Wilbur Tailwater Trout Fishery Management Plan

2022-2027

Tennessee Wildlife Resources Agency

February 2022

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Prepared by

Jim W. Habera, Sally J. Petre, Bart D. Carter, and Carl Williams
Tennessee Wildlife Resources Agency

February 2022

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FOREWORD

Meeting Tennessee's variety of trout management challenges requires that the Tennessee Wildlife Resources Agency (TWRA) have a comprehensive management plan capable of addressing current needs, while also anticipating areas where future needs may arise. The Statewide Trout Management Plan (STMP) provides guidance for the management of Tennessee's trout fisheries given the status of wild trout resources and hatchery trout production (TWRA 2017). The Wilbur Tailwater Management Plan provides goals, strategies, and objectives for managing the trout fishery in this tailwater in accordance with the Mission Statement of the STMP. Other relevant goals, objectives, and strategies of the 2017-2027 STMP supported by this management plan are provided in the appendix and the entire STMP can be viewed at: https://www.tn.gov/content/dam/tn/twra/documents/fishing/trout/Tennessee-Trout-Management-Plan-2017-2027.pdf

MANAGEMENT GOAL: *Maintain a trout fishery that is substantially self-sustaining and capable of providing a variety of opportunities to the anglers who enjoy this resource.*

Tailwater trout fisheries can provide a variety of angling opportunities including high catch rates and larger fish (i.e., ≥14 inches) sustained by both stocked and wild fish. The Wilbur tailwater offers all these opportunities and management strategies will continue to focus on maintaining them (as under previous plans; Habera et al. 2009a, 2015).

STRATEGIES:

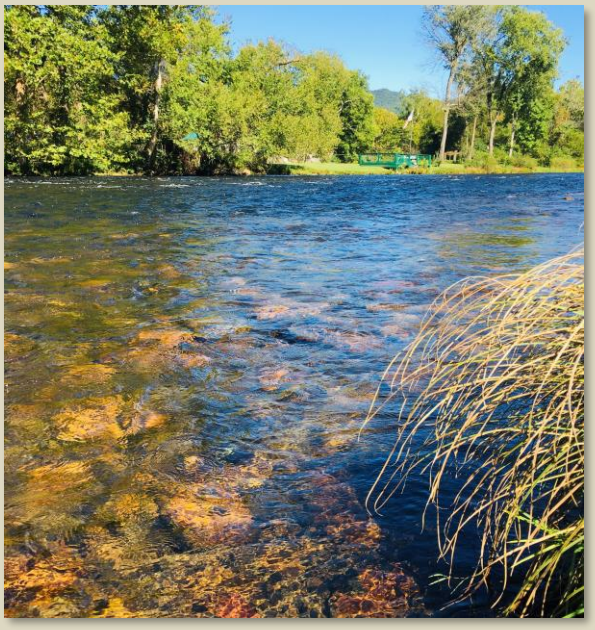
- *Feature the exceptional wild Brown Trout* Salmo trutta *and developing wild Rainbow Trout* Oncorhynchus mykiss *fisheries*
- *Continue providing a supplemental hatchery-supported fishery for adult Rainbow Trout with special seasonal stocking considerations for the lower portion of the tailwater (below Blevins Bend)*
- *Maintain the 'Quality Zone' special regulations*

Angling regulations for the tailwater outside of the Quality Zone (QZ) will continue to include a daily creel limit of 7 trout with no size or bait restrictions. Most Wilbur tailwater anglers have supported maintaining the QZ special regulations (creel limit of two trout ≥14 inches, artificial lures only) during creel surveys in 2013 (67% overall) and 2016 (81% of 99 QZ anglers; Habera et al. 2017). This support has been consistent even though slight majorities of QZ anglers have indicated that they did not experience higher catch rates there for trout ≥14 inches

(56% in 2016; 54% in 2020, Habera et al. 2021). Given that the QZ has remained popular with Wilbur tailwater anglers, it will remain in effect during the 2022-2027 management plan term.

1. BACKGROUND

The Watauga River originates in northwestern North Carolina and is impounded by Watauga Dam to form Watauga Reservoir (6,432 acres) near Hampton in Carter County, Tennessee. Most of the Tennessee portion of the reservoir's 468 mi.^{2} watershed is within the Cherokee National Forest. Wilbur Dam, at Watauga River Mile (WRM) 34, impounds a small reservoir (~72 acres) about 3 mi. downstream of Watauga Dam. Wilbur Dam was completed in 1912 and was acquired by the Tennessee Valley Authority (TVA) in 1945. Its four turbines can release a total flow of 2,680 ft^3/s (cfs) and one turbine has a higher capacity (1,766 cfs) than the other three, offering more discharge options than at other Tennessee hydroelectric facilities (Bettoli 1999). Currently, only the higher-capacity turbine is operational and lower flows, such as the 107 cfs minimum flow, are provided by spilling. Turbine venting of discharges from Watauga (Scott et al. 1996) has helped Wilbur Dam discharges meet TVA's target dissolved oxygen (DO) concentration of 6.0 mg/L. The Wilbur tailwater flows ~16 mi. from Wilbur Dam through Carter and Washington counties before being impounded in Boone Reservoir. Surface area of the tailwater at base flow is 334 acres (Bettoli 1999).



Wilbur tailwater (Watauga River)

Currently, a put-and-take fishery for Rainbow Trout is provided throughout the Wilbur tailwater by annually stocking adult fish (9-10 inches), although there appears to be substantial natural reproduction as well. Brown Trout stocking was discontinued throughout the tailwater in 2015 to manage for a wild Brown Trout fishery (Habera et al. 2016). Wilbur tailwater's wild Brown Trout population has grown since 2010, particularly in the upper half—although no spawning sanctuaries or restrictive angling regulations have been established there (as they have for the South Holston tailwater). Adult and fingerling Brook Trout were stocked during 2001-2008

(average of 63,000/year), but this was discontinued because of poor survival, slow growth, and excessive predation by Brown Trout (Damer and Bettoli 2008; Habera et al. 2009b).

Bettoli (1999) found that the density of trout ≥14 in. was higher in the QZ than elsewhere in the tailwater but recognized that limited access to the QZ could also have been a contributing factor at that time. The original QZ established by TWRA in 1989 extended 2.7 mi. from Smalling Bridge downstream to the Hwy. 400 Bridge. Special trout angling regulations consisted of a 14-in. minimum size limit and two-fish creel limit, with only artificial lures permitted. The lower QZ boundary was moved (0.1 mi.) upstream to the CSX Railroad Bridge in 2003 to accommodate bait anglers at the nearby access area (Figure 1). A parking area and trail connector on the Watauga Bluffs State Natural Area opened in 2015 and provides wading anglers with better access to the QZ.

Survival of stocked adult Rainbow Trout after 200 days (17-27%) was considered good by Bettoli (1999) and the return (harvest) rate of 27% was intermediate among Tennessee tailwaters. These fish grew relatively slowly (0.20-0.28 in./month) and condition declined significantly after stocking (Bettoli 1999). Fingerling Rainbow Trout stocked in June survived well and had better growth (0.55 in./month), although this rate was generally lower than corresponding growth rates for fingerling Rainbow Trout in the Norris and South Holston tailwaters (Bettoli 1999).

2. CURRENT TROUT FISHERY STATUS

2.1 Abundance

TWRA currently monitors the Wilbur tailwater trout fishery at 13 boat electrofishing stations (Figure 1) in March each year to provide an assessment of carry-over trout populations (including size structure) before stocking begins. These stations are sampled (600 s each; 2.17 h of total effort) during the day at a flow of approximately 2,400 cfs, which is currently provided by operating Wilbur Dam's higher-capacity unit with supplemental spilling. The 13th station (10.5; Figure 1) was added in 2010 to help evaluate the special regulations in the QZ. Electrofishing catch per unit effort (CPUE) estimates (fish/h) are calculated and based on trout at least 178 mm (7 in.) long, as this is the minimum size considered fully recruited to the sampling gear and technique.

The Wilbur tailwater currently supports a relatively-high-abundance trout fishery, with total CPUE averaging 242 fish/h during the past five years (Figure 2). Prior to the increase in the Brown Trout population upstream of Blevins Bend (WRM 22) that began in 2010 (Figure 3),

Electrofishing survey on the Wilbur tailwater.

average CPUE was 125 fish/h. Mean Brown Trout CPUE upstream of Blevins Bend (Stations 1- 8) increased from 102 fish/h in 2007 to 321 fish/h in 2017 and has averaged 274 fish/h during the past five years (Figure 3). Downstream of Blevins Bend (Stations 9-12), Brown Trout mean CPUE has remained relatively consistent and much lower since 2007, ranging from 31-81 fish/h and averaging 47 fish/h (Figure 3). Overall Rainbow Trout CPUE gradually increased during 2004-2015 (30 to 70 fish/h) but has declined somewhat since then, averaging 28 fish/h for the last two surveys (Figure 2). The decline of Rainbow Trout abundance in the lower portion of the tailwater (below Blevins Bend) has been more substantial than further upstream, with CPUE there averaging 10 fish/h the past two years (Figure 4).

