse
- 235 feet long, average height 25 feet.
- Impounds >16,000 LF Rocky River and >2,000 LF tributaries



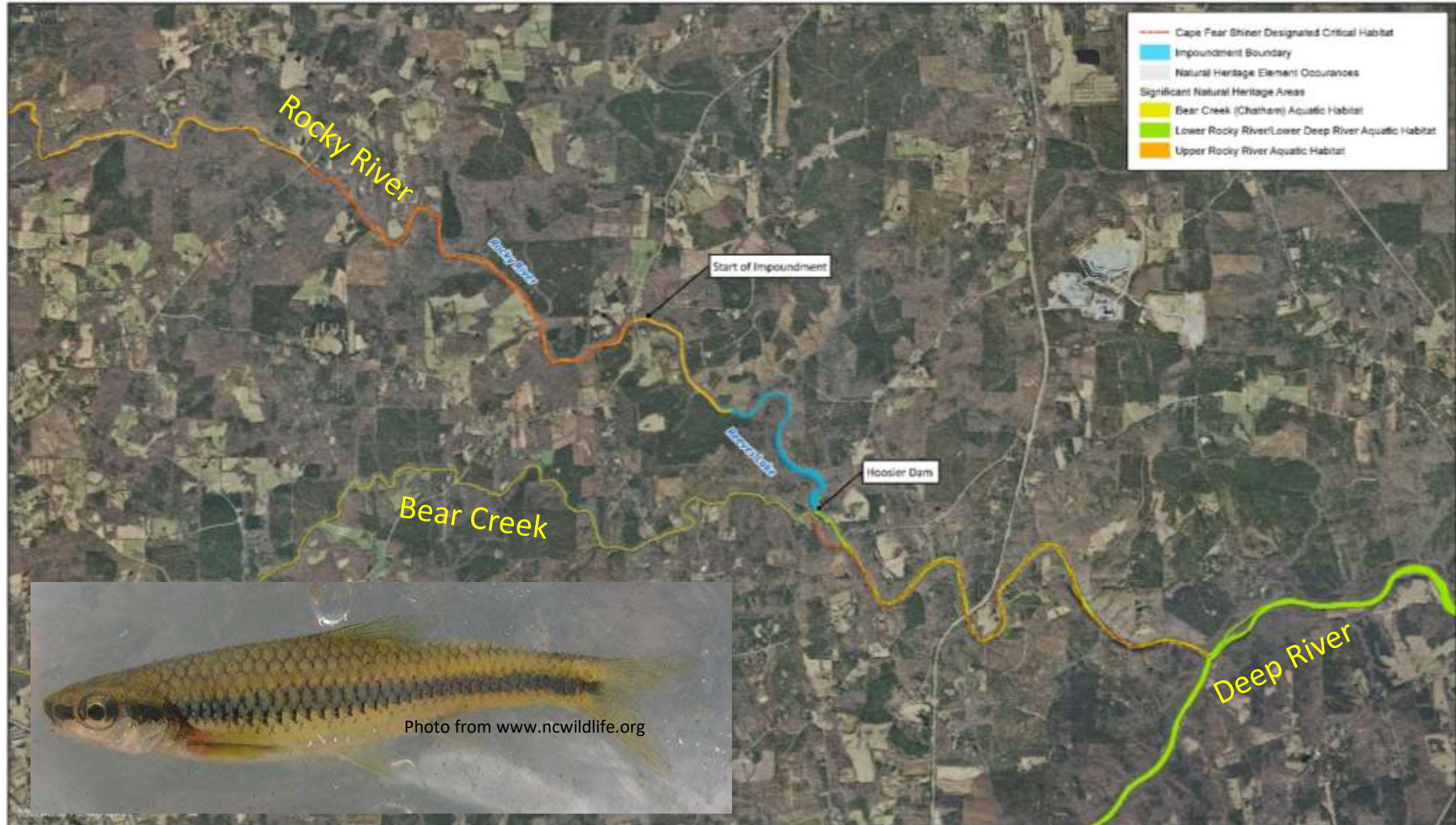


