Lower White River
Oceana and Muskegon Counties
White River watershed, last surveyed 2025

Mark Tonello, Fisheries Management Biologist

Environment

The White River is a tributary to Lake Michigan that flows through Newaygo, Oceana, and Muskegon Counties in Michigan's Lower Peninsula. It enters Lake Michigan near the communities of Montague and Whitehall, after flowing through White Lake, which is a drowned river mouth lake. The river originates from springs in the Oxford Swamp near the community of Woodville in Newaygo County. From its origins, the White River flows south until it enters Lake White Cloud, a man-made impoundment in the Village of White Cloud. After exiting the impoundment through the White Cloud Dam, the river flows west until it reaches Hesperia Dam in the Village of Hesperia. From there, it flows southwest after entering Oceana County. The White River eventually enters Muskegon County and flows into White Lake and then Lake Michigan. From its headwaters to Lake Michigan, the length of the river is 89.8 miles (O'Neal 2012). The White River watershed is 344,166 acres (538 square miles) in size (DeMol 2009). This report focuses on the 33-mile lower White River from Hesperia Dam to White Lake (Figure 1). Hesperia Dam is currently the upstream limit for migratory fish from White Lake and Lake Michigan.

The White River is the southern-most major coldwater system in Michigan, with roughly 80% of the watershed having a coldwater designation (Rippke and Baldwin 2021). According to O'Neal (2012), the river drops 485.6 feet over its nearly 90-mile course, for an average gradient of 5.8 feet per mile. O'Neal (2012) also reports that the gradient between Hesperia Dam and White Lake averages 3.8 feet per mile although there are faster sections. The lower six miles has very little gradient and is influenced by water levels in White Lake and Lake Michigan (O'Neal 2012). The White River has an average summer discharge of about 300 cubic feet per second (https://nwis.waterdata.usgs.gov/).

The landscape that forms the White River watershed is relatively undeveloped and mostly forested (about 58%), with some agricultural areas and a few wetlands (DeMol 2009). Much of the watershed (23%) is federally owned as part of the Manistee National Forest, which is managed by the United States Forest Service (USFS). There are also privately-owned parcels interspersed throughout the watershed. The forested land within the watershed generally consists of aspen, white pine, and northern hardwoods. The lower White River hosts annual migrations of fish from White Lake and Lake Michigan, which include Steelhead (Rainbow Trout), Chinook Salmon, Coho Salmon, Walleye, Smallmouth Bass, White Suckers, and several Redhorse species. Tributaries including Carlton Creek, Silver Creek, Sand Creek, Cleveland Creek, the North Branch of the White River, Skeel Creek, Cushman Creek, and Brayton Creek all join the lower White River. The above tributaries are all designated trout streams, with self-sustaining populations of Brook Trout and Brown Trout. Wild Steelhead, Chinook Salmon, and Coho Salmon are also present in most tributary reaches accessible from White Lake and Lake Michigan. Silver, Sand, and Cleveland Creeks all have dams that limit access to migratory salmonids. These dams also warm downstream reaches, which would otherwise be more suitable for coldwater species.

Public access to the lower White River is available within the Village of Hesperia at Hesperia Dam and Vida Weaver Park. Just upstream from the Garfield Road crossing, a canoe/kayak launch that is managed

by the Michigan Department of Natural Resources (MDNR) is available. There is also a small parking lot owned by Greenfield Township at the Garfield Road crossing. Proceeding downstream, there is access to several large USFS parcels available off 194th Avenue. One parking area is commonly known as the St. Hubert angler access. Further downstream is the Pines Point Campground, a USFS campground that offers canoe/kayak launching, rustic camping, and access to the river. The next access point downstream is Sischo Bayou, which is followed by Diamond Point. Both access sites are administered by the USFS. A final access point and boat ramp is available at Covell Park in Whitehall, just upstream from White Lake.

The White River is designated as a Natural River by the State of Michigan. Michigan's Natural Rivers program was enacted by the legislature in 1970 and consists of individual zoning plans within river corridors designed to protect the natural characteristics of each designated river. There are currently 16 designated Natural Rivers throughout the state. The White River was designated a Natural River in 1975 and has been protected by the program ever since. The entire mainstem of the White River (excluding those portions within the White Cloud and Hesperia city limits) and nearly all named tributaries fall under the protection of the Natural Rivers program (Anonymous 1975).