There were no changes to Rainbow Trout stocking rates during 2015-2020, but estimated Rainbow Trout harvest in 2020 (34,000 fish) was nearly three times higher than the mean for all creel surveys since 2013 (range, 8,00-19,000; mean, 13,000; see Section 2.5 below and Black 2021). Lower Rainbow Trout CPUE also mirrors the extended (2015-2020) Boone Reservoir drawdown for repairs to the dam and some anglers have implicated Striped Bass *Morone saxatilis* predation as a factor in the lower tailwater. Striped Bass use this portion of the tailwater during the summer months (Habera et al. 2019) and may have been more abundant there during the drawdown. But whatever has affected Rainbow Trout abundance in the lower Wilbur tailwater since 2015 has not affect Brown Trout abundance to the same degree (Figure 3).

Large Brown Trout from a Wilbur tailwater monitoring sample.

The abundance of larger trout (≥14 in.) throughout the Wilbur tailwater generally increased during 2002-2014 and CPUE has remained in the 19-25 fish/h range since then (Figure 2). These larger fish are primarily Brown Trout, but the proportion of Rainbow Trout further declined during 2018-2021 (Figure 2). The Brown Trout length frequency distribution for 2021 sample indicated potential stockpiling of fish in the 8-12 in. size classes (80% of fish ≥7 in., Figure 5), which may reduce recruitment into the larger size classes as in the South Holston tailwater (Habera et al. 2021).

Catch rates for trout ≥14 in. within the Wilbur tailwater QZ (Stations 10, 10.5, and 11) have typically exceeded corresponding catch rates for the stations outside the QZ since 2010 (Figure 6). However, higher variability (standard errors) associated with the QZ CPUE means limit the usefulness of comparisons with CPUEs from outside the QZ.

2.2 Relative Weight (W_r)

Relative weights (W_r) provide an index of body condition based on standard weight (W_s), with a W_r of 100 considered ideal and values approaching 70 considered low and suggestive of poor health or insufficient food resources (Blackwell 2000). Mean W_r for Brown Trout in the upper portion of the Wilbur tailwater (Stations 1-6) has declined below 90 (Figure 7) with their increasing abundance in that area (Figure 3). Although Figure 3 includes Stations 7 and 8 in the area upstream of Blevins Bend, those stations have contributed only 10% of the catch since 2013. Brown Trout relative weights for the upper portion of the tailwater (Stations 1-6) also now remain below those for the lower portion of the tailwater (Stations 7-12; Figure 7), where abundance is much lower. This is indicative of density-dependent effects, including reduced growth and recruitment into the larger size classes as observed in the South Holston tailwater (Habera et al. 2019, 2020, 2021).

2.3 Stocking

Currently, 40,000 adult (9-10 inch) Rainbow Trout are stocked annually in the Wilbur tailwater. All Brown Trout stocking was discontinued in 2015 as part of the shift to a management focus on wild fish (Figure 8; Habera et al. 2015). Fingerling (~4 inch) Rainbow Trout stocking was reduced from 100,000 to 50,000 fish in 2004 (Figure 8) as an initial step toward determining the optimum annual stocking rate. Mean Rainbow Trout abundance (mean annual CPUE) prior to this 50% reduction in the fingerling stocking rate was 41 fish/h and has averaged 49 fish/h since 2004, although recently (2020 and 2021) CPUE has been below 30 fish/h (Figure 2).

An important objective of this management plan during 2022-2027 will be to further evaluate fingerling Rainbow Trout stocking and determine the appropriate amount (which may be none) given the current level of natural reproduction. Accordingly, fingerling Rainbow Trout stocking was discontinued in 2021 and will not resume during this management plan term unless deemed necessary to maintain the Rainbow Trout fishery. Retired brood fish (Rainbow Trout) from Erwin National Fish Hatchery (ENFH) were officially added to the Wilbur tailwater stocking program in 2020 and 2,100 of these 17-18 in. fish are now allocated annually. About half of the ENFH fish are stocked below Blevins Bend in the lower portion of the lower tailwater (which includes the QZ) during August-October and should be resistant to predation by any Striped Bass that may be present.

2.4 Angler Use

Results for the most recent (2020) Wilbur tailwater creel survey (Black 2021) indicated that trout anglers made an estimated 16,998 trips comprising 93,320 hours of effort (Figure 9). Although angling pressure (hours) in 2020 increased 50% relative to the 2018 survey, it remained below the 112,740 hours estimated for 2016 (Figure 9). Estimated trips for 2020 matched the average (17,000) for the past three surveys (Figure 9). Both Rainbow Trout and Brown Trout catch increased in 2020 relative to 2018 but were within the range of estimates for previous creel surveys (Figure 10). However, Rainbow Trout harvest in 2020 (34,000 fish; Figure 10) exceeded all previous estimates (<20,000 fish), as did the Rainbow Trout harvest rate (35%; Figure 11). Anglers have been encouraged to harvest more smaller (8-12 in.) Brown Trout for the past few years as the population in the upper portion of the tailwater has increased, but 2020 was the first year that there was a noteworthy change in harvest. Estimated Brown Trout harvest increased to 4,000 fish in 2020 (from 900-2,600 during 2013-2018; Figure 10) and harvest rate increased for the first time (Figure 11).

Trout catch rates have remained in the 1-2 fish/h range (Figure 12), which would generally be considered representative of good fishing (i.e., >0.7 fish/h; McMichael and Kaya 1991; Wiley et al. 1993). Catch per trip has generally increased over time (Figure 12), indicating somewhat longer trips (mean, 4.5 h/trip 1998-2013, 5.1 h/trip 2016-2020).

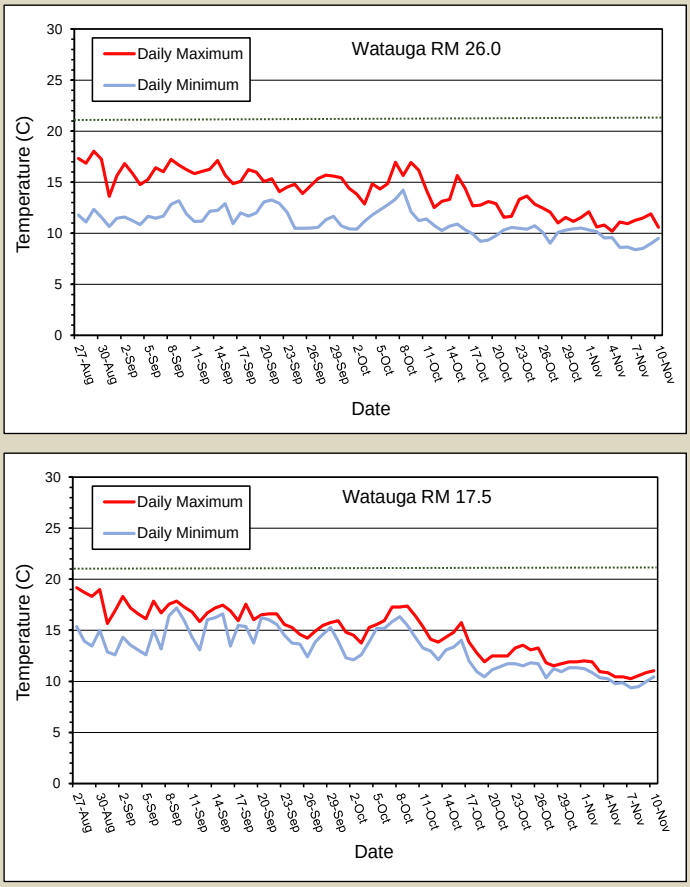
The proportion of resident Tennessee anglers interviewed during Wilbur tailwater creel surveys decreased from 71% in 2013 (Black 2014) to 57% in 2016 (Black 2017) and 54% in 2018 (Black 2019). This trend continued in 2020, as half (50%) of the anglers interviewed were from outside Tennessee (primarily North Carolina, as in the previous surveys). Anglers (n=383) were also asked in 2020 about their use of and success in the QZ, as well as their overall perception of the trout fishery in the lower portion of the tailwater (below Blevins Bend). Only 30% indicated they had fished in the QZ during the previous year and of those, most (54%) said they did not catch more trout ≥14 in. in the QZ than elsewhere in the tailwater. A substantial majority (72%) rated the trout fishery in the lower portion of the tailwater as excellent (5 on a 1-5 scale) and no one gave a 1 or 2 rating (13% had no opinion).

