Wisconsin Department of Natural Resources

Inland Waters Trout Stamp Expenditure Report
Fiscal Years 2019-2021

Bird Creek, Waushara County. / Photo credit: Wisconsin DNR

Bureau of Fisheries Management
Administrative Report No. 102

Wisconsin Department of Natural Resources
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Beaver Control 113

Photo credit: Wisconsin DNR

This document summarizes expenditures of the Inland Waters Trout Stamp (IWTS) Program by the Bureau of Fisheries Management for fiscal years (FY) 2019 (July 1, 2018 – June 30, 2019), 2020 (July 1, 2019 – June 30, 2020) and 2021 (July 1, 2020 – June 30, 2021).

Inland Waters Trout Stamp Program

The Wisconsin Department of Natural Resources (DNR) has a long history of successful trout stream habitat management. Projects began with the federal work programs in the 1930s and improved as more successful methods were developed. Over the years, funding was reduced. As a result, the IWTS program was created in 1977 to provide additional funding for improving and restoring trout habitat and to provide increased trout fishing opportunities.

The cost of the first trout stamp was $2.50 from 1978-1983. The price of an IWTS was increased to $3.25 during 1984-1991, to $7.25 during 1992-2006 and currently is $10.00 (since 2006).

To further assist in the implementation of the IWTS program, the Wisconsin Inland Trout Management Plan 2020-2029 is the first statewide trout management plan for the Wisconsin Department of Natural Resources and is intended to:

- Provide direction for inland trout management in Wisconsin,
- Guide direction of resources (budget and staffing decisions, justification for funding requests and projects),
- Identify constraints in funding and capacity to implement trout management,
- Determine location and prioritization of where work should be done,
- Guide DNR trout team charges and priorities, and
- Provide an internal and external communication tool.

A digital version of the plan can be found here: Wisconsin Inland Trout Management Plan 2020-2029

Guidelines for Inland Waters Trout Stamp Program

Wisconsin State Statute 29.2285 (1)(e) states: “The Department shall expend the receipts from the sale under this subsection of inland waters trout stamps on improving and maintaining trout habitat in inland trout waters, conducting trout surveys in inland trout waters and administering this subsection.”

Under the same state statute, inland waters are defined as all inland waters except the following: 1) Any harbor on Lake Michigan or Lake Superior, 2) Any river or stream tributary of Lake Michigan or Green Bay, except the Kewaunee River, from its mouth upstream to the first dam or lake, 3) Any other river or stream tributary of Lake Michigan or Green Bay that is designated by the department.

Projects funded by IWTS revenues must specifically relate to inland trout habitat management, trout survey or administration of the program.

Habitat management encompasses a variety of activities that help improve and/or maintain instream trout habitat, riparian habitat, past habitat projects, angler access and aquatic connectivity. Beaver control projects may be funded

as part of habitat management. The purchase of equipment to conduct trout habitat projects and trout surveys is also authorized.

Surveys authorized must be limited to trout surveys of inland waters. Surveys funded to date have included those designed to plan and evaluate habitat improvement projects, wild trout stocking, trout genetics and regulations. Surveys are very important for planning habitat improvement projects and evaluating the results of funded projects on trout populations.

The Bureau of Fisheries Management is approved for 8.09 full-time positions to be funded with the IWTS. Hours exceeding the 8.09 full-time positions on eligible activities are billed to the department's Fish and Wildlife account, which is supported by general fishing and hunting license sales.

Revenues and Expenditures of Inland Waters Trout Stamp Program

All revenues from the sale of IWTS, 2-Day Inland Lake Trout Fishing and Stamp and a percentage of Conservation Patron Licenses revenues are placed in the IWTS account. A customer participation survey is used to determine the percentage of patron license revenues to be added to the IWTS account. General license fees, federal Sport Fishing Restoration funds, grants and donations may also support the inland trout program.

The number of IWTS sold averaged 164,205 stamps annually from 2019 through 2021. Patron license sales averaged 56,555 from 2019 through 2021. Total annual revenue averaged $1,822,187.77 over those same years. Trout stamp sales and patron license sales from 1978 through 2021, along with annual total revenues, are listed in Table 1 and depicted in Figure 1.

During FY2019 through FY2021, inland tout activities were funded primarily by trout stamp revenues. Inland trout activities were also supported by funding from the Segregated Fish and Wildlife Account (SEG).

Total available funds in the IWTS account for each fiscal year are comprised of trout stamp sales, patron license sales and beginning cash balances carried over from the previous fiscal period. Total available funds averaged $2,480,756.76 for FY2019 through FY2021. Total available funds were $1,956,993.93 for FY2019, $2,487,010.53 for FY2020 and $2,998,265.81 for FY2021. Table 2 lists the beginning cash balances, revenues and total available funds for FY2019 through FY2021.

Expenditures for the IWTS program are made up of funds from the IWTS account and SEG account. Expenditures were $1,731,216.89 for FY2019, $1,779.908.27 for FY2020 and $2,286,273.04 for FY2021. Total expenditures averaged $1,932,466.07 for FY2019 through FY2021.

Trout stamp funds accounted for 79% ($1,367,400.00) of the total expenditures in FY2019, 81% ($1,445,849.47) of the total expenditures in FY2020 and 74% ($1,690,162.72) of the total expenditures in FY2021.

SEG funds accounted for 21% ($363,816.89) of the total expenditures in FY2019, 19% ($334,058.80) of the total expenditures in FY2020 and 26% ($596,110.32) of the total expenditures in FY2021.

From FY2019 through FY2021, the DNR expended, on average, $459,564.21 annually for permanent staff salaries, $257.079.40 annually for limited-term employee salaries, $305,312.29 annually on fringe benefits and $910,510.17 for supplies and services. Expenditures for each category and by source for each fiscal year are listed in Table 3.

Expenditures of the IWTS Program are billed to specific projects referred to as activity codes. During FY2019 through FY2021, expenditures occurred within five categories of activity codes: trout habitat, cold water fish passage, beaver management, trout habitat equipment and trout program administration.

During FY2019 through FY2021, 83.4% of the total expenditures were used for trout habitat projects, 13.4% for beaver management, 2.7% for cold water fish passage projects, 0.3% for IWTS program administration and 0.2% for trout habitat equipment. Percent expenditures for all activities for FY2019 through FY2021 are depicted in Figure 2.

Table 1. *1978-2021 trout stamp sales, patron license sales and total revenues*

Year	Patron Card	Trout Stamp	Total Revenues
1978	N/A	183,135	$244,459
1979	N/A	183,447	$393,912
1980	N/A	187,958	$420,403
1981	N/A	194,873	$445,189
1982	N/A	194,658	$440,949
1983	N/A	190,821	$424,617
1984	N/A	192,510	$503,337
1985	218	181,960	$548,513
1986	264	182,354	$550,349
1987	398	180,096	$544,367
1988	254	177,138	$674,422
1989	449	162,447	$723,358
1990	756	131,910	$401,174
1991	539	113,640	$346,440
1992	847	131,008	$647,594
1993	13,486	131,308	$971,516
1994	24,757	135,425	$1,044,839
1995	34,942	130,701	$1,066,710
1996	43,370	136,687	$1,107,057
1997	48,368	127,840	$986,760
1998	55,579	129,385	$1,008,113
1999*	89,114	184,526	$1,553,033
2000	76,175	140,603	$1,019,645
2001	81,211	142,449	$1,180,221
2002	82,615	142,633	$1,157,984
2003	80,851	143,405	$1,166,441
2004	74,587	137,828	$1,126,266
2005	69,979	133,441	$1,147,805
2006	59,974	129,194	$1,782,603
2007	56,676	130,119	$1,495,230
2008	55,159	136,836	$1,504,428
2009	50,752	146,803	$1,618,053
2010	46,837	140,576	$1,569,374
2011	44,952	137,731	$1,498,739
2012	44,049	140,830	$1,570,291
2013	45,585	141,967	$1,506,574
2014	46,633	141,729	$1,549,946
2015	47,965	147,022	$1,609,090
2016	50,231	140,646	$1,582,639
2017	51,889	143,392	$1,591,126
2018	52,633	142,729	$1,616,529
2019	53,445	144,484	$1,612,042
2020*	56,836	173,837	$1,897,417
2021*	62,305	174,294	$1,957,105

* A spike in sales occurred in FY99 due to implementation of the Automated License Issuance System (ALIS) and in FY20 and FY21 during the COVID-19 pandemic.

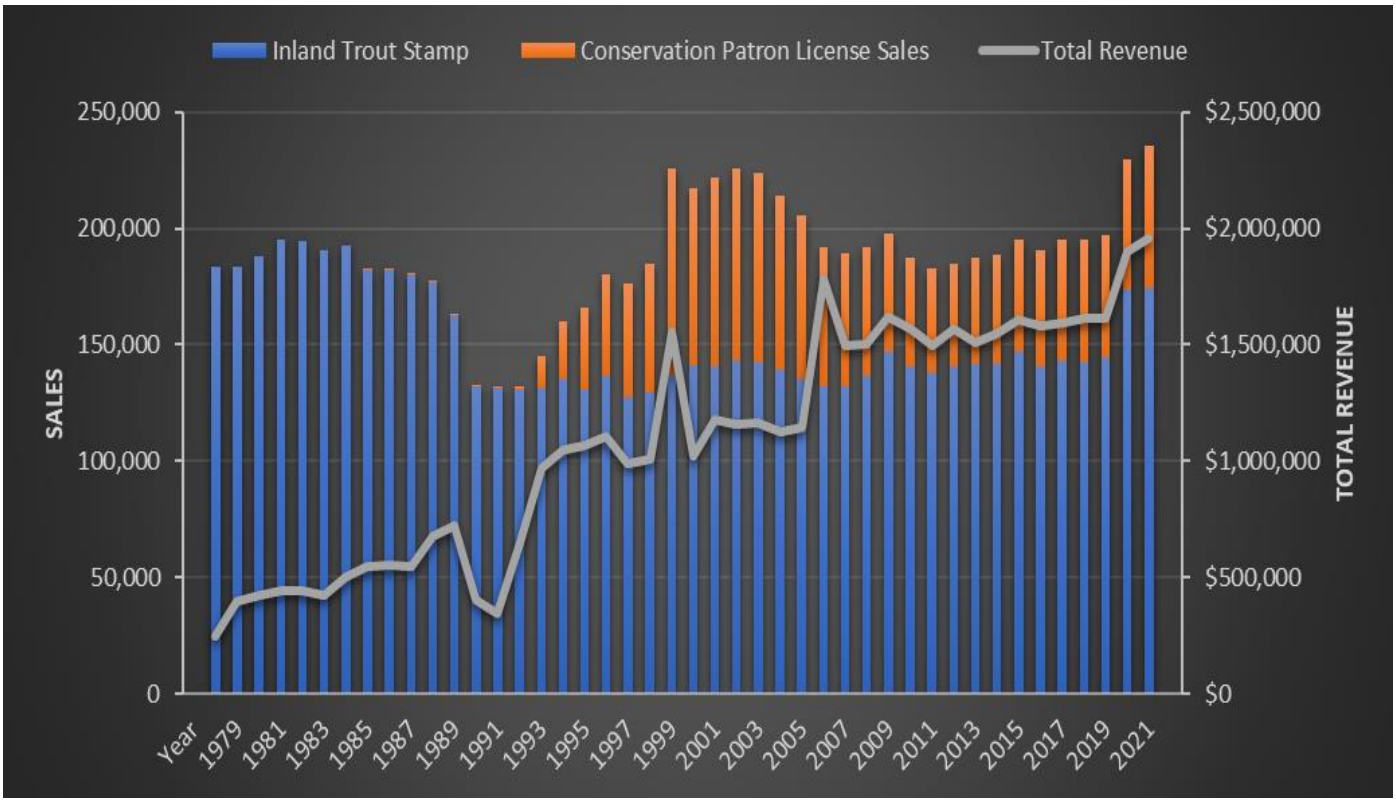


Figure 1. *Trout stamp sales, patron license sales and total license revenue from 1978 – 2021. The spike in sales in 1999 was due to implementation of the Automated License Issuing System (ALIS). The spike in revenues in 2006 was due to the fee increase and a rebate from the surplus in the heavy equipment pool. A spike in sales occurred in FY2020 and FY2021 during the COVID-19 pandemic.*

Table 2. *Available annual funds in the Inland Waters Trout Stamp account for fiscal years 2019-2021*

	FY2019	FY2020	FY2021
Beginning cash balance	$344,951.98	$589,593.93	$1,041,161.06
Revenues (Trout Stamp and Patron License Sales)	$1,612,041.95	$1,897,416.60	$1,957,104.75
Total available funds	$1,956,993.93	$2,487,010.53	$2,998,265.81

Table 3. *Expenditure of IWTS and SEG funds supporting trout habitat work in the fiscal years 2019-2021*

	FY2019	FY2020	FY2021
Permanent Salaries	$ 416,357.63	$ 417,074.18	$ 545,260.81
LTE Salaries	$ 235,965.10	$ 267,870.72	$ 267,402.37
Fringe Benefits	$ 273,441.72	$ 281,298.78	$ 361,196.38
Supplies/Services	$ 805,452.44	$ 813,664.59	$ 1,112,413.48
TOTAL	$ 1,731,216.89	$ 1,779,908.27	$ 2,286,273.04

	FY2019	FY2020	FY2021
Trout Stamp	$ 1,367,400.00	$ 1,445,849.47	$ 1,690,162.72
SEG*	$ 363,816.89	$ 334,058.80	$ 596,110.32
TOTAL	$ 1,731,216.89	$ 1,779,908.27	$ 2,286,273.04

*During FY2019-2021, inland trout activities were also funded by Segregated Fish and Wildlife Account (SEG) funds. Gift donations were also used to fund some inland trout activities but are not captured in this report.

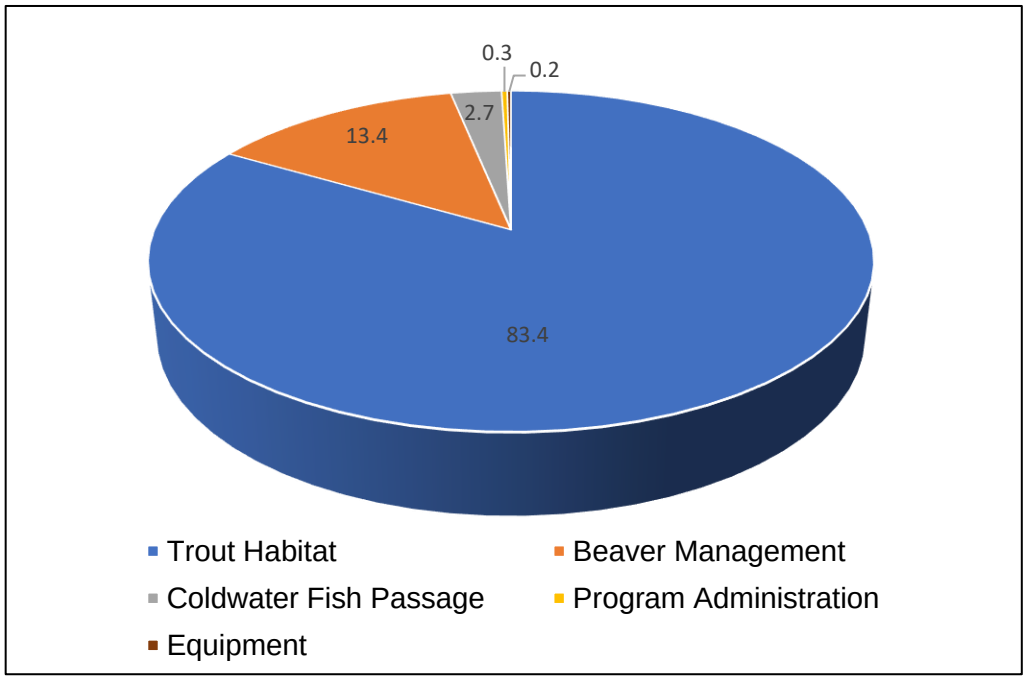


Figure 2. *Percent of total expenditures for all activities FY2019 through FY2021*

Trout Habitat Projects Funded by the IWTS Program FY2019 – FY2021

Project reports were extracted from annual progress reports and formatted for this report. Projects are listed alphabetically by stream name within each county, which are listed under their representative district. The projects in each county are listed with a number that corresponds to their location on the county map. The size of the county maps is not to scale.

Dredging at the confluence of the Stillhouse spring pond and Lost Spring spring pond outlet creeks / Photo credit: Wisconsin DNR

Habitat Techniques and Structures

With diverse resources come diverse techniques and management styles. As readers progress through the habitat project descriptions below, they may come by terms such as log sill, Elevated Riparian Optimization (ERO), vortex weir, bank cover, point bar, brush bundle or fishability brushing and ask themselves, “What’s that?” DNR habitat specialists have shared some of the more common but unique habitat management techniques and structures that are made possible through Wisconsin’s IWTS program.

Root Wads

As the name suggests, root wads are just that: root wads from trees, which may be suspended in the water column or resting on the substrate. They may be fully submerged or extend above the water’s surface. In addition to trout habitat, they also provide habitat for non-game and terrestrial species, including turtles and birds. Winged insects can also use them to deposit eggs in the water and for habitat when they are in aquatic life stages. Root wads provide excellent overhead cover, resting areas, shelters for insects and other fish food organisms, substrate for aquatic organisms, and increased stream velocity that results in sediment flushing and deeper scour pools.

Installed root wad / Photo credit: Wisconsin DNR

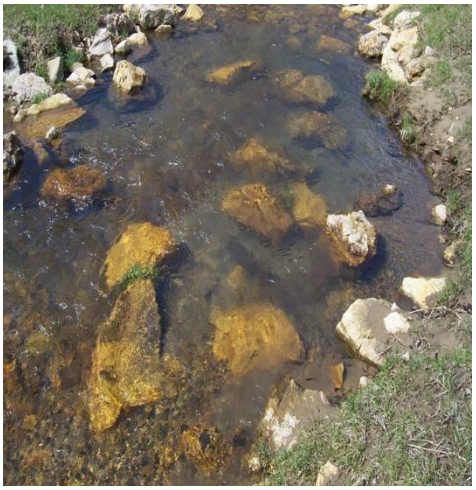
LUNKERS (Little Underwater Neighborhood Keepers Encompassing Rheotactic Salmonids)

Designed for the Driftless Area to increase the combination of pool and overhead cover habitat for adult trout in high-gradient streams that have cobble and rubble substrates. They are a prefabricated, sandwich-like wooden platform that rests directly on the stream bottom. They are constructed with oak planks that form the platform and stringers. Oak blocks or spacers are used to create the space where the trout hide. Each platform may be anchored in place by several pieces of rebar driven into the coarse substrate.

LUNKERS / Photo credit: Wisconsin DNR

Midstream Boulders

Midstream boulders, sometimes referred to as instream boulders, provide flow breaks for trout in stream reaches with run type habitat, which would otherwise be featureless and homogenous. Current/flow breaks are essential in run type habitats because they provide small pockets of reduced flows, allowing for simultaneous energy conservation and increased foraging ability for trout. They also increase habitat heterogeneity in areas where installing other habitat structures would be impractical because of depth and/or flow restrictions. Midstream boulders are installed mid-channel or near the edge of the channel not connected to the streambank. Coarse cobble substrate provides a stable bottom for the placement of midstream boulders while still allowing the water to scour around and behind them to create small pools.



Midstream boulders / Photo credit: Wisconsin DNR

Cross Log

Cross logs are logs that are installed to transect the stream channel. They may be placed at any angle depending on where one would want to direct the flow. Water will flow over the log at 90º, creating deep pools for overhead cover and resting areas for trout and preventing any head cutting in higher gradient streams. Head cutting is a process of active erosion in a channel caused by an abrupt change in slope or plunge. The water undercuts bed material collapsing the upper edge. This process, left unattended, will advance upstream.

Crosslog / Photo credit: Wisconsin DNR

Bank Boulders

Bank boulders are groups of large rocks placed along a streambank edge to improve habitat and create scour holes and areas of reduced velocity. Placing the boulders on the streambank edge creates eddies, which create overhead cover for fish by partially diffusing sunlight. Bank boulders can also generate scour that cause pockets of deeper water to develop, which adds to the physical diversity of the stream.

Bank boulders / Photo credit: Wisconsin DNR

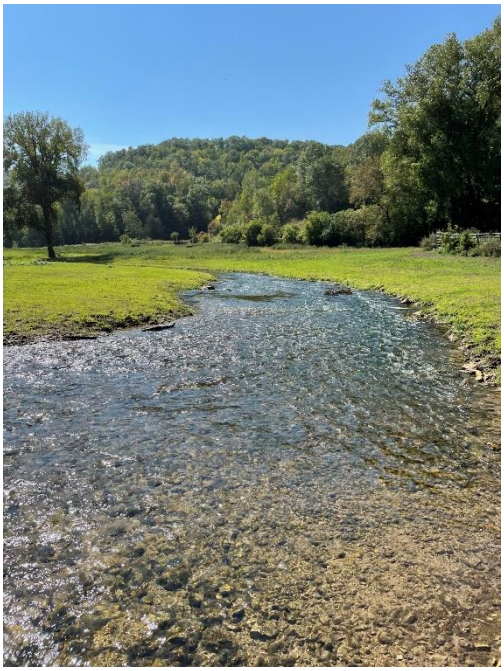
ERO

Gradient compromised streams need some type of constrictor, choke point or narrowing to accelerate the water and scour the sand away. Elevated Riparian Optimization (ERO) is a feature that helps do this. It is a type of Bernoulli structure that narrows the stream, increases its velocity, elevates the riparian and optimizes the force of the water. During low water or normal water flows, there is little noticeable effect, but when torrential rains fall, the added water volume and subsequent increased velocity potentiall provide enough energy to scour sand. These features create feeding and overwintering areas for trout. Bernoulli structure is named after the Bernoulli principle, established by Swiss physicist Daniel Bernoulli. Water passing through such a structure gains kinetic energy which helps maintain a plunge pool or scour hole.

ERO / Photo credit: Wisconsin DNR

Riffles

Riffle structures are primarily installed to increase instream habitat diversity and provide areas of turbulence to sections adversely affected by the deposition of an excessive amount of fine sediment. Riffles increase velocity to flush out sand and silt. They are shallow with a rocky, cobble substrate for trout to lay their eggs. Keeping the fine sediment out of these areas is crucial to allow fry to hatch in the spring. Gravel and rock bottom streams have more insects than a stream full of fine sediment. The most common place to install these structures are in sections of stream rarely exceeding two feet in depth. These structures are often installed within the transitional areas between runs and pools. Adjacent streambanks are excavated and armored with stone to prevent stream migration around the structure. Fine sediment located in the treatment site is excavated down to hardpan. This area is filled with core material - appropriately sized, immobile rock. This core material is covered with finer gravel. Benefits include increased instream habitat diversity to sections that are sand and silt dominated, provide spawning habitat to trout and other fish species, increase the amount of anchoring substrate for aquatic invertebrates and improve floodplain connectivity during highwater events.



Riffles / Photo credit: Wisconsin DNR

Island Creation

Islands help add diversity to stream channels, increase shoreline complexity and may help increase flow velocity and scours. Electrofishing surveys in the Driftless Area have found brook trout inhabiting these features. Islands have been added to streams where brook trout and brown trout coexist to favor brook trout habitat.

Backwater Refuge

These shallow water structures created adjacent to the stream create ideal habitat for reptiles, amphibians and insects, along with smaller size fish. Young of the year trout may also use these in the spring as water temperature increases faster than the temperature in the mainstem of the stream.

Backwater refuge / Photo credit: Wisconsin DNR

Streambank Mowing

The objective of streambank mowing is to maintain a grass riparian area. Each habitat project is mowed on a 4-year rotation, providing sustained grassland riparian area and desirable angler access.

Streambank mowing / Photo credit: Wisconsin DNR

Fishability Brushing

This trout stream restoration technique focuses on improving the ability of anglers to freely travel and cast through a given stretch of stream that is otherwise unfishable due to excessive woody vegetation growth. Benefits of fishability brushing include being a cost effective treatment, providing ample space for casting, improving access along streams, helping eradicate invasive species, reducing competition for native species, increasing sunlight penetration to streambed, promoting aquatic vegetation growth, increasing sunlight penetration to streambank and promoting streambank stabilizing grass and forb growth. Material brushing projects may also be recycled into brush bundles and installed along the streambanks,

Post-fishability project. Notice the brush bundles installed along the streambank using material from the brushing project / Photo credit: Wisconsin DNR

Bankcover

Bankcovers can be an extremely important technique when restoring trout stream habitat. Bankcovers replicate naturally occurring undercut streambanks, which provide deep pool habitat combined with overhead cover. Bankcovers not only provide adult trout with a superb habitat to feed from and evade predation, but they also stabilize streambanks from erosion. Streambanks located on outside bends showing signs of instability are ideal sites. Bankcovers are often constructed with pilings jetted into the substrate and then finished off by installing a set of stringer boards and deck boards to provide the overhead cover.

Bankcover installation / Photo credit: Wisconsin DNR

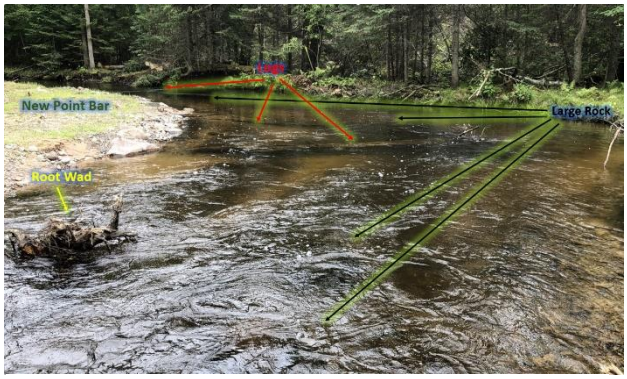
Log Sill

These complex, coarse, woody structures are constructed of whole trees and large limbs found within the stream corridor and are most often constructed in conjunction with trout stream fishability projects and trout habitat improvement projects. Log sill locations are most often in deep runs and pools at the outside streambank of meander bends in water exceeding two feet in depth. Diseased and storm-damaged trees that are creating navigability issues and streambank erosion issues are limbed into manageable pieces. The large butt sections are reoriented In a quartering downstream fashion and are anchored to either the streambank or streambed. The medium-sized material is placed on top of the largest materials, and brush and/or small limbs are placed on top of the medium material. Benefits include cost effectiveness, utilizing storm-damaged, dead or invasive tree species that are close to the river, providing complex woody cover habitat for adult fish, increasing the amount of anchoring substrate for aquatic invertebrates, allowing high water to flow over and through, which promotes sediment deposition within the structure, providing ideal conditions for instream aquatic vegetation growth and increasing streambank stability.

Log sill / Photo credit: Wisconsin DNR

Large Wood and Rock Additions

Large wood and rock additions are done in sections of streams lacking overhead cover and resting places for trout. For this, parts of trees or whole trees are used to create complex wood habitats. The complex wood habitat provides foraging, resting and overhead cover from aerial predators for trout. Rock is used as additional cover for trout. They also function to pin and hold new wood being installed and help capture recruiting wood to the stream.



Large rock and wood additions / Photo credit: Wisconsin DNR

Tag Alder Management

Tag Alder lined stream / Photo credit: Wisconsin DNR

Like fishability brushing but is designed to target tag alder stands. In some sections of streams, tag alder can become dense enough that it obstructs the stream. This can impede stream flow, causing water ponding, streambank erosion, sedimentation, and instream siltation, which can increase stream temperatures. In addition, tag alder brush can restrict recreational access to the stream. Tag alder brush on outside cut streambank bends is removed from the stream and immediate streambank. Other alder extending over half the channel width is also cut back to prevent future impediments to the stream. Brushing is often done by hand or chainsaws. On larger projects, a FECON (Florida Engineers in Construction) mulcher can be used on a track loader or excavator. Alder is often left in slack water areas as it still provides suitable habitat for trout and other species in these areas. Brushing helps maintain stream flow, prevents sediment deposition in the thalweg and aids in maintaining cold water temperatures. In addition, suppressing alder can allow improved access for recreation and help other preferable herbaceous and woody vegetation succeed.