Downstream from Hesperia Dam, the White River is classified as a Type 4 trout stream by MDNR and is open to fishing year-round. Salmon and Steelhead can be harvested year-round, while the Brown Trout and Brook Trout harvest season extends from the last Saturday in April through September 30th. Minimum size limits are seven inches for Brook Trout and 10 inches for Brown Trout, Rainbow Trout, and salmon species. The daily limit is five fish, only three of which can be trout that are 15 inches or greater.

The primary citizen-led group for the White River is the White River Watershed Partnership (WRWP) whose mission is "to protect the unique characteristics and the natural resources of the White River Watershed by promoting conservation, restoration and preservation activities" (http://www.whiteriverwp.org). The WRWP has participated in the MICORPS Volunteer Stream Monitoring program, conducted temperature surveys, conducted stream habitat improvement projects, and a number of other efforts in the White River watershed.

History

Like many other rivers in Michigan, the White River was used for log drives throughout the latter half of the 19th century. Logs harvested throughout the watershed were floated downstream to lumber mills on White Lake and multiple dams were constructed throughout the watershed to support this practice. Extensive logging left the White River watershed stripped of hemlock, white pine, and large-diameter hardwoods. Both logging and driving logs downstream, along with wildfires resulting from logging, led to excessive erosion of sandy soils into the White River (Rippke and Baldwin 2021).

Although there are no official records of the original fish community in the White River, it would have had appropriate temperatures and gradients to support Arctic Grayling. Therefore, it is possible, or even likely, that Arctic Grayling was the only native salmonid inhabiting the river. Vincent (1962) lists the White River as originally supporting an Arctic Grayling population. However, by 1900 or shortly thereafter, the species was considered extirpated from all streams in the lower peninsula of Michigan (Vincent 1962). Brook Trout, Brown Trout, Rainbow Trout (Steelhead), and salmon species are all introduced and were not native to the White River watershed.

The first known stocking event occurred in 1910, when 1,000 Brook Trout of an unknown life stage were released into the lower White River (Table 1). Although fish stocking records for the early 1900s are generally sparse because many were lost in a fire in Lansing, there are a few additional records available. The first recorded Brown Trout stocking occurred in 1945 (200 adults), and Rainbow Trout were first stocked in 1965 (2,000 yearlings). It appears that Brook Trout were regularly stocked into the White River upstream of White Cloud through 1964 (O'Neal 2012), while Brown Trout have been regularly stocked into the middle reach of the White River between Hesperia and White Cloud since the mid-1900s (Tonello 2021). More recent stocking data indicates only yearling Steelhead have been stocked since the early 1990s (nearly 800,000 total; Table 1). White Lake has also been stocked with many different fish species over the years, some of which do migrate into the lower White River (Tonello 2024).

Lower White River file entries from the late 1940s feature multiple discussions among Michigan Department of Conservation (MDOC; the precursor to the MDNR of today) Fisheries and Law Enforcement personnel about dip netting in the lower White River. Although dip netting was legal for suckers and other non-game fish species, the discussions indicate that game species were also being illegally harvested. In particular, the White Bass spawning run was mentioned as being negatively affected by dip netting, along with Northern Pike, Walleye, and Steelhead. Hook and line anglers also felt that they were being denied the opportunity to target game species because dip nets were strung across the river and occupied most of the access sites between Hesperia Dam and White Lake. In the fall of 1947, the White Lake Sportsman's Club asked for a regulation change to outlaw dip netting. Dip netting remained a controversial fishing method until it was finally outlawed in the late 1950s.

The disappearance of White Bass from White Lake and the lower White River is also discussed multiple times in MDNR file entries. In correspondence from 1962, Gerald Cooper, then Director of the Institute for Fisheries Research (IFR) at the University of Michigan, discusses White Bass and how they were abundant in White Lake and the White River (and Pentwater Lake and Pentwater River) until about 1954, although additional correspondence indicated that a run did occur in 1960. In 1973, Fisheries Division Chief Wayne Tody wrote to State Representative Warren Goemaere regarding White Lake and mentions that the White Bass fishery has "completely disappeared", posing increased Alewife abundance in the early 1950s as a possible cause. It is also possible that dip netting and illegal harvest of White Bass may have also played a role in the decline of the White Bass run in the lower White River. Borgeson (1973) also discussed the White Bass run, stating that "until 1950 the river near Whitehall was known more for its fine spring fishing for White Bass which ran the river in droves at spawning time. These were sizeable fish, too; often running 2–3 pounds and up to 17–18 inches long".