2.5 *Myxobolus cerebralis* Screening

Screening for the parasite that causes whirling disease, *Myxobolus cerebralis,* was conducted for adult Rainbow Trout and Brown Trout from the Wilbur and South Fork Holston tailwaters in 2017. Samples submitted to the U.S. Fish and Wildlife Service's Warm Springs, GA Fish Health Lab later tested positive for fish from both locations, making this the first detection of *M. cerebralis* in Tennessee. Wilbur tailwater anglers were subsequently asked during the 2018 creel survey if they were aware that the whirling disease parasite was present and if so, how they had learned about it. Most anglers (60%) were aware and two-thirds of those (67%) said the Agency's 2018 fishing guide article was how they had been informed. Other anglers (16%) and the Agency's website (12%) were also important information sources. The Southeastern Cooperative Fish Parasite and Disease Lab at Auburn University, which began conducting all *Myxobolus* screening for TWRA in 2018, requested that the Wilbur tailwater be resampled (using fingerling Rainbow Trout) to confirm the initial (2017) positive results. Results for the 2018 sample were also positive, confirming the presence of *M. cerebralis.* Two adult Rainbow Trout with cranial deformities subsequently captured in 2019 were later

Cranial deformity of a Rainbow Trout from Wilbur tailwater (upper image) compared to the appearance of normal Rainbow Trout (lower image). Such deformities are a common clinical sign of infection by the whirling disease parasite (M. cerebralis). Whirling disease was later histologically confirmed in the deformed fish in the upper image (Ksepka et al. 2020).

analyzed and represent the first histologically confirmed cases of whirling disease in wild-caught salmonids in the southeastern United States (Ksepka et al. 2020). TWRA continued to move forward with information and education efforts to inform anglers of the importance of taking biosecurity measures for preventing the spread of spores and infected fish, including cleaning waders and fishing gear and not moving potentially infected fish (especially those used as bait). Because of the presence of *M. cerebralis* in two tailwaters and a few other stocked trout streams, TWRA recommended to the Tennessee Fish and Wildlife Commission that the use of wild-caught trout as bait from *M. cerebralis*-positive waters (including the Wilbur tailwater) be restricted to the waters where they were harvested. This restriction became effective March 1, 2020.



Daily maximum and minimum water temperatures at two locations on the Wilbur tailwater (Watauga River) during 27 August – 10 November 2021. Dotted lines in each graph indicate 21°C (70°F), above which impacts could occur.

2.6 Water Temperature Monitoring

Anglers expressed concern about extended low flows from Wilbur Dam and potentially elevated water temperatures during summer 2021. Accordingly, temperature loggers were placed in the Wilbur tailwater on 27 August 2021 at the Lovers Lane access in Elizabethton (near Watauga RM 26.0) and at the Wagner Road access near the Hwy. 400 bridge (Watauga RM 17.5) at the lower end of the QZ. Results from this monitoring (through 10 November 2021) indicated there were no issues (i.e., water temperatures exceeding 21°C or 70°F) during late summer and fall (see graphs above). TWRA will continue to work with Wilbur tailwater anglers and other partners to be aware of, document (e.g., by deploying temperature loggers), and address potential water temperature issues during 2022-2027 in accordance with Management Objective 3 (Section 3).

Wilbur Tailwater

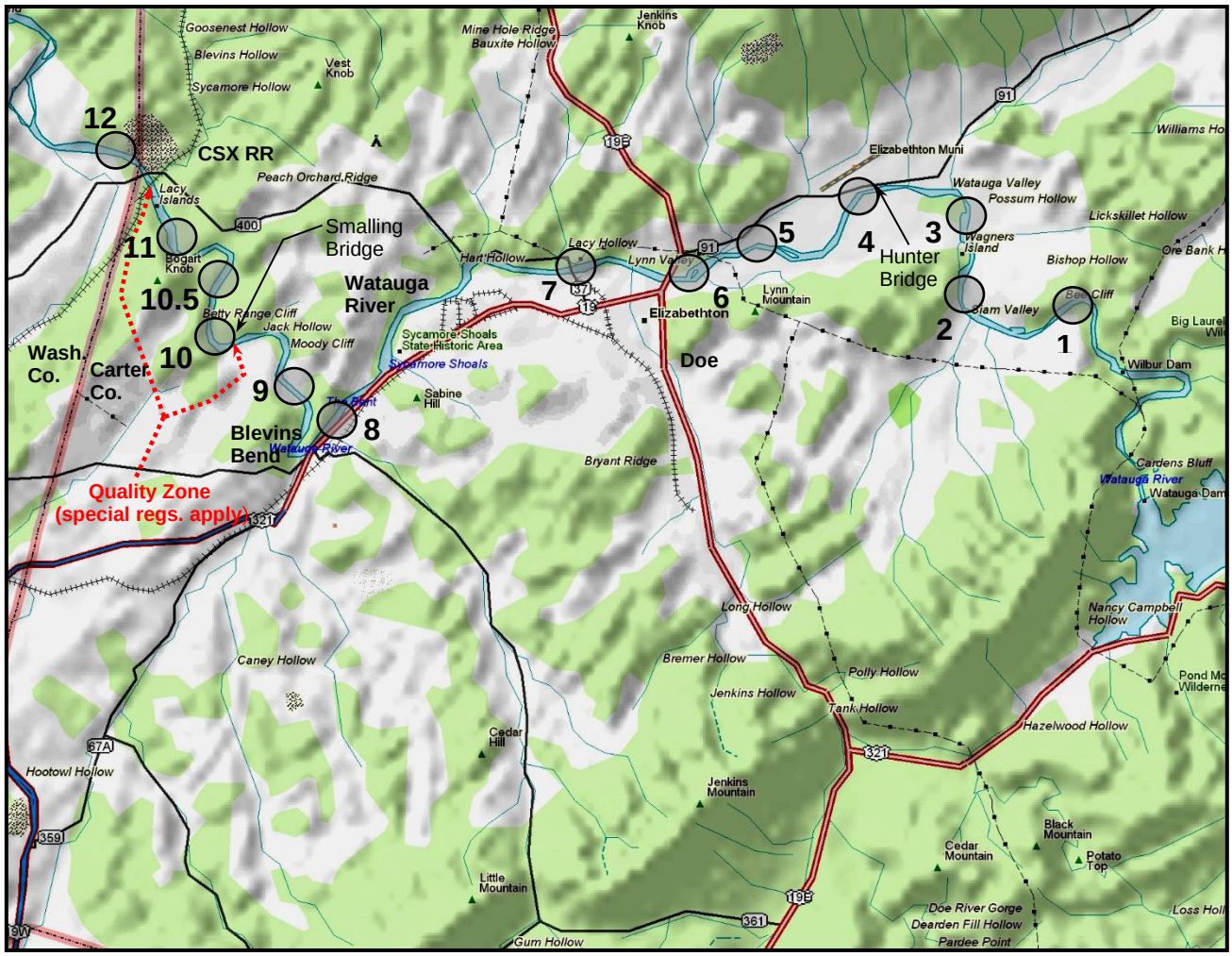


Figure 1. Locations of the 12 annual monitoring stations on the Wilbur tailwater (Watauga River).