Tree Plantings

Tree planting point bars / Photo credit: Wisconsin DNR

Historically, many northern Wisconsin streams had stream corridors composed of mostly mature timber for vegetation cover. Presently, tag alder has not been succeeding to timber. To prompt the recruitment of trees in riparian corridors, trees are being planted. Tree plantings are often saplings consisting of white pine, tamarack, hemlock, maple and birch species. Trees are planted in high densities to combat deer browse loss. Trees are planted in random order to look as if they recruited naturally. The goals of tree plantings are streambank stabilization, suppressing tag alder growth, maintaining cold water by providing shade and recruiting wood to the stream in the future.

Brush Bundles / Brush Mattresses

Brush bundles / Photo credit: Wisconsin DNR

Brush bundling or Brush Mattress is often done in wide and shallow sections of streams that have soft stream beds mainly composed of sand and/or silt. This technique utilizes cut materials from brushing or recycled Christmas trees to create bundles. These bundles are placed on the inside bend of a stream. The purpose of bundles is to narrow, deepen, concentrate stream flow and re-meander the stream channel. The bundles will capture soft sediments and, over time, create a new streambank that will eventually vegetate. This allows the stream to flush sand and silt, exposing spawning gravel and helping maintain cold water temperatures.

Channel Shaping

Channel shaping / Photo credit: Dave Curran

Channel shaping is typically done in sections of streams that are wide and shallow with a hard bottom. They also typically lack complex wood and rock habitat preferred by trout. In most cases, an excavator is used to reshape the channel of the stream. The depth of the stream is increased by creating new runs and pools in the stream. Spoils from excavation are used to create point bars. The point bars are strategically placed to work with the natural meander of the stream. The point bars narrow the stream, concentrating stream flow, which helps maintain cold water temperatures. Riffles are not removed as they are important natural hydraulic controls and spawning areas for trout. This helps to retain the natural hydraulic processes through the section of the stream. The channel shaping process results in increasing and improving the number of runs and pools while also narrowing the channel width of a section of stream. Large wood and rock additions are done along with channel shaping projects to increase the amount of complex habitat in the stream. Often, tree plantings and brushing are normal post-project vegetation management practices to help suppress tag alder growth and promote the recruitment of timber into the riparian corridor.

Stream Crossing Replacement


Culvert before replacement (left photo) and after replacement (right photo). / Photo credit: Wisconsin DNR

Stream crossings can often degrade the stream quality if constructed improperly. Crossings common in northern streams consist of bridges, culverts and fords. Improperly set and designed crossings can raise waterway elevations, which can lead to increased water temperatures, sedimentation above the crossing and a barrier for fish passage. In some locations, culverts are removed completely, converted to a ford crossing or replaced with properly designed and sized structures set at the correct elevation. Ford crossings are often improved by setting them at the correct substrate elevation to prevent increased water level elevation above the crossing.

Spring Pond Dredging

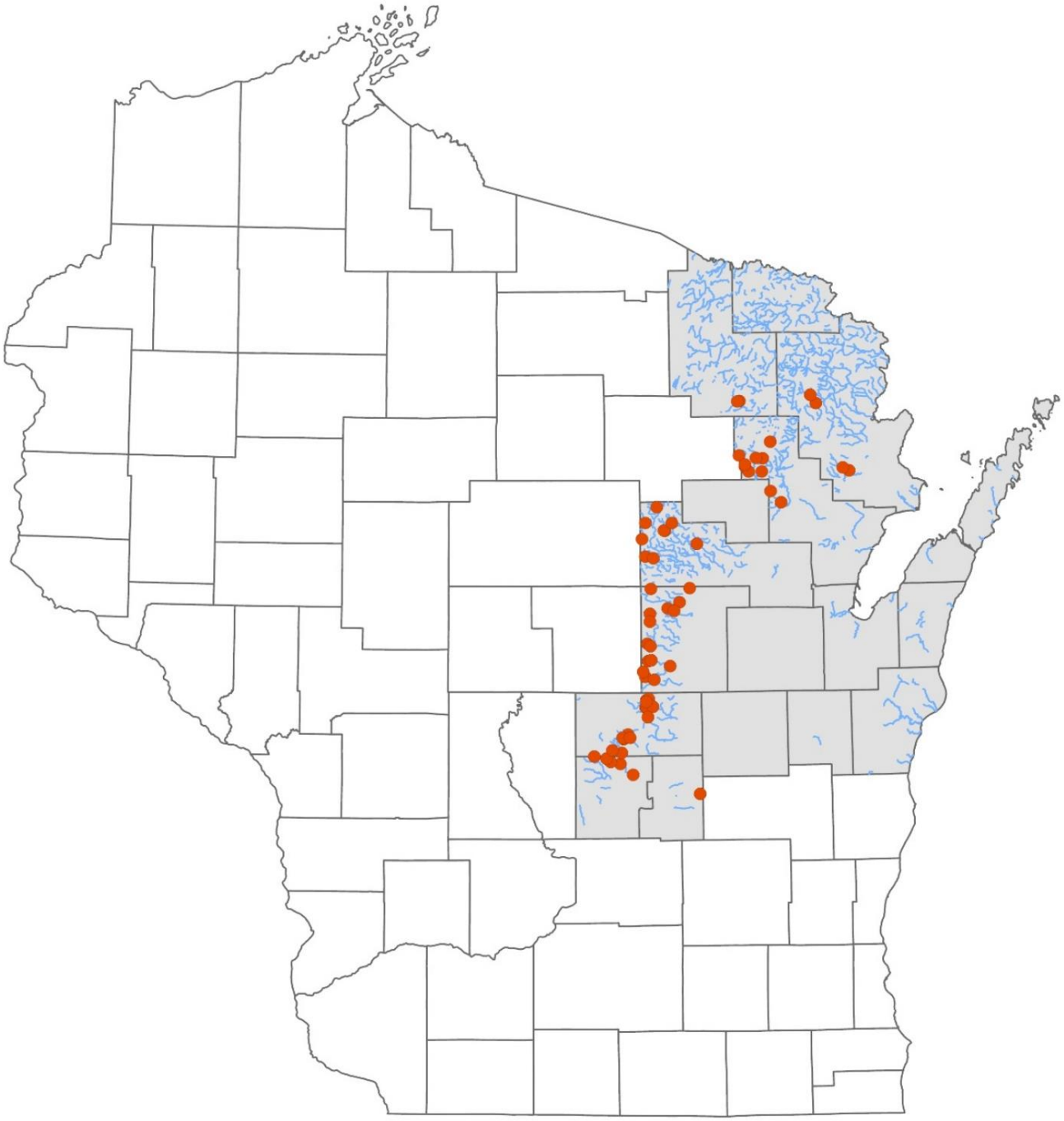
Spring Pond Dredge - Anitgo / Photo credit: Wisconsin DNR

Wisconsin's largest concentration of spring ponds are found in Langlade County. Spring ponds age quickly because of the highly productive spring water feeding them. Calcium carbonate within the spring water precipitates, forming marl which is a substrate for periphyton growth. Over time, this causes these once flourishing cold water habitats to deteriorate with the accumulation of sediments, creating shallow habitats, limiting depth, warming cold water and rendering woody overhead cover unusable. This creates beds of aquatic vegetation and siltation of trout spawning areas. Other impairments of spring ponds are often the result of dammed water from manmade structures such as improperly set culverts, ford crossings and other impoundments. Restoring the natural hydrology of a spring pond is important before dredging. A floating hydraulic dredge is used to remove accumulated sediments and detritus materials from spring ponds. Soft sediments consisting mainly of a muck and marl slurry are pumped from the pond into a disposal area. Disposal areas are often an upland depression or berm area. The material in the disposal area will dewater, which will allow for reclamation of the area post dredging completion. Ponds are normally dredged to a maximum of twelve feet or mineral soil. Gravel spawning sites are improved by dredging and flushing sediments from them. Typically, 15-20% of the pond area will not be dredged. This provides a more diverse habitat for a variety of aquatic life such as young of the year trout, minnow species, amphibians, reptiles and benthic species. Exposed trees, logs and root wads found in the pond are repositioned after dredging is complete. The large wood provides complex habitat for trout. The dredging increases depth, which increases the living space for naturally reproducing trout.

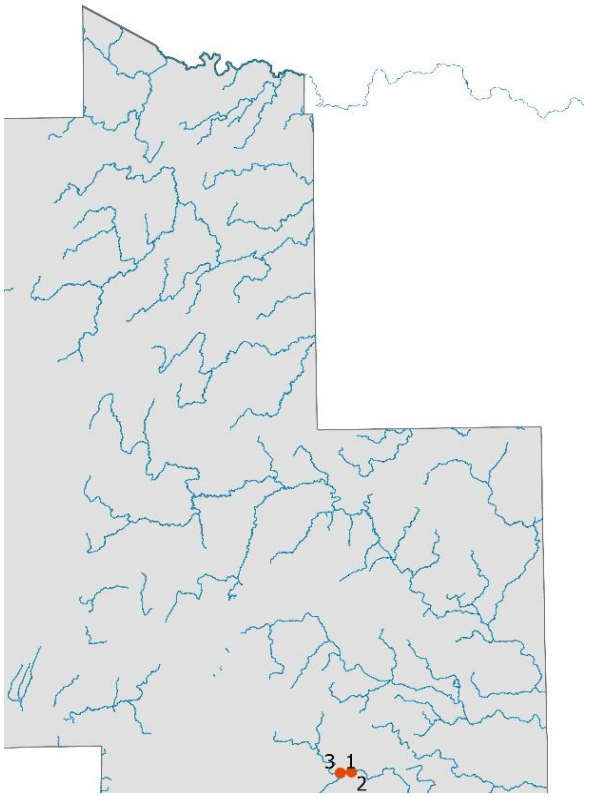
Habitat Project Descriptions

The following is a list of project descriptions entered by staff into the statewide habitat management reporting system. Streams projects are reported alphabetically within each district by county and stream name. Numbers in parentheses next to the stream name refer to the numbered location found on the county map. Fiscal year, location (given as latitude and longitude), project length/size, project purpose, haibtat impariments, target species, techniques/structures and contributing partners are presented for each project.

East District



Forest County



<u>North Branch Oconto River</u> (1,3)

- **Fiscal Year:** 2019, 2020
- **Location:** 45.440415, -88.65745
- **Project Length:** 800 feet
- **Purpose:** Improve angler access and trout habitat
- **Stream Habitat Impairments:** Overgrown tag alders; reduced depth; limited trout cover
- **Target Species:** Brook and brown trout
- **Technique or Structure:** Brush bundle/mattresses; brush removal
- **Partners:** Town of Wabeno, Trout Unlimited

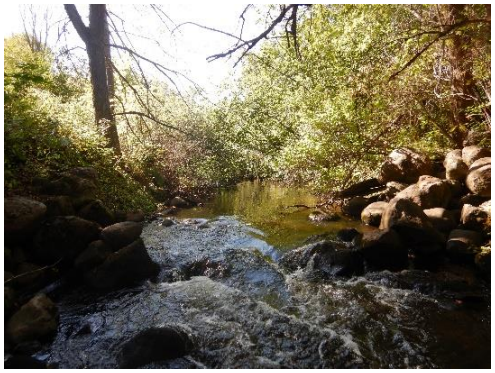
Before accessibility project. / Photo credit: Wisconsin DNR

After accessibility project. / *Photo credit: Wisconsin DNR*

North Branch Oconto River (2)

- **Fiscal Year:** 2019
- **Location:** 45.441226, -88.645044
- **Project Length:** 1,465 feet
- **Purpose:** Improve access and fishability; improve resting, refuge and feeding cover for brook and brown trout; reconnect the floodplain and improve fish passage
- **Stream Habitat Impairments:** Overgrown tag alder; mill dam constricting stream and disconnecting upstream and downstream portions of the floodplain; limited fish passage
- **Target Species:** Brook and brown trout
- **Technique or Structure:** Mill Dam removal; brush bundle/mattresses; material removal; brush removal; log sills; streambank re-establishment
- **Partners:** Wabeno Area School District, Trout Unlimited

N. Br. Oconto River pre-brushing. / Photo credit: Wisconsin DNR

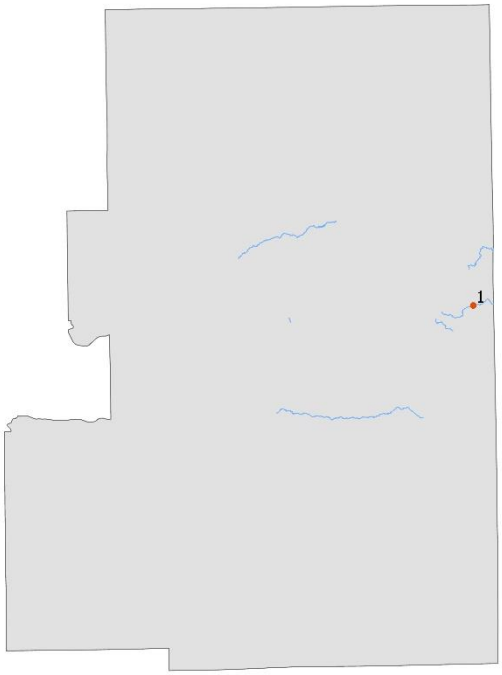


Mill dam site before project. / Photo credit: Wisconsin DNR

N. Br. Oconto River post-brushing. / Photo credit: Wisconsin DNR

Mill dam site after project. / Photo credit: Wisconsin DNR

Green Lake County

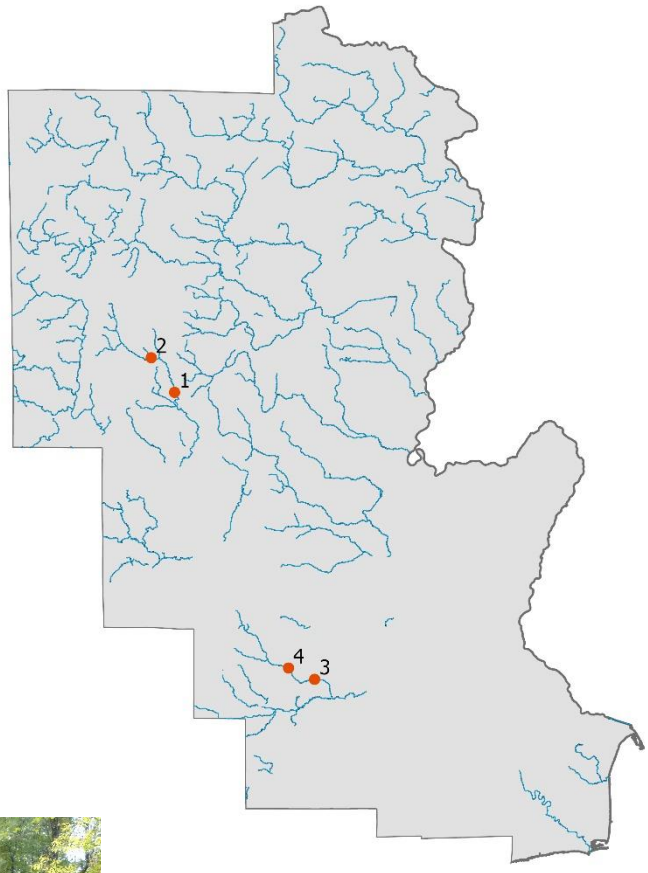


<u>Dakin Creek</u> (1)

- **Fiscal Year:** 2020
- **Location:** 43.82372, -88.9011
- **Project Length:** 2,000 feet
- **Purpose:** Improve water quality of Big Green Lake; stabilize streambanks and improve trout habitat
- **Stream Habitat Impairments:** Dissipated stream flow; unstable streambanks; incised streambanks; steep unprotected upland slopes; channel braiding.
- **Target Species:** Brook trout
- **Technique or Structure:** Brush bundle/mattresses; log sills; exotic vegetation removal
- **Partners:** Green Lake Association

Conducting habitat evaluation surveys on Dakin Creek. / Photo credit: Wisconsin DNR

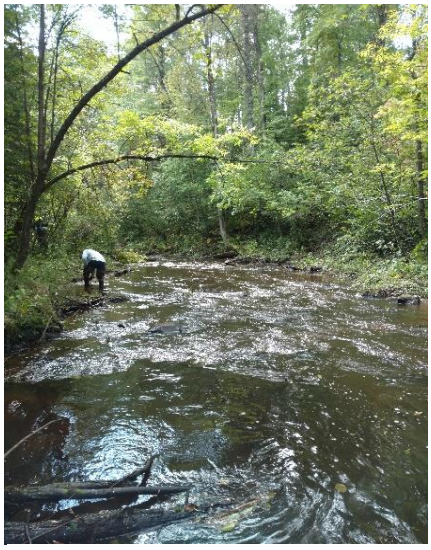
Marinette County



<u>Eagle Creek</u> (1)

- **Fiscal Year:** 2019
- **Location:** 45.427129, -88.204698
- **Project Length:** 1,560 feet
- **Purpose:** Re-establish natural streambanks; reconnect stream to floodway; remove degraded structures; reduce erosion; improve angler access and fishability
- **Stream Habitat Impairments:** No floodplain connectivity; Bank covers too numerous; constricted stream channel; lack of sediment transport; sand deposits on top of streambank; improperly installed structures causing adverse erosional issues on opposite banks as well as looking unnatural
- **Target Species:** Brook trout
- **Technique or Structure:** Material removal; brush removal; streambank re-establishment

Eagle Creek pre-brushing. /
Photo credit: Wisconsin DNR



Eagle Creek post-brushing. /
Photo credit: Wisconsin DNR

Renovated bank cover site reconnecting Eagle Creek with floodplain. / Photo credit: Wisconsin DNR

Eagle Creek (2)

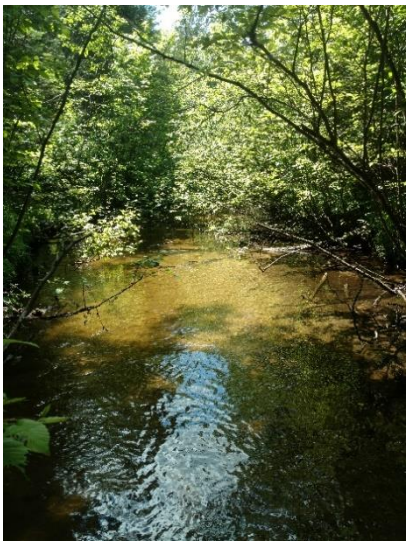
- **Fiscal Year:** 2021
- **Location:** 45.46097, -88.23573
- **Project Length:** 5,600 feet
- **Purpose:** Improve angler access and fishability
- **Stream Habitat Impairments:** Overgrown tag alder resulting in sloughing into the stream; impeding flow; impairing access
- **Target Species:** Brook trout
- **Technique or Structure:** Fishability brushing

North Branch Beaver Creek (3)

- **Fiscal Year:** 2021
- **Location:** 45.14730, -88.02253
- **Project Length:** 9,500 feet
- **Purpose:** Improve angler access, fishability and stream flow
- **Stream Habitat Impairments:** Excessive brush; widened stream channel; excessive deposition of fine sediments
- **Target Species:** Brook and brown trout
- **Technique or Structure:** Fishability brushing

North Branch Beaver Creek (4)

- **Fiscal Year:** 2019, 2020
- **Project Length:** 2,260 feet
- **Location:** 45.158593, -88.057815
- **Purpose:** Improve angler access and fishability; increase resting, refuge and feeding cover for trout; capture sand and sediment, as well as scour to uncover spawning gravels and improve fish migration
- **Stream Habitat Impairments:** Heavy sand bed load; reduced depth; dense tag alder overgrowth; impaired access and fishing.
- **Target Species:** Brook and brown trout
- **Technique or Structure:** Brush bundle/mattresses; brush removal; log sills; angler access paths

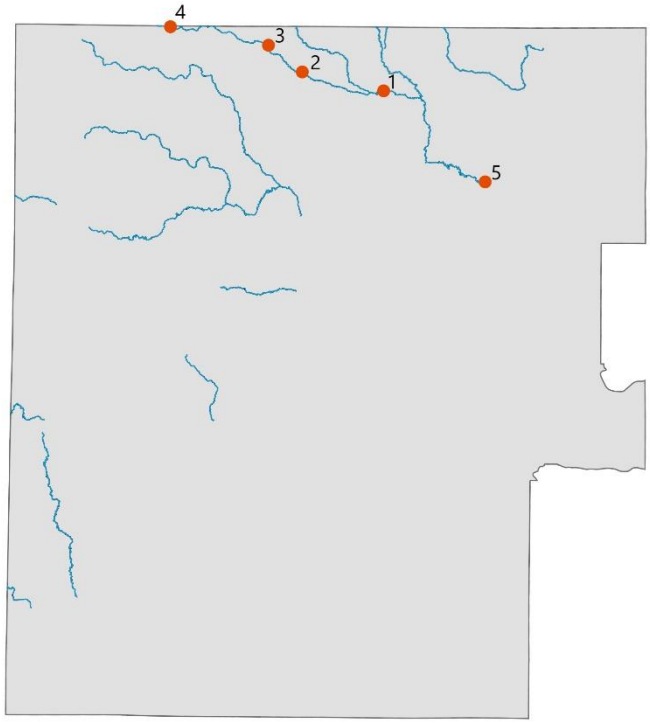


N. Br. Beaver Creek pre-brushing. / Photo credit: Wisconsin DNR

N. Br. Beaver Creek post-brushing./ Photo credit: Wisconsin DNR

Log sill installed on N. Br. Beaver Creek./ Photo credit: Wisconsin DNR

Marquette County



<u>Chaffee Creek</u> (1)

- **Fiscal Year:** 2019
- **Location:** 43.95085, -89.34714
- **Project Length:** 3,800 feet
- **Purpose:** Improve angler access and fishability
- **Stream Habitat Impairments:** Overgrowth of invasive exotic woody vegetation (buckthorn and honeysuckle)
- **Target Species:** Brown trout
- **Technique or Structure:** Brush removal; angler paths; exotic vegetation removal

<u>Chaffee Creek</u> (2)

- **Fiscal Year:** 2021
- **Location:** 43.9598, -89.4024
- **Project Length:** 3,200 feet
- **Purpose:** Improve access and fishability
- **Stream Habitat Impairments:** Overgrowth of invasive woody vegetation
- **Target Species:** Brown trout
- **Technique or Structure:** Fishability brushing, willow tree removal, angler paths and exotic vegetation removal

Angler path after removal of large willow tree along Chaffee Creek. / Photo credit: Wisconsin DNR

Large willow tree blocking access and falling on angler path along Chaffee Creek. / Photo credit: Wisconsin DNR

<u>Chaffee Creek</u> (3)

- **Fiscal Year:** 2021
- **Location:** 43.97275, -89.42563
- **Project Length:** 4,700 feet
- **Purpose:** Improve access and fishability
- **Stream Habitat Impairments:** Overgrowth of invasive exotic woody vegetation (buckthorn and honeysuckle)
- **Target Species:** Brown trout
- **Technique or Structure:** Beaver dam removal; fishability brushing; angler paths; exotic vegetation removal

Chaffee Creek (4)

- **Fiscal Year:** 2021
- **Location:** 43.98137, -89.49247
- **Project Length:** 2,500 feet
- **Purpose:** Improve access and fishability
- **Stream Habitat Impairments:** Overgrowth of invasive exotic woody vegetation (buckthorn and honeysuckle)
- **Target Species:** Brown trout
- **Technique or Structure:** Fishability brushing; angler paths; exotic vegetation removal

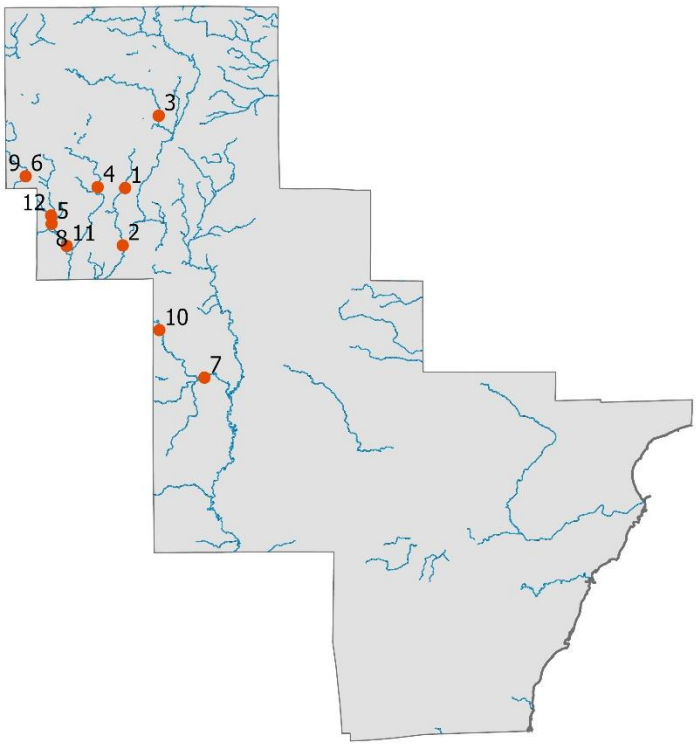
After Chaffee Creek brushing project, 2020. / Photo credit: Wisconsin DNR

Mecan River (5)

- **Fiscal Year:** 2021
- **Location:** 43.9065, -89.2776
- **Project Length:** 100 feet
- **Purpose:** Preventative removal of hazardous willow trees from around the electric fish barrier
- **Stream Habitat Impairments:** An electric fish barrier was installed in 1964 to prevent rough fish and northern pike migration from the Germania Marsh Wildlife Area upstream into classified trout water of the Mecan River.
- **Target Species:** Brown trout
- **Technique or Structure:** Willow tree removal

Electric fish barrier on Mecan River. / Photo credit: Wisconsin DNR

Oconto County



First South Branch Oconto River (1)

- **Fiscal Year:** 2019
- **Location:** 45.204125, -88.518431
- **Project Length:** 3,300 feet
- **Purpose:** Improve access and fishability; increase resting, refuge and feeding cover
- **Stream Habitat Impairments: Excessive** storm-damaged trees in stream; impaired access and fishing; widened shallow spots in the river; sand deposition on desirable woods and gravels.
- **Target Species:** Brook and brown trout

Technique or Structure: Brush bundle/mattresses; brush removal; log sills

First South Branch Oconto River (2)

- **Fiscal Year:** 2021
- **Location:** 45.14964, -88.52303
- **Project Length:** 11,600 feet
- **Purpose:** Improve stream flow and angler access
- **Stream Habitat Impairments:** reduced flow
- **Target Species:** Brook and brown trout
- **Technique or Structure:** Fishability brushing

McCauslin Brook (3)

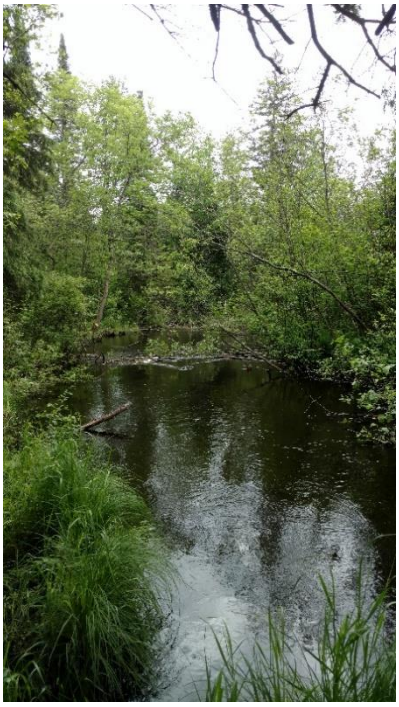
- **Fiscal Year:** 2020, 2021
- **Location:** 45.27256, -88.47115
- **Project Length:** 5,600 feet
- **Purpose:** Improve accessibility, cover and stream flow
- **Stream Habitat Impairments:** Reduced flow; lack of overhead; dense riparian vegetation
- **Target Species:** Brook and brown trout
- **Technique or Structure**: Brush removal

Second South Branch Oconto River (4)