In an attempt to restore the White Bass population, nearly 2,300 adult White Bass were stocked in total during 1983–1984 (Tonello 2024). The White Bass were caught via hook and line from the Detroit River by volunteer anglers and then transported across the state and stocked into the White River just upstream of White Lake by MDNR; these fish are officially recorded as being stocked into White Lake, not the lower White River, and are not included in Table 1. According to a Muskegon Chronicle article (date unknown) the White Bass stocking program was halted due to the fear of accidentally introducing White Perch into White Lake and possibly Lake Michigan.

A report by former MDNR Fisheries Biologist David Borgeson (1973) provides an excellent description of the fisheries in the lower White River at that time. Borgeson mentions that the lower White River is most famous for its Steelhead run, but that through about 1950, it was formerly known mostly for its

spring White Bass run that created an excellent fishery. The author also mentions that the lower White River holds the occasional "lunker Brown Trout" and that it would be a better Brown Trout fishery if it were regularly stocked. However, Borgeson did indicate that warmer-than-desirable temperatures for trout management continue to plague the lower White River.

In a major flood during fall 1975, Hesperia Dam was breached, sending unknown amounts of sand and sediment downstream. Correspondence from riparian landowners downstream of the dam indicates that major sedimentation occurred after the breach, smothering spawning gravel that would have been utilized by salmon, Steelhead, Walleye, and White Suckers. MDNR Fisheries Biologist Russ Lincoln recommended that if Hesperia Dam were to be rebuilt, fish passage should be incorporated into the design, while still blocking Sea Lamprey (Lincoln 1976). Despite Lincoln's recommendations, Hesperia Dam was rebuilt with no fish passage included.

The first Chinook Salmon were stocked into Lake Michigan tributaries in 1967. Although the White River was never stocked, a strong wild Chinook Salmon run quickly developed, likely from strays stocked in other rivers. In 1983, MDNR installed a Chinook Salmon harvest weir in the White River just upstream from White Lake (Trimberger 1984), and a total of 695 Chinook Salmon were harvested by a state contractor during the fall run. Exactly why the contractor was allowed to harvest Chinook Salmon is unknown, and the presence of the weir was controversial among many local residents. The harvest weir was only installed and operated in 1983, and no weir harvest of Chinook Salmon from the White River has been allowed since. Trimberger (1984) estimated the annual fall Chinook Salmon spawning run in the White River at that time (1983) to be around 20,000 adults.

Another major flood occurred during the fall of 1986, which resulted in the failure of both White Cloud and Hesperia Dams. In a writeup regarding the incident, MDNR Fisheries Biologist Ralph Hay stated "Tremendous flooding occurred on the White River. Very possible that the entire fish population have been killed. The tons of silt and sand will cover spawning gravel, fill in deep holes, and destroy the cover for trout. The White River will probably never be the same again from White Cloud downstream.". MDNR opposed the reconstruction of both White Cloud and Hesperia Dams, but both dams were subsequently rebuilt. As in 1976, no fish passage was included in the rebuilt Hesperia Dam, but a Sea Lamprey barrier was included.

In 2013, Hesperia Dam was once again breached during a January flood. However, the emergency spillway handled the overflow well, and no major sedimentation or damage was reported downstream.

The Village of Hesperia received a $270,000 grant from the Michigan Department of Environment, Great Lakes, and Energy (EGLE) Dam Risk Reduction Grant Program in 2024 and began a major effort to potentially rebuild Hesperia Dam. Prior inspections indicated major issues that needed repair, including limited effectiveness as a Sea Lamprey barrier, which forced the United States Fish and Wildlife Service (USFWS) to implement control measures in the White River upstream of Hesperia. USFWS now conducts regular treatments with chemicals designed to kill larval Sea Lamprey and limit abundance of predatory adults. The complete removal of Hesperia Dam was not viewed as a viable outcome by the Village of Hesperia or USFWS. Discussions regarding the project are ongoing, with fish passage being considered in updated plans.