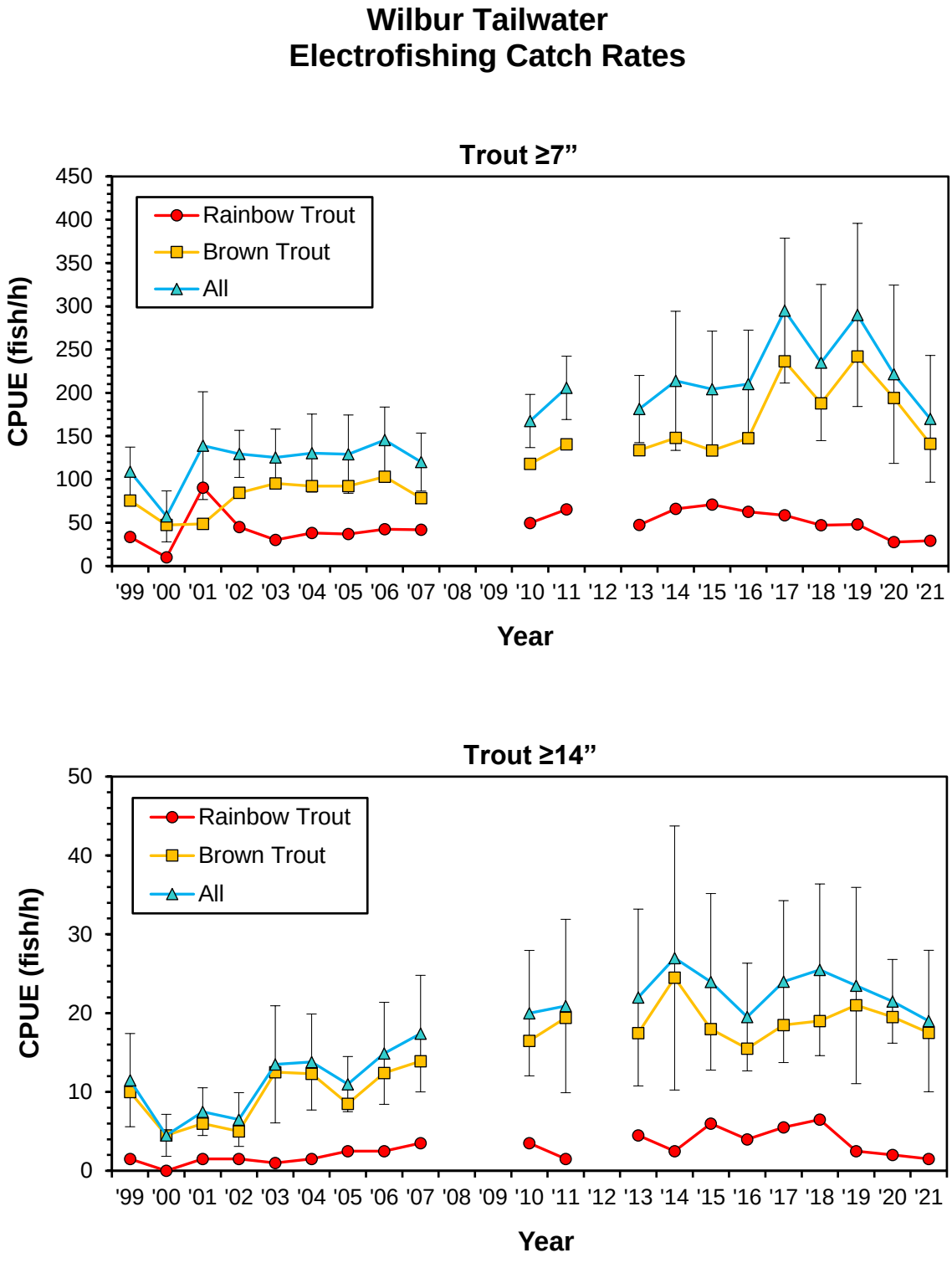


Figure 2. Mean electrofishing catch rates (CPUE) for trout ≥7 in. (upper graph) and ≥14 in. (lower graph) for the Wilbur tailwater. Bars indicate 90% confidence intervals.

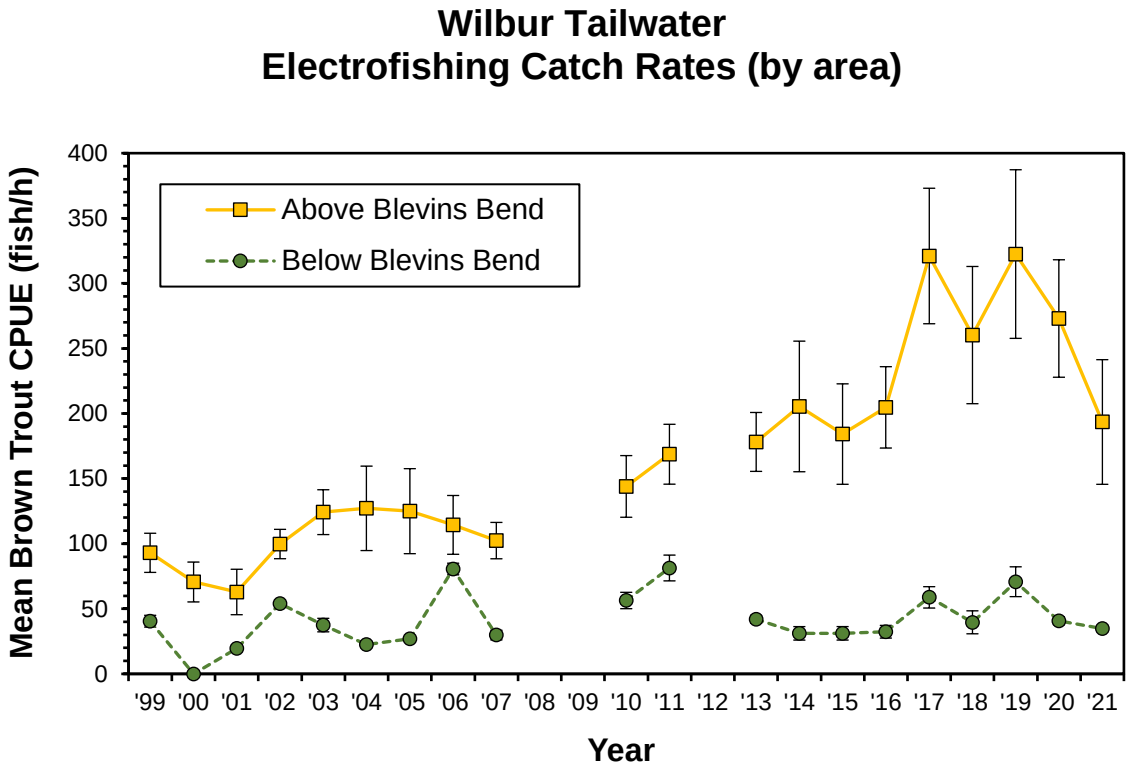


Figure 3. Mean electrofishing catch rates (CPUE) for Brown Trout (≥7 in.) in the Wilbur tailwater above and below of Blevins Bend (WRM 22). Bars indicate standard errors.

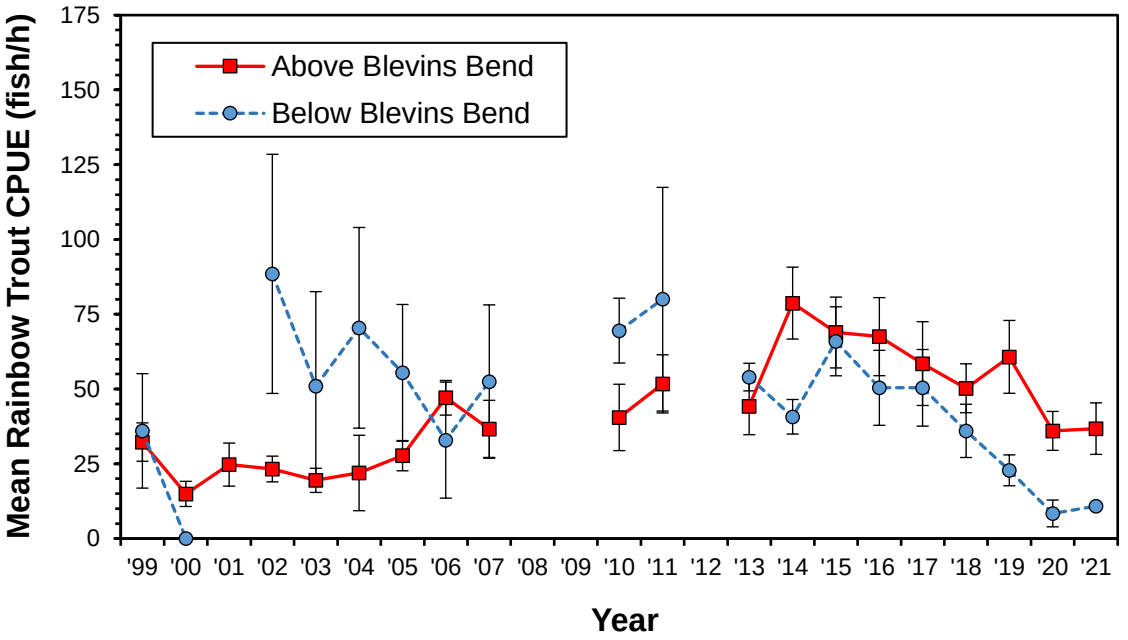


Figure 4. Mean electrofishing catch rates (CPUE) for Rainbow Trout (≥7 in.) in the Wilbur tailwater above and below of Blevins Bend (WRM 22). Bars indicate 90% confidence intervals.

