



Brook Trout Restoration in Cady Creek, Pierce County

Kasey Yallaly

Wisconsin DNR Senior Fisheries Biologist
St. Croix, Pierce and Western Dunn counties



OF NATURAL

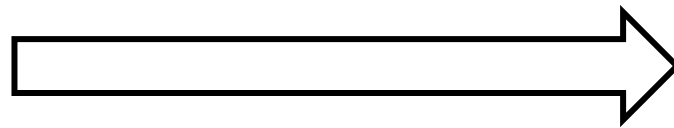
Driftless Area Trout Species

- Brook trout and brown trout
 - Limited rainbow stocking
 - Brook trout-only native inland trout species
 - Brown trout-introduced from Europe
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- Manage for both species
 - Stocking



Background

- Some Driftless Area streams have experienced changes in species assemblages
- Streams that were once 100% brook trout streams or brook trout dominated are now brown trout dominated



Background

- Documentation on many streams:
 - Cady (Pierce County)
 - Pine (Pierce County)
 - Parker (St. Croix County)
 - Burkhardt (Pierce County)
 - Gilbert (Dunn County)
 - Upper Wilson (Dunn County)
 - Lost (Pierce County)
 - Cave (Pierce County)
 - Plum (Pierce County)
- Swinns Valley Creek – Buffalo County
- Eagle Creek – Buffalo County
- Waumandee Creek – Buffalo County
- Buffalo River – Trempealeau County
- South Fork Bad Axe (upper portion, Vernon County)
- Cook Creek (Vernon County)
- Garbers Coulee (La Crosse County)
- Joe's Coulee (La Crosse County)
- Plum Creek (Crawford County)
- Du Charme Creek (Crawford County)
- Connway Valley Creek (Crawford County)
- Gran Grae Creek (Crawford County)
- Nederlo Creek (Crawford County)
- Richland Creek (Crawford County)

Brook Trout Declines

- Temperature increases
 - Climate change
- Habitat changes
- Stocking changes
 - Eau Galle tributaries
- Disturbance
 - Brown trout better adapted to tolerate disturbances