Although White Cloud Dam is not within the scope of this report, it does have a major impact on the White River watershed. Due to serious structural deficiencies with the dam, and to reduce the risk of

catastrophic failure, Lake White Cloud (the impoundment created by the dam) was drained to base flow during the summer of 2025. Repairing the dam will likely be extremely expensive and no funding sources are readily available. When at full pool, White Cloud Dam has a dramatic impact on water temperature in the middle reach of the White River (Tonello 2021). However, the 2025 draw-down resulted in much cooler water temperatures below White Cloud (Jake Lemon, Trout Unlimited, personal communication). If the dam remains in a drawn-down state, or if the dam is removed, cooler temperatures could reach as far downstream as Hesperia and below Hesperia Dam.

Since 1994, a total of 199 fish caught from the lower White River have been entered into the MDNR Fisheries Division Master Angler program, including 13 different species (Table 2). White Sucker and Redhorse species were the most frequently entered species, with 51 and 46 entries, respectively. Rainbow Trout (Steelhead; 45 entries) and Chinook Salmon (26 entries) were also common.

Historical Fisheries and Temperature Surveys

The first comprehensive fisheries survey of the lower White River was conducted by the MDOC in 1952 (Schultz 1953). Many sites throughout the lower river and adjacent tributaries were surveyed by electrofishing. On the mainstem, Schultz utilized a tow-barge electrofishing unit for the 1952 survey and documented 27 different fish species (Table 3). In the report, Schultz mentions older studies of the White River from the 1920s and 1930s that were on file at the IFR and compares the 1952 results with those from earlier studies. Schultz also discusses the migratory fish runs of the lower White River, with the largest being the sucker run, followed by White Bass and then Walleye and Steelhead, the last three running in “small numbers”. Schultz concluded that the lower river was not suitable year-round trout habitat due to warmer-than-desirable temperatures, and points out that many of the tributaries to the lower White River are dammed, diminishing their capabilities for supporting trout and warming their waters below impoundments. Additionally, Schulz mentions the Smallmouth Bass population in the lower White River and that habitat improvement might benefit their numbers. Apparently sucker dip netting was the most popular form of fishing in the lower river during the early 1950s (Schultz 1953).

Another comprehensive fisheries survey of the lower White River was conducted in 1975 (Lincoln 1976). A total of 27 fish species were caught in this effort (Table 3). Lincoln mentions that conditions in the lower river did not seem to have changed appreciably since the 1952 survey, with the exception that the formerly abundant White Bass were apparently extinct from the watershed. Lincoln seconds the opinion of Schultz (1953) that the lower river is not suitable year-round trout habitat and mentions the Steelhead fishery in a positive light, along with the newly established wild Chinook Salmon run that likely developed from strays stocked in other rivers. Two curious findings of the 1975 survey were the lack of Smallmouth Bass, with only two caught, and no mention of Walleye. Similar to Schultz (1953), Lincoln (1976) also addressed the impounded nature and un-naturally warm water temperatures of tributaries to the lower White River. O’Neal (1991) further discusses the lower White River and succinctly states that “Summer water temperatures in the lower White River are too high to support trout on a year-round basis”. The temperature impacts of both the White Cloud and Hesperia Dams on the lower White River were also mentioned (O’Neal 1991).

O’Neal (2011) evaluated stream discharge and water temperatures in the mainstem of the White River for the purpose of evaluating potential fisheries management objectives for the watershed. In particular, O’Neal investigated the impacts of White Cloud and Hesperia Dams on the watershed and stated that “The potential for restoration of natural ecosystem condition and providing significant, sustainable fisheries in the White River watershed is limited without removing the deleterious effects of these two

dams". The three management options presented by O'Neal included removing both dams, removing only Hesperia Dam, and removing only White Cloud Dam. A follow-up temperature study was conducted in 2012 (O'Neal and Goldberg 2013), and the results supported the main conclusions of O'Neal (2011).

In the summer of 2018, a temperature study of the lower White River was conducted by MDNR. Continuous recording thermometers were placed at two locations below Hesperia Dam, including Michigan Avenue (also known as Loop Road) and near 184th Avenue (Table 4). The average July temperature at both locations was 72.0°F. According to Wehrly et al. (1999), average July temperatures above 66.2°F limit production of Brown Trout. Therefore, both stations were well above the recommended temperature range for year-round trout habitat.