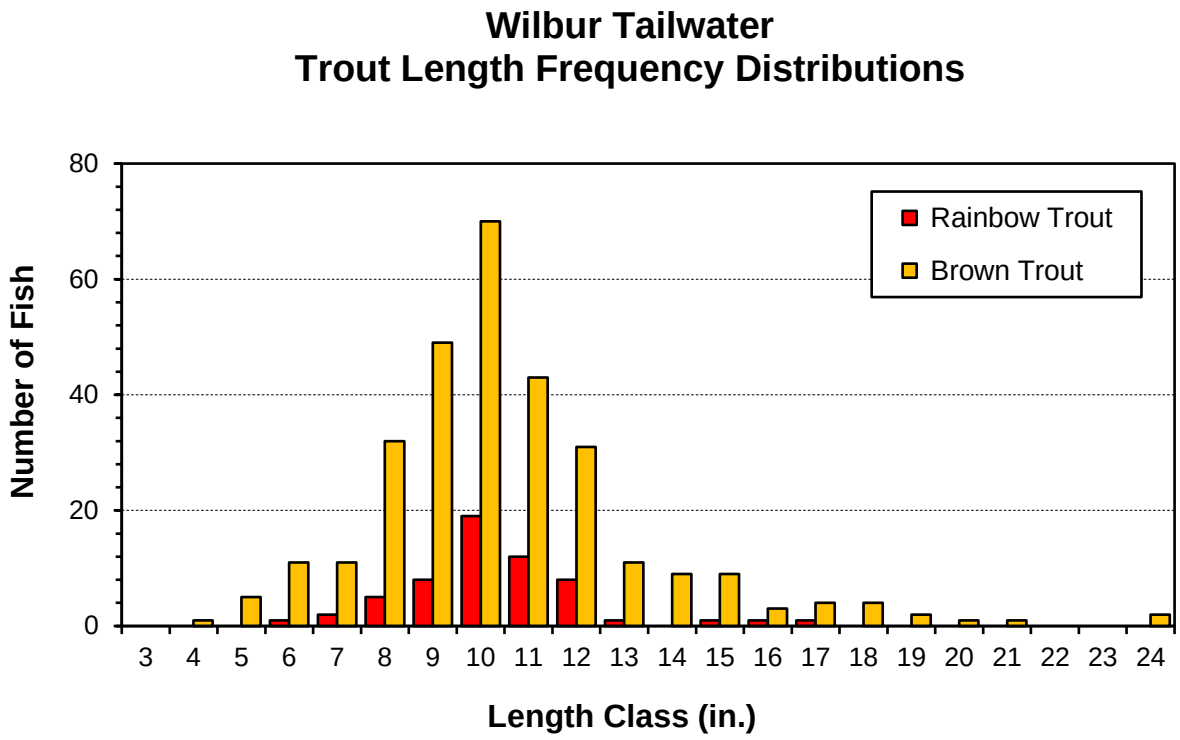


Figure 5. Trout length frequency distributions for the 2021 Wilbur tailwater annual monitoring sample.

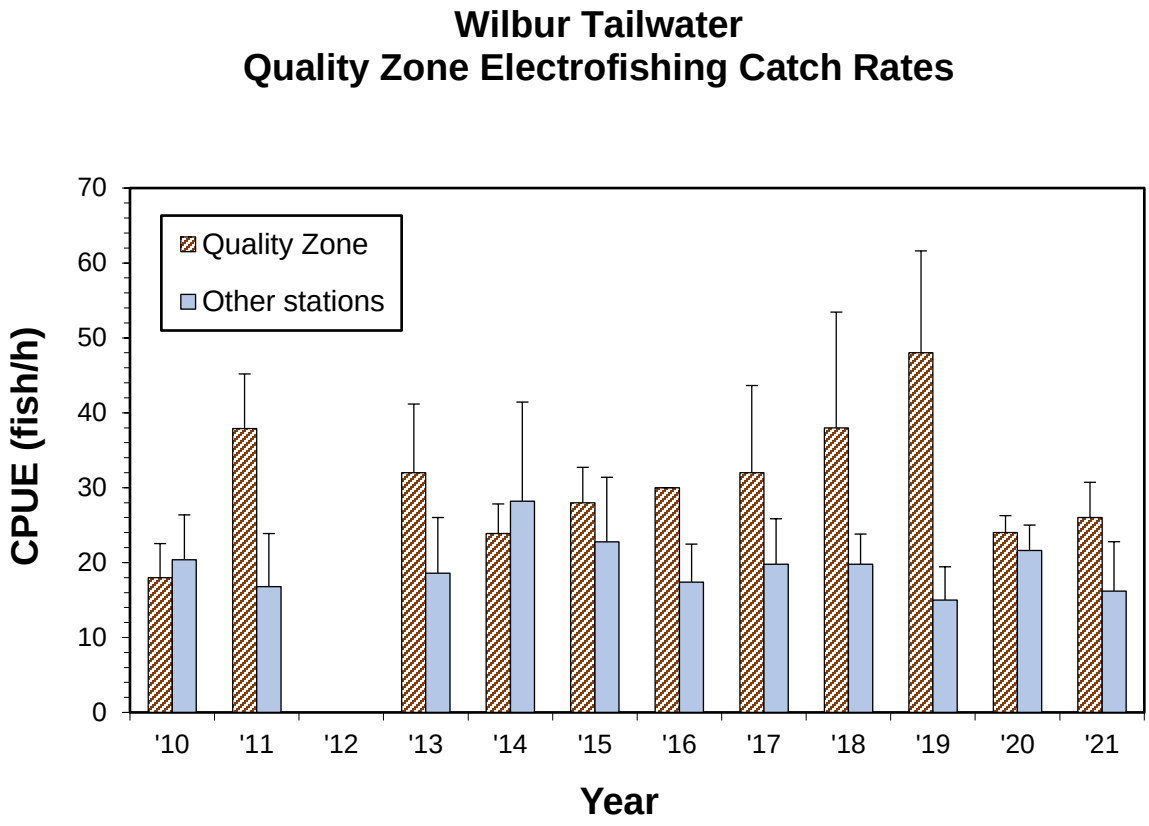


Figure 6. Mean electrofishing catch rates (CPUE) for all trout ≥14 in. in the Wilbur tailwater Quality Zone (Stations 10, 10.5, and 11) compared with the stations outside the QZ since 2010. Bars indicate standard errors.

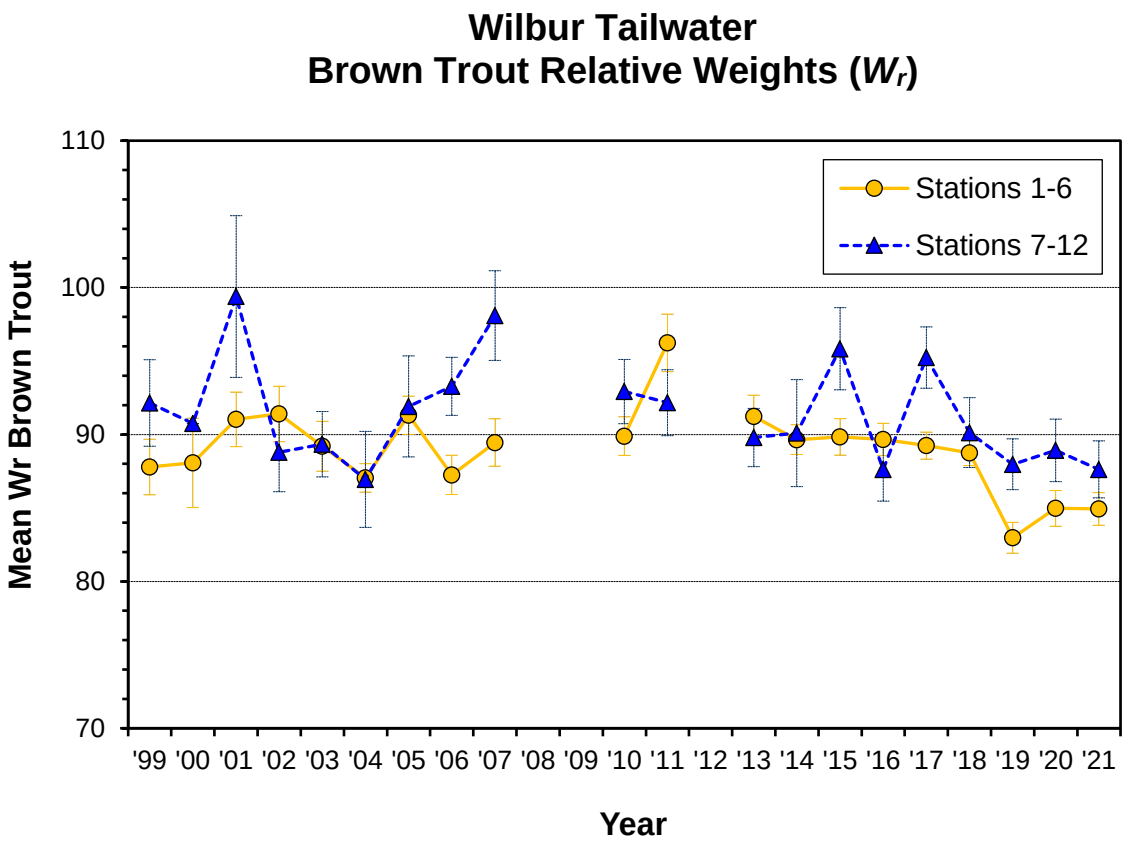


Figure 7. Mean relative weight (W_r) for Brown Trout in the upper (Stations 1-6) and lower (Stations 7-12) portions of Wilbur tailwater. The standard weight (W_s) relationship used for Brown Trout is: $W_s = 10^{-4.867}\ L^{2.96}$ where W is weight (g) and L is length (mm). Bars indicate 90% confidence intervals.