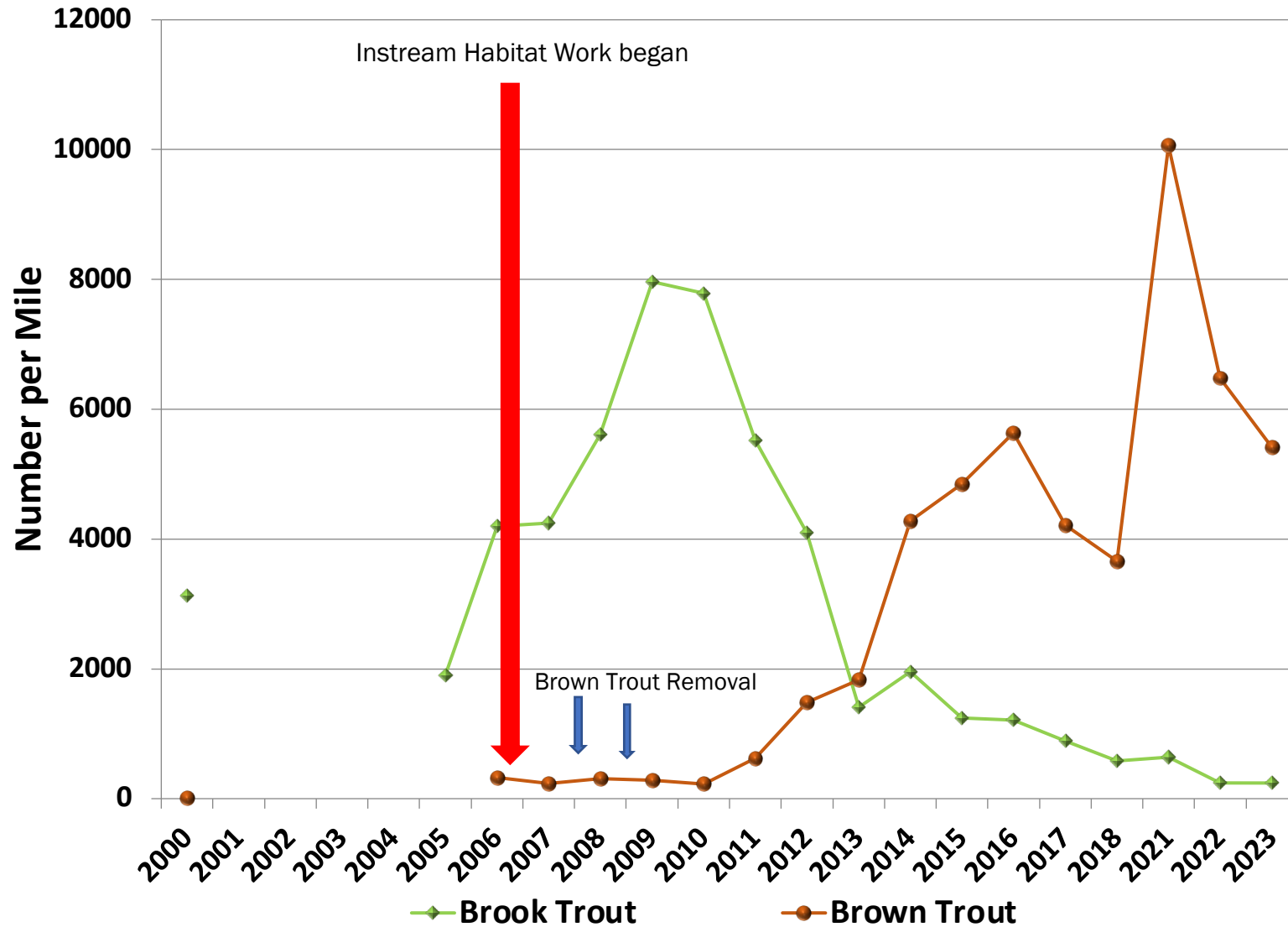


Pine Creek Habitat Project Monitoring Case Study

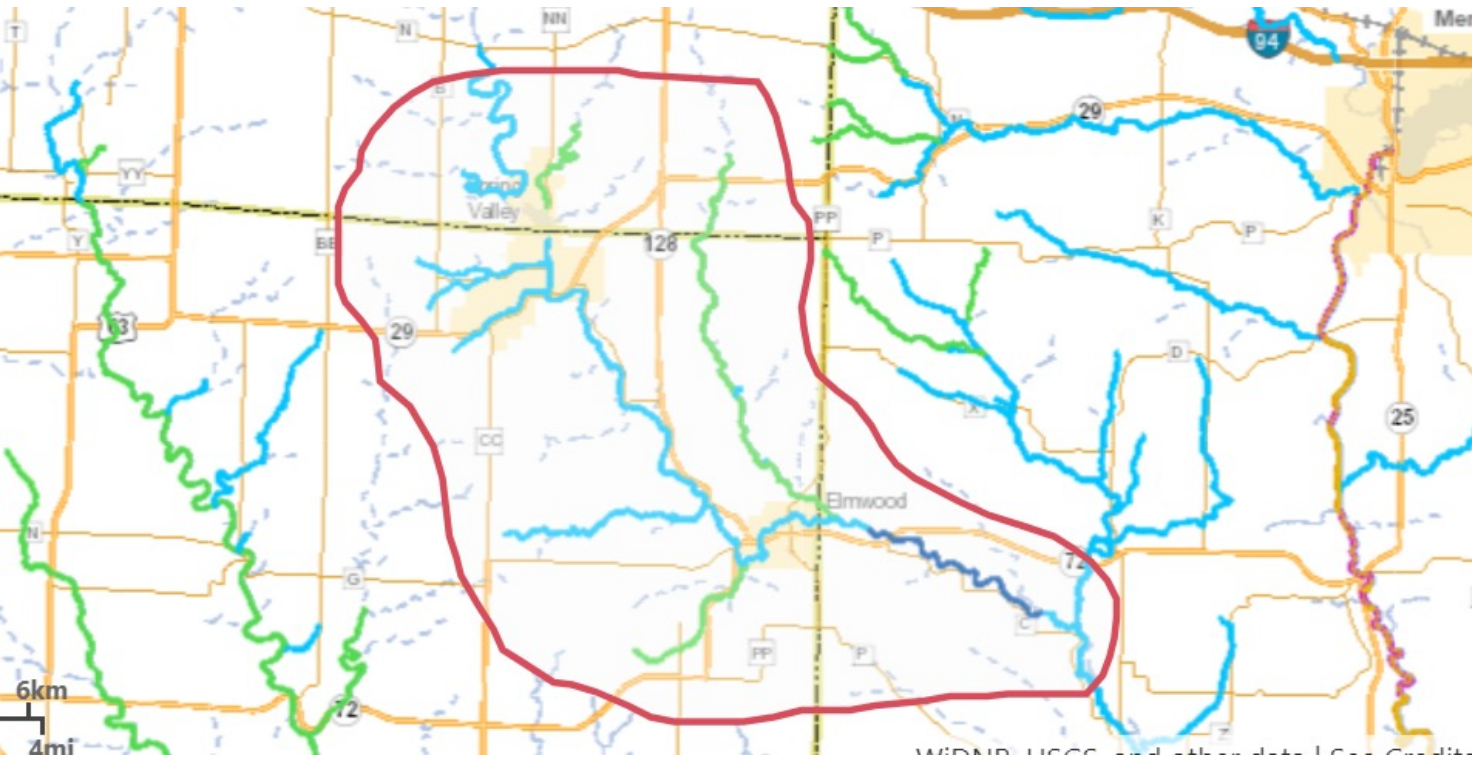
- Measurable improvement in the stream temperature regime, providing a buffer against future climate change impacts (Project Objective 1)
 - 60% decrease in stream bank height, reducing erosion potential and re-connecting stream to floodplain (Project Objective 2)
 - 140% increase in coarse stream bottom substrate (Project Objective 3)
 - 133% increase in aquatic macrophyte presence (Project Objective 4)
 - 40% decrease in stream channel width
 - 75% increase in water depth
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- An exceptionally cold temperature regime in Pine Creek did not provide a competitive post-restoration advantage for Brook Trout