Current Status

The most recent MDNR fisheries and habitat survey of the lower White River was conducted on July 7, 2025. A one-pass survey with a tow-barge electrofishing unit and three probes was conducted just downstream of Michigan Avenue (also known as Loop Road). The survey station was 1,800 feet in length, with the upstream limit being approximately 75 feet downstream of the Michigan Avenue bridge (Figure 2). The survey was conducted according to the protocols for random site sampling outlined in the MDNR Stream Status and Trends Program Sampling Protocols (Wills et al. 2011).

A total of 2,336 fish representing 27 different species were caught in the survey (Tables 2, 5, and 6). The most abundant species was Common Shiner, with 1,359 individuals ranging from 1 to 6 inches in length. Other abundant species included Round Goby (234 total; range = 1 to 4 inches), White Sucker (155 total; range = 1 to 17 inches), and Hornyhead Chub (139 total; range = 2 to 7 inches). Game fish species caught included Smallmouth Bass (86 total; range = 1 to 19 inches), Brown Trout (34 total; range = 2 to 16 inches), Rainbow Trout (23 total; range = 1 to 6 inches), and Northern Pike (10 total; range = 18 to 26 inches).

Appropriate aging structures (scales and/or spines) were collected from game and panfish species for age and growth analyses. Weights were calculated for all fish species using standard length-weight regression equations compiled by Schneider et al. (2000b). Mean length-at-age was used to obtain a growth index by calculating the difference from the state average length (Schneider et al. 2000a). The mean growth indices for a given game fish species was generated by averaging the growth indices for each age class represented by at least five fish (Table 7). Results of growth analyses indicated that Brown Trout and Northern Pike were growing at rates faster than the state average, while Rainbow Trout and Smallmouth Bass were growing at rates slower than the state average (Table 7).

The 2025 survey reach began at Vida Weaver Park (administered by the Village of Hesperia). Downstream from there, the entire reach was privately owned on both sides of the river, with a mix of wooded and cleared residential riparian zones. The river averaged nearly 91 feet in width, with an average depth of 1.6 feet and a maximum depth of 4.1 feet. The stream morphology consisted of 92.3% run, 7.7% riffle, and 0% pool. Substrates consisted of 29.2% boulder, 29.2% gravel, 20.0% large cobble, 18.5% small cobble, and 1.5% of both silt and sand (Table 8).

Analysis and Discussion

The 2025 fisheries survey of the lower White River was the first such survey conducted in 50 years. The survey showed a diverse array of non-game fish and gamefish species, which notably included Smallmouth Bass, Northern Pike, Steelhead, and Brown Trout.

The 2025 survey showed a robust population of Smallmouth Bass. While the Smallmouth Bass population in the lower White River is likely migratory to some degree, with individuals migrating upstream from White Lake and/or Lake Michigan, Smallmouth Bass ranging from 1–19 inches in length and representing nine different year-classes were observed. Given the observed length and age distributions, at least some of the Smallmouth Bass appear to be residents. Whether they are migratory or residents, Smallmouth Bass provide an excellent summer fishery opportunity for anglers targeting the lower White River.

Previous temperature and fisheries surveys (Table 4; Schultz 1952; Lincoln 1976; O'Neal and Goldberg 2013) have shown the lower White River to be too warm for year-round trout survival. However, the 2025 survey still included low catches of Brown Trout and Steelhead, which indicates that recent temperature data may not tell the entire story. Cold water refugia (e.g., groundwater seeps, springs, and colder tributaries, particularly the North Branch of the White River) must be present to allow low numbers of Brown Trout and juvenile Steelhead to survive and occasionally hold over from one year to the next. Some of the Brown Trout caught in the 2025 survey were hatchery fish (determined by fin erosion from hatchery raceways), while some were clearly wild fish. It is likely that the hatchery fish were stocked in the middle White River and migrated downstream over Hesperia Dam and into the lower White River. All Steelhead observed in the 2025 survey were wild fish. Anglers commonly report incidental catches of Brown Trout and juvenile Steelhead in the lower White River when targeting salmon and adult Steelhead during cooler months. The Steelhead fishery in the lower White River is extremely popular with anglers and consists of both stocked and naturally reproduced fish.