Critical Habitat Area for the Cape Fear Shiner





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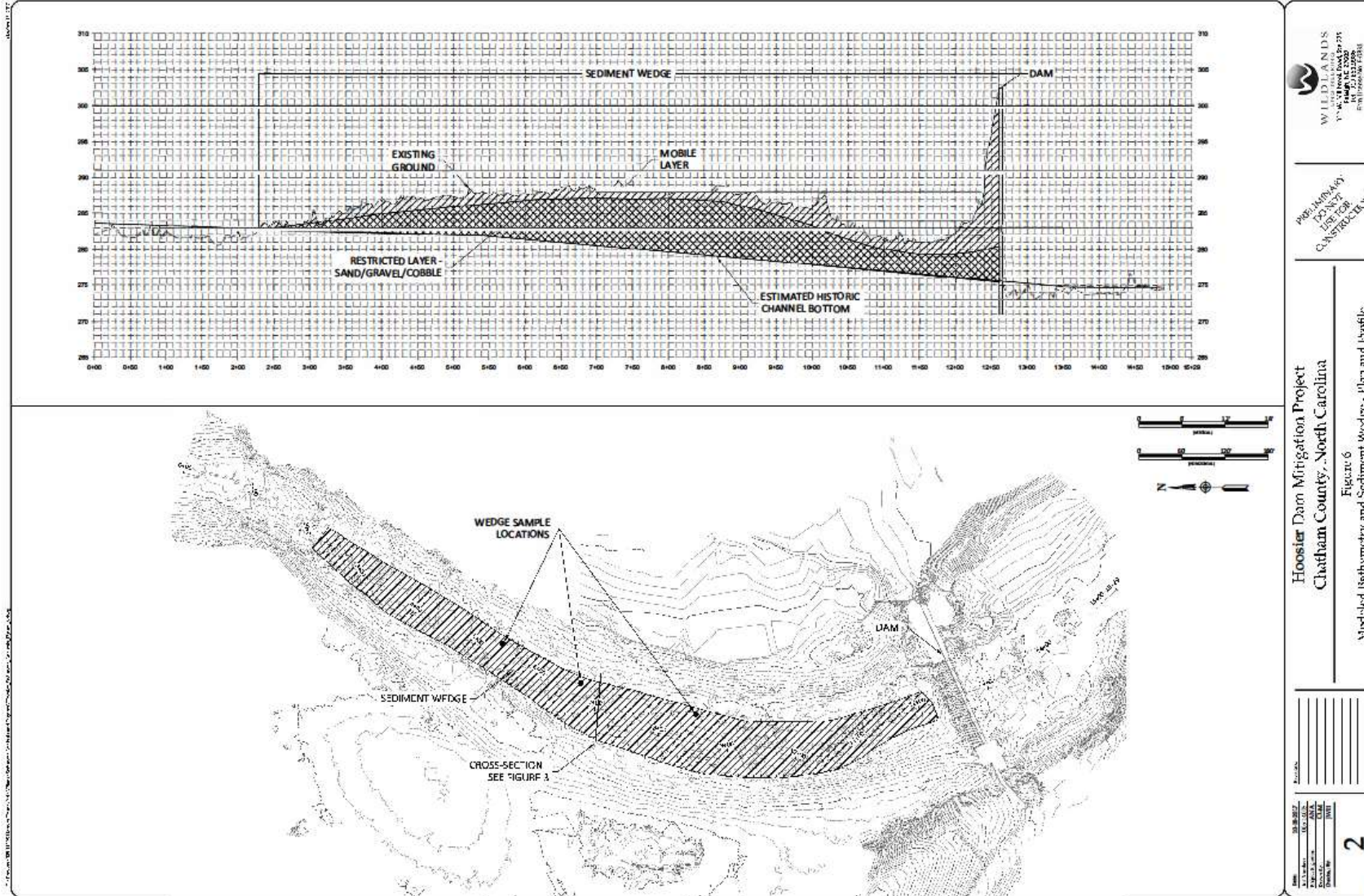
Project Timeline