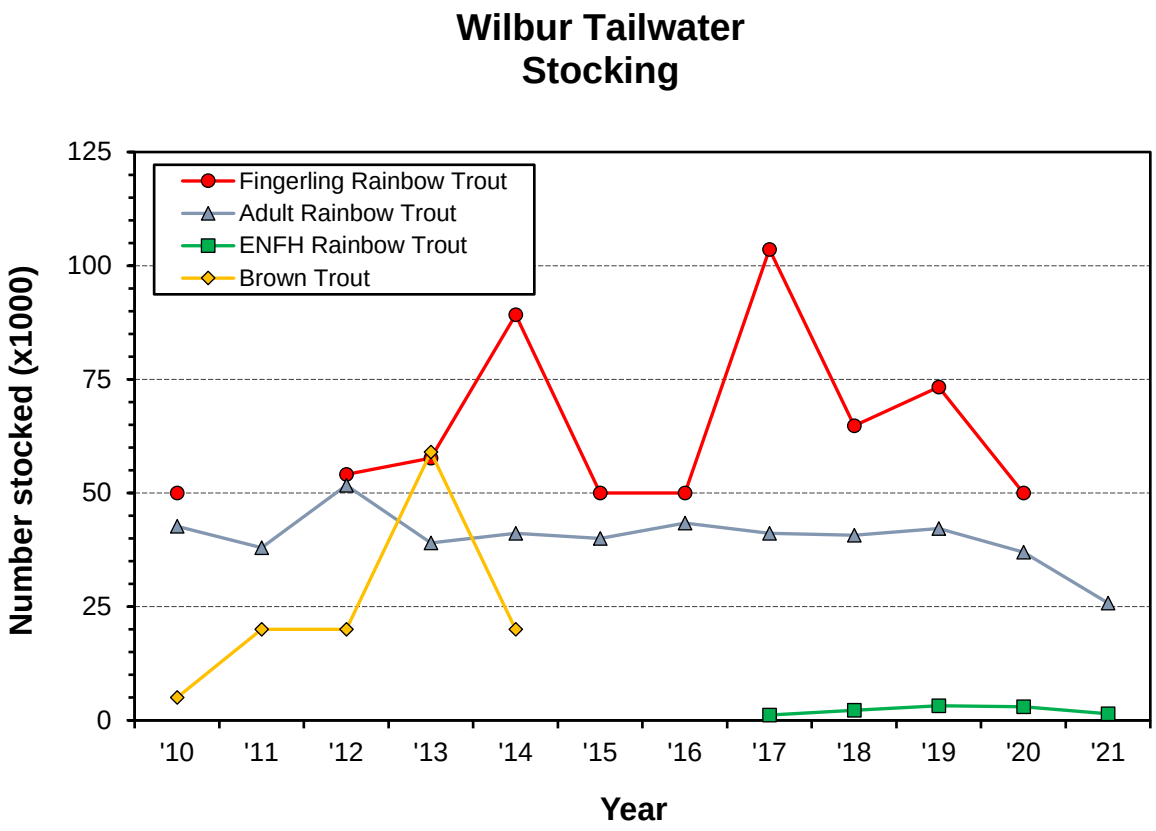


Figure 8. Trout stocking rates for Wilbur tailwater during 2010-2021. Brown Trout stocking was discontinued in 2015 and fingerling Rainbow Trout stocking is suspended beginning in 2021. Retired brood Rainbow Trout (17-18 in. fish) from Erwin National Fish Hatchery have been stocked periodically, but 2,100 were added to annual allocations in 2020.

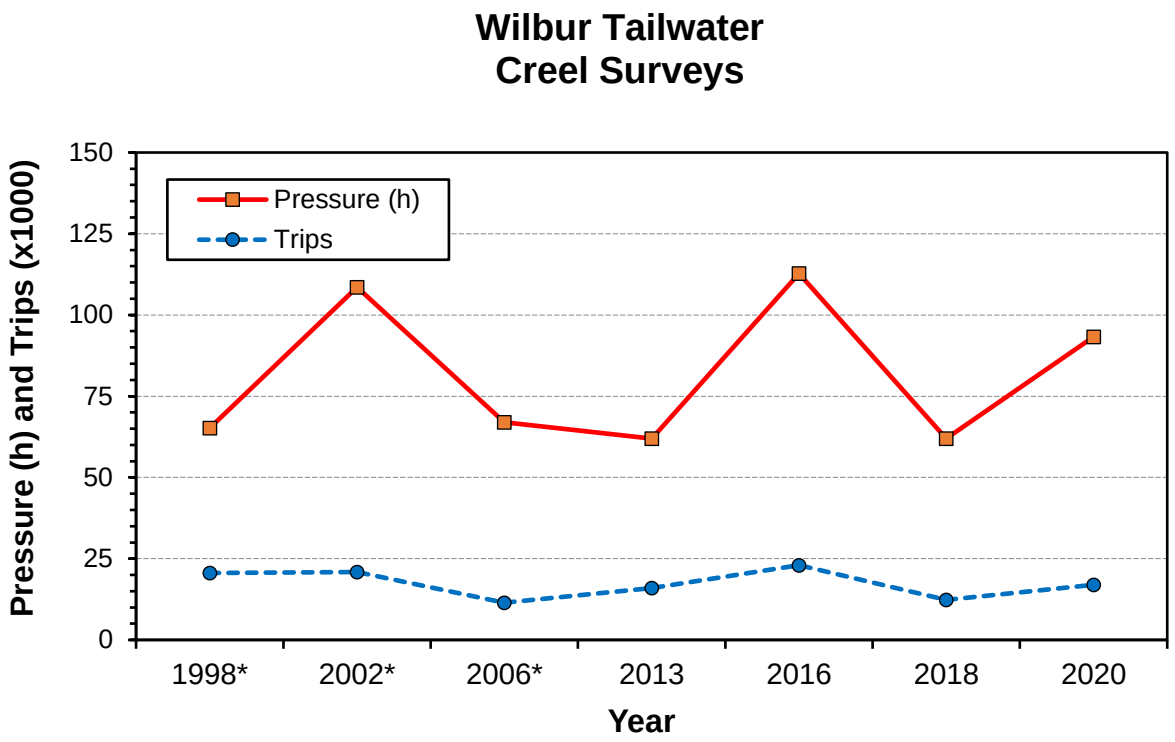


Figure 9. Angler use (pressure and trips) estimated by Wilbur tailwater creel surveys (1998-2020). The 1998-2006 surveys covered only March-October.

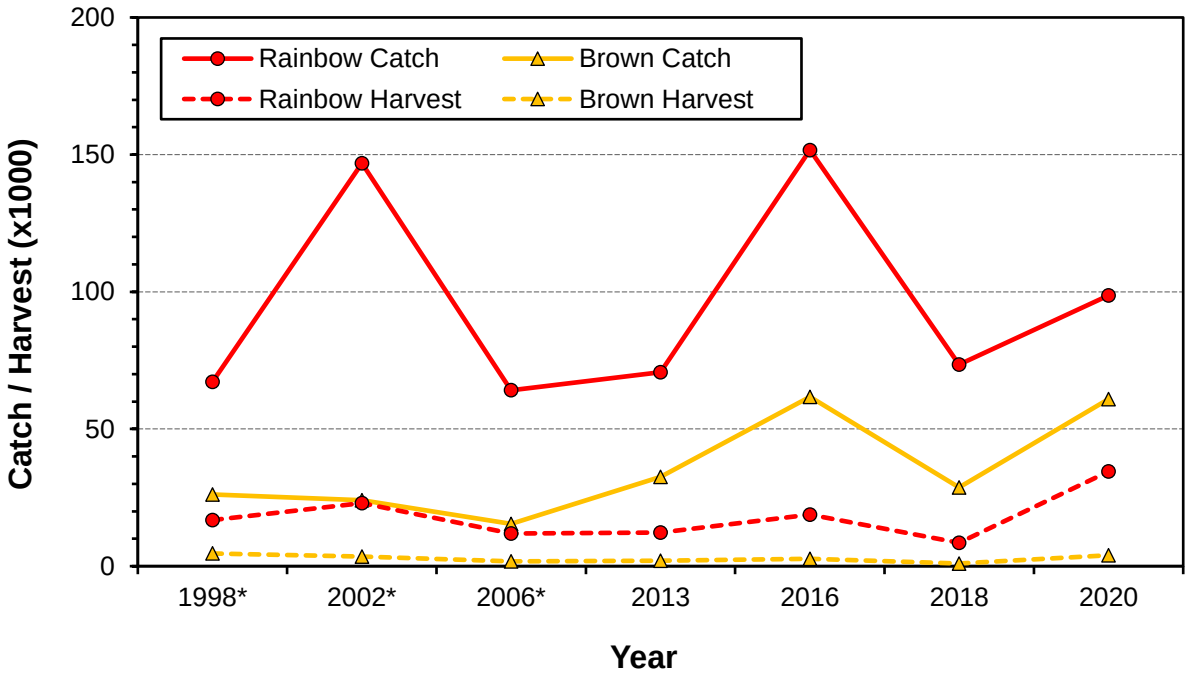


Figure 10. Angler catch and harvest estimated by Wilbur tailwater creel surveys (1998-2020). The 1998-2006 surveys covered only March-October.