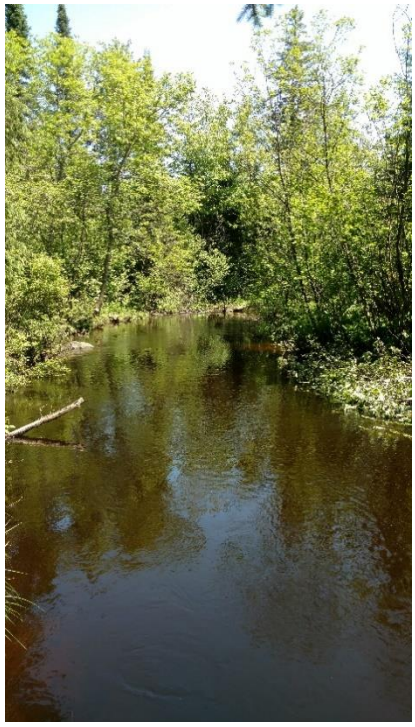
- **Fiscal Year:** 2021
- **Location:** 45.20543, -88.55537
- **Project Length:** 15,800 feet
- **Purpose:** Maintain habitat; improve stream flow and fishing access
- **Stream Habitat Impairments:** Excessive brush; altered stream flows; widened stream channel; soft sediment deposition within the stream channel
- **Target Species:** Brook trout
- **Technique or Structure:** Fishability brushing

South Branch Oconto River (5,8)

- **Fiscal Year:** 2019,2020
- **Location:** 45.171234, -88.618691
- **Project Length:** 5,200 feet
- **Purpose:** Increase access and fishability for the handicapped boardwalk and throughout the USFS property; increase resting, refuge and feeding cover.
- **Stream Habitat Impairments:** Storm damage and dense tag alder growth; reduced access to handicapped accessible fishing platforms; widened and shallow stream channel
- **Target Species:** Brook and brown trout
- **Technique or Structure:** Brush bundle/mattresses, log/brush/rock shelters and brush removal
- **Partners:** Oconto River Trout Unlimited, Wolf River Trout Unlimited, Green Bay Trout Unlimited and Marinette Trout Unlimited



S. Br. Oconto River pre-brushing. / Photo credit: Wisconsin DNR



S. Br. Oconto River post-brushing. / Photo credit: Wisconsin DNR

South Branch Oconto River (6,9)

- **Fiscal Year:** 2019, 2020
- **Location:** 45.217233, -88.652597
- **Project Length:** 3,600 feet
- **Purpose:** Increase access, fishability and bank covers throughout the USFS property
- **Stream Habitat Impairments:** Overgrown with tag alder, buckthorn and native tree limbs
- **Target Species:** Brook and brown trout
- **Technique or Structure:** Brush removal

South Branch Oconto River (7)

- **Fiscal Year:** 2020
- **Location:** 45.02194, -88.41638
- **Project Length:** 3,300 feet
- **Purpose:** Improve angler access, navigation and fishability
- **Stream Habitat Impairments:** massive trees blocking stream channel
- **Target Species:** Brook and brown trout
- **Technique or Structure:** Exotic vegetation removal

Riparian corridor post brush removal. / Photo credit: Wisconsin DNR

Wild Rose crew member sizing up large willow tree to be removed. / Photo credit: Wisconsin DNR

South Branch Oconto River (10)

- **Fiscal Year:** 2021
- **Location:** 45.06814, -88.47603
- **Project Length:** 33,792 feet
- **Purpose:** Restoring stream flow; maintain wood habitat
- **Stream Habitat Impairments:** Impaired stream flow and hydrologic function
- **Target Species:** Brook and brown trout
- **Technique or Structure:** Relocation of large woody instream habitat

South Branch Oconto River (11)

- **Fiscal Year:** 2021
- **Location:** 45.14994, -88.5988
- **Project Length:** 1,600 feet
- **Purpose:** Improve access and fishability
- **Stream Habitat Impairments:** Overgrowth of tag alder
- **Target Species:** Brook and brown trout
- **Technique or Structure:** Fishability brushing

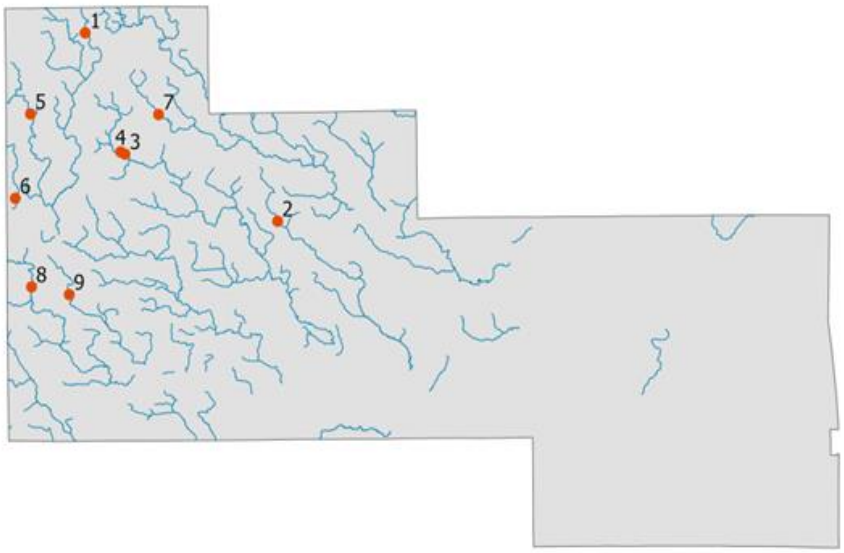
South Branch Oconto River (12)

- **Fiscal Year:** 2021
- **Location:** 45.17923, -88.61901
- **Project Length:** 4,400 feet
- **Purpose:** Improve access and fishability
- **Stream Habitat Impairments:** inhibited fishing access and altered stream flows
- **Target Species:** Brook and brown trout
- **Technique or Structure:** Fishability brushing

Shawano County

Middle Branch Embarrass River (1)

- **Fiscal Year:** 2020, 2021
- **Location:** 45.00868, -89.1280
- **Project Length:** 1,400 feet
- **Purpose:** Improve angler access and fishability
- **Stream Habitat Impairments:** Overabundant tag alder
- **Target Species:** Brook trout
- **Technique or Structure**: Brush removal



Mill Creek (2)

- **Fiscal Year:** 2021
- **Location:** 44.85554, -88.90256
- **Project Length:** 1,420 feet
- **Purpose:** Improve angler access, fishability and stream flow
- **Stream Habitat Impairments:** Overabundant tag alder; widened stream channel
- **Target Species:** Brook trout
- **Technique or Structure**: Brush removal; angler paths; exotic vegetation removal

North Branch Embarrass River (3)

- **Fiscal Year:** 2020
- **Location:** 44.91106, -89.08226
- **Project Length:** 1,700 feet
- **Purpose:** Remove tag alder; improve angler access
- **Stream Habitat Impairments:** Overabundant tag alder; impaired access
- **Target Species:** Brook trout
- **Technique or Structure**: Brush removal

North Branch Embarrass River (4)

- **Fiscal Year:** 2021
- **Location:** 44.91288, -89.08769
- **Project Length:** 6,525 feet
- **Purpose:** Improve angler access, fishability and stream flow
- **Stream Habitat Impairments:** Overabundant tag alder; impaired access; widened stream channel
- **Target Species:** Brook and brown trout
- **Technique or Structure:** Fishability brushing

Packard Creek (5)

- **Fiscal Year:** 2021
- **Location:** 44.94406, -89.19397
- **Project Length:** 2,580 feet
- **Purpose:** Improve the fishing and the stream flow
- **Stream Habitat Impairments:** Overabundant tag alder; impaired access; widened stream channel
- **Target Species:** Brook trout
- **Technique or Structure:** Fishability brushing

Railroad Creek (6)

- **Fiscal Year:** 2021
- **Location:** 44.87649, -89.21291
- **Project Length:** 2,150 feet
- **Purpose:** Improve the fishing and the stream flow
- **Stream Habitat Impairments:** Overabundant tag alder; impaired access; widened stream channel
- **Target Species:** Brook trout
- **Technique or Structure:** Fishability brushing

Silver Creek (7)

- **Fiscal Year:** 2021
- **Location:** 44.94246, -89.04211
- **Project Length:** 2,100 feet
- **Purpose:** Improve the fishability and the stream flow
- **Stream Habitat Impairments:** Overabundant tag alder; impaired access; widened stream channel
- **Target Species:** Brook trout
- **Technique or Structure:** Fishability brushing

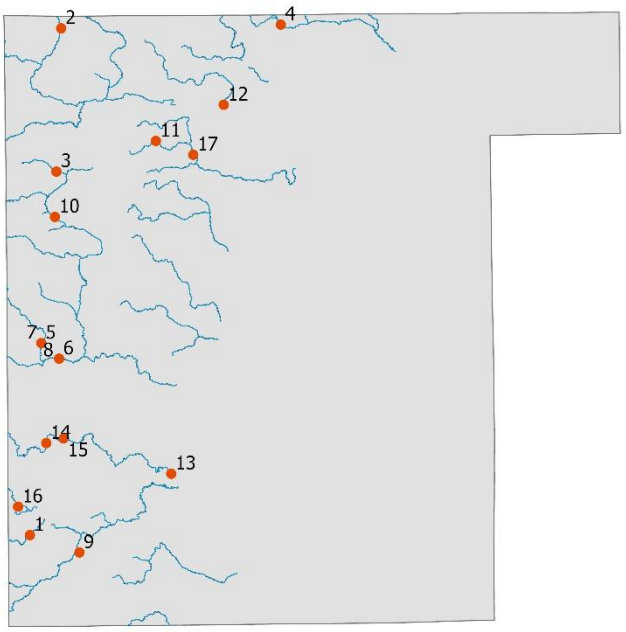
South Branch Embarrass River (8)

- **Fiscal Year:** 2021
- **Location:** 44.80515, -89.19483
- **Project Length:** 940 feet
- **Purpose:** Improve the fishing and the stream flow
- **Stream Habitat Impairments:** Overabundant tag alder; impaired access; widened stream channel
- **Target Species:** Brook and brown trout
- **Technique or Structure:** Fishability brushing

Tiger Creek (9)

- **Fiscal Year:** 2021
- **Location:** 44.79886, -89.15018
- **Project Length:** 3,090 feet
- **Purpose:** Improve fishability and stream flow
- **Stream Habitat Impairments:** Overabundant tag alder; impaired access; widened stream channel
  Target Species: Brook trout
- **Technique or Structure:** Fishability brushing

Waupaca County



Emmons Creek (1)

- **Fiscal Year:** 2021
- **Location:** 44.3089, -89.2023
- **Project Length:** 3,200 feet
- **Purpose:** Improve access and fishability
- **Stream Habitat Impairments:** Overabundant tag alder; impaired access; widened stream channel
  Target Species: Brown trout
- **Technique or Structure:** Fishability brushing, angler/hunter paths and exotic vegetation removal

Jackson Creek (2)

- **Fiscal Year:** 2021
- **Location:** 44.67157, -89.16589
- **Project Length:** 1,600 feet
- **Purpose:** Improve angler access and stream flow
- **Stream Habitat Impairments:** Reduced flow; dense riparian vegetation
- **Target Species:** Brook trout
- **Technique or Structure:** Fishability brushing

Leer Creek (3)

- **Fiscal Year:** 2021
- **Location:** 44.56906, -89.17205
- **Project Length:** 5,700 feet
- **Purpose:** Improve fishability and stream flow
- **Stream Habitat Impairments:** Overabundant tag alder; impaired access; widened stream channel
  Target Species: Brook trout
- **Technique or Structure:** Fishability brushing

North Branch Pigeon River (4)

- **Fiscal Year:** 2021
- **Location:** 44.67233, -88.94543
- **Project Length:** 5,600 feet
- **Purpose:** Improve access, fishability and streamflow
- **Stream Habitat Impairments:** Overabundant tag alder; impaired access; widened stream channel
- **Target Species:** Brook trout
- **Technique or Structure:** Fishability Brushing

Peterson Creek (5,7)

- **Fiscal Year:** 2019, 2020
- **Location:** 44.44638, -89.18907
- **Project Length:** 2,500 feet
- **Purpose:** Improve angler access and fishability
- **Stream Habitat Impairments:** Overgrown woody vegetation; impaired angler access
- **Target Species:** Brook and brown trout
- **Technique or Structure:** Brush removal; exotic vegetation removal

Peterson Creek (6)

- **Fiscal Year:** 2020
- **Location:** 44.43501, -89.1713
- **Project Length:** 1,300 feet
- **Purpose:** Improve angler access and fishability; reduce streambank erosion.
- **Stream Habitat Impairments:** Overgrown, downed woody vegetation; impaired angler access
- **Target Species:** Brown trout
- **Technique or Structure:** Brush removal; exotic vegetation removal

Wild Rose Crew member sizing up storm damaged tree. / Photo credit: Wisconsin DNR

Post brush removal on Peterson Creek, 2020. / Photo credit: Wisconsin DNR

Peterson Creek (8)

- **Fiscal Year:** 2021
- **Location:** 44.43501, -89.1713
- **Project Length:** 2,000 feet
- **Purpose:** Plan for the installation of a parking area; improve access and fishability
- **Stream Habitat Impairments:** Overgrown exotic vegetation; impaired angler access
- **Target Species:** Brown trout
- **Technique or Structure:** Fishability brushing; angler paths; exotic vegetation removal

Radley Creek (9)

- **Fiscal Year:** 2019
- **Location:** 44.29614, -89.15303
- **Project Length:** 3,500 feet
- **Purpose:** Improve angler access and fishability
- **Stream Habitat Impairments:** Dense woody vegetation
- **Target Species:** Brown trout
- **Technique or Structure:** Brush removal; angler paths

Wild Rose crew brushing Radley Creek. / Photo credit: Wisconsin DNR

South Branch Little Wolf River (10)

- **Fiscal Year:** 2021
- **Location:** 44.53662, -89.1741
- **Project Length:** 2,200 feet
- **Purpose:** Improve access and fishability
- **Stream Habitat Impairments:** Overgrown woody vegetation; impaired angler access
- **Target Species:** Brook and brown trout
- **Technique or Structure:** Fishability brushing; angler/hunter paths; exotic vegetation removal

South Branch Whitcomb Creek (11)

- **Fiscal Year:** 2021
- **Location:** 44.59016, -89.07204
- **Project Length:** 3,700 feet
- **Purpose:** Improve fishability, access and stream flow
- **Stream Habitat Impairments:** Overgrown woody vegetation; impaired angler access
- **Target Species**: Brook trout
- **Technique or Structure:** Fishability brushing

Spaulding Creek (12)

- **Fiscal Year:** 2021
- **Location:** 44.61547, -89.00383
- **Project Length:** 20,100 feet
- **Purpose:** Improve fishability and stream flow
- **Stream Habitat Impairments:** Overgrown woody vegetation; impaired angler access
- **Target Species:** Brook trout
- **Technique or Structure:** Fishability brushing

Waupaca River (13)

- **Fiscal Year:** 2021
- **Location:** 44.35171, -89.06069
- **Project Length:** 200 feet
- **Purpose:** Remove black locust trees; prepare trees to be used for future habitat work
- **Stream Habitat Impairments:** Limited overhead cover habitat
- **Target Species:** Brown trout
- **Technique or Structure:** Tree removal

Waupaca River (14)

- **Fiscal Year:** 2019
- **Location:** 44.3747, -89.18508
- **Project Length:** 2,000 feet
- **Purpose:** Improve angler access and fishability
- **Stream Habitat Impairments:** Overgrown woody vegetation; impaired angler access
- **Target Species:** Brown trout
- **Technique or Structure:** Brush removal; angler paths; exotic vegetation removal

Waupaca River (15)

- **Fiscal Year:** 2020
- **Location:** 44.37787, -89.1677
- **Project Length:** 2,000 feet
- **Purpose:** Remove fallen trees and unwanted vegetation
- **Stream Habitat Impairments:** Overgrown exotic vegetation; excessive woody debris; impaired angler access
- **Target Species:** Brown trout
- **Technique or Structure:** Brush removal; exotic vegetation removal

Waupaca River (16)

- **Fiscal Year:** 2019
- **Location:** 44.3293, -89.2137
- **Project Length:** 1,600 feet
- **Purpose:** Stabilize streambanks; improve trout angling access, trout habitats, canoe access and stream crossing
- **Stream Habitat Impairments:** Destabilized streambanks; impaired navigation and angling; invasive exotic species of woody vegetation
- **Target Species:** Brown trout
- **Technique or Structure:** Stream crossing, beaver dam removal; brush removal; log sills; exotic vegetation removal
- **Partners:** City of Waupaca (Partnership)

Log sills installed on Waupaca River. / Photo credit: Wisconsin DNR

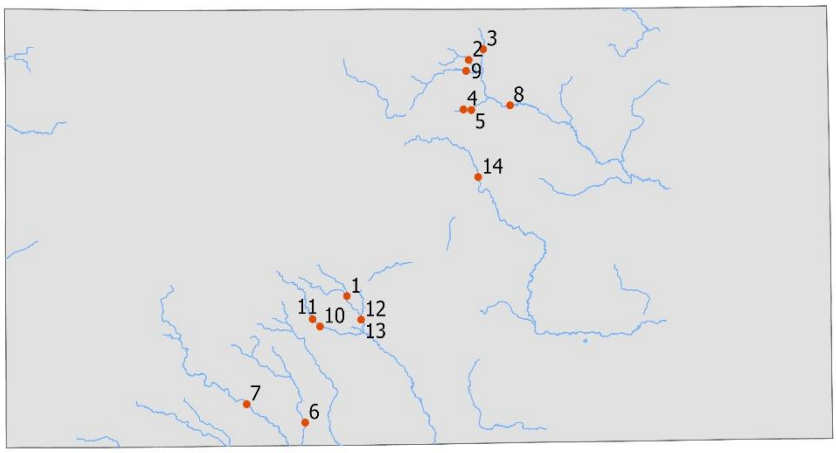
Whitcomb Creek (17)

- **Fiscal Year:** 2021
- **Location:** 44.5799, -89.03486
- **Project Length:** 5,800 feet
- **Purpose:** Improve fishability and stream flow
- **Stream Habitat Impairments:** Overgrown woody vegetation; impaired angler access
- **Target Species:** Brook trout

Technique or Structure: Fishability brushing

Waushara County

<u>Bird Creek</u> (1)



- **Fiscal Year:** 2019, 2020, 2021
- **Location:** 44.07193, -89.30361
- **Project Length:** 2,300 feet
- **Purpose:** Improve access; improve instream trout habitat
- **Stream Habitat Impairments:** Reduced stream velocity; accumulation of fine sediments
- **Target Species:** Brook and brown trout
- **Technique or Structure:** Brush bundle/mattresses; brush removal; log sills; exotic vegetation removal; riffles
- **Partners:** City of Wautoma, Wautoma Highschool, Wautoma Citizens, Central Wisconsin Chapter of Trout Unlimited, Fox Valley Chapter of Trout Unlimited, Frank Hornberg Chapter of Trout Unlimited, Shaw-Paca Chapter of Trout Unlimited and Trout Unlimited Youth Camp

Volunteers working to install brush bundles and log sills on Bird Creek. / Photo credit: Wisconsin DNR

Brush bundles, log sills and fishability brushing completed on Bird Creek. / Photo credit: Wisconsin DNR

Riffle complex, post-installation on Bird Creek. / Photo credit: Wisconsin DNR

Rawhide – About Face Students help clear storm-damaged trees. / Photo credit: Wisconsin DNR

Davies Creek (2)

- **Fiscal Year:** 2019
- **Location:** 44.21265, -89.19666
- **Project Length:** 4,435 feet
- **Purpose:** Improve trout habitat, streambank stabilization, angler access and fishability
- **Stream Habitat Impairments:** Impaired angling access; unstable streambanks
- **Target Species:** Brook and brown trout
- **Technique or Structure:** Brush bundle/mattresses; brush removal; log sills
- **Partners:** Rawhide Boys Ranch - About Face Students, Fox Valley Chapter of Trout Unlimited and Central Wisconsin Chapter of Trout Unlimited

Humphrey Creek (3)

- **Fiscal Year:** 2019, 2020
- **Location:** 44.21894, -89.18409
- **Project Length:** 5,800 feet
- **Purpose:** Improve angler access, fishability, trout cover and spawning habitats; strengthen partnerships and education with Rawhide Boys Ranch - About Face Students/Fox Valley Chapter of Trout Unlimited
- **Stream Habitat Impairments:** Overgrown woody vegetation; impaired angler access; accumulation of fine sediments
- **Target Species:** Brook and brown trout
- **Technique or Structure:** Brush bundle/mattresses; brush removal; log sills
- **Partners**: Rawhide Boys Ranch - About Face Students, Fox Valley Chapter of Trout Unlimited and Central Wisconsin Chapter of Trout Unlimited

Wild Rose crew and partners moving a log for installation of a trout habitat structure. / Photo credit: Wisconsin DNR

Kaminski Creek (4)

- **Fiscal Year:** 2020
- **Location:** 44.18304, -89.2016
- **Project Length:** 2,400 feet
- **Purpose:** Improve access for anglers
- **Stream Habitat Impairments:** Overgrown woody vegetation; impaired angler access
- **Target Species:** Brook trout
- **Technique or Structure:** Brush removal

Post brush removal on Kaminski Creek. / Photo credit: Wisconsin DNR

Kaminski Creek (5)

- **Fiscal Year:** 2021
- **Location:** 44.18266, -89.19492
- **Project Length:** 1,500 feet
- **Purpose:** Improve instream habitat, fishability and access
- **Stream Habitat Impairments:** Overgrown woody vegetation; impaired angler access
- **Target Species:** Brook trout
- **Technique or Structure:** Fishability brushing; riffles; angler paths; exotic vegetation removal

Riffle installation on Kaminski Creek. / Photo credit: Wisconsin DNR

Little Pine Creek (6)

- **Fiscal Year:** 2021
- **Location:** 43.9966, -89.34026
- **Project Length:** 2,200 feet
- **Purpose:** Improve access and fishability
- **Stream Habitat Impairments:** Overgrown native shrubs; invasive exotic woody vegetation; storm damaged trees
- **Target Species:** Brook trout
- **Technique or Structure:** Fishability brushing; angler paths; exotic vegetation removal

Little Pine Creek pre brush removal. / Photo credit: Wisconsin DNR

Little Pine Creek post brush removal. / Photo credit: Wisconsin DNR

Mecan River (7)

- **Fiscal Year:** 2020, 2021
- **Location:** 44.0078, -89.3906
- **Project Length:** 4,000 feet
- **Purpose:** Improve angler access
- **Stream Habitat Impairments:** Overgrown woody vegetation; lack of stream channel definition; dense reed canary grass; impaired access
- **Target Species:** Brown trout
- **Technique or Structure**: Brush removal; angler paths; exotic vegetation removal

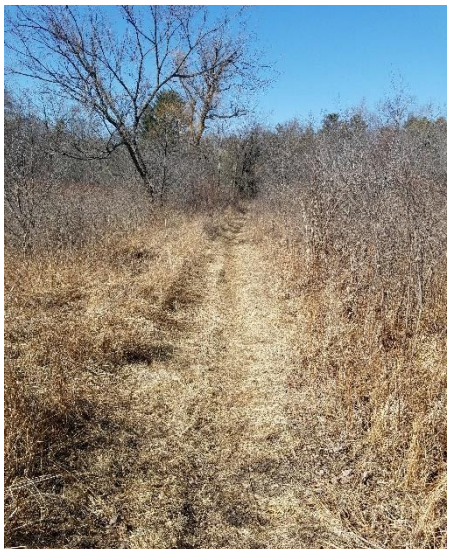
Pine River (8)

- **Fiscal Year:** 2019
- **Location:** 44.18514, -89.16148
- **Project Length:** 3,700 feet
- **Purpose:** Improve angler access and fishability, complex trout habitats and channelized stream segments
- **Stream Habitat Impairments:** Invasive exotic woody vegetation (glossy buckthorn); instability to streambanks; a loss of natural wood recruitment instream; a loss of species diversity (flora and fauna) within the riparian corridor; reduced recreational access through the river; widened stream channel
- **Target Species:** Brook and brown trout
- **Technique or Structure:** Brush bundle/mattresses; overhead bank cover; brush removal; log sills; angler paths; exotic vegetation removal
- **Partners:** Central Wisconsin Chapter of Trout Unlimited and Fox Valley Chapter of Trout Unlimited

Log sill installation on the Pine River. / Photo credit: Wisconsin DNR

Pine River (9)

- **Fiscal Year:** 2019
- **Location:** 44.20599, -89.19903
- **Project Length:** 9,400 feet
- **Purpose:** Survey angler access and trout habitat
- **Stream Habitat Impairments:** Overgrown woody vegetation; impaired angler access; limited trout habitat
- **Target Species:** Brown trout
- **Technique or Structure:** Habitat and angler access survey



Access corridor for the Pine River. / Photo credit: Wisconsin DNR

West Branch White River (10,11)

- **Fiscal Year:** 2019, 2020
- **Location:** 44.05849, -89.3332
- **Project Length:** 4,200 feet
- **Purpose:** Improve wading and angling; optimize natural recruitment of coarse wood into the stream for overhead, refuge and holding trout habitats; stabilize eroding streambanks; increase amount of trout spawning substrate; remove exotic vegetation to promote a diverse community of native vegetation
- **Stream Habitat Impairments:** Shallow/wide sand-dominated flats; degradation of streambank stability; lack of overhead cover habitats; lack of deep water/pool habitats.
- **Target Species:** Rainbow trout
- **Technique or Structure:** Brush bundle/mattresses; brush removal; log sills; angler paths
- **Partners:** Central Wisconsin Chapter of Trout Unlimited, Fox Valley Chapter of Trout Unlimited, Frank Hornburg Chapter of Trout Unlimited and Trout Unlimited Youth Camp Attendees

Curious visitor on the West Branch of the White River habitat project. / Photo by Nate Ratliff

Large turnout for West Branch of the White River workday. / Photo credit: Wisconsin DNR

White River (12)

- **Fiscal Year:** 2019
- **Location:** 44.05788, -89.29147
- **Project Length:** 2,500 feet
- **Purpose:** Improve angler access and fishability
- **Stream Habitat Impairments:** Invasive exotic woody vegetation (buckthorn and honeysuckle); impaired angler access
- **Target Species:** Brown trout
- **Technique or Structure:** Brush removal; angler paths

Post project on the West Branch of the White River. / Photo credit: Wisconsin DNR

White River (13)

- **Fiscal Year:** 2021
- **Location:** 44.0579, -89.2915
- **Project Length:** 2,600 feet
- **Purpose:** Improve access and fishability along the White River throughout DNR public lands located downstream of the DNR parking area at Chicago Avenue
- **Stream Habitat Impairments:** Overgrown native vegetation; impaired angler access
- **Target Species:** Brown trout
- **Technique or Structure:** Fishability brushing; angler paths; exotic vegetation removal

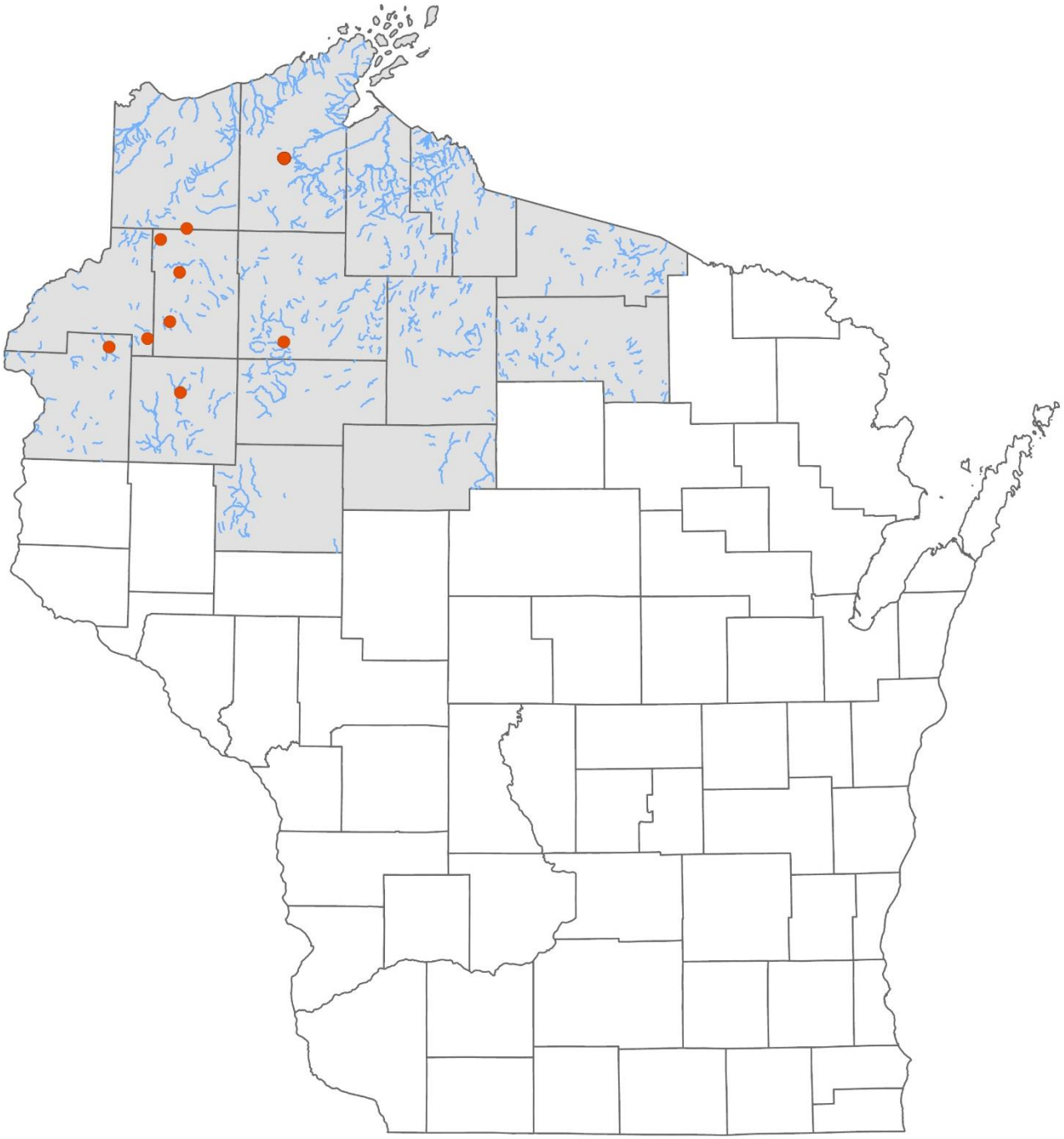
Willow Creek (14)