Catch per Unit Effort- All Trout

Pine Creek- St. 2



Cady Creek



Cady Creek

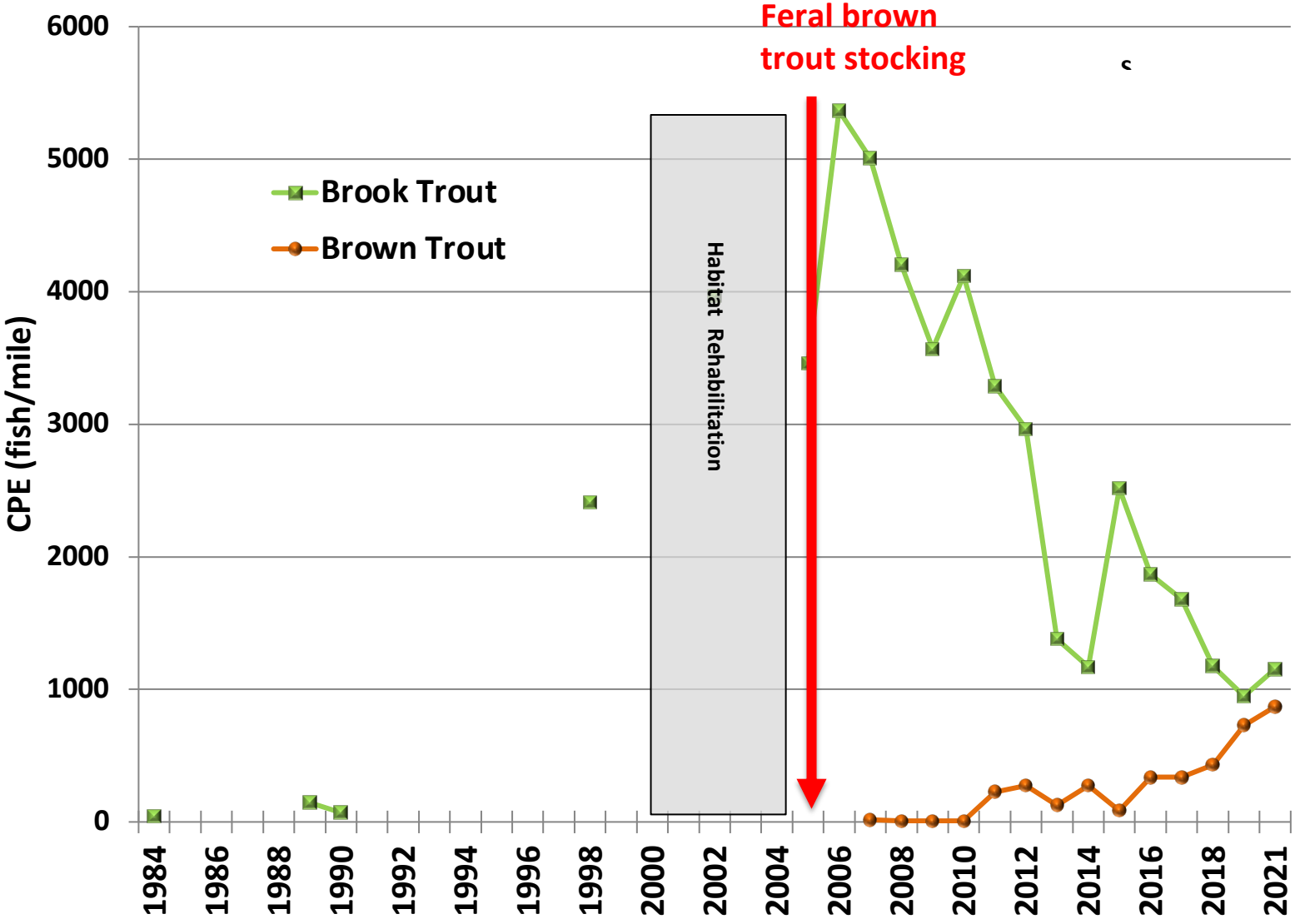
- Class I tributary to the Eau Galle River
- Exceptional resource water
- 1 of few BKT fisheries left in Pierce county
- Genetically wild Heritage strain brook trout
- Historically high densities of brook trout
- 4.7 miles of intensive habitat work completed in early 2000s
- Broodstock collection rotation
- Brook Trout Reserve Stream