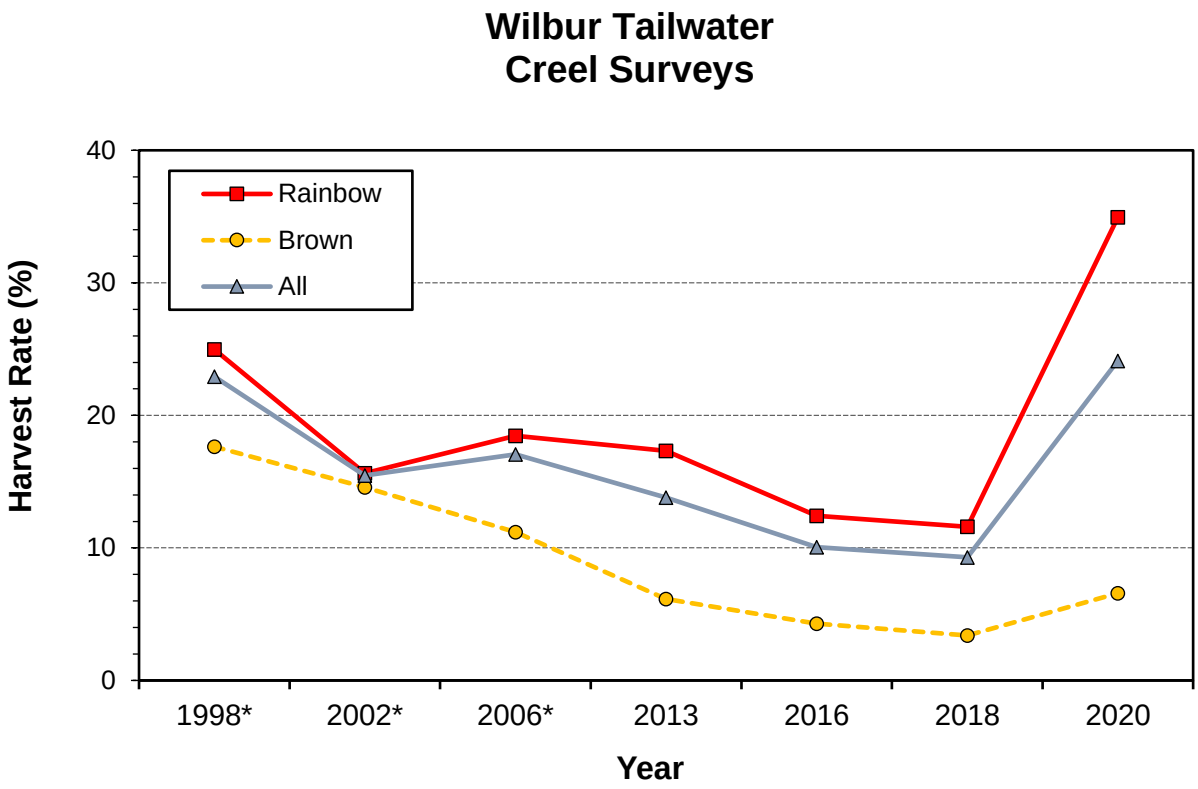


Figure 11. Trout harvest rates for the Wilbur tailwater (1998-2020). The 1998-2006 surveys covered only March-October.

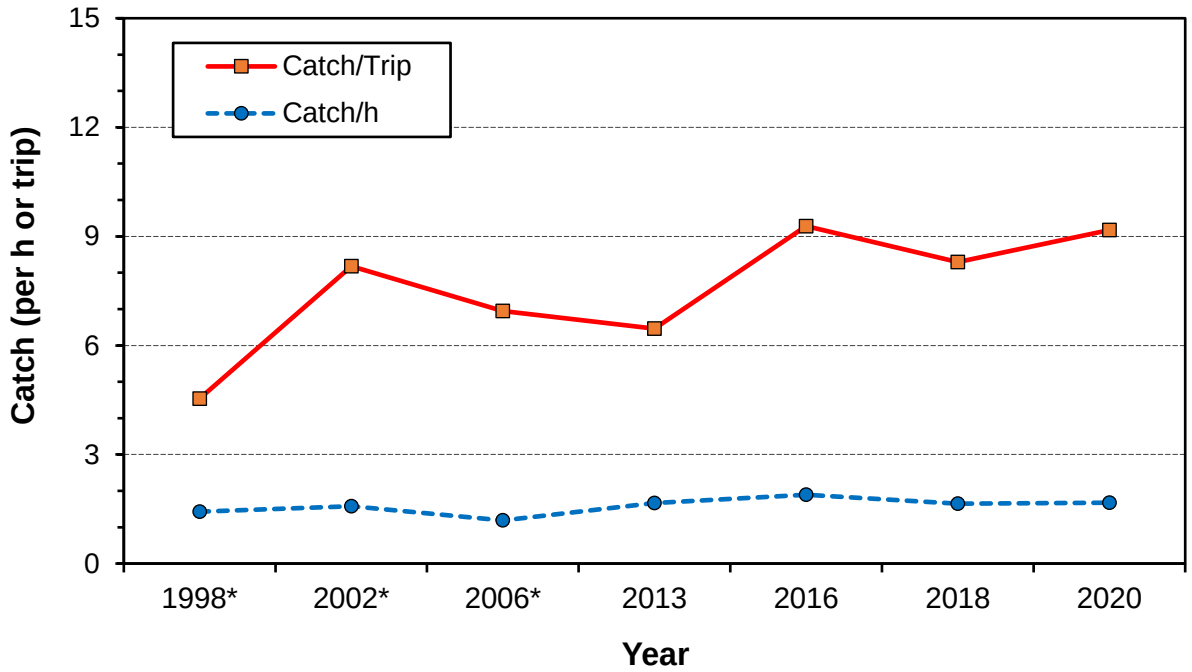


Figure 12. Angler catch per hour and per trip for the Wilbur tailwater (1998-2020). The 1998-2006 surveys covered only March-October.

3. MANAGEMENT OBJECTIVES AND RECOMMENDATIONS

The management goal for the Wilbur tailwater is to *"Maintain a trout fishery that is substantially self-sustaining and capable of providing a variety of opportunities to the anglers who enjoy this resource"* by:

- Featuring the exceptional wild Brown Trout and developing wild Rainbow Trout populations
- Providing a supplemental hatchery-supported fishery for adult Rainbow Trout with special considerations for the lower portion of the tailwater (below Blevins Bend)
- Maintaining the 'Quality Zone' special regulations

Based on the goal, management strategies, and status of the tailwater trout fishery, corresponding objectives during 2022-2027 will be:

OBJECTIVES:

1. *Determine the contribution of wild Rainbow Trout to the fishery by suspending fingerling Rainbow Trout stocking (beginning in 2021). A mean CPUE of ≥42 fish/h by 2024 would indicate adequate natural reproduction.*
2. *Improve Rainbow Trout abundance below Blevins Bend by adjusting stocking strategies to produce a CPUE of ≥25 fish/h by the 2027 monitoring sample.*
3. *Ensure that Wilbur Dam operations do not impact the tailwater trout fishery.*

Objective 1: Determine the contribution of wild Rainbow Trout to the fishery by suspending fingerling Rainbow Trout stocking during (beginning in 2021). A mean CPUE of ≥42 fish/h by 2024 would indicate adequate natural reproduction.

Efforts to collect age-0 (fingerling) Rainbow Trout for additional *M. cerebralis* screening in July 2019 produced 30 Rainbow Trout <100 mm in the shoal areas near Siam Bridge and Hunter Bridge. Those fish must have been the result of natural reproduction based on their size and their abundance suggests natural reproduction may now be more substantial than previously understood. Abundant wild age-0 Rainbow Trout were also observed during similar efforts in South Holston tailwater in 2018. The fingerling Rainbow Trout stocking rate since 2004 has been 50,000/year, but natural reproduction may be capable of partially or fully replacing those fish. Consequently, the contribution by wild Rainbow Trout to the fishery will be assessed by eliminating fingerling stocking beginning in 2021. If mean Rainbow Trout CPUE is ≥42 fish/h (5-year average for 2017-2021) for annual monitoring samples by 2024, then fingerling stocking will not resume. Otherwise, fingerling stocking will resume at an appropriate rate (up to 50,000/year). This objective addresses the STMP Hatchery-Supported Fisheries Goal 1, Strategies 1, 2, and 5.