- **Fiscal Year:** 2019
- **Location:** 44.14245, -89.18941
- **Project Length:** 2,900 feet
- **Purpose:** Improve angler access and fishability
- **Stream Habitat Impairments:** Invasive exotic woody vegetation (buckthorn and honeysuckle); impaired angler access
- **Target Species:** Brown trout
- **Technique or Structure:** Brush removal; angler paths

Willow Creek post-project. / Photo credit: Wisconsin DNR

Willow Creek pre-brushing. / Photo credit: Wisconsin DNR

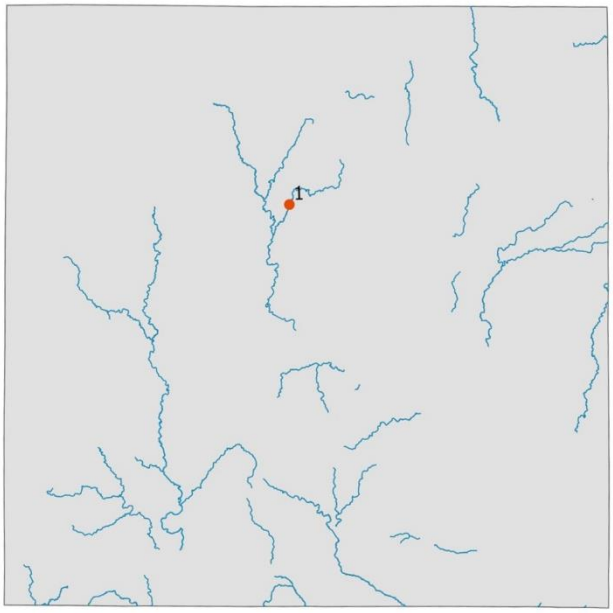
North District



Barron County

<u>Engle Creek</u> (1)

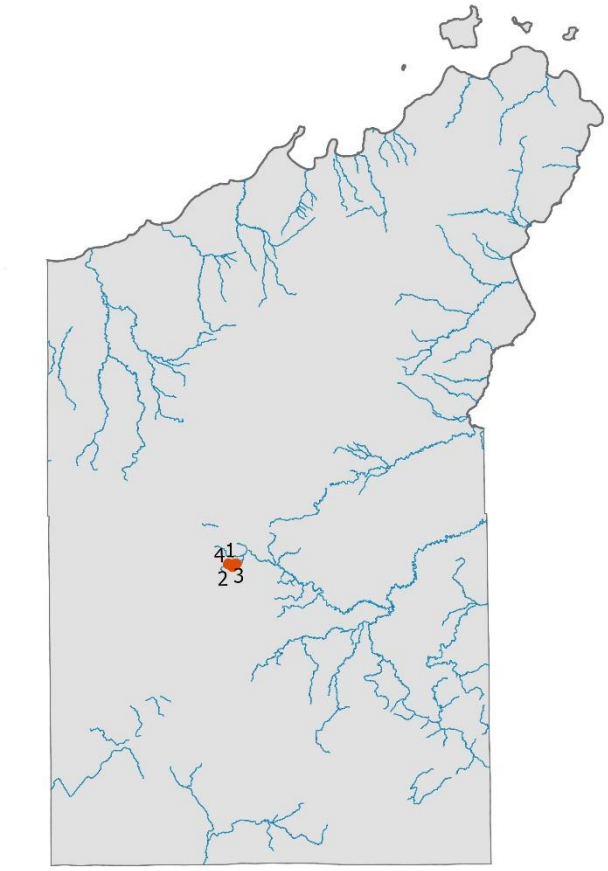
- **Fiscal Year:** 2021
- **Location:** 45.49674, -91.86589
- **Project Length:** 1,320 feet
- **Purpose:** Improve angler access, streambank stability and stream depth; inventory on the condition and location of historic trout habitat projects
- **Stream Habitat Impairments:** Overgrown with tag alder and brush
- **Target Species:** Brook trout
- **Technique or Structure:** Brush removal; inventory survey



Bayfield County

<u>South Fork of the White River</u> (1)

- **Fiscal Year**: 2019, 2020, 2021
- **Location:** 46.45452, -91.2842
- **Project Length**: 5,000 feet
- **Purpose:** Removal of dense vegetated areas of glossy buckthorn (*Rhamnus frangula*)
- **Stream Habitat Impairments:** Riparian corridors of densely vegetated by the exotic shrub glossy buckthorn
- **Target Species:** Brook and brown trout
- **Technique or Structure:** Tree cover; brush removal; angler paths; exotic vegetation removal
- **Partners:** 4Control Inc



Pre-buckthorn removal on South Fork of the White River. / Photo credit: Wisconsin DNR

Post-buckthorn removal on South Fork of the White River. / Photo credit: Wisconsin DNR

South Fork of the White River (2)

- **Fiscal Year:** 2019
- **Location:** 46.4492, 91.2842
- **Project Length:** 7,920 feet
- **Purpose:** Inspection and maintenance of previously completed trout habitat projects on the South Fork of the White River in Bayfield County, Wisconsin; annual maintenance on previously completed trout habitat projects is necessary to ensure the aesthetics, function and longevity of structures installed; unmaintained devices also pose a threat to public safety, resource integrity and department liability.
- **Stream Habitat Impairments:** Deteriorating boom covers and wing deflectors constructed during the late 1960s through early 1980s were replaced in 1994 – 1996 and 2006 - 2007
- **Target Species:** Brook and brown trout
- **Technique or Structure:** Brushing; modified boom covers

South Fork of the White River (3)

- **Fiscal Year:** 2020, 2021
- **Project Length:** 400 feet
- **Location:** 46.45191, -91.28900
- **Purpose:** Stabilize the streambank, which had washed out from flood events.
- **Stream Habitat Impairments:** Sedimentation of important spawning area; buried and irreparably damaged two existing boom covers; stream channel artificially wide and shallow.
- **Target Species:** Brook and brown trout
- **Technique or Structure:** Streambank shaping; rip rap; seeding
- **Partners:** DNR - Forestry

Eroding hillside and streambank on South Fork of the White River. / Photo credit: Wisconsin DNR

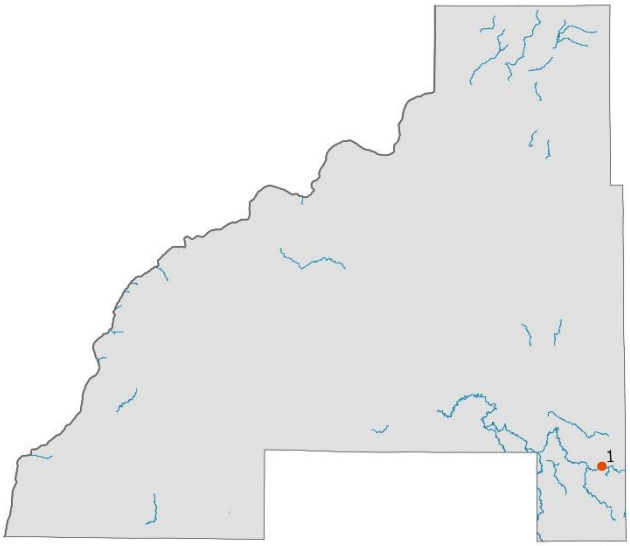
South Fork of the White River (4)

- **Fiscal Year:** 2020, 2021
- **Location:** 46.45378, -91.29109
- **Project Area:** 20 acres
- **Purpose:** Removal of dense vegetated areas of glossy buckthorn
- **Stream Habitat Impairments:** Riparian corridors densely vegetated by the exotic shrub glossy buckthorn
- **Target Species:** Brown trout
- **Technique or Structure:** Brush removal
- **Partners:** 4 Control, G Force Enterprises, Trout Unlimited, Friends of the White River, Wisconsin Department of Corrections

Burnett County

<u>North Fork of Clam River maintenance brushing</u> (1)

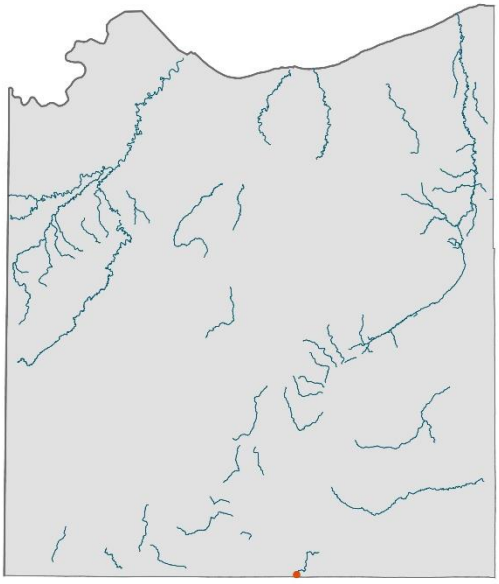
- **Fiscal Year:** 2021
- **Project Length:** 7181 feet
- **Location:** 45.71236, -92.06455
- **Purpose:** Prevent the stream from widening and becoming shallow by stabilizing the streambanks; improve angler access and fishability
- **Habitat Impairments:** Dense tag alder; reduced stream depth; limited angler access
- **Target Species:** Brook and brown trout
- **Technique or Structure:** Brush removal



Douglas County

<u>Bergen Creek</u> (1)

- **Fiscal Year:** 2019
- **Location:** 46.16072, -91.86135
- **Project Length:** 120 feet
- **Purpose:** Undersized culvert replacement
- **Stream Habitat Impairments:** Undersized culverts; backwatering; high velocities; impaired brook trout passage.
- **Target Species:** Brook trout
- **Technique or Structure:** Culvert replacement
- **Partners:** Town of Wascott



Polk County

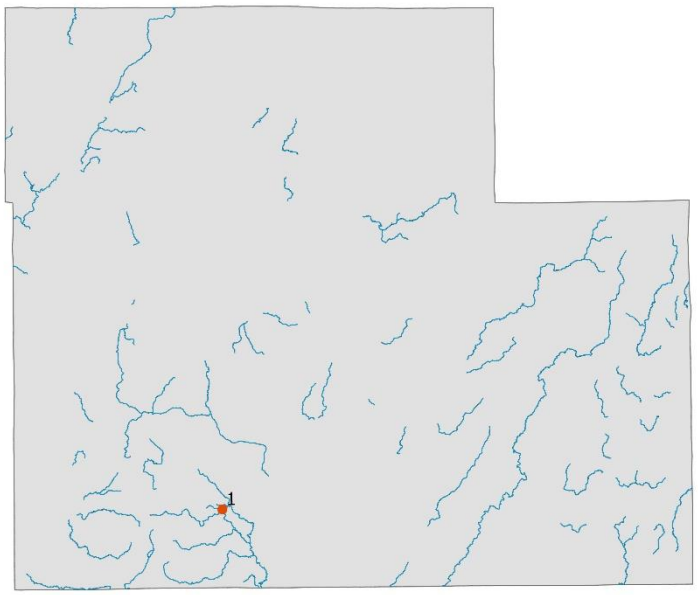
Clam River Habitat Inventory (1)

- **Fiscal Year:** 2020
- **Location:** 46.16072, -91.86135
- **Project Length:** 3,696 feet
- **Purpose:** Inventory condition and location of historic trout habitat projects; this information will help determine if any structures need to be repaired or removed
- **Stream Habitat Impairments:** NA.
- **Target Species:** Brook and brown trout
- **Technique or Structure:** Inventory survey

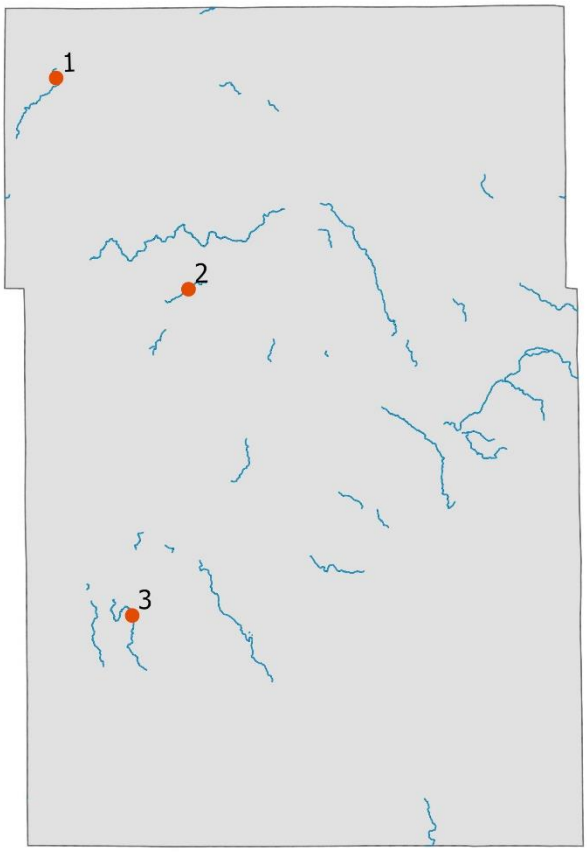
Sawyer County

Beaver Creek (1)

- **Fiscal Year:** 2020
- **Location:** 45.70921, -91.27558
- **Project Length:** 1,320 feet
- **Purpose:** Brush bundling to stabilize sediment in meadow area after beaver dam removal
- **Stream Habitat Impairments:** Wide, shallow and silt dominated channel with undefined thalweg
- **Target Species:** Brook trout
- **Technique or Structure:** Brush bundles



Washburn County



Fivemile Creek (1)

- **Fiscal Year:** 2019
- **Location:** 46.114027, -92.003807
- **Project Length:** 5,280 feet
- **Purpose:** Inventory of existing habitat structures and required riparian vegetation management
- **Stream Habitat Impairments:** Deteriorated instream habitat structures; dense riparian vegetation
- **Target Species:** Brook trout
- **Technique or Structure:** Inventory survey

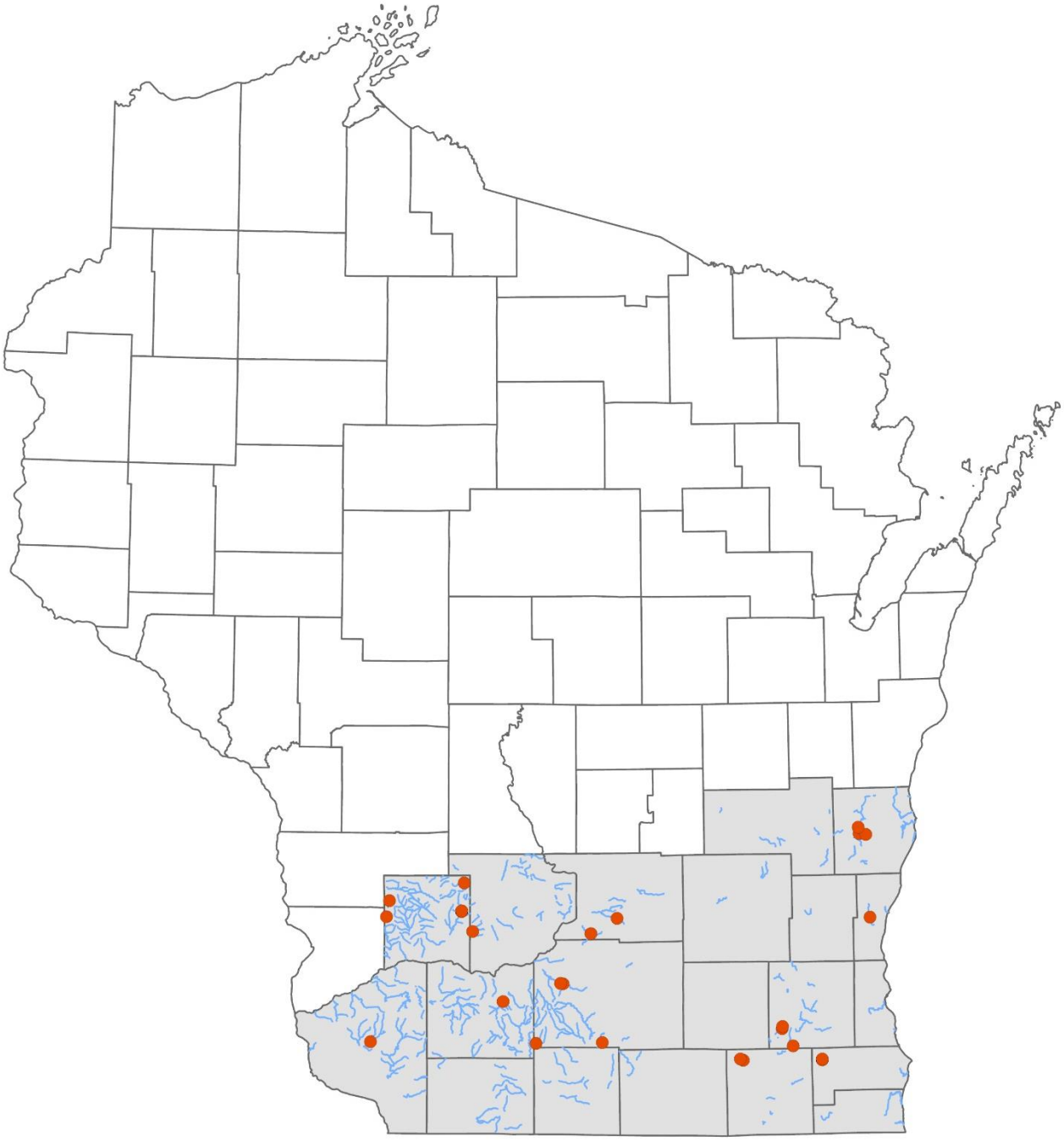
Mckenzie Creek (2)

- **Fiscal Year:** 2019
- **Location:** 45.9835, -91.8869
- **Project Length:** 8,659 feet
- **Purpose:** Inventory of existing habitat structures; required riparian vegetation management
- **Stream Habitat Impairments:** Dense riparian vegetation
- **Target Species:** Brook trout
- **Technique or Structure:** Inventory survey

Sawyer Creek (3)

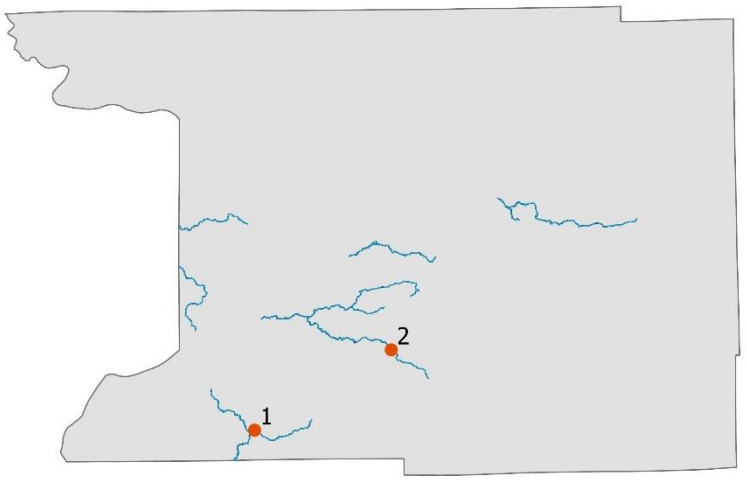
- **Fiscal Year:** 2019
- **Location:** 45.782133, -91.937825
- **Project Length:** 1,742 feet
- **Purpose:** Inventory of existing habitat structures; required riparian vegetation management
- **Stream Habitat Impairments:** Deteriorated instream habitat structures; dense riparian vegetation
- **Target Species:** Brook and brown trout
- **Technique or Structure:** Inventory survey

South District



Columbia County

Bohlman Branch (Unnamed Creek:1262300) (1)



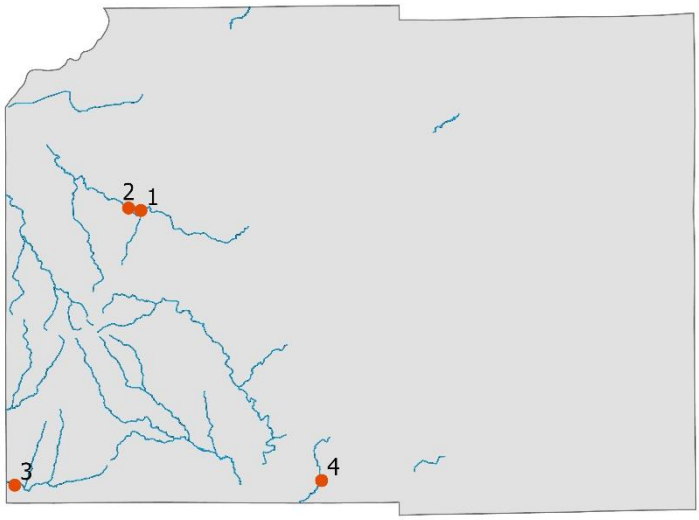
- **Fiscal Year:** 2020
- **Location:** 43.31746, -89.52079
- **Project Length:** 2,000 feet
- **Purpose:** Remove trees and brush along streambank to allow grass growth for streambank stabilization and angler access
- **Stream Habitat Impairments:** Streambank overgrowth hinder fishing access
- **Target Species:** Brook trout
- **Technique or Structure:** Brushing

Rowan Creek (2)

- **Fiscal Year:** 2021
- **Location:** 43.37884, -89.37492
- **Project Length:** 1,250 feet
- **Purpose:** Post-habitat surveys to measure changes in trout abundance and size structure
- **Stream Habitat Impairments:** Wide and shallow stream channel with limited overhead cover prior to habitat project in the summer of 2016
- **Target Species:** Brown trout
- **Technique or Structure:** Trout population survey

Dane County

Black Earth Creek (1)



- **Fiscal Year:** 2020
- **Location:** 43.11462, -89.6753
- **Project Length:** 2,122 feet
- **Purpose:** Add instream habitat by increasing complexity, depth and instream overhead cover
- **Stream Habitat Impairments:** Wide shallow areas; log jams
- **Target Species:** Brown trout
- **Technique or Structure:** Root wads, brush bundles; instream boulders; vortex weirs; streambank stabilization

Black Earth Creek (2)

- **Fiscal Year:** 2019
- **Location:** 43.11701, -89.6753
- **Purpose:** Burn brush piles that were created from brushing completed in 2017. Flooding in 2018 pushed some of the brush piles into the adjacent private property
- **Stream Habitat Impairments:** Dense riparian vegetation
- **Target Species:** Brown trout
- **Technique or Structure:** Brushing

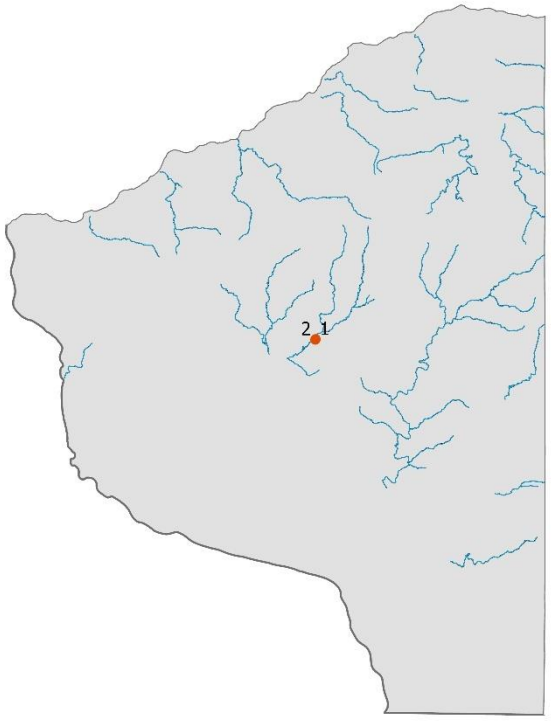
Kittleson Valley (3)

- **Fiscal Year:** 2021
- **Location:** 42.87359, -89.82723
- **Project Length:** 2,000 feet
- **Purpose:** Increase brown trout abundance by providing additional habitat for brown trout; improve angler access and fishability
- **Stream Habitat Impairments:** Box elder tangles, wide shallow areas and high eroded streambanks
- **Target Species:** Brown trout
- **Technique or Structure:** Streambank sloping; trees/root wads; stream crossing

Story Creek (4)

- **Fiscal Year:** 2019
- **Location:** 42.87659, -89.46082
- **Project Length:** 900 feet
- **Purpose:** Filling of agricultural ditches to revert bypasses water back to Story Creek
- **Stream Habitat Impairments:** Agricultural ditches causing loss in fish habitat, increased water temps and large sediment deposits
- **Target Species:** Brook and brown trout
- **Technique or Structure:** Bypass stream flow around channelized reaches

Grant County



<u>Grant River</u> (1)

- **Fiscal Year:** 2019
- **Location:** 42.87843, -89.46082
- **Project Length:** 1,975 feet
- **Purpose:** Increase the amount of habitat for adult brown trout. Stabilize streambanks and reconnect stream with floodplain
- **Stream Habitat Impairments:** Erosive streambanks and lack of cover
- **Target Species:** Brown trout
- **Technique or Structure:** Log deflectors; root wads; LUNKERS; streambank sloping

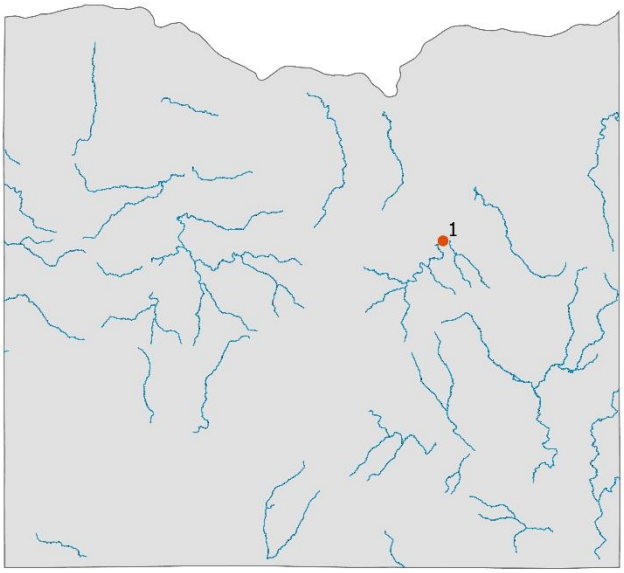
<u>Grant River</u> (2)

- **Fiscal Year:** 2020
- **Location:** 42.87803, -90.73798
- **Project Length:** 2,122 feet
- **Purpose:** Slope streambanks and fix erosion due to extreme rain event; work was previously completed and was damaged due to a lack of established vegetation
- **Stream Habitat Impairments:** Erosion; steep streambanks; cattle grazing
- **Target Species:** Brown trout
- **Technique or Structure:** Slope and seed damaged streambanks

<u>Grant River</u> (2)