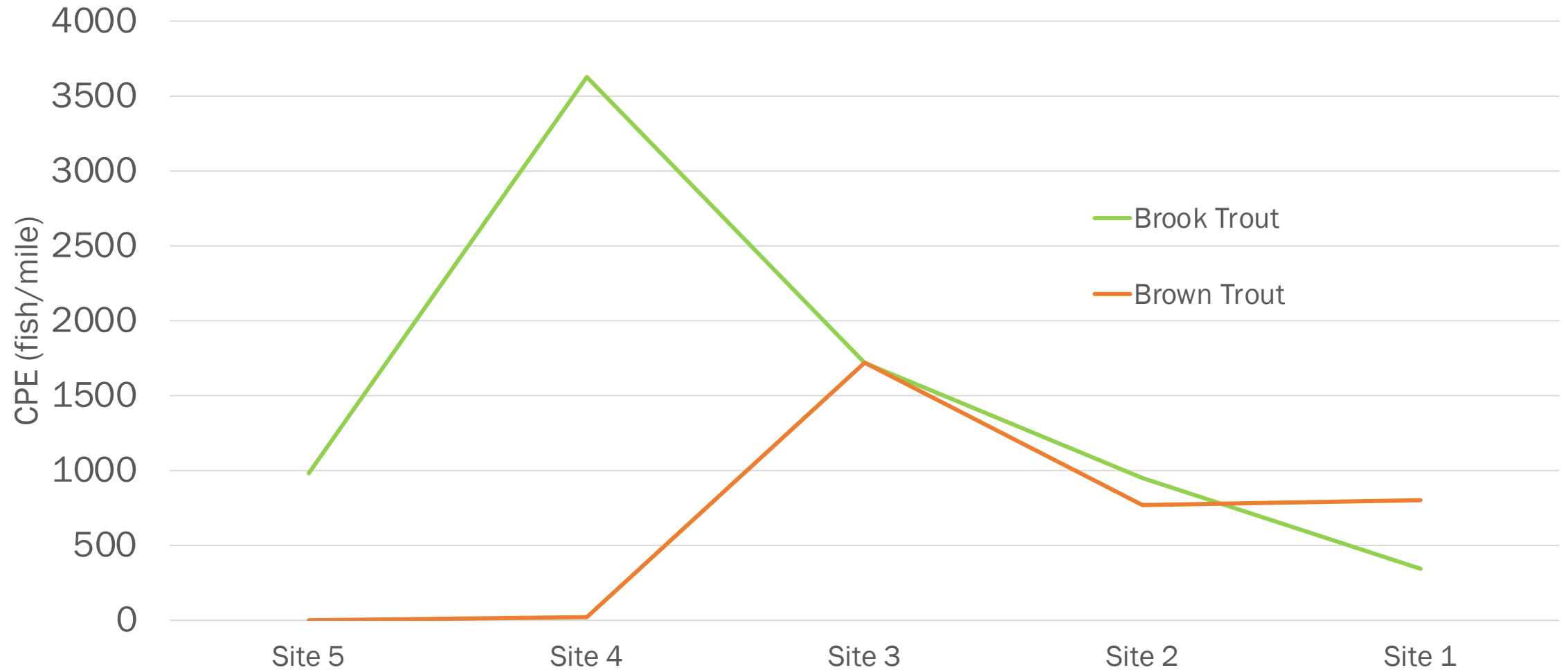
Past Management

- Prior to 2005
 - Brown trout stocking in Eau Galle River
 - Domestic brown trout
- 2005
 - strain of brown trout stocked changed to Timber Coulee strain
 - Stocked near confluence with Cady
- 2007- 2 6-7in brown trout were captured during surveys
- Brown trout increased to over 1000 fish/mile in trend site in 2018
 - Higher densities downstream