- Water Quality Analysis: July to September 2013
- Geomorphic Assessment: July 2015
- Wetland Delineation: July 2016
- Grant Start: January 2017
- Pre-Application Meeting: March 2017
- Tier 1 Sediment Report: September 2016, reissued March 2017
- Biological Assessment: May 2017
- Dewatering of Impoundment/FERC exemption: June 2017
- Permitting: March 2017 to 'Sometime in the Future'
- Dam Removal: October 2018

All the Permits a PM Could Wish For.....

- USACE/NCDWR: Nationwide 53 (Dam Removal),
- USFWS: Biological Opinion
- NCSHPO: Historical/Archaeological Approval
- FERC: Drawdown Request, Surrender of FERC exemption
- FEMA: Dam removal is exempt from modeling, but site will require no-rise, LOMR
- NCDEQ: Erosion and Sediment Control Permit

What lies beneath..... ?





Turbine-Left Bay

Turbine in left bay. Wicket gates allow flow into turbine. Right bay has a 24" DIA orifice with a flap gate in the same location as the turbine.

Wicket gate operator stem.

Headgate. Used for dewatering the bay for maintenance of components downstream of headgate. Headgate in right bay is similar; however is deteriorated to point it is no longer functional as a gate.



Left Bay Gates

(view is from the powerhouse floor looking down through the access hatch into the dewatered bay)

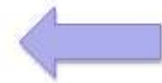
12" DIA Floor drain with flap gate.

Flap gate operating stem. Stem is raised or lowered to operate gate.



Flap Valve for 12" DIA Floor Drain-Left Bay

(Flap Valves for 24" DIA orifice and 12" DIA floor drain located in right bay are similar)



FLOW



Rocky River Dam
Chatham County, NC

PROJECT NO. 17C21002.00

Rock River Dam Gates



Let's
Engineer
Something!



We dewatered, now what?

Sediment Combination
of gravel, cobble, and
fines with low
likelihood of
contamination





To pulse or mechanically remove the sediment?



Cape Fear shiner (*Notropis mekistocholas*)

VS



Carolina
Creekshell
(*Villosa
vaughaniana*)



Eastern
Creekshell
(*Villosa
delumbis*)



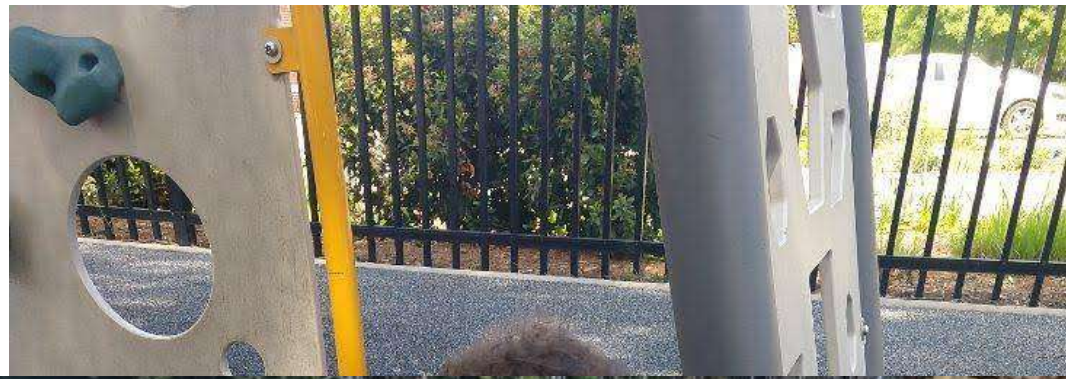
Savannah
Liliput
(*Toxolasma
pullus*)

USFWS

VS

NCWRC

After 5+ years working on the project and lots and lots of paperwork....



Then I got another call!









December 2018



June 2019



Questions?

<https://www.uniqueplacesllc.com/hoosier-dam-removal>

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