- **Fiscal Year:** 2021
- **Location:** 42.87803, -90.73798
- **Project Length:** 1,850 feet
- **Purpose:** Increase the amount of habitat for adult brown trout, stabilize streambanks and reconnect stream with floodplain
- **Stream Habitat Impairments:** Erosive streambanks; lack of cover
- **Target Species:** Brown trout
- **Technique or Structure:** Streambank sloping; LUNKERS; trees/root wads; rip rap; brushing
- **Partners:** Jerry Griswold and NRCS

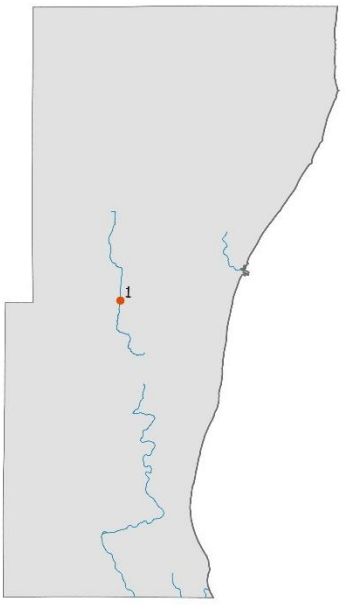
Iowa County



<u>Mill Creek and Love Creek</u> (1)

- **Fiscal Year:** 2020
- **Location:** 43.257322, -90.007654
- **Project Length:** 1,320 feet
- **Purpose:** Remove overgrown brush and trees inhibiting access to the stream
- **Stream Habitat Impairments:** Tree and brush choked riparian corridor
- **Target Species:** Brown and brook Trout
- **Technique or Structure:** Brush removal

Ozaukee County

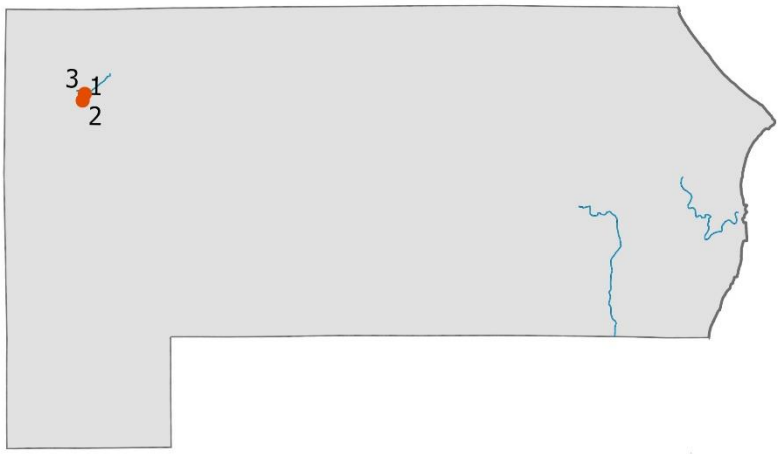


<u>Mole Creek</u> (1)

- **Fiscal Year:** 2019
- **Location:** 43.36838, -87.96849
- **Project Length:** 250 feet
- **Purpose:** Stream realignment
- **Stream Habitat Impairments:** Channelized steam channel; limited habitat for trout species.
- **Target Species:** Brook and brown trout
- **Technique or Structure:** Channel shaping

Racine County

<u>Tichigan Creek</u> (1)



- **Fiscal Year**: 2020
- **Location:** 42.7939, -88.2512
- **Project Length:** 1,700 Feet
- **Purpose:** Narrow stream channel to mobilize soft sediment, concentrate stream flow, maintain cold water conditions produced in the headwaters, and remove multiple fish passage impediments
- **Stream Habitat Impairments:** Braiding; siltation; warming; lack of natural morphology and flow regime; fish passage impediments
- **Target Species:** Brook trout
- **Technique or Structure:** Brush bundle/mattresses; beaver dam removal; beaver removal; migration barriers; coconut fiber roll; brush removal

<u>Tichigan Creek</u> (2)

- **Fiscal Year**: 2021
- **Location:** 42.7939, -88.2512
- **Project Length:** 650 feet
- **Purpose:** Narrow stream channel to mobilize soft sediment, concentrate stream flow, maintain cold water conditions produced in the headwaters, and remove multiple fish passage impediments.
- **Stream Habitat Impairments:** Braiding; siltation; warming; lack of natural morphology and flow regime; fish passage impediments
- **Target Species:** Brook trout
- **Technique or Structure:** Brush bundle/mattresses; beaver dam removal; beaver removal; migration barriers; coconut fiber roll; brush removal

Installation of coconut fiber roll on Tichigan Creek to aid in narrowing stream channel. / Photo credit: Wisconsin DNR

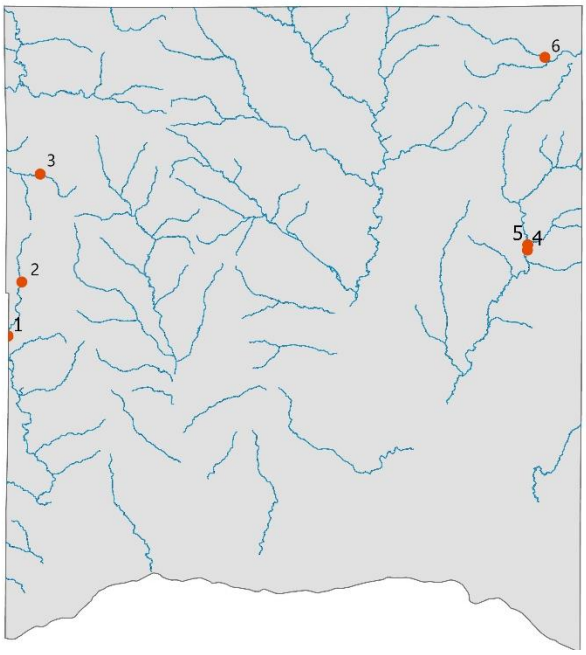
<u>Tichigan Creek</u> (3)

- **Fiscal Year:** 2021
- **Location:** 42.7974, -88.2497
- **Project Length:** 30 feet
- **Purpose:** Replace a failing tin whistle with an appropriately sized culvert
- **Stream Habitat Impairments:** Sedimentation and warming
- **Target Species:** Brook trout
- **Technique or Structure:** Stream crossing replacement

Removal of failing tin whistle on Tichigan Creek. / Photo credit: Wisconsin DNR

Installation of new culvert on Tichigan Creek. / Photo credit: Wisconsin DNR

Richland County



Knapp Creek (1)

- **Fiscal Year:** 2020
- **Location:** 43.35403, -90.66601
- **Project Length:** 446 feet
- **Purpose:** Manage regrowth of early successional woody trees and shrubs
- **Stream Habitat Impairments:** Abundance of willow and honeysuckle
- **Target Species:** Brook and brown trout
- **Technique or Structure:** Brushing

Knapp Creek (2)

- **Fiscal Year:** 2020
- **Location:** 43.38664, -90.65495
- **Project Length:** 400 feet
- **Purpose:** Manage regrowth of early successional woody trees and shrubs
- **Stream Habitat Impairments:** Abundance of willow and honeysuckle
- **Target Species:** Brook and brown trout
- **Technique or Structure:** Brushing

Elk Creek (3)

- **Fiscal Year:** 2020
- **Location:** 43.45168, -90.64034
- **Project Length:** 2,307 feet
- **Purpose:** Manage regrowth of early successional woody trees and shrubs
- **Stream Habitat Impairments:** Dense brush and willow trees
- **Target Species:** Brook trout
- **Technique or Structure:** Brushing and tree removal

Willow Creek (4)

- **Fiscal Year:** 2021
- **Location:** 43.40751, -90.23724
- **Project Length:** 783 feet
- **Purpose:** Pre-restoration project assessment to evaluate the effectiveness of the habitat restoration project and determine population status
- **Stream Habitat Impairments:** High eroding streambanks
- **Target Species:** Brown trout
- **Technique or Structure:** Trout population survey

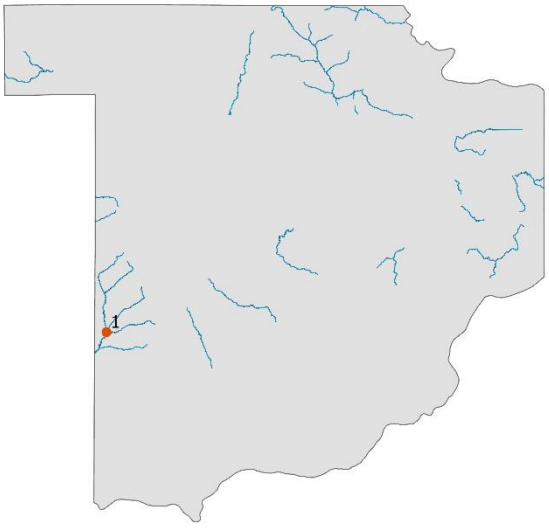
Willow Creek (5)

- **Fiscal Year:** 2021
- **Location:** 43.41065, -90.23696
- **Project Length:** 3,200 feet
- **Purpose:** Streambank stabilization; adult trout habitat improvement
- **Stream Habitat Impairments:** Streambank erosion; sedimentation; limited adult habitat and spawning substrate
- **Target Species:** Brown trout
- **Technique or Structure:** Streambank sloping; LUNKERS; trees/root wads; rip rap; boulder retard; weir; stream crossing; wing deflector
- **Partners:** Trout Unlimited

Cazenovia Branch, Richland County (6)

- **Fiscal Year:** 2019
- Location: 43.52358, -90.22321
- **Project Length:** 1,200 feet
- **Purpose:** Rehabilitate trout habitat
- **Stream Habitat Impairments:** Excessive cattle grazing; wide and shallow stream channel; steep eroded streambanks.
- **Target Species:** Brown trout
- **Technique or Structure:** Brushing; streambank shaping; LUNKERS; root wads; cross-channel logs; streambank stabilization; rock vortex weirs; boulder retards; cattle watering area(s); seeding of streambanks

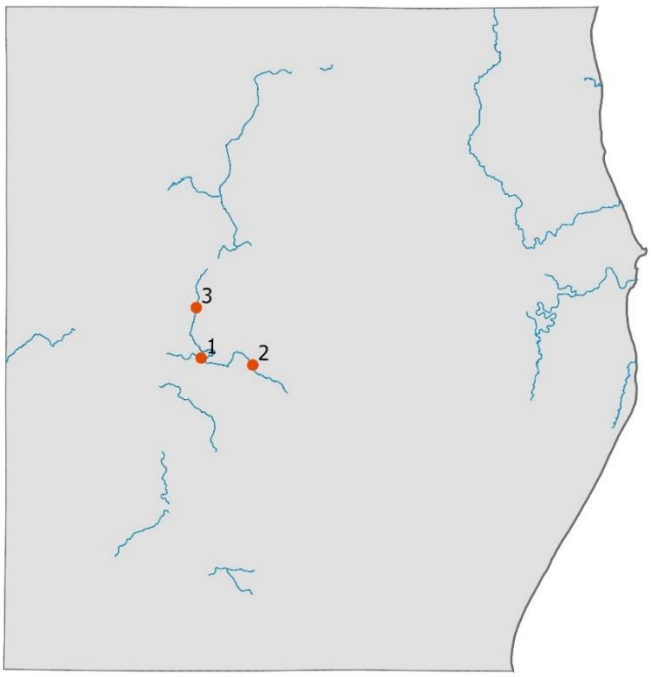
Sauk County



Bear Creek (1)

- **Fiscal Year:** 2020
- Location: 43.32774, -90.17579
- **Project Length:** 6,000 feet
- **Purpose:** Trout population surveys to assess changes in abundance and size structure in segments where trout habitat improvement projects are completed
- **Stream Habitat Impairments:** Wide and shallow with stream channel; eroding streambanks; excessive sediment; limited overhead cover
- **Target Species:** Brown trout

Sheboygan County



Mill Creek (1)

- **Fiscal Year:** 2019
- **Location:** 43.70722, -88.01869
- **Project Length:** 50 feet
- **Purpose:** Replace undersized failing culverts; improve upstream and downstream passage of brown trout
- **Stream Habitat Impairments:** Two undersized culverts; blocked upstream fish passage
- **Target Species:** Brown trout
- **Technique or Structure:** Migration barriers

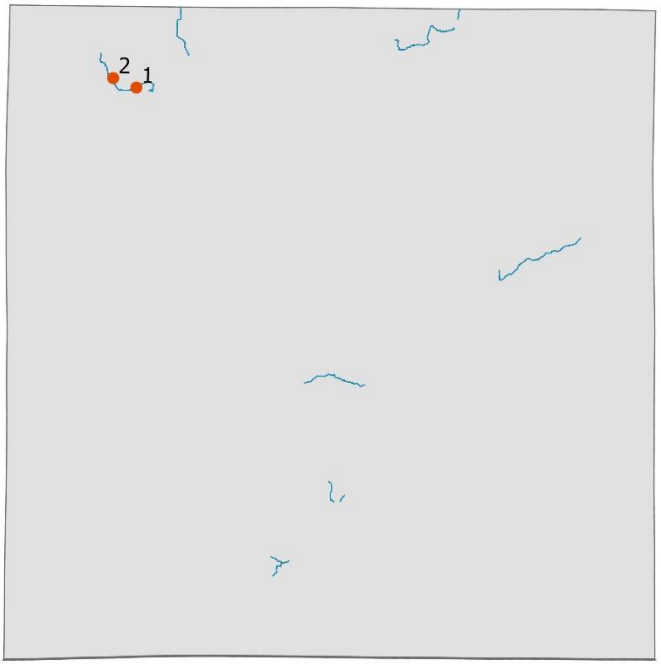
Onion River (2)

- **Fiscal Year:** 2019
- **Project Length:** 500 feet
- **Location:** 43.70375, -87.98113
- **Purpose:** Decrease instream sedimentation and increase habitat diversity
- **Stream Habitat Impairments:** Heavy instream sedimentation; decreased flows; low habitat diversity; poor accessibility for anglers; shallow stream channel; warmer water temperatures
- **Target Species:** Brown trout
- **Technique or Structure:** Brush bundle/mattresses; material removal; brush removal

Onion River (3)

- **Fiscal Year:** 2021
- **Location:** 43.73371, -88.02242
- **Project Length:** 70 acres
- **Purpose:** Survey, map and use treatment control methods on invasive plant species on a minimum of 70 acres on the Onion River and Schuett Creek properties
- **Stream Habitat Impairments:** Abundance of non-native invasive plant species within riparian corridor
- **Target Species:** Brown trout, rainbow trout and brook trout
- **Technique or Structure:** Collection of aquatic invasive species locations using a Garmin GPS unit paired with WDNRGPS (version 6.1.0.6); treatment of invasive plant species using manual removal, mechanical removal and chemical removal.

Walworth County



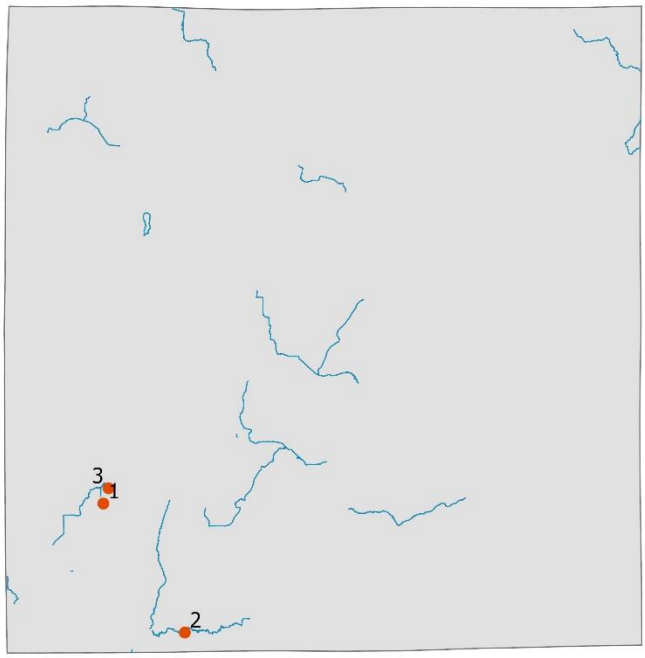
Bluff Creek (1)

- **Fiscal Year:** 2019
- **Location:** 42.79892, -88.68411
- **Project Length:** 740 feet
- **Purpose:** Constrict the ditch channel; increase velocity; scour of soft sediments; improve thermal conditions
- **Stream Habitat Impairments:** Channelization; shallow; silty; warming water
- **Target Species:** Brown trout
- **Technique or Structure:** Coconut fiber roll
- **Partners:** Southeast Wisconsin Chapter of Trout Unlimited

Whitewater Creek (2)

- **Fiscal Year:** 2020
- **Location:** 42.8038, -88.7009
- **Project Length:** 550 feet
- **Purpose:** Establish instream habitat; mobilization of soft sediment; increase angling opportunity
- **Stream Habitat Impairments:** Ditching; straightening; warming; lack of overhead cover; lack of natural morphology and flow regime
- **Target Species:** Brown trout
- **Technique or Structure:** Boulder clusters (10); log/brush/rock shelters (1)
- **Partners:** Southeastern WI Trout Unlimited

Waukesha County



<u>McKeawn Springs</u> (1)

- **Fiscal Year:** 2021
- **Location:** 42.92438, -88.46877
- **Project Length:** 1 acre
- **Purpose:** Dredge sediment from pond and restore upland area
- **Stream Habitat Impairments:** Sedimentation; shallow water; reduced carrying capacity.
- **Target Species:** Brook trout
- **Technique or Structure:** Material removal
- **Partners:** SEWTU

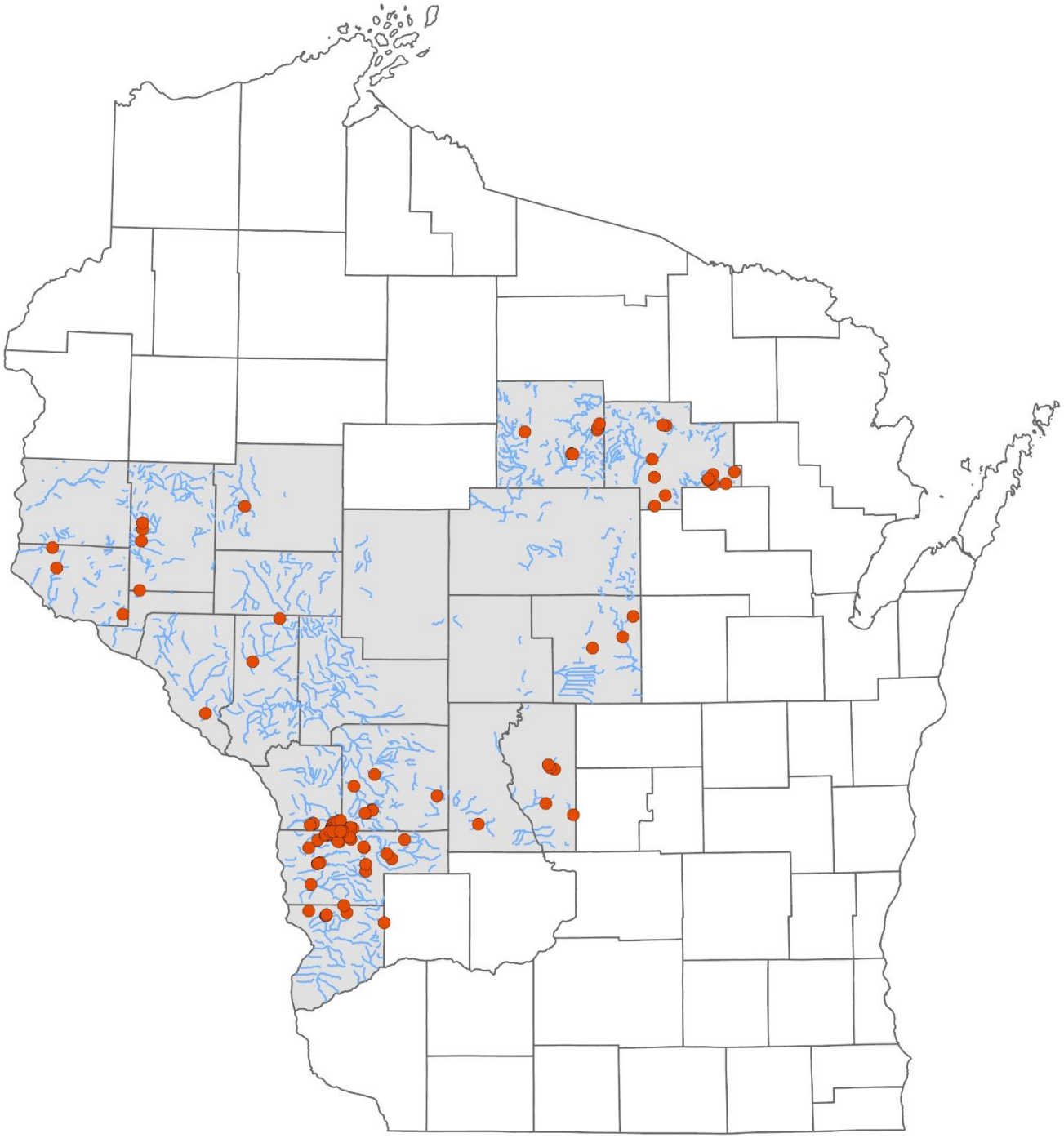
<u>Mukwonago River</u> (2)

- **Fiscal Year:** 2019
- **Location:** 42.85356, -88.40927
- **Project Length:** 50 feet
- **Purpose:** Woody structure installation; streambank stabilization; restoration of altered hydrology
- **Stream Habitat Impairments:** Perched culverts; eroded streambanks
- **Target Species:** Brook trout
- **Technique or Structure:** Stream bed improvement; wood habitat; streambank stabilization

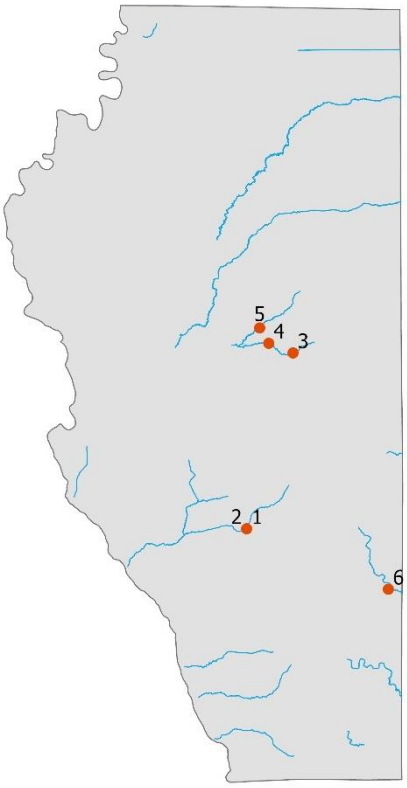
<u>Scuppernong River</u> (3)

- **Fiscal Year:** 2019
- **Location:** 42.93256, -88.4648
- **Project Length:** 2,500 feet
- **Purpose:** Streambank stabilization on the Scuppernong Springs headwaters; repairing the stream in the former impoundment; re-defining the stream channel; reducing sedimentation to provide increased trout habitat
- **Stream Habitat Impairments:** Wide shallow areas; degraded habitat for adult brook trout
- **Target Species:** Brook trout
- **Technique or Structure:** Brush bundle/mattresses; coconut fiber roll; removal of grade control structures
- **Partners:** Trout Unlimited

West District



Adams County



<u>Campbell Creek</u> (1)

- **Fiscal Year:** 2020
- **Location:** 43.839776, -89.766308
- **Project Length:** 2,600 feet
- **Purpose:** Improve angler access and fishability; reduce streambank erosion; improve trout habitat
- **Stream Habitat Impairments:** Dense streambank brush; limited overhead cover for trout; eroding streambanks.
- **Target Species:** Brown trout
- **Technique or Structure:** Brush removal; brush bundles

<u>Campbell Creek</u> (2)

- **Fiscal Year:** 2021
- **Location:** 43.839776, -89.766308
- **Project Length:** 1,100 feet
- **Purpose:** Remove brush; improve angler access; establish grasses along streambanks
- **Stream Habitat Impairments:** Dense streambank brush; eroding streambanks; limited overhead cover along stream edges.
- **Target Species:** Brown trout
- **Technique or Structure:** Brush removal

<u>Fordham Creek</u> (3)

- **Fiscal Year:** 2019
- **Location:** 43.97700, -89.71581
- **Project Length:** 1,500 feet
- **Purpose:** Increase the number of adult brown trout and rainbow trout; establish grass vegetation and stabilize streambank; decrease mean stream width and increase mean stream depth
- **Stream Habitat Impairments:** Steep eroded outside bends; very little overhead cover; shifting sand substrate; dense tag alder; shallow stream channel
- **Target Species:** Brook and brown trout
- **Technique or Structure:** Brush bundle/mattresses; overhead bank cover; trees/root wads; plunge pools; log sills
- **Partners:** City of Stevens Point, Roger Springman and Dwight Mueller

Installation of jetted bank cover on Fordham Creek. / Photo credit: Wisconsin DNR

Fordham Creek (4)

- **Fiscal Year:** 2021
- **Location:** 43.98462, -89.74181
- **Project Length:** 3,122 feet
- **Purpose:** Improve habitat for trout on a newly acquired streambank easement; narrow and deepen the stream channel; improve overhead cover for fish
- **Stream Habitat Impairments:** Widened and shallow stream channel; dense tag alder and dead ash stands
- **Target Species:** Brook and brown trout
- **Technique or Structure**: LUNKERS; plunge pools; tree cover; log, root wad and boulder revetments; log sills; tree removal
- **Partners:** Andrew Kolff

Plunge pool installed on Fordham Creek. / Photo credit: Wisconsin DNR

Little Roche-A-Cri Creek (5)

- **Fiscal Year:** 2019
- **Location:** 43.9968, -89.75181
- **Project Length:** 2,700 feet
- **Purpose:** The purpose of the project is to install overhead cover for trout, increase the number of brook trout, increase stream depth and establish grass cover along the streambank.
- **Stream Habitat Impairments:** Widened and shallow stream channel; dense dead ash stand
- **Target Species:** Brook trout
- **Technique or Structure:** Brush bundle/mattresses
- **Partners:** City of Stevens Point

Brush bundles/mattresses installed on Little Roche-A-Cri Creek. / Photo credit: Wisconsin DNR

<u>Little Roche-A-Cri Creek</u> (5)

- **Fiscal Year:** 2020, 2021
- **Location:**
- **Project Length**: 2,700 feet
- **Purpose:** Improve the overhead cover; decrease streambank erosion
- **Stream Habitat Impairments**: Streambank erosion; widening of stream channel; limited overhead cover
- **Target Species:** Brook trout
- **Technique or Structure:** Brush bundle/mattresses; LUNKERS; trees/root wads; plunge pools; log sills

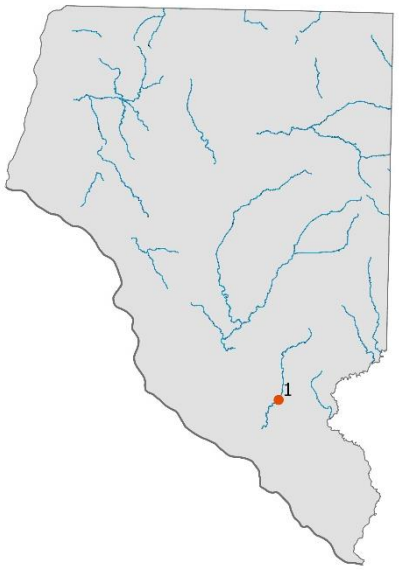
Root wad structures installed on sill installed on Little Roche-A-Cri Creek. / Photo credit: Wisconsin DNR

Log sill installed on Little Roche-A-Cri Creek. / Photo credit: Wisconsin DNR

<u>Neenah Creek</u> (6)

- **Fiscal Year:** 2020
- **Location:** 43.792028, -89.613889
- **Project Length:** 3,500 feet
- **Purpose:** Remove dense stands of tag alder; improve angler access and fishability
- **Stream Habitat Impairments:** Dense stream-side vegetation; reduced angler access and fishability; streambank erosion
- **Target Species:** Brown trout
- **Technique or Structure:** Brush removal