Cady Creek-Site 2



Cady Creek-2019

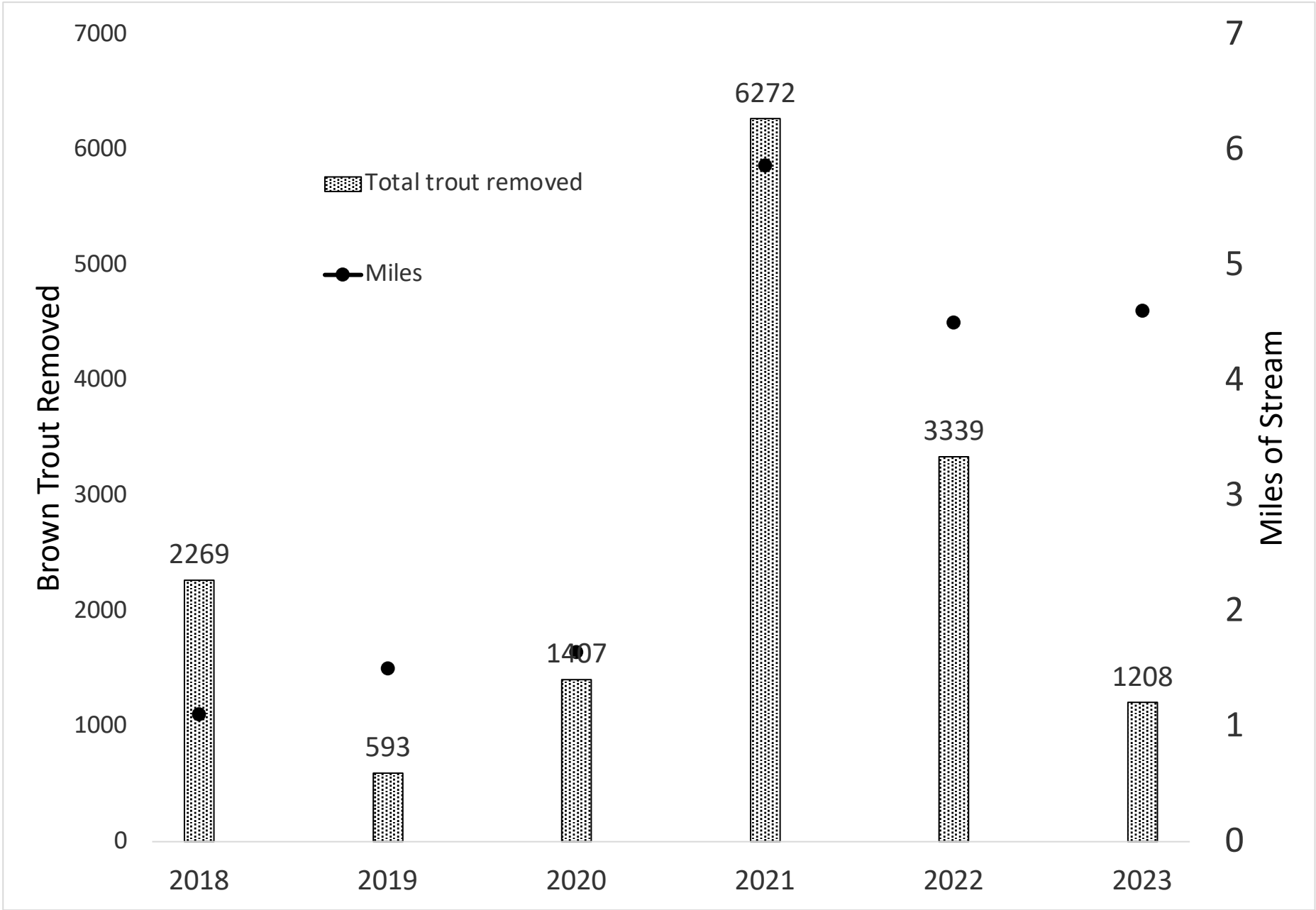


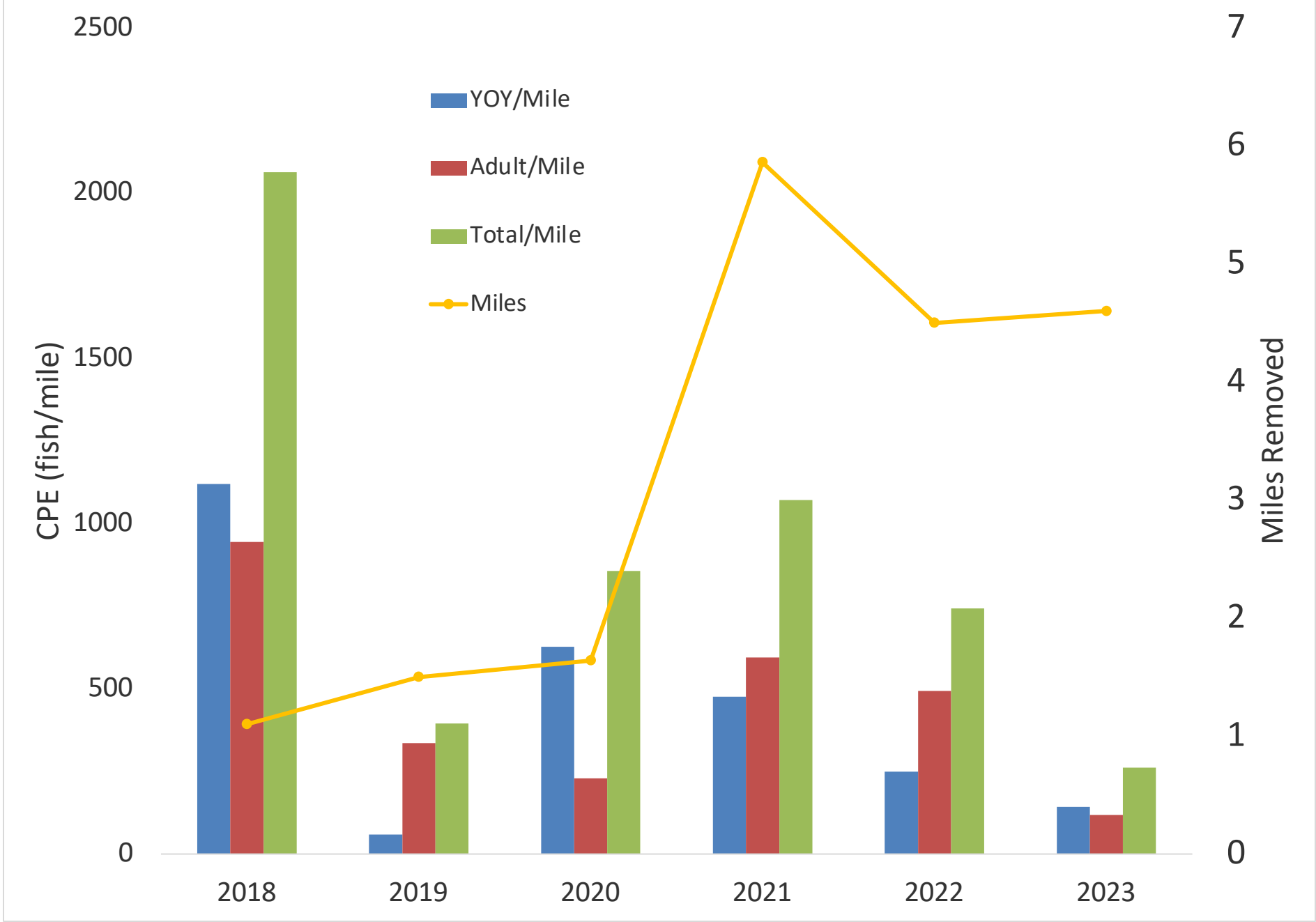
Restoration Plan Development

- Stop brown trout stocking in Eau Galle River
 - Initiated brook trout stocking in 2020-feral brook trout
- Change regulations to allow for increased harvest of brown trout and protect brook trout
- Mechanical brown trout removal
 - Electrofishing equipment
- Develop fish barrier
- Wild fish transfer (brook trout stocking) from high density areas to low density areas (within Cady Creek)
 - Electrofishing equipment
 - DNR stocking trucks