Objective 2: *Improve Rainbow Trout abundance below Blevins Bend by adjusting stocking strategies to produce a CPUE of ≥33 fish/h by the 2027 monitoring sample.*

The recommended annual stocking rate for adult Rainbow Trout in the Wilbur tailwater will remain at 40,000 9-10-inch fish during 2022-2027. These fish are provided by Dale Hollow National Fish Hatchery (DHNFH) and until 2020 were stocked throughout the tailwater during March-September at the following rates:

March	*April*	*May*	*June*	*July*	*August*	*September*	*October*	*November*	*December*	*Total*
6,000	*6,000*	*6,000*	*6,000*	*6,000*	*6,000*	*4,000*				*40,000*

Angler concern for potential Striped Bass predation impacts to the Rainbow Trout fishery in the lower portion of the tailwater (below Blevins Bend) during summer led TWRA to make stocking schedule changes beginning in 2020. Adult Rainbow Trout that would have been stocked below Blevins Bend (2,000 per month during June-August) were shifted to new events in that area in November and December (3,000 fish each) when Striped Bass predation should be minimal. This schedule will be maintained during 2022-2027:

March	*April*	*May*	*June*	*July*	*August*	*September*	*October*	*November*	*December*	*Total*
6,000	*6,000*	*6,000*	***4,000***	***4,000***	***4,000***	*4,000*		***3,000***	***3,000***	*40,000*

Retired brood Rainbow Trout from Erwin National Fish Hatchery (ENFH) were officially added to the Wilbur tailwater stocking program in 2020 and 2,100 of these 17-18 in. fish are now allocated annually. About half of the ENFH fish are stocked in the lower tailwater (below Blevins Bend) during August-October to bolster the fishery there and should be resistant to predation by any Striped Bass that may be present.

Mean Rainbow Trout CPUE (≥7 in.) below Blevins Bend was 11 fish/h in 2021 (Figure 4), thus an improvement to ≥33 fish/h by 2027 would represent at least a threefold increase and indicate that the modified stocking strategy could be successful.

It is also recommended that the overall Wilbur tailwater adult Rainbow Trout stocking rate (40,000/year) be increased to 47,000/year, which would align it with the corresponding stocking rate for the South Holston tailwater. This would be appropriate given that recent (2019-2020) angling pressure, trips, and Rainbow Trout harvest estimates are comparable for these two tailwaters (Figures 9 and 10; Habera et al. 2021). Most or all of the additional 7,000 fish would likely need to come from DHNFH, thus it will be necessary to discuss the feasibility of this

increase during the 2022 annual trout allocation meeting hosted by TWRA. It might also be possible to provide some of these fish by adjusting existing allocations elsewhere that may be excessive. If these additional fish can be allocated, they could be incorporated by returning the June-August stocking rates to 6,000 fish and increasing the September rate to 5,000 fish (see tables above).

This objective addresses the STMP Angling Opportunities Goal 1 and Hatchery Supported Fisheries Goal 1, Strategy 6.

Objective 3: Ensure that Wilbur Dam operations do not impact the tailwater trout fishery.

TWRA will continue to communicate (e.g., at the annual coldwater partners meeting) and work cooperatively with TVA and other partners such as Trout Unlimited (TU) to ensure tailwater flows and temperatures—particularly during summer—do not impact the tailwater trout fishery. TWRA will deploy temperature loggers in the tailwater if necessary to help document any potential issues with elevated water temperatures and will work with TVA to develop solutions, such as temporary increases in the frequency or duration of water releases. This objective addresses the STMP Habitat Protection Goal 2, Strategy 3.

Evaluation

Sampling of the Wilbur tailwater monitoring stations will continue annually. Management objective accomplishments will be assessed following completion of the 2027 sampling efforts and if necessary, strategies will be adjusted for the next cycle to meet the management goal. Angler surveys will be conducted periodically (typically every other year) to complement monitoring data and further develop management strategies. These surveys will occasionally include supplemental questions to gauge angler opinion in areas such as satisfaction with the QZ or overall management of the trout fishery. This objective addresses the STMP Angling Opportunities Goal 1, Strategy 6 and Outreach Goal 1, Strategy 2.

Outreach

Results of annual monitoring and angler surveys, particularly as they relate to attainment of the management plan goal and objectives, will be periodically communicated through reports and presentations in both stakeholder and professional forums. This objective addresses the STMP Outreach Goal 1, Strategies 1 and 4.

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APPENDIX

2017-2027 Statewide Trout Management Plan Support

Statewide Trout Management Plan (TWRA 2017)
Mission Statement, Goals, and Objectives
Supported by the 2022-2027 Wilbur Tailwater Management Plan

Page 1

Mission Statement:

The mission of TWRA's trout program is to:

"Provide a variety of quality trout angling opportunities that are compatible with Tennessee's other aquatic resources."

Management Goal:

Continue providing a high-quality, largely self-sustaining trout fishery and the variety of angling opportunities it offers.

ANGLING OPPORTUNITIES

GOAL 1. Maintain a variety of trout fisheries

Objective: Continue to offer trout fishing opportunities in streams, tailwaters, reservoirs, and other permanent or temporary habitats that satisfy a diverse public's many different skill levels and definitions of quality

HATCHERY-SUPPORTED FISHERIES

GOAL 1. Optimize use of hatchery trout.

Strategy:

1. Emphasize wild trout management where feasible. Hatchery trout are most effectively used to provide fisheries where wild trout are unsustainable. Shifts to wild trout management have recently been accomplished with Brown Trout in the South Holston and Wilbur tailwaters. Hatchery fish continue to be stocked in some wild trout streams based largely on historic demand. These streams should be re-evaluated and, where possible, stocking should be curtailed or eliminated in favor of wild trout management. Where wild trout cannot support angling pressure, strategies for enhancing abundance (e.g., improving habitat or reducing harvest) should be considered.

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Objective 1:

Determine the contribution of wild Rainbow Trout to the fishery by suspending fingerling Rainbow Trout stocking beginning in 2021.

HATCHERY-SUPPORTED FISHERIES

GOAL 1. Optimize use of hatchery trout.

Strategy:

1. Emphasize wild trout management where feasible. Hatchery trout are most effectively used to provide fisheries where wild trout are unsustainable. Shifts to wild trout management have recently been accomplished with Brown Trout in the South Holston and Wilbur tailwaters. Hatchery fish continue to be stocked in some wild trout streams based largely on historic demand. These streams should be re-evaluated and, where possible, stocking should be curtailed or eliminated in favor of wild trout management. Where wild trout cannot support angling pressure, strategies for enhancing abundance (e.g., improving habitat or reducing harvest) should be considered.

2. Avoid excessive stocking rates by determining the minimum number of trout that can be stocked while still providing good fishing. This has been addressed on some tailwaters (e.g., South Holston and Wilbur), but more work (e.g., research, angler use surveys, or trial and error) is needed on other hatchery-supported waters (e.g., reservoirs and winter trout program fisheries) to determine optimum stocking rates.

5. Develop tailwater trout fisheries management plans where these are currently lacking (e.g., Cherokee, Ft. Patrick Henry, and Boone) in accordance with TWRA's Strategic Plan (TWRA 2014); include objectives for optimizing stocking rates based on monitoring data and angler use/harvest information.

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Objective 2:

Improve Rainbow Trout abundance below Blevins Bend by adjusting stocking strategies to produce a CPUE of ≥33 fish/h by the 2027 monitoring sample.

ANGLING OPPORTUNITIES

GOAL 1. Maintain a variety of trout fisheries

Objective: Continue to offer trout fishing opportunities in streams, tailwaters, reservoirs, and other permanent or temporary habitats that satisfy a diverse public's many different skill levels and definitions of quality.

HATCHERY-SUPPORTED FISHERIES

GOAL 1. Optimize use of hatchery trout.

Strategy:

6. Work with ENFH personnel to incorporate retired brood fish produced by that facility into the annual allocation process; prioritize DH areas, kids' fishing events, and locations where higher return rates would be expected. Avoid tailwaters and reservoirs where return rates would be much lower, large fish are typically already present, and special regulations may apply.

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Objective 3:

Ensure that Wilbur Dam operations do not impact the tailwater trout fishery

HABITAT PROTECTION

GOAL 2. Optimize habitat quality in trout tailwaters.

Strategy:

3. Continue to work with TVA and USACE to maintain water quality improvements that have been made in trout tailwaters, resolve periodic water quality and flow issues that may arise, and monitor situations that may affect water quality in tailwaters (e.g., the extended Boone Lake drawdown). Cooperation between TWRA and TVA was instrumental during June and July of 2011 and 2014 in addressing increased temperatures in the lower portion of the South Holston tailwater resulting from extended periods of minimum flow (90 cfs) releases.

Evaluation:

ANGLING OPPORTUNITIES

GOAL 1. Maintain a variety of trout fisheries

Strategy:

6. Continue conducting opinions surveys periodically to make sure TWRA's management and trout angler preferences align as much as possible.

OUTREACH

GOAL 1. Effectively and interactively communicate with all trout anglers.

Strategy:

2. Continue collecting trout angler preference and satisfaction data via telephone and creel surveys (including reservoirs, DH areas, and winter trout events); incorporate this information where appropriate into management strategies and policy.

Outreach:

OUTREACH

GOAL 1. Effectively and interactively communicate with all trout anglers.

Strategies:

1. Attend various stakeholder group meetings (e.g., TU chapters and local sportsmen's' organizations) to communicate the current status of trout fisheries, discuss current issues and policies, and gauge interest in or support for various management options.

4. Make TWRA's annual trout fishery reports and other related information available through links on the Agency and regional websites and social media pages.