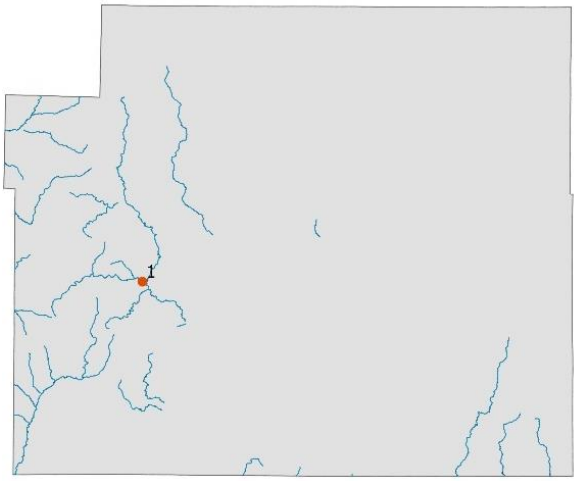
Buffalo County



<u>Eagle Creek</u> (1)

- **Fiscal Year:** 2019
- **Location:** 44.1936, -91.6840
- **Project Length:** 680 feet
- **Purpose:** Improve instream habitat; reduce streambank erosion.
- **Stream Habitat Impairments:** Steep and eroding streambanks; lack of overhead cover; limited pool/overwintering habitat
- **Target Species:** Brook and brown trout
- **Technique or Structure:** Streambank sloping; weir; streambank stabilization fabric; log, root wad and boulder revetments; native seed planting
- **Partners:** Fountain City Rod and Gun Club (Grantor); NRCS

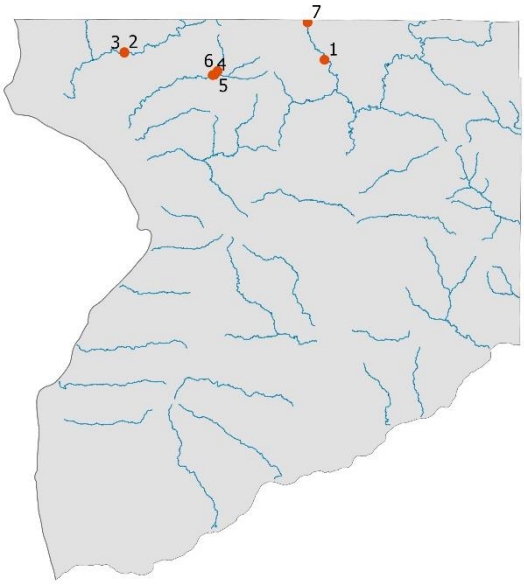
Chippewa County



<u>Hay Creek</u> (1)

- **Fiscal Year:** 2020
- **Location:** 45.03603, -91.48416
- **Project Length:** 2,740 Feet
- **Purpose:** Improve trout habitat; reduce width-to-volume ratio; improve stream shading
- **Stream Habitat Impairments:** Widened, shallow stream channel; limited trout habitat is limited; absence of overhead cover; riffles covered with sand
- **Target Species:** Brook trout
- **Technique or Structure:** Trees/root wads; rip rap; plunge pools; tree planting
- **Partners:** Wisconsin Clear Waters; Trout Unlimited DARE Grant

Crawford County



<u>Conway Creek</u> (1)

- **Fiscal Year:** 2021
- **Location:** 43.39272, -90.87506
- **Project Length:** 1,450 feet
- **Purpose:** Remove undesirable brush and trees (box elder); improve angler access; improve trout habitat
- **Stream Habitat Impairments:** Unstable streambanks; dense vegetation; limited trout habitat
- **Target Species:** Brook and brown trout
- **Technique or Structure:** Trees/root wads; material removal
- **Partners:** Madison Fishing Expo Grant - Coulee Region TU, Bass Pro Shops and Cabela's Outdoor Fund, Blackhawk- Friends of TU Wisconsin, Blackhawk TU Chapter, Elliot Donelly TU Chapter, TU State Chapter, Crawford County Conservation Aide Grant-Prairie Rod and Gun, TUDARE, NRCS, and Embrace a Stream - Oakbrook Chapter TU

<u>Rush Creek</u> (2)

- **Fiscal Year:** 2020
- **Location:** 43.39769, -91.08779
- **Project Length:** 225 feet
- **Purpose:** Stabilize stream and create instream cover for trout
- **Stream Habitat Impairments:** There were unstable streambanks and limited cover for trout.
- **Target Species:** Brown trout
- **Technique or Structure:** Streambank sloping; rip rap; streambank shaping and planting; log, root wad and boulder revetments

On opening day, an angler is fishing Conway Creek where the trees were removed last fall. / Photo credit: Wisconsin DNR

Rush Creek (3)

- **Fiscal Year:** 2021
- **Location:** 43.39738, -91.08757
- **Project Length:** 350 feet
- **Purpose:** Connect stream to floodway; stabilize streambanks; establish riparian vegetation
- **Stream Habitat Impairments:** Streambank erosion
- **Target Species**: Brown trout
- **Technique or Structure:** Streambank sloping; material removal; stream crossing; streambank shaping and planting

Rush Creek streambank being stabilized with logs and root wads incorporated into the rock. / Photo credit: Wisconsin DNR

Same streambank completed with seed and mulch. / Photo credit: Wisconsin DNR

Left photo - *Excavator removing deposition from the inside point to connect Rush Creek to floodplain. / Photo credit: Wisconsin DNR*
Right photo - *The same inside point after deposition is removed and then seeded and mulched. Notice the opposite side streambank with the vegetation laid down from the high-water event. / Photo credit: Wisconsin DNR*

Sugar Creek (4)

- **Fiscal Year:** 2019
- **Location:** 43.38046, -90.99368
- **Project Length:** 405 feet
- **Purpose:** Stabilize the eroding streambanks; improve habitat for trout and other aquatic species
- **Stream Habitat Impairments**: Eroding streambanks; limited cover for trout.
- **Target Species:** Brown trout
- **Technique or Structure:** Streambank sloping; trees/root wads; rip rap; instream boulder; material removal; streambank shaping and planting
- **Partners:** Prairie Rod and Gun Club, Crawford County LCD

Streambanks along Sugar Creek immediately following completion of habitat work. Streambanks were sloped, seeded and stabilized with rock and root wads. / Photo credit: Wisconsin DNR

Sugar Creek (5)

- **Fiscal Year:** 2019
- **Location:** 43.3806, -90.99202
- **Project Length:** 140 feet
- **Purpose:** Repair stream crossing
- **Stream Habitat Impairments:** Unstable stream crossing
- **Target Species:** Brown trout
- **Technique or Structure:** Material removal; stream crossing

Sugar Creek (6)

- **Fiscal Year:** 2019
- **Location:** 43.38358, -90.98844
- **Project Length:** 48 feet
- **Purpose:** Remove fallen tree
- **Stream Habitat Impairments:** Streambank erosion; obstruction of flow to bridge.
- **Target Species:** Brown trout
- **Technique or Structure:** Tree removal

Tainter Creek (7)

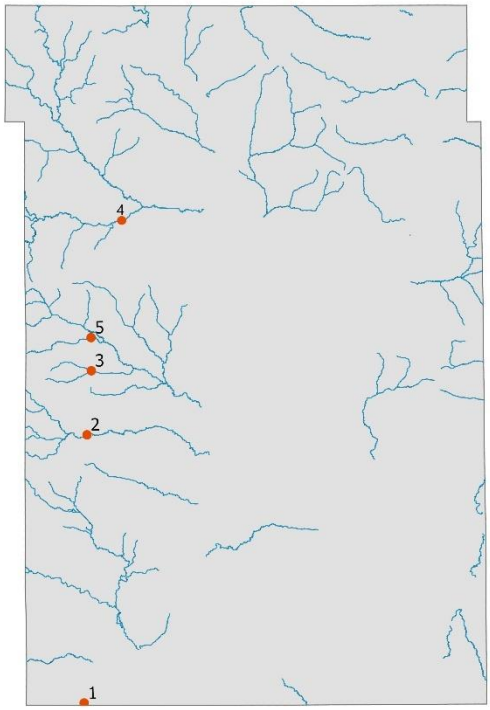
- **Fiscal Year:** 2020, 2021
- **Location:** 43.42161, -90.89321
- **Project Length:** 745 feet
- **Purpose:** Stabilize three eroding streambanks and improve trout habitat by installing three rock weirs
- **Stream Habitat Impairments:** Eroding unstable streambanks; widened and shallow stream channel.
- **Target Species:** Brown trout
- **Technique or Structure:** Streambank sloping; rip rap; boulder retard; weir; plunge pools; log/brush/rock shelters; ERO; bank shaping and planting

Recently installed rock weir with plunge pool creating cover for Tainter Creek brown trout. Streambanks have been mulched and seeded. / Photo credit: Wisconsin DNR

Dunn County

Gilbert Creek (1)

- **Fiscal Year:** 2021
- **Location:** 44.68628, -92.07391
- **Project Length:** 3,300 feet
- **Purpose:** Stabilize the streambanks; create additional instream cover
- **Stream Habitat Impairments:** Eroding vertical sand banks; excessive sand bedload; abundant box elder trees and reed canary grass
- **Target Species:** Brook and brown trout
- **Technique or Structure:** Trees/root wads; rip rap; weir; boulder clusters; grade control measures; island building; riffles
- **Partners:** Jeff Hasting, Dunn County Highway Department, Wisconsin Clear Waters TU



Gilbert Creek (2)

- **Fiscal Year:** 2021
- **Location:** 44.88718, -92.07033
- **Project Length:** 1,945 feet
- **Purpose:** Stabilize the streambanks; create additional instream cover
- **Stream Habitat Impairments:** Eroding vertical sand streambanks; excessive sand bedload, box elder trees and reed canary grass
- **Target Species:** Brook and brown trout
- **Technique or Structure:** Trees/root wads; Trees/root wads; rip rap; riffles
- **Partners**: Dunn County Fish and Game Club, Fishers and Farmers Partnership Grant, Wisconsin Clear Waters TU, Jeff Hastings, TU, and Dunn County Aids Grant

Hay Creek (3)

- **Fiscal Year:** 2019
- **Location:** 44.93514, -92.06555
- **Project Length:** 3,281 feet
- **Purpose:** Trout habitat enhancement and streambank stabilization on a public fishing easement; flush fine sediment; improve spawning habitat
- **Stream Habitat Impairments:** Limited trout habitat; streambank erosion.
- **Target Species**: Brook trout
- **Technique or Structure:** Trees/root wads; rip rap; instream boulders; stream crossing; streambank stabilization fabric; native seed planting
- **Partners:** Trout and Salmon Grant, Covia, Wisconsin Clear Waters TU, Kiap-TU-Wish T.U., USFWS and NRCS

Hay Creek project area post habitat work. Streambanks were sloped and seeded to reconnect the floodplain with boulder clusters for instream habitat. / Photo credit: Wisconsin DNR

Tiffany Creek (4)

- **Fiscal Year:** 2020
- **Project Length:** 2,060 feet
- **Location:** 45.04667, -92.03592
- **Purpose:** Develop a community and educational project site; improve trout habitat and angler access; reduce streambank erosion
- **Stream Habitat Impairments:** Wide, shallow stream channel; abundant box elder in corridor; sand levee streambanks preventing water from reaching the stream
- **Target Species:** Brook and brown trout
- **Technique or Structure:** Trees/root wads; rip rap; plunge pools
- **Partners:** Dunn County

Wilson Creek (5)

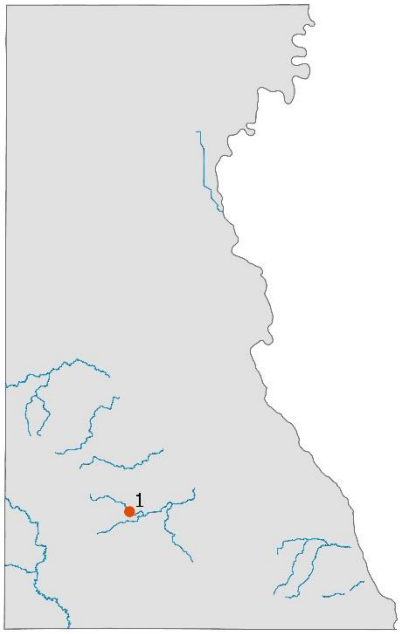
- **Fiscal Year:** 2019
- **Location:** 44.95998, -92.06564
- **Project Length:** 4,740 feet
- **Purpose:** Improve instream habitat; increase brook trout abundance and size structure; remove nuisance trees to stabilize streambanks; and improve angler access to the stream corridor
- **Stream Habitat Impairments:** Limited trout habitat; severe streambank erosion; sedimentation; dense box elder tree stand
- **Target Species:** Brook and brown trout
- **Technique or Structure:** Trees/root wads; rip rap; stream crossing; plunge pools; boulder clusters
- **Partners:** NRCS, Wisconsin Clear Waters Trout Unlimited and Dunn County

Wilson Creek post habitat project. Plunge pool installation with root wad upstream. / Photo credit: Wisconsin DNR

Juneau

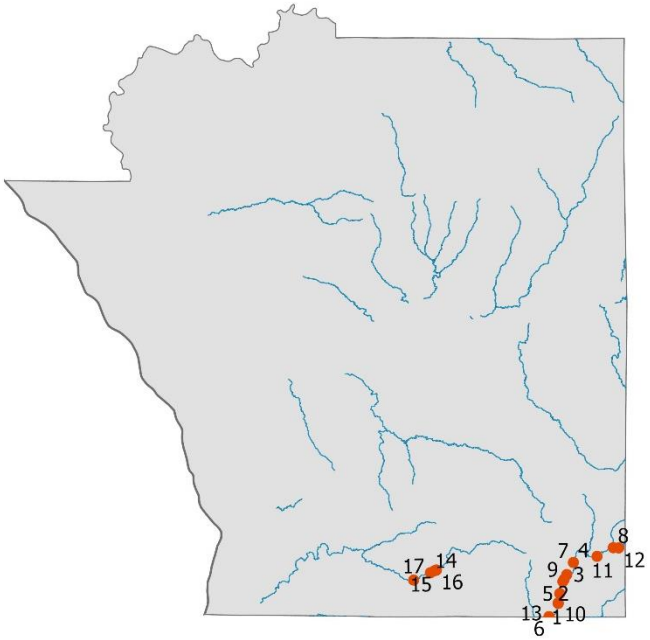
Onemile Creek (1)

- **Fiscal Year:** 2019
- **Location:** 43.75614, -90.14446
- **Project Length:** 2,700 feet
- **Purpose:** Create overhead cover; remove streamside vegetation for fishability purposes
- **Stream Habitat Impairments:** Sediment deposits, low flow velocities; limited overhead cover; dense tag alder; reduced stream access
- **Target Species:** Brook trout
- **Technique or Structure:** Overhead bank cover; plunge pools; brush removal
- **Partners:** Juneau County Land and Water Conservation, Outdoors Forever



La Crosse

<u>Coon Creek / Bohemian Valley Creek</u> (1)



- **Fiscal Year:** 2021
- **Location:** 43.73405, -90.96641
- **Project Length:** 2,500 feet
- **Purpose:** Remove flood debris constricting the floodway; reshape stream channel; repair stream crossing
- **Stream Habitat Impairments:** Debris in floodway; widened stream channel
- **Target Species:** Brook and brown trout
- **Technique or Structure:** Streambank shaping; channel shaping; grade control; material removal; stream crossing

<u>Coon Creek / Bohemian Valley Creek</u> (2)

- **Fiscal Year:** 2021
- **Location:** 43.74805, -90.96157
- **Project Length:** 415 feet
- **Purpose:** Stabilize streambank; improve trout habitat; repair septic field
- **Stream Habitat Impairments:** Unstable streambanks; exposed septic field; limited habitat
- **Target Species:** Brown trout
- **Technique or Structure:** Streambank sloping; rip rap; boulder retard; weir; grade control measures; streambank shaping and planting

Left photo - Eroded streambank on Coon Creek with exposed drain field. / Photo credit: Wisconsin DNR
Right photo – Same streambank after placing rip rap with sloping, seeding and mulching. / Photo credit: Wisconsin DNR

Coon Creek / Bohemian Valley Creek (3)

- **Fiscal Year:** 2021
- **Location:** 43.75091, -90.95947
- **Project Length:** 2,280 feet
- **Justification and Purpose:** Stabilize eroding streambanks; restore instream habitat damaged by flood events
- **Stream Habitat Impairments:** Unstable streambanks; limited instream habitat for trout
- **Target Species:** Brown trout
- **Technique or Structure:** Bank sloping; trees/root wads; rip rap; plunge pools; channel shaping; grade control measures; bank shaping and planting

Recently installed rock weir with plunge pool on Coon Creek. / Photo credit: Wisconsin DNR

Coon Creek / Bohemian Valley Creek (4)

- **Fiscal Year:** 2021
- **Location:** 43.75826, -90.95404
- **Project Length:** 2,250 feet
- **Purpose:** Stabilize eroding streambanks, restoring the instream habitat that was damaged by flood events.
- **Stream Habitat Impairments:** Unstable streambanks; limited instream habitat for trout **Target Species:** Brown trout
- **Technique or Structure:** Bank sloping; trees/root wads; rip rap; stream crossing; plunge pools; channel shaping; grade control measures; bank shaping and planting

Coon Creek rock weir with cross channel log incorporated at the bottom and a small / Photo credit: Wisconsin DNR

Coon Creek / Bohemian Valley Creek (5)

- **Fiscal Year:** 2019
- **Location:** 43.7397, -90.96515
- **Project Length:** 3,300 feet
- **Purpose:** Remove flood debris constricting the floodway; reshape the stream channel and streambanks; repair stream crossing
- **Stream Habitat Impairments:** Constricted floodway; widened and shallow stream channel; eroding streambanks
- **Target Species:** Brook and brown trout
- **Technique or Structure:** Bank sloping; material removal; stream crossing; channel shaping; grade control measures; vegetation planting

Coon Creek / Bohemian Valley Creek (6)

- **Fiscal Year:** 2019
- **Location:** 43, .72592, -90.97381
- **Length:** 230 feet
- **Purpose:** Remove rock and rubble deposits that were backing up flow below the stream crossing and spring feeder stream.
- **Stream Habitat Impairments:** Reduced flow velocities.
- **Target Species:** Brown trout
- **Technique or Structure:** Material removal; stream crossing; channel shaping

Coon Creek / Bohemian Valley Creek (7)

- **Fiscal Year:** 2019
- **Location:** 43.7582, -90.95405
- **Project Length:** 2,175 feet
- **Purpose:** Remove flood debris constricting the floodway; reshape the stream channel and streambanks; repair stream crossing
- **Stream Habitat Impairments:** Constricted floodway; widened and shallow stream channel; streambank erosion.
- **Target Species:** Brook and brown trout
- **Technique or Structure:** Bank sloping; material removal; stream crossing; channel shaping; grade control measures; vegetation planting

Coon Creek / Bohemian Valley Creek (8)

- **Fiscal Year:** 2019
- **Location:** 43.76703, -90.92122
- **Project Length:** 60 feet
- **Purpose:** Repair machinery crossing; remove a downed tree; enhance stream productivity and access; establish mature timber in riparian corridor
- **Stream Habitat Impairments:** Overgrowth of tag alder
- **Target Species:** Brook and brown trout
- **Technique or Structure:** Brush removal
- **Partners:** Northeast Region Trout Unlimited

Coon Creek / Bohemian Valley Creek (9)

- **Fiscal Year:** 2019
- **Location:** 43.74688, -90.96268
- **Project Length:** 3,260 feet
- **Purpose:** Remove flood debris constricting the floodway; reshape the stream channel and streambanks; repair stream crossing
- **Stream Habitat Impairments:** Constricted floodway; widened and shallow stream channel; streambank erosion
- **Target Species:** Brook and brown trout

- **Technique or Structure:** Material removal; stream crossing; channel shaping

Coon Creek / Bohemian Valley Creek (10)

- **Fiscal Year:** 2019
- **Location:** 43.73371, -90.96637
- **Project Length:** 2,500 feet
- **Purpose:** Stabilize eroding streambanks; restore instream habitat that was damaged by flood events.
- **Stream Habitat Impairments:** Unstable streambanks; lack of instream
- **Target Species:** Brown trout
- **Technique or Structure:** Bank sloping; trees/root wads; rip rap; weir; stream crossing; plunge pools; channel shaping; grade control measures; bank shaping and planting

Coon Creek / Bohemian Valley Creek (11)

- **Fiscal Year:** 2019
- **Location:** 43.76182, -90.93459
- **Project Length:** 50 feet
- **Purpose:** Remove flood debris constricting the floodway; reshape the stream channel and streambanks; repair stream crossing
- **Stream Habitat Impairments:** Constricted floodway; widened and shallow stream channel; streambank erosion
- **Target Species:** Brown trout
- **Technique or Structure:** Material removal; stream crossing; grade control measures

Coon Creek / Bohemian Valley Creek (12)

- **Fiscal Year:** 2019
- **Location:** 43.76696, -90.91684
- **Project Length:** 310 feet
- **Purpose:** Remove flood debris constricting the floodway
- **Stream Habitat Impairments:** Constricted floodway
- **Target Species:** Brook and brown trout
- **Technique or Structure:** Material removal

Coon Creek / Bohemian Valley Creek (13)

- **Fiscal Year:** 2020
- **Location:** 43.72582, - 90.97409
- **Project Length:** 120 feet
- **Purpose:** Remove flood deposits; repair stream crossing.
- **Stream Habitat Impairments:** Abundant sedimentation.
- **Target Species:** Brown trout
- **Technique or Structure:** Material removal; stream crossing; channel shaping; grade control measures

Mormon Coulee Creek (14)

- **Fiscal Year:** 2019
- **Location:** 43.75175, -91.07186
- **Project Length:** 295 feet
- **Purpose:** Remove flood debris that was constricting the floodway; reshape the stream channel and the streambanks; return the stream flow back to the original channel
- **Stream Habitat Impairments:** Constricted floodway; widened and shallow stream channel; streambank erosion
- **Target Species:** Brown trout
- **Technique or Structure:** Bank sloping; material removal; stream crossing; channel shaping; bank shaping and planting

Mormon Coulee Creek (15)

- **Fiscal Year:** 2019
- **Location:** 43.75297, -91.06858
- **Project Length:** 725 feet
- **Purpose:** Remove flood debris
- **Stream Habitat Impairments:** Excessive flood debris deposited instream; stream crossing covered in sediment deposits
- **Target Species:** Brown trout
- **Technique or Structure:** Bank sloping; material removal; stream crossing; grade control measures; bank shaping and planting

Mormon Coulee Creek (16)

- **Fiscal Year:** 2020
- **Location:** 43.75336, -91.06685
- **Project Length:** 125 feet
- **Purpose:** Remove flood debris and excessive deposits in channel; restore flow to original channel
- **Stream Habitat Impairments:** Flood debris deposited instream; eroding streambanks
- **Target Species:** Brook and brown trout
- **Technique or Structure:** Material removal; channel shaping; grade control measures; streambank re-establishment

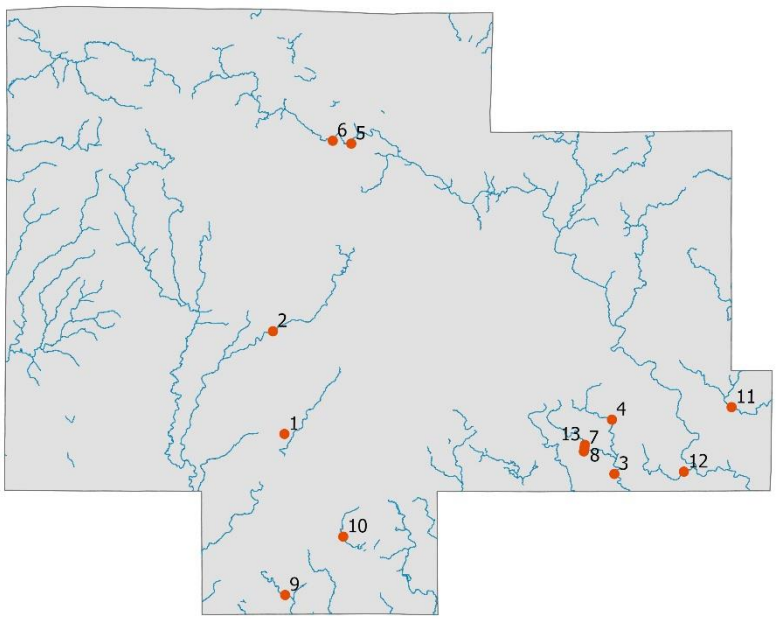
Mormon Coulee Creek (17)

- **Fiscal Year:** 2021
- **Location:** 43.74737, -91.08569
- **Project Length**: 8,131 feet
- **Purpose:** Remove the unwanted woody vegetation along riparian corridor to improve angler access
- **Stream Habitat Impairments:** Dense woody vegetation
- **Target Species:** Brown trout
- **Technique or Structure:** Tree and brush removal

Mormon Coulee Creek pre-brushing project. / Photo credit: Wisconsin DNR

Mormon Coulee Creek post-brushing project. / Photo credit: Wisconsin DNR

Langlade County



Averill Creek (1)

- **Fiscal Year:** 2019
- **Location:** 45.1602, -89.1388
- **Project Length:** 31,680 feet
- **Purpose:** Enhance stream productivity; establish mature timber in riparian corridor; improve access
- **Stream Habitat Impairments:** Overgrowth of tag alder
- **Target Species:** Brook and brown trout
- **Technique or Structure:** Brush removal
- **Partners:** Northeast Region Trout Unlimited

East Branch of the Eau Claire River (2)

- **Fiscal Year:** 2019
- **Location:** 45.23466, -89.15044
- **Project Length:** 350 feet
- **Purpose:** Improve instream habitat; reduce bank erosion
- **Stream Habitat Impairments:** Wide shallow stream bed; sedimentation in front of a handicap fishing dock; lack of overhead cover
- **Target Species:** Brook trout
- **Technique or Structure:** Half logs; brush bundles; dredging
- **Partners:** Northeast Region Trout Unlimited

Half logs installed on the East Branch of the Eau Claire River improve overhead cover. / Photo credit: Wisconsin DNR

Brush bundles installed on the East Branch of the Eau Claire River. / Photo credit: Wisconsin DNR

Evergreen River (3)

- **Fiscal Year:** 2019
- **Location:** 45.13054, -88.80113
- **Project Length:** 1,800 feet
- **Purpose:** Increase flow velocity to maintain cold water temperatures; provide areas for silt and sediment deposition; expose silt free spawning areas; establish vegetative riparian area to initiate forest succession
- **Stream Habitat Impairments:** Wide and shallow stream channel; lack of overhead cover; high bed load of soft sediments
- **Target Species:** Brook and brown trout
- **Partners:** Northeast Region TU (Partnership)

Evergreen River (3)

- **Fiscal Year:** 2020
- **Location:** 45.13054, -88.80113
- **Project Length:** 9,081 feet
- **Purpose:** Remove tag alder canopy over stream and open corridor for angling; increase light penetration to increase productivity of stream; remove tag alders from water to increase flow; brushing the bank on the outside bends of the stream also helps maintain cold water temperatures and prevent sedimentation.
- **Stream Habitat Impairments:** Severe tag alder choked stream channel; lack of vegetation other than tag alder on the streambank; sedimentation; impeded stream flow
- **Target Species:** Brook trout and brown trout
- **Technique or Structure:** Brush removal

Evergreen River (4)

- **Fiscal Year:** 2020
- **Location:** 45.16986, -88.80337
- **Project Length:** 1,637 feet
- **Purpose:** Remove tag alder canopy over stream and open corridor for angling; increase light penetration to increase productivity of stream; remove tag alders from water to increase flow; brushing the bank on the outside bends of the stream also helps maintain cold water temperatures and prevent sedimentatio
- **Stream Habitat Impairments:** Severe tag alder choked stream channel; lack of vegetation other than tag alder on the streambank; sedimentation; impeded stream flow
- **Target Species:** Brook trout and brown trout
- **Technique or Structure:** Brush removal

Hunting River (5)

- **Fiscal Year:** 2020
- **Location:** 45.37033, -89.06981
- **Project Length:** 2,500 feet
- **Purpose:** Reduce stream channel width; increase depth; increase complex woody habitat and rock habitat; improve spawning sites
- **Stream Habitat Impairments:** Widening and shallowing of the stream channel; erosion of streambanks; sedimentation; limited large complex woody and rock habitat
- **Target Species:** Brook and brown trout
- **Technique or Structure:** Channel shaping (2500 feet, 13); log/brush/rock shelters (190); brush removal (2,500 feet); point bars
- **Partners:** Trout Unlimited Northeast Region