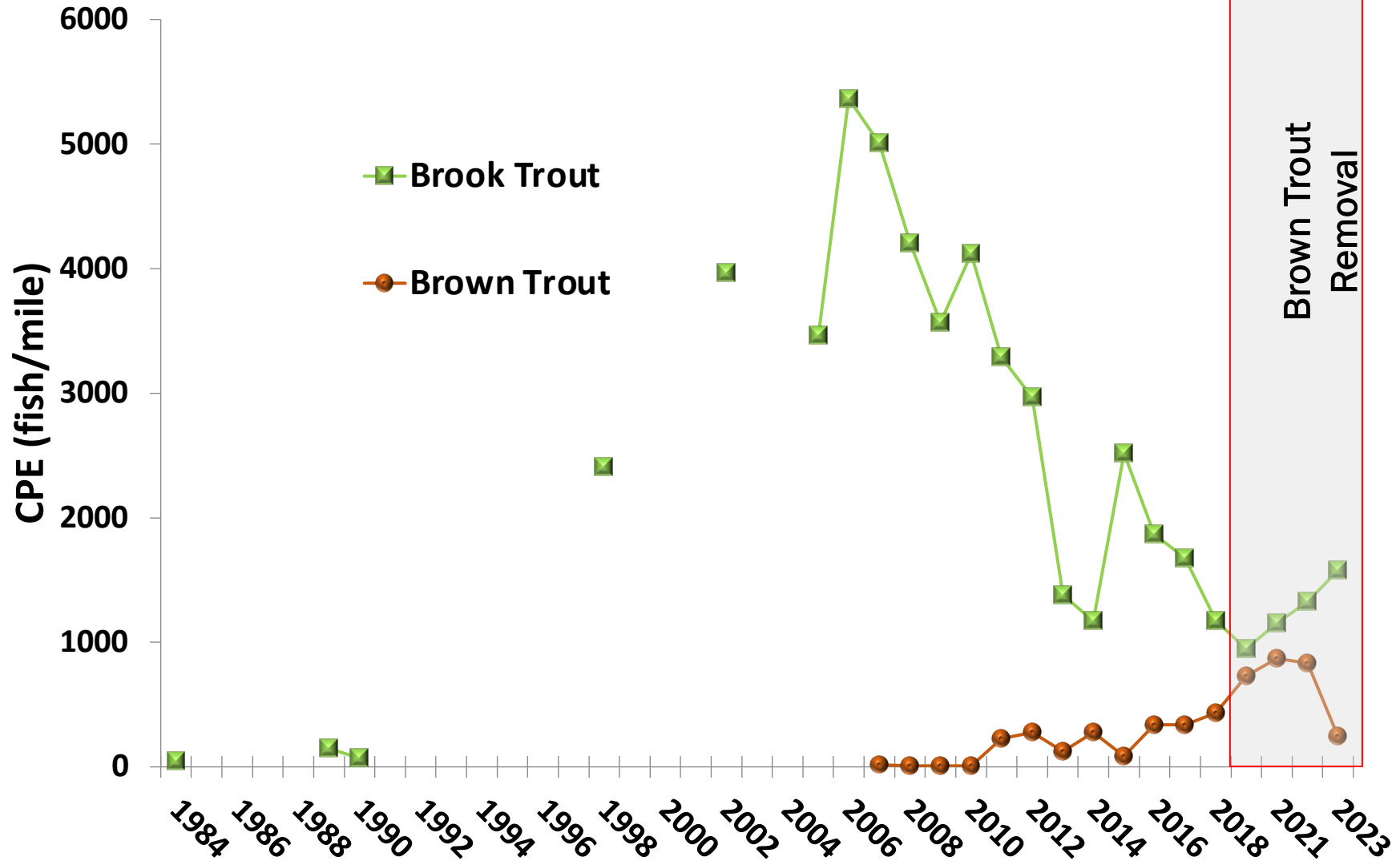
Part I-The Removals

- Began removals in 2018-2 days
- Continued in 2019-3 days, 6 sampling events
- Continued in 2020 using backpack shocker-3 days, 5 sampling events
 - Donated trout to local nursing home
- 2021-8 days, 9 sampling events
- 2022-7 sampling events in 5 days
- 2023-9 sampling events in 9 days (included summer sampling)
 - Donated trout to wildlife rehab center





Cady Creek-Site 2



Part II-The Weir

- Despite success of removals:
 - Still influx of adult brown trout in the fall for spawning
- Cady Creek-spawning, rearing and nursery stream for brown trout in the Eau Galle River
- Need barrier!
 - Temporary
 - Need to know specifically when to install





Photo
credit-ODFW

Pros and Cons-Weir

- Pros
 - Prevented fish movement upstream into Cady Creek
 - Easy to install
 - Easy access
 - Can allow brook trout to pass upstream
- Cons
 - Did not trap any fish-problems with our trap
 - Needed to be cleaned/checked 2x's per day
 - Travel time, staff time
 - Timing of install

Adjustments...

- Alter trap and funnel
- Need to understand exact timing of brown trout seasonal movement
- Developed trout movement study
 - Collaborated with research staff

Trout Seasonal Movement Study & Beaver Dam Passage Study

- Use of PIT tags-passive integrated transponder tags
 - Tracks movement of individual fish
- 2 arrays were constructed in Cady
 - Above and below a beaver dam



Will detect any tagged trout that pass over and record time/date and each individual fish's PIT tag number





Trout Seasonal Movement Study

- 1015 trout tagged with PIT tags
 - 272 brook trout
 - 743 brown trout
- Tags inserted into body cavity
- Marked brown trout by adipose clipping
- Marked brook trout by yellow elastomer tag on pectoral fin



Seasonal Movement Study

- Evaluate seasonal movement of brook and brown trout
- Evaluate tributary use
- Evaluate differences in brook and brown trout passage through beaver dams
- Evaluate growth of trout through recapture events
- Evaluate habitat use

Future Plans

- Continue brown trout removals
- Monitor response of brook trout population
- Continue brook trout stocking in Eau Galle River
- Analyze trout movement data and install weir according to time periods when majority of brown trout migrate for fall spawning



2023-2024 Sampling

- Watershed Rotation Sampling
 - 2023
 - Isabelle, Pine and Plum Creek sub-watersheds
 - 2024
 - Wilson, Annis and Gilbert Creek sub-watersheds (Western Dunn County)
- Reports available!

CONNECT WITH US

Kasey Yallaly

Kasey.Yallaly@wisconsin.gov

715-977-7354



/WIDNR



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OFF THE RECORD"