Large rock and large wood habitat installed on the Hunting River. / Photo credit: Wisconsin DNR

Hunting River (6)

- **Fiscal Year:** 2020
- **Location:** 45.3724, -89.0887
- **Project Length:** 6,864 feet
- **Purpose:** Remove tag alder canopy over stream and open up corridor for angling; increase light penetration to increase productivity of stream; remove tag alders from water to increase flow. Brushing the bank on the outside bends of the stream also helps maintain cold water temperatures and prevent sedimentation.
- **Stream Habitat Impairments:** Severely tag alder choked stream channel; lack of vegetation other than tag alder on the streambank; sedimentation; impeded stream flow
- **Target Species:** Brook and brown trout
- **Technique or Structure:** Brush removal
- **Partners:** Trout Unlimited Northeast Region

Point bar shortly after construction on the Hunting River. / Photo credit: Wisconsin DNR

Long Creek (7)

- **Fiscal Year:** 2019
- **Location:** 45.149341, -88.831624
- **Project Length:** 50 feet
- **Purpose:** Replace impaired culvert; reduce ponding; increase flow; restore aquatic connectivity
- **Stream Habitat Impairments:** Improperly set forest road culvert crossing; sedimentation, siltation and ponding of water above the crossing; barrier to fish movement.
- **Target Species:** Brook and brown trout
- **Technique or Structure:** Culvert replacement

Left photo - Culverts being removed and reset. / Photo credit: Wisconsin DNR
Right photo – The restored stream channel above the crossing after properly installing culvert. / Photo credit: Wisconsin DNR

Lost Springs Dredging Project (8)

- **Fiscal Year:** 2020
- **Location:** 45.14696, -88.83228
- **Project Area:** 1 acres
- **Purpose:** Create more living space; better spawning habitat; uncovering woody debris that has been unusable; uncover or open the natural spring up flows; increasing cold water flow downstream
- **Stream Habitat Impairments:** Shallow; warming water; unusable woody habitat; large beds of aquatic vegetation and covering spawning habitat
- **Target Species:** Brook trout
- **Technique or Structure:** Dredging

Middle Branch of the Embarrass River (9)

- **Fiscal Year:** 2020
- **Location:** 45.0438, -89.1383
- **Project Length:** 2,640 feet
- **Purpose:** Open up corridor for angling; increase light penetration to increase productivity of stream; remove tag alders from water to increase flow
- **Stream Habitat Impairments:** Severe tag alder choked stream channel; lack of vegetation other than tag alder on the streambank; sedimentation; tag alder impeding the stream flow
- **Target Species:** Brook and brown trout
- **Technique or Structure:** Brush removal
- **Partners:** Trout Unlimited Northeast Region

Red River (10)

- **Fiscal Year:** 2019
- **Location:** 45.08597, -89.07893
- **Project Length:** 50 feet
- **Purpose:** Replace culvert crossing with instream crossing; restore aquatic connectivity
- **Stream Habitat Impairments:** Sedimentation; siltation; aquatic organism barrier; ponding of water above the crossing
- **Target Species:** Brook and brown trout
- **Technique or Structure:** Culvert replacement

Red River project site where the culvert was removed and replaced with instream crossing. Silt fence to retain runoff until slopes are stabilized. / Photo credit: Wisconsin DNR

South Branch of the Oconto River (11)

- **Fiscal Year:** 2020
- **Location:** 45.17836, -88.68057
- **Project Length:** 1,320 feet
- **Purpose:** Remove tag alder canopy over stream and open up corridor for angling; increase light penetration to increase productivity of stream; remove tag alders from water to increase flow. Brushing the bank on the outside bends of the stream also helps maintain cold water temperatures and prevent sedimentation.
- **Stream Habitat Impairments:** Severe tag alder choked stream channel; lack of vegetation other than tag alder on the streambank; sedimentation; tag alder impedes the stream flow
- **Target Species:** Brook and brown trout
- **Technique or Structure:** Brush removal
- **Partners:** Trout Unlimited Northeast Region

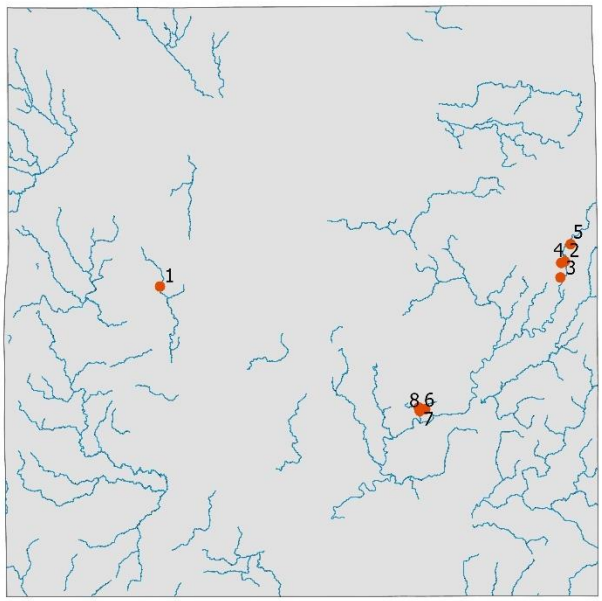
Spring Creek (12)

- **Fiscal Year:** 2020
- **Location:** 45.1319, -88.7299
- **Project Length:** 3,960 feet
- **Purpose:** Remove tag alder canopy over stream and open up corridor for angling; increase light penetration to increase productivity of stream; remove tag alders from water to increase flow. Brushing the bank on the outside bends of the stream also helps maintain cold water temperatures and prevent sedimentation.
- **Stream Habitat Impairments:** Severe tag alder choked stream channel; lack of vegetation other than tag alder on the streambank; sedimentation; tag alder impedes the stream flow
- **Target Species:** Brook and brown trout
- **Technique or Structure:** Brush removal
- **Partners:** Trout Unlimited Northeast Region

Stillhouse Springs Dredge Project (13)

- **Fiscal Year:** 2021
- **Location:** 45.15173, -88.83123
- **Project Length**: 1 acre
- **Purpose:** Removal of organic sediments to create more living space; removal and replacement of woody debris; flushing historical spawning areas; uncovering the springs to increase the flow of water; improving the overall condition of the pond, providing a good suppling of cold water flow downstream for several decades into the future for better fishing and recreation opportunities.
- **Stream Habitat Impairments:** Shallow warming water; accumulation of sediments; dying aquatic vegetation covering woody habitat; limited spawning areas; limited warm or cold water refuge throughout the year for species in downstream waterbodies.
- **Target Species:** Brook and brown trout
- **Technique or Structure:** Material removal; channel shaping (70 feet)
- **Partners:** Antigo Trout Unlimited

Lincoln County



<u>Averill Creek</u> (1)

- **Fiscal Year:** 2019
- **Location:** 45.3492, -89.8830
- **Project Length:** 800 feet
- **Purpose:** Remove excessive brush; stabilize banks; narrow stream channel; increase trout habitat
- **Stream Habitat Impairments:** Dense tag alder growth; wide and shallow stream channel; elevated road crossing
- **Target Species:** Brook trout
- **Technique or Structure:** Brush removal; point bar construction; channel excavation; wood habitat complex; instream rock

Complex wood habitat installed on Averill Creek. / Photo credit: Wisconsin DNR

Prairie River (2)

- **Fiscal Year:** 2021
- **Location:** 45.366521, -89.45895
- **Project Length:** 3,000 feet
- **Purpose:** Stabilize streambanks; improve trout habitat by increasing overhead cover, resting places, channel shaping, the amount of large complex wood and rock habitat
- **Stream Habitat Impairments:** Erosion of streambanks; sedimentation; siltation of spawning habitat; limited large complex woody and rock habitat
- **Target Species:** Brook and brown trout
- **Technique or Structure:** Trees/root wads; channel shaping; boulder clusters; brush removal; native seed planting; point bars; islands; wing deflectors
- **Partners:** Wisconsin River Valley Trout Unlimited, Northeast Region Trout Unlimited Chapters, Northeast Region Trout Unlimited Chapters

Aerial view of the Prairie River habitat project showing point bar construction, boulder clusters and woody habitat. / Photo credit: Dave Curran

Prairie River (3)

- **Fiscal Year:** 2020
- **Location:** 45.3546, -89.4637
- **Project Length:** 2,798 feet
- **Purpose:** Remove tag alder canopy over stream and open up corridor for angling; increase light penetration to increase productivity of stream; remove tag alders from water to increase flow. Brushing the bank on the outside bends of the stream also helps maintain cold water temperatures and prevent sedimentation.
- **Stream Habitat Impairments:** Severe tag alder choked stream channel; lack of vegetation other than tag alder on the streambank; sedimentation; impeded stream flow
- **Target Species**: Brook and brown trout
- **Technique or Structure:** Brush removal
- **Partners:** Trout Unlimited Northeast Region

Prairie River (4)

- **Fiscal Year:** 2020
- **Location:** 45.3653, -89.46286
- **Project Length:** 5,280 feet
- **Purpose:** Remove tag alder canopy over stream and open up corridor for angling; increase light penetration to increase productivity of stream; remove tag alders from water to increase flow. Brushing the bank on the outside bends of the stream also helps maintain cold water temperatures and prevent sedimentation.
- **Stream Habitat Impairments:** Severe tag alder choked stream channel; lack of vegetation other than tag alder on the streambank; sedimentation; impeded stream flow
- **Target Species:** Brook and brown trout
- **Technique or Structure:** Brush removal
- **Partners:** Trout Unlimited Northeast Region

Prairie River (5)

- **Fiscal Year:** 2020
- **Location:** 45.3791, -89.4527
- **Project Length:** 6,706 feet
- **Purpose:** Remove tag alder canopy over stream and open up corridor for angling; increase light penetration to increase productivity of stream; remove tag alders from water to increase flow. Brushing the bank on the outside bends of the stream also helps maintain cold water temperatures and prevent sedimentation.
- **Stream Habitat Impairments:** Severe tag alder choked stream channel; lack of vegetation other than tag alder on the streambank; sedimentation; impeded stream flow
- **Target Species:** Brook and brown trout
- **Technique or Structure:** Brush removal
- **Partners:** Trout Unlimited Northeast Region

Spring Creek (6)

- **Fiscal Year**: 2021
- **Location:** 45.2568, -89.6115
- **Project Length: 1**50 feet
- **Purpose:** Improve aquatic connectivity
- **Stream Habitat Impairments:** Limited aquatic connectivity; improperly installed culvert
- **Target Species:** Brook and brown trout
- **Technique or Structure:** Culvert replacement
- **Partners:** Trout Unlimited Northeast Region

Newly installed culverts on Spring Creek. / Photo credit: Wisconsin DNR

Spring Creek (7)

- **Fiscal Year:** 2021
- **Location:** 45.2594, -89.6125
- **Project Length:** 1,320 feet
- **Purpose:** Reduce tag alder density; improve angler access; improve light penetration; reduce sedimentation
- **Stream Habitat Impairments:** Severe tag alder choked stream channel; lack of vegetation other than tag alder on the streambank; sedimentation; impeded the stream flow
- **Target Species:** Brook and brown trout
- **Technique or Structure:** Brush removal
- **Partners**: Trout Unlimited Northeast Region

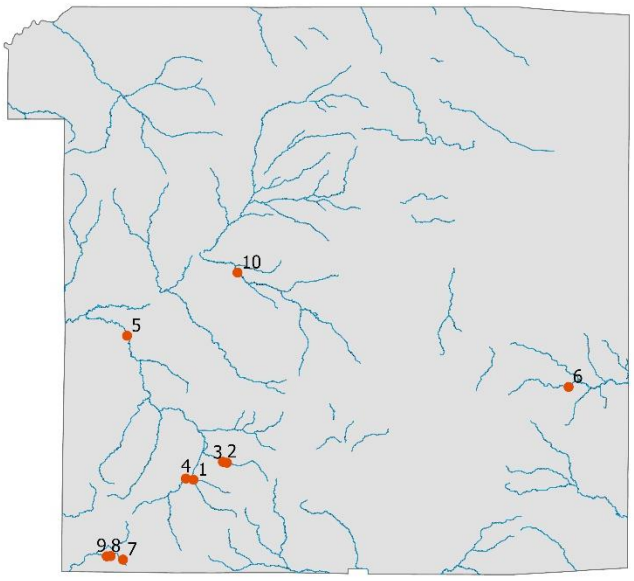
Unnamed Tributary to Spring Creek (8)

- **Fiscal Year**: 2021
- **Location:** 45.25801, -89.60579
- **Project Length:** 50 feet
- **Purpose:** Replace improperly installed and undersized culvert
- **Stream Habitat Impairments:** Impaired aquatic connectivity; ponding and siltation upstream of crossing
- **Target Species:** Brook and brown trout
- **Technique or Structure:** Culvert installation
- **Partners:** Trout Unlimited Northeast Region

Monroe County

Unnamed Creek 6-16 (1)

- **Fiscal Year:** 2019
- **Location:** 43.79702, -90.77186
- **Project Length:** 2,485 feet
- **Purpose:** Remove flood debris that was constricting the floodway; reshape the stream channel and the streambanks
- **Stream Habitat Impairments:** Constricted floodway; a widened shallow stream channel; streambank erosion
- **Target Species:** Brook trout
- **Technique or Structure:** Bank sloping; material removal; channel shaping; grade control measures; bank shaping and planting



Left photo - Post-flood event location of Unnamed Creek 6-16's channel threatening manure storage tank. / Photo credit: Wisconsin DNR
Right photo - Unnamed Creek 6-16 after being relocated back to pre-flood channel. / Photo credit: Wisconsin DNR

<u>Unnamed Creek / Halls Valley Creek</u> (2)

- **Fiscal Year:** 2020
- **Location:** 43.81102, -90.74107
- **Project Length:** 2,240 feet
- **Purpose:** Remove flood debris; open floodway from nuisance trees; establish grass along banks
- **Stream Habitat Impairments:** Water diversion from flood debris
- **Target Species:** Brook and brown trout
- **Technique or Structure:** Material removal; brush removal

<u>Unnamed Creek / Halls Valley Creek</u> (3)

- **Fiscal Year:** 2021
- **Location:** 43.81025, -90.73688
- **Project Length:** 290 feet
- **Purpose:** Stabilize streambank's third streambank; reconnect stream to floodplain
- **Stream Habitat Impairments:** Unstable high streambanks
- **Target Species:** Brook and brown trout
- **Technique or Structure:** Bank sloping; rip rap; material removal; bank shaping and planting
- **Partners:** Monroe County LCD (Cooperator)

Left photo - Eroding high streambank prior to habitat work on Unnamed Creek / Halls Valley Creek. / Photo credit: Wisconsin DNR
Right photo – Same streambank that after it had been sloped, rip rap installed and seeded. / Photo credit: Wisconsin DNR

Little La Crosse River (4)

- **Fiscal Year:** 2021
- **Location:** 43.79795, -90.78007
- **Project Length:** 4,435 feet
- **Purpose:** Remove unwanted woody vegetation that was growing along the stream corridor; improve angler access; stabilize streambanks; establish grasses
- **Stream Habitat Impairments:** Dense woody vegetation; eroding streambanks
- **Target Species:** Brown trout
- **Technique or Structure:** Tree removal

Little La Crosse River (5)

- **Fiscal Year:** 2021
- **Location:** 43.90666, -90.84364
- **Project Length:** 675 feet
- **Purpose:** The purpose of this project was to stabilize the eroding riverbanks, reconnect the stream to the floodplain, and increase the amount of habitat for trout along with other aquatic species.
- **Stream Habitat Impairments:** Unstable eroding streambanks; limited amount of instream cover for trout
- **Target Species:** Brown trout
- **Technique or Structure:** Streambank sloping; trees/root wads; rip rap; boulder retard; weir; material removal; streambank shaping and planting; brush removal
- **Partners:** Monroe County LCD

Little Lemonweir River (6)

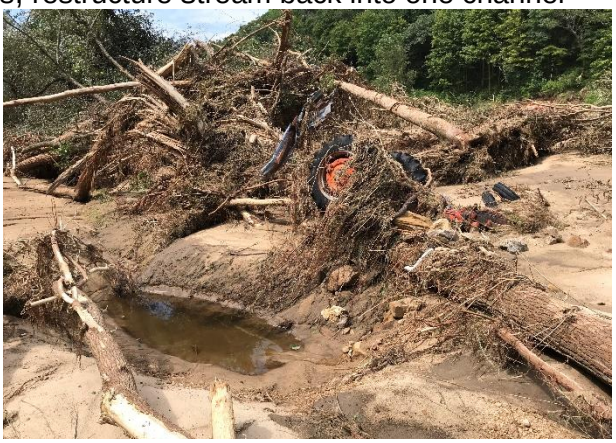
- **Fiscal Year:** 2019
- **Location:** 43.87009, -90.37575
- **Project Length:** 820 feet
- **Purpose:** The purpose of this project was to stabilize several eroding streambanks and create cover for trout.
- **Stream Habitat Impairments:** Unstable streambanks; wide and shallow stream channel; abundant sand substrate
- **Target Species:** Brook trout
- **Technique or Structure:** Streambank sloping; rip rap; boulder retard; weir; plunge pools; boulder clusters; grade control measures; streambank shaping and planting; log, root wad and boulder revetments; brush removal
- **Partners:** Clifton Rod and Gun Club

Rullands Coulee Creek (7)

- **Fiscal Year:** 2019
- **Location:** 43.73542, -90.84573
- **Project Length:** 530 feet
- **Purpose:** Remove flood debris constricting the floodway; reshape the stream channel and streambanks; repair stream crossing
- **Stream Habitat Impairments:** Constricted floodway; widened and shallow stream channel; streambank erosion
- **Target Species:** Brook and brown trout
- **Technique or Structure:** Strreambank sloping; material removal; stream crossing; channel shaping; streambank shaping and planting

Rullands Coulee Creek (8)

- **Fiscal Year:** 2019
- **Location:** 43.73796, -90.86278
- **Project Length:** 270 feet
- **Purpose:** Repair a machinery crossing; remove flood debris; restructure stream back into one channel
- **Stream Habitat Impairments:** Widened shallow stream channel; constricted floodway; poorly shaped streambanks; impassible machinery crossing
- **Target Species:** Brook and brown trout
- **Technique or Structure:** Streambank sloping; material removal; stream crossing; channel shaping; streambank shaping and planting



Flood debris, including tractor, blocking stream channel on Rullands Coulee Creek. / Photo credit: Wisconsin DNR

Rullands Coulee Creek (9)

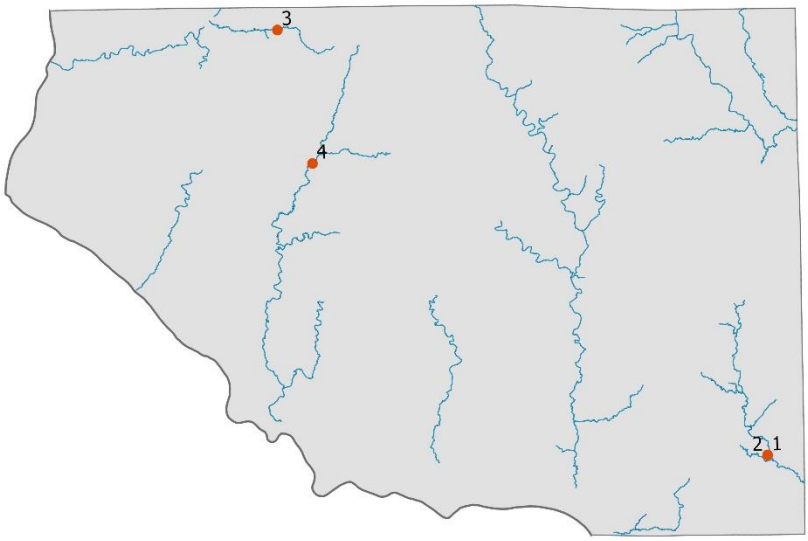
- **Fiscal Year:** 2019
- **Location:** 43.73817, -90.85881
- **Project Length:** 350 feet
- **Purpose:** Remove flood debris constricting the floodway; reshape the stream channel and streambanks; repair stream crossing
- **Stream Habitat Impairments:** Constricted floodway; widened and shallow stream channel; streambank erosion
- **Target Species:** Brook and brown trout
- **Technique or Structure:** Streambank sloping; material removal; stream crossing; channel shaping; streambank shaping and planting

Silver Creek (10)

- **Fiscal Year:** 2019
- **Location:** 43.95578, -90.72745
- **Project Length:** 1,845 feet
- **Purpose:** Stabilize streambanks; create cover for trout and other aquatic species; sloping streambanks
- **Stream Habitat Impairments:** Lack of instream cover for trout; unstable streambanks; poor stream substrate
- **Target Species:** Brook and brown trout
- **Technique or Structure:** Streambank sloping; material removal; stream crossing; streambank shaping and planting; instream boulders; grade control measures; plunge pool; rip rap; root wads; weirs

Pierce County

<u>Plum Creek</u> (1)



- **Fiscal Year:** 2021
- **Location:** 44.58789, -92.1663
- **Project Length:** 6,500 feet
- **Purpose:** Restore and protect streambanks; increase instream habitat available to brook trout; increase the number of brook trout within the project area; improve fishing access and fishability for anglers
- **Stream Habitat Impairments:** Streambank erosion; instream sedimentation; limited adult and spawning habitat; shallow stream channel
- **Target Species:** Brook trout
- **Technique or Structure:** Streambank sloping; weir; stream crossing; boulder clusters; log, root wad and boulder revetments
- **Partners:** Pierce County Aids Money, Kiap TU Wish

<u>Plum Creek</u> (2)

- **Fiscal Year:** 2020
- **Location:** 44.58803, -92.16633
- **Project Length:** 3,335 feet
- **Purpose:** Trout habitat enhancement; streambank stabilization
- **Stream Habitat Impairments:** Lack of trout habitat; stream is extremely shallow; excessive streambank erosion, sediment covering trout habitat and spawning areas; difficult angler access
- **Target Species:** Brook trout
- **Technique or Structure:** Trees/root wads; rip rap; grade control measures; native seed planting
- **Partners:** Pierce County, Kiap TU, Kiap TU

<u>South Fork of Kinnickinnic River</u> (3)

- **Fiscal Year:** 2021
- **Location:** 44.84862, -92.57638
- **Project Length:** 2,000 feet
- **Purpose:** Increase flow velocities; scour sand bed load
- **Stream Habitat Impairments**: Large amount of sand bedload inundating previous habitat project
- **Target Species:** Brook trout
- **Technique or Structure:** ERO - grade control measures
- **Partners:** Kiap TU, Loren Haas

Trimbelle River (4)

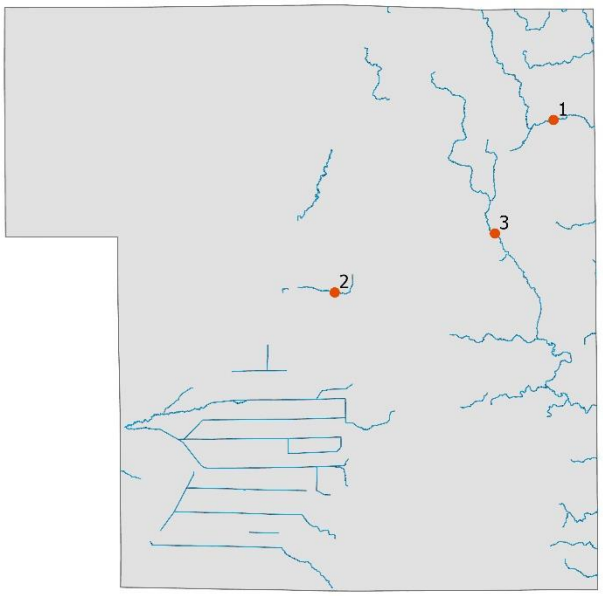
- **Fiscal Year:** 2019
- **Location:** 44.76778, -92.54798
- **Project Length:** 4,000 feet
- **Purpose:** Trout habitat enhancement; streambank stabilization, reconnecting stream to floodplain
- **Stream Habitat Impairments:** Limited trout habitat; streambank erosion
- **Target Species:** Brook trout
- **Technique or Structure:** Streambank sloping; trees/root wads; rip rap; stream crossing; boulder clusters; native seed planting
- **Partners:** NRCS, Kiap TU, Pierce County

Trimbelle River post-habitat work, instream boulders, root wads and bank sloping. / Photo credit: Wisconsin DNR

Portage County

Flume Creek (1)

- **Fiscal Year:** 2020
- **Location:** 44.59767, -89.26699
- **Project Length:** 6,150 feet
- **Purpose:** Establish grass on streambank; improve overhead cover along streambanks; improve angler access; improve fishability
- **Stream Habitat Impairments:** Dense tag alder; shallow stream channel; increased sedimentation, covering spawning substrate; little to no overhead cover for fish
- **Target Species:** Brook and brown trout
- **Technique or Structure:** Tree and brush removal



Little Plover River (2)

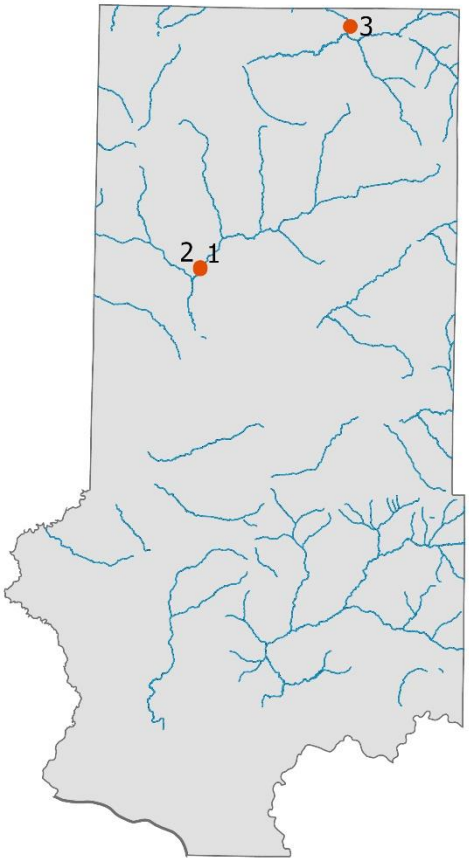
- **Fiscal Year:** 2019, 2020
- **Location:** 44.46905, -89.49835
- **Project Length:** 1,200 feet
- **Purpose:** Determine the effects of streambank brushing; reduce the amount of brush present along streambank; promote growth of sedges and grasses; reconnecting stream to the floodplain
- **Stream Habitat Impairments:** Dense tag alder and buckthorn; limited fishability; eroding streambank; wide and shallow stream channel; floodplain not connected to stream channel
- **Target Species:** Brook trout
- **Technique or Structure:** Brush bundle/mattresses; material removal; brush removal; wetland scrape
- **Partners:** University of Wisconsin Stevens Point, Frank Hornberg Chapter of Trout Unlimited, Bill Cook Chapter of Trout Unlimited

Plover River after riparian tag alder and buckthorn were removed and brush bundle/mattresses were installed. / Photo credit: Wisconsin DNR

Tomorrow River (3)

- **Fiscal Year:** 2020
- **Location:** 44.512644, -89.32978
- **Project Length:** 775 feet
- **Purpose:** Enhance existing habitat structures
- **Stream Habitat Impairments:** Wide stream channel
- **Target Species:** Brook and brown trout
- **Technique or Structure:** Brush bundles

Trempealeau County



<u>Elk Creek</u> (1)

- **Fiscal Year:** 2019
- **Location:** 44.4068, -91.4223
- **Project Length:** 400 feet
- **Purpose:** Improve pool depth, overhead and mid-channel cover; reduce streambank erosion and sedimentation; increase the fishability of the stream corridor
- **Stream Habitat Impairments:** Excessive streambank erosion; high sand bed load; limited overhead cover; lack of pool depth
- **Target Species:** Brook and brown trout
- **Technique or Structure:** Streambank sloping; weir; wing deflector; log, root wad and boulder revetments; brush removal
- **Partners:** Elk Rod and Gun Club (Grantor)

<u>Elk Creek</u> (2)

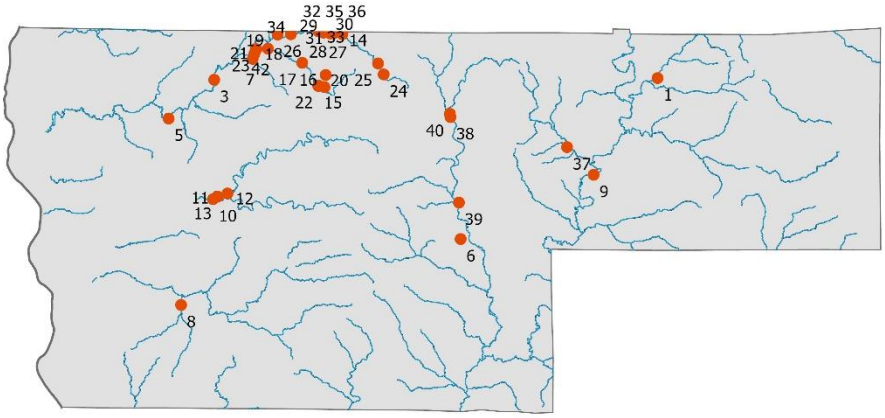
- **Fiscal Year:** 2021
- **Location:** 44.4079, -91.4224
- **Project Length:** 3,200 feet
- **Purpose:** Stabilize eroding streambanks; improve adult trout habitat
- **Stream Habitat Impairments:** Wide and shallow stream channel; excessive sand bed load; eroding streambanks; lack of overhead cover
- **Target Species:** Brook and brown trout
- **Technique or Structure:** Streambank sloping; rip rap; weir; wing deflector; log, root wad and boulder revetments; brush removal
- **Partners:** Elk Rod and Gun Club

Elk Creek post-habitat work. / Photo credit: Wisconsin DNR

<u>Pine Creek</u> (3)

- **Fiscal Year:** 2021
- **Location:** 44.58334, -91.2755
- **Project Length:** 1,750 feet
- **Purpose:** Improve trout habitat; stabilize the eroding streambanks
- **Stream Habitat Impairments:** Eroding streambanks; lack of overhead cover for trout; widened stream channel; shallow with a bedload consisting mainly of sand.
- **Target Species**: Brook trout
- **Technique or Structure:** Streambank sloping (1,750 feet); trees/root wads (4); rip rap (1,005 feet); weir (5); material removal (1,750 feet); stream crossing (1); plunge pools; wing deflector (1); boulder clusters (2); log/brush/rock shelters (27); grade control measures; streambank shaping and planting (1,750 feet); native seed planting

Vernon County



<u>Billings Creek</u> (1)

- **Fiscal Year:** 2020, 2021
- **Location:** 43.69035, -90.55704
- **Project Length:** 3,150 feet
- **Purpose:** Stabilize streambanks; maintenance on the areas damaged by the recent floods; replace damaged habitat structures; narrow and deepen stream
- **Stream Habitat Impairments:** Eroding streambanks; widened shallow channel
- **Target Species:** Brown trout
- **Technique or Structure:** Streambank sloping; LUNKERS; rip rap; weir; material removal; plunge pools; streambank shaping and planting

Billings Creek post-habitat work. / Photo credit: Wisconsin DNR

Coon Creek / Bohemian Valley Creek (2)

- **Fiscal Year:** 2021
- **Location:** 43.70675, -90.99989
- **Project Length:** 7,603 feet
- **Purpose:** Remove undesirable brush and trees (box elder); improve angler access
- **Stream Habitat Impairments:** Unstable streambanks; dense tree and brush growth
- **Target Species:** Brown trout
- **Technique or Structure:** Tree and brush removal

Coon Creek / Bohemian Valley Creek (3)

- **Fiscal Year:** 2019,2020
- **Location:** 43.68554, -91.04351
- **Project Length:** 35 feet
- **Purpose:** Remove sediment deposited by flood water; repair stream crossing
- **Stream Habitat Impairments:** Sedimentation
- **Target Species:** Brown trout
- **Technique or Structure:** Material removal; stream crossing

Coon Creek / Bohemian Valley Creek (4)

- **Fiscal Year:** 2019, 2020
- **Location:** 43.71005, --90.99826
- **Project Length:** 35 feet
- **Purpose:** Remove sediment deposited by flood water; repair stream crossing
- **Stream Habitat Impairments:** Sedimentation
- **Target Species:** Brown trout
- **Technique or Structure:** Material removal; streambank stabilization

Coon Creek / Bohemian Valley Creek (5)

- **Fiscal Year:** 2020
- **Location:** 43.65432, -91.09293
- **Project Length:** 50 feet
- **Purpose:** Remove fallen tree
- **Stream Habitat Impairments:** Fallen tree diverting flow towards walking trail
- **Target Species:** Brown trout
- **Technique or Structure:** Tree removal

Creek 32-5 (6)

- **Fiscal Year:** 2019
- **Location:** 43.56088, -90.77159
- **Project Length:** 45 feet
- **Purpose:** The purpose of this project was to remove a beaver dam and restore flow in the main channel.
- **Stream Habitat Impairments:** Restricted fish passage; sedimentation; flooded riparian area
- **Target Species:** Brook trout
- **Technique or Structure:** Material removal; beaver dam removal; migration barriers

Creek 8-8 (7)

- **Fiscal Year:** 2019
- **Location:** 43.70259, -91.00169
- **Project Length:** 1,675 feet
- **Purpose:** Remove flood debris that was constricting the floodway; reshape the stream channel and the stream; repair a machinery crossing that was damaged from the flood
- **Stream Habitat Impairments:** Constricted floodway; widened shallow stream channel; streambank erosion
- **Target Species:** Brook and brown trout
- **Technique or Structure:** Streambank sloping; material removal; stream crossing; channel shaping; grade control measures; streambank shaping and planting

Frohock Creek (8)

- **Fiscal Year:** 2020
- **Location:** 43.50606, -91.07672
- **Project Length:** 745 feet
- **Purpose:** Stabilize eroding streambank; increase adult trout habitat
- **Stream Habitat Impairments:** Eroding streambanks; limited trout habitat
- **Target Species:** Brown trout
- **Technique or Structure:** Streambank sloping; trees/root wads; rip rap; weir; material removal; plunge pools; streambank shaping and planting

Eroding streambank, Frohock Creek, pre-project. / Photo credit: Wisconsin DNR

Eroding streambank, Frohock Creek, post-project. / Photo credit: Wisconsin DNR

Kickapoo River (9)

- **Fiscal Year:** 2021
- **Location:** 43.61298, -90.62642
- **Project Length:** 1,640 feet
- **Purpose:** Remove undesirable trees and establish grass
- **Stream Habitat Impairments:** Unstable streambanks
- **Target Species:** Brown trout
- **Technique or Structure:** Tree removal

North Fork Bad Axe River (10)

- **Fiscal Year:** 2019
- **Location:** 43.59053, -91.04319
- **Project Length:** 545 feet
- **Purpose:** Stabilize an eroding streambank and create instream habitat for trout; create habitat for reptiles and amphibians
- **Stream Habitat Impairments:** Unstable streambanks; lack of cover for trout; constricted floodway
- **Target Species:** Brown trout
- **Technique or Structure:** Streambank sloping; rip rap; material removal; streambank shaping and planting; log, root wad and boulder revetments; brush removal; backwater refuge

Constricted backwater refuge on the North Fork Bad Axe River. / Photo credit: Wisconsin DNR

North Fork Bad Axe River (11)

- **Fiscal Year:** 2019
- **Location:** 43.59262, -91.03825
- **Project Length:** 290 feet
- **Purpose:** Repair a machinery crossing; remove trees and brush along the stream
- **Stream Habitat Impairments:** Channel constriction; sedimentation; damaged stream crossing
- **Target Species:** Brown trout
- **Technique or Structure:** Streambank sloping; material removal; stream crossing; streambank shaping and planting; brush removal

North Fork Bad Axe River (12)

- **Fiscal Year:** 2019
- **Location:** 43.59504, -91.02749
- **Project Length:** 70 feet
- **Purpose:** Repair a machinery crossing; stabilize the grade below the crossing
- **Stream Habitat Impairments:** Sedimentation
- **Target Species:** Brown trout
- **Technique or Structure:** Streambank sloping; material removal; stream crossing; grade control measures; streambank shaping and planting

North Fork Bad Axe River (13)

- **Fiscal Year:** 2021
- **Project Length:** 5,544 feet
- **Location:** 43.59248, -91.03818
- **Purpose:** Remove the unwanted woody vegetation; improve angler access; open up riparian floodway.
- **Stream Habitat Impairments:** Dense woody vegetation
- **Target Species**: Brown trout
- **Technique or Structure:** Tree and brush removal

Post brush removal along the North Fork Bad Axe River. / Photo credit: Wisconsin DNR

Rullands Coulee Creek (14)

- **Fiscal Year:** 2019
- **Location:** 43.72500, -90.90509
- **Project Length:** 1,460 feet
- **Purpose:** Remove flood debris; reshape the stream channel; slope the streambanks; return the stream flow back to the original channel
- **Stream Habitat Impairments:** Constricted floodway; streambank erosion; widen shallow channel
- **Target Species:** Brown trout
- **Technique or Structure:** Streambank sloping; material removal; channel shaping; streambank shaping and planting

Spring Coulee Creek (15)

- **Fiscal Year:** 2019
- **Location:** 43.68167, -90.92927
- **Project Length:** 1,230 feet
- **Purpose:** Remove flood debris; reshape the stream channel and the streambanks; restore stream to original channel; repair two machinery crossings
- **Stream Habitat Impairments:** Constricted floodway; widened shallow channel; streambank erosion; damaged crossing
- **Target Species:** Brook and brown trout
- **Technique or Structure:** Streambank sloping; material removal; stream crossing; channel shaping; streambank shaping and planting

Spring Coulee Creek (16)

- **Fiscal Year:** 2019
- **Location:** 43.69053, -90.92136
- **Project Length:** 900 feet
- **Purpose:** Remove flood debris; reshape the stream channel and the streambanks; restore stream to original channel
- **Stream Habitat Impairments**: Constricted floodway; a wide shallow stream channel; unstable streambanks
- **Target Species**: Brook and brown trout
- **Technique or Structure:** Streambank sloping; rip rap; weir, material removal; plunge pools; channel shaping; streambank shaping and planting; log, root wad and boulder revetments

Spring Coulee Creek (17)

- **Fiscal Year:** 2019
- **Location:** 43.69996, -90.9473
- **Project Length:** 1,535 feet
- **Purpose:** Remove flood debris; reshape the stream channel and the streambanks; restore stream to original channel ; stabilize two streambanks
- **Stream Habitat Impairments:** Constricted floodway; a widened shallow stream channel; streambank erosion
- **Target Species:** Brown trout
- **Technique or Structure:** Streambank sloping; rip rap; material removal; channel shaping; streambank shaping and planting; log, root wad and boulder revetments

Spring Coulee Creek (18)

- **Fiscal Year:** 2019
- **Location:** 43.71037, -90.99758
- **Project Length:** 25 feet
- **Purpose:** Remove sediment from machinery crossing
- **Stream Habitat Impairments:** Sedimentation from stream crossing runoff
- **Target Species:** Brown trout
- **Technique or Structure:** Material removal; stream crossing

Spring Coulee Creek (19)

- **Fiscal Year:** 2019
- **Location:** 43.71089, -90.98483
- **Purpose:** Remove flood debris
- **Stream Habitat Impairments:** Constricted floodway with deposition of sand
- **Target Species:** Brown trout
- **Technique or Structure:** Material removal

Spring Coulee Creek (20)M

- **Fiscal Year:** 2020
- **Location:** 43.68066, -90.92238
- **Project Length:** 450 feet
- **Purpose:** Remove flood debris; reshape the stream channel and the streambanks
- **Stream Habitat Impairments:** Eroding streambanks
- **Target Species**: Brook and brown trout
- **Technique or Structure:** Material removal; channel shaping; streambank shaping and planting

Spring Coulee Creek (21)

- **Fiscal Year:** 2020
- **Location:** 43.71037, -90.99758
- **Project Length:** 25 feet
- **Purpose:** Remove sediment deposited on stream crossing
- **Stream Habitat Impairments:** Sedimentation from stream crossing
- **Target Species:** Brown trout
- **Technique or Structure**: Material removal; stream crossing

Spring Coulee Creek (22)

- **Fiscal Year:** 2021
- **Location:** 43.68181, -90.92867
- **Project Length:** 90 feet
- **Purpose:** Remove a large instream cottonwood tree
- **Stream Habitat Impairments:** Flow diverted from fallen tree
- **Target Species:** Brown trout
- **Technique or Structure:** Material removal; stream crossing

Spring Coulee Creek (23)

- **Brushing**
- **Fiscal Year:** 2021
- **Location:** 43.71047, -90.99834
- **Project Length:** 2,323 feet
- **Purpose:** Remove undesirable woody vegetation; improve angler access; streambank erosion
- **Stream Habitat Impairments:** Dense woody vegetation
- **Target Species:** Brown trout
- **Technique or Structure:** Brush removal

Post brush removal on Spring Coulee Creek. / Photo credit: Wisconsin DNR

Timber Coulee Creek (24)

- **Fiscal Year:** 2019
- **Location:** 43.6914, -90.85772
- **Project Length:** 30 feet
- **Purpose:** Maintain stream crossing
- **Stream Habitat Impairments:** Flood deposits on stream crossing; deep water over crossing
- **Target Species:** Brown trout
- **Technique or Structure:** Streambank sloping; material removal; stream crossing; streambank shaping and planting

Timber Coulee Creek (25)

- **Fiscal Year:** 2019
- **Location:** 43.70009, -90.86385
- **Project Length**: 75 feet
- **Purpose:** Stabilize streambank; create cover for trout.
- **Stream Habitat Impairments:** Unstable streambank; limited habitat for trout
- **Target Species:** Brown trout
- **Technique or Structure:** Streambank sloping; rip rap; weir; streambank shaping and planting

Timber Coulee Creek (26)

- **Fiscal Year:** 2019
- **Location:** 43.72228, -90.97443
- **Project Length:** 60 feet
- **Purpose:** Remove fallen tree
- **Stream Habitat Impairments:** Streambank erosion; obstruction of stream crossing
- **Target Species:** Brown trout
- **Technique or Structure:** Tree removal

Timber Coulee Creek (27)

- **Fiscal Year:** 2019
- **Location:** 43.72366, -90.9134
- **Project Length:** 285 feet
- **Purpose:** Repair stream crossing from flood damage
- **Stream Habitat Impairments:** Widened stream channel; shallow stream channel; ponding of water
- **Target Species:** Brown trout
- **Technique or Structure:** Material removal; stream crossing; channel shaping; grade control measures

Timber Coulee Creek (28)

- **Fiscal Year:** 2019
- **Location:** 43.72367, -90.91682
- **Project Length:** 575 feet
- **Purpose:** Remove debris constricting the floodway; reshape the stream channel and the streambanks that were damaged from the flood
- **Stream Habitat Impairments:** Constricted floodway; widened stream channel; streambank erosion.
- **Target Species:** Brown trout
- **Technique or Structure:** Streambank sloping; material removal; channel shaping; streambank shaping and planting

Timber Coulee Creek (29)

- **Fiscal Year:** 2019
- **Location:** 43.72417, -90.92434
- **Project Length:** 35 feet
- **Purpose:** Stabilize an eroding streambank
- **Stream Habitat Impairments:** Eroding streambank
- **Target Species:** Brown trout
- **Technique or Structure:** Streambak sloping; rip rap; streambank shaping and planting

Timber Coulee Creek (30)

- **Fiscal Year:** 2019
- **Location:** 43.72418, -90.91507
- **Project Length:** 80 feet
- **Purpose:** Stabilize eroding the streambank; reduce the depth of a stream crossing; remove sediment
- **Stream Habitat Impairments:** Unstable, eroding streambank
- **Target Species:** Brown trout
- **Technique or Structure:** Streambank sloping; rip rap; stream crossing; streambank shaping and planting

Timber Coulee Creek (31)

- **Fiscal Year:** 2019
- **Location:** 43.72424, -90.9152
- **Project Length:** 180 feet
- **Purpose:** Remove flood debris constricting the floodway; repair stream crossing; reshape the streambanks that were damaged from the flood
- **Stream Habitat Impairments:** Constricted floodway; streambank erosion
- **Target Species:** Brown trout
- **Technique or Structure:** Streambank sloping; material removal; stream crossing; streambank shaping and planting

Timber Coulee Creek (32)

- **Fiscal Year:** 2019
- **Location:** 43.72476, -90.92415
- **Project Length:** 210 feet
- **Purpose:** The purpose of this project was to remove flood debris from a snowmobile bridge that was constricting the stream flow and diverting stream away from channel.
- **Stream Habitat Impairments:** Widened stream channel; flow diversion; streambank erosion
- **Target Species:** Brown trout
- **Technique or Structure:** Streambank sloping; material removal; stream crossing; streambank shaping and planting

Timber Coulee Creek (33)

- **Fiscal Year:** 2019
- **Location:** 43.72504, -90.92953
- **Project Length**: 70 feet
- **Purpose:** Remove rock and rubble diverting flow outside of stream channel; restore flow back to original channel, protecting previous habitat work
- **Stream Habitat Impairments:** Diverted stream flow away from original stream channel and completed habitat work.
- **Target Species:** Brown trout
- **Technique or Structure:** Streambank sloping; material removal; channel shaping; streambank shaping and planting

Timber Coulee Creek (34)

- **Fiscal Year:** 2020
- **Location:** 43.7226, -90.95989
- **Project Length:** 1,700 feet
- **Purpose:** Remove flood debris and riparian trees
- **Stream Habitat Impairments:** Eroded streambanks; widened stream channel
- **Target Species:** Brown trout
- **Technique or Structure:** Material removal; brush removal

Timber Coulee Creek (35)

- **Fiscal Year:** 2020
- **Location:** 43.72299, -90.90348
- **Project Length:** 440 feet
- **Purpose:** Remove flood debris constricting floodway; reshape the stream channel and streambanks that were damaged from the flood
- **Stream Habitat Impairments:** Eroded streambanks; widened stream channel
- **Target Species:** Brown trout
- **Technique or Structure:** Material removal; channel shaping; streambank shaping and planting

Timber Coulee Creek (36)

- **Fiscal Year:** 2020
- **Location:** 43.72366, -90.91682
- **Project Length:** 700 Feet
- **Purpose:** Remove flood debris constricting the floodway; reshape stream channel and streambanks; repair stream crossing
- **Stream Habitat Impairments:** Unstable and eroding streambanks; constricted floodway
- **Target Species:** Brown trout
- **Technique or Structure:** Streambank sloping; material removal; stream crossing; channel shaping; streambank shaping and planting

Weister Creek (37)

- **Fiscal Year:** 2019
- **Location:** 43.63471, -90.65591
- **Project Length:** 2,910 feet
- **Purpose:** Stabilize streambanks; create cover for trout; reconnect stream to floodplain
- **Stream Habitat Impairments:** Unstable streambanks; lack of cover for trout; nuisance vegetation
- **Target Species:** Brown trout
- **Technique or Structure:** Streambank shaping and planting; brush removal
- **Partners:** Kickapoo Valley Reserve

Rock staged along Weister Creek ready to be installed. / Photo credit: Wisconsin DNR

Weister Creek (37)

- **Fiscal Year:** 2020
- **Location:** 43.63471, -90.65591
- **Project Length:** 2,910 feet
- **Purpose:** Stabilize the streambanks; create cover for trout and other aquatic species; open up floodway
- **Stream Habitat Impairments:** Unstable streambanks; limited trout cover; riparian area dominated by box elder trees; constricted floodway
- **Target Species:** Brown trout
- **Technique or Structure:** Streambank sloping; trees/root wads; rip rap; boulder retard; weir; stream crossing; plunge pools; grade control measures; streambank shaping and planting; log, root wad and boulder revetments
- **Partners:** Kickapoo Valley Reserve

Rock weir with plunge pool and basking logs for reptiles installed on Weister Creek. / Photo credit: Wisconsin DNR

West Fork of the Kickapoo River (38)

- **Fiscal Year:** 2019
- **Location:** 43.65799, -90.78402
- **Project Length:** 1,225 feet
- **Purpose:** Remove flood debris; reshape the stream channel and the streambanks; bring the flow to original channel; repair damaged stream crossing
- **Stream Habitat Impairments:** Constricted floodway; diverted stream channel; streambank erosion
- **Target Species:** Brook and brown trout
- **Technique or Structure:** Streambank sloping; material removal; stream crossing; channel shaping; grade control measures; streambank shaping and planting

West Fork of the Kickapoo River (39)

- **Fiscal Year:** 2020
- **Location:** 43.59001, -90.77376
- **Project Length:** 925 feet
- **Purpose:** Remove the box elder trees, sand and debris on the inside point; open up and reconnect the floodway; repair damage behind LUNKERS structures
- **Stream Habitat Impairments:** Improper function of LUNKERS structures;
- **Target Species:** Brown trout
- **Technique or Structure:** Streambank sloping; rip rap; material removal; channel shaping; streambank shaping and planting; brush removal; streambank re-establishment

Streambank sloped to connect river to floodplain on the West Fork of the Kickapoo River. / Photo credit: Wisconsin DNR

West Fork of the Kickapoo River (40)

- **Fiscal Year:** 2021
- **Location:** 43.66048, -90.78476
- **Project Length:** 6,389 feet
- **Purpose:** Remove undesirable woody vegetation; improved angler access; increase capacity of floodway
- **Stream Habitat Impairments:** Dense woody vegetation
- **Target Species:** Brown trout
- **Technique or Structure:** Material removal

Stretch of the West Fork of the Kickapoo River scheduled for brushing and mowing. Left streambank was completed prior to picture being taken. / Photo credit: Wisconsin DNR

Beaver Control

The primary means of removal of beaver and beaver dams from selected trout streams is through a cooperative service agreement with the United States Department of Agriculture – Animal and Plant Health Inspection Service - Wildlife Services (USDA-APHIS-WS). Other agencies, particularly the United States Forest Service (USFS) and several counties, also enter into agreements with USDA-APHIS-WS for beaver and beaver dam removal from streams. Removals allow the specified streams to remain free of impoundments to meet local management goals for the protection and/or rehabilitation of desired stream channel hydraulic and physical characteristics.

The cooperative service agreement corresponds to the calendar year and spans two DNR fiscal reporting years. Most of the work is conducted in the North and East districts, although some work is done in the northern portion of the West District and the South District. The USDA-APHIS-WS maintains complete records of the number of beaver and beaver dams removed from selected streams in each county. These records are reported monthly as well as annually. Counties listed on the cooperative agreement during FY2019-FY2021 are depicted in Figure 3.

The USDA-APHIS-WS beaver and beaver dam removal operations are seasonal and conducted primarily from April through mid-October on a calendar year basis. Effort is also not consistent across counties. All agreed-upon streams are checked at least once by the USDA-APHIS-WS, DNR and/or USFS staff, utilizing fixed-wing aircraft, foot travel and/or public reports of beaver dam presence. Not all streams monitored had beaver and/or beaver dams removed.

In FY2019, the USDA-APHIS-WS removed 1,867 beaver and 790 beaver dams. Trout stamp expenditure for this work was $282,349.50.

In FY2020, the USDA- APHIS-WS removed 1,407 beaver and 1,017 beaver dams. Trout stamp expenditure for this work was $269,963.54.

In FY2021, the USDA-APHIS-WS removed 1,406 beaver and 626 beaver dams. Trout stamp expenditure for this work was $161,699.60.

DNR staff conduct small-scale beaver removal projects as part of the DNR's annual work-plan process on streams not monitored by USDA-APHIS-WS.

In FY2019, DNR staff conducted beaver control on trout streams and spring ponds in Marquette, Shawano, Juneau, Portage, Lincoln and Langlade counties. Trout stamp expenditure for this work was $16,865.76.

In FY2020, DNR staff conducted beaver control on trout streams and spring ponds in Bayfield, Douglas, Marquette, Shawano, Waupaca, Waushara, Juneau, Portage, Lincoln and Langlade counties. Trout stamp expenditure for this work was $18,459.23.

In FY2021, DNR staff conducted beaver control on trout streams and spring ponds in Bayfield, Douglas, Marquette, Shawano, Waupaca, Waushara, Juneau, Portage, Lincoln and Langlade counties. Trout stamp expenditure for this work was $25,681.55.

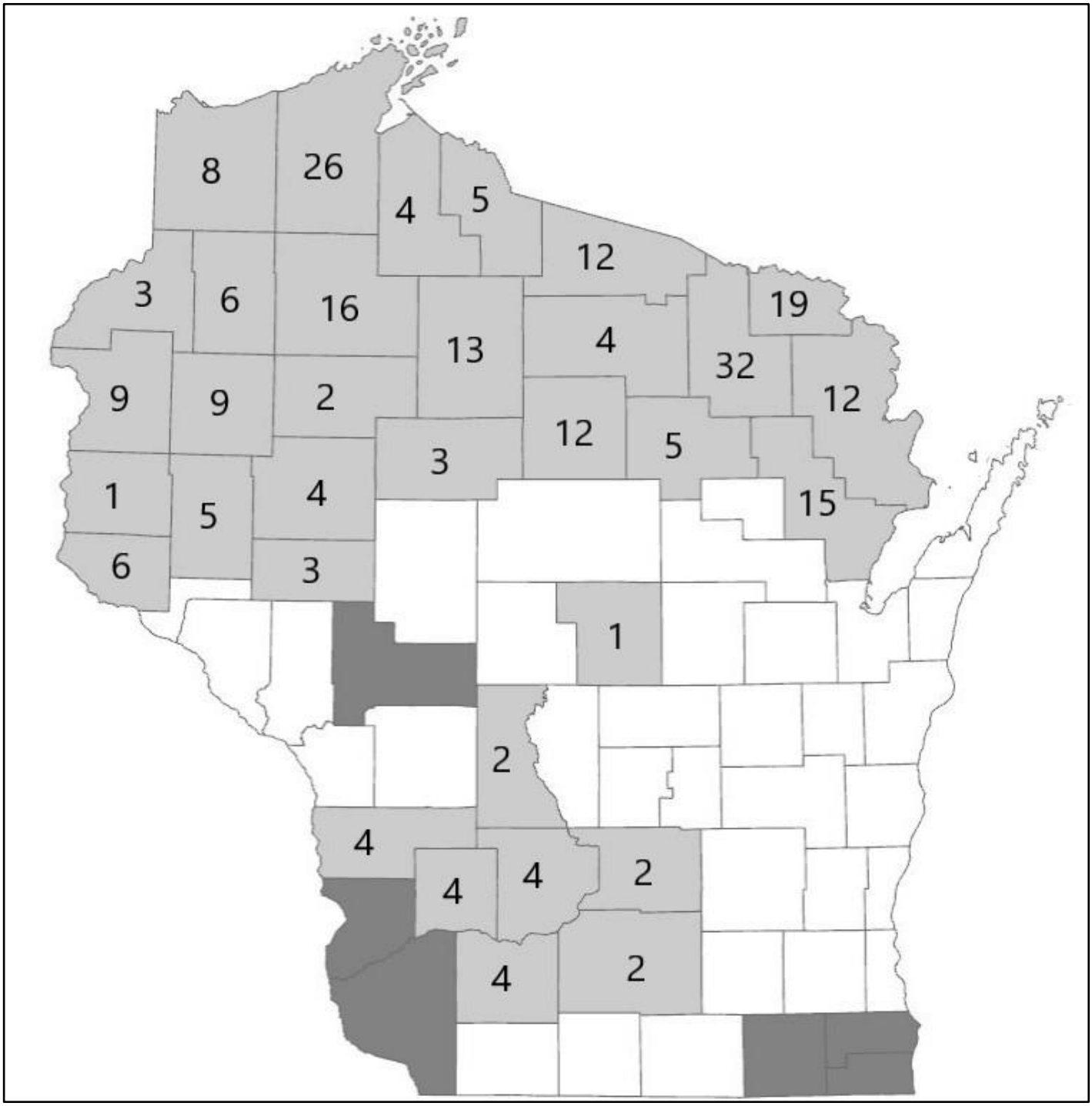


Figure 3. *Counties funded through the Inland Waters Trout Stamp listed in the cooperative service agreements (FY2019-FY2021) for beaver control are shaded grey. Trout streams in the counties shaded light grey required some beaver and/or beaver dam removal, while trout streams in the counties shaded dark grey were surveyed but no removal was completed. Numbers within a county indicate the total number of trout streams in which beaver and/or beaver dam removal occurred using Inland Waters Trout Stamp funds.*