Management Direction

In general, the lower White River has remained relatively intact and healthy. The lower river below Hesperia Dam is, without question, the most heavily fished reach of the White River, with most angling effort targeting migratory Chinook Salmon and Steelhead. Other species commonly pursued by anglers include Smallmouth Bass, Northern Pike, White Sucker, and several species of Redhorse. Of these species, only Steelhead are stocked. The White River is known as a "destination fishery" for both Chinook Salmon and Steelhead, with many anglers traveling long distances and from out-of-state to target both species. Professional river guides also provide guided float trips throughout the lower river. Collectively, the salmon and Steelhead fisheries heavily contribute to the local economy of Hesperia and the surrounding area. Although some naturally reproduced Steelhead are caught from the lower White River by anglers each year, temperature issues limit the natural reproduction of this species. Therefore, continued stocking of Steelhead into the lower White River is recommended, with a suitable stocking rate of about 20,000 yearlings annually. Stocking of Chinook Salmon is not necessary, because the species appears to reproduce very well on the abundant gravel and cobble beds available in the lower White River.

Dams play a huge role in limiting the Steelhead fishery in the lower White River. The primary limiting factor for natural reproduction of Steelhead is Hesperia Dam, which prevents access to colder, upstream reaches of the watershed. If Hesperia Dam was updated to include a fish passage structure, as is currently being considered, Steelhead could access the middle White River and its tributaries, which

would add an additional 27 mainstem river miles (plus tributary mileage) of more suitable spawning and rearing habitat. The drawdown of Lake White Cloud in 2025 will make the middle White River even colder and more suitable for Steelhead reproduction. If White Cloud Dam were eventually removed, Steelhead could also access an additional 21 more mainstem river miles (plus even more tributary mileage) of the watershed, with the potential for producing even more wild fish. Chinook Salmon and Coho Salmon would also benefit from the same management actions. Currently, Coho Salmon are only occasionally caught in the White River, and a larger Coho Salmon run would enhance the existing fishery and provide anglers with more variety.

MDNR Fisheries Division will continue to advocate for fish passage at Hesperia Dam while still utilizing the structure as an effective Sea Lamprey barrier. An ideal solution would be to provide fish passage for all species, at least at times when Sea Lamprey are not migrating. At the very minimum, any re-build of Hesperia Dam should provide fish passage for jumping salmonids, including Steelhead, Chinook Salmon, Coho Salmon, and Brown Trout.

Other dams also negatively impact the lower White River. Specifically, dams on Silver, Sand, and Cleveland Creeks warm the waters of those streams and prevent fish passage into their upper watersheds. Removal of these dams would increase cold-water habitat available in both the lower White River and tributary reaches, which would result in greater production of wild Steelhead, Chinook Salmon, Coho Salmon, Brown Trout, and Brook Trout.

Although present, Brown Trout do not provide a major fishery in the lower White River. Given current temperature limitations, stocking Brown Trout below Hesperia Dam would be unlikely to create a summer trout fishery of any magnitude. While there are apparently some coldwater refugia available in the lower river, it is unlikely to provide enough habitat for large numbers of Brown Trout to survive the summer and hold over from one year to the next. Summer fishing on the lower White River is already considered good for Smallmouth Bass, so stocking Brown Trout would be unlikely to generate additional angler effort. Other nearby streams offer both stocked and wild Brown Trout fisheries for summer anglers (e.g., Muskegon River below Croton Dam, middle and upper White River, and the entire Pere Marquette River watershed). Therefore, no Brown Trout stocking program should be initiated below Hesperia Dam. MDNR Fisheries Division should continue to monitor conditions in the lower White River because it is possible that future management actions related to White Cloud and Hesperia Dams could improve summer water temperatures in the lower White River, thereby making it more suitable for survival of stocked Brown Trout.

The White River has remained a high-quality fishery in large part due to a lack of intensive human development within the watershed. Much of the watershed remains in a forested, undeveloped state. Therefore, the primary management goal for the White River watershed should be protection. Protection from significant changes in land use in the future will be very important to maintain the fisheries in the White River watershed. The Natural Rivers designation for the White River should help with this management goal as pressure to develop additional areas will likely increase in the coming years.

Land use will be critical to the continued health of the White River watershed. According to DeMol (2009), wetlands covered about 56,300 acres of the pre-settlement watershed, but by 1978, wetland coverage had declined nearly 30% to about 41,400 acres. Most of this change resulted from the conversion of wetlands to agricultural production. Future land use practices and wetland loss may

result in the deterioration of both water quality and aquatic habitat. Specifically, wetland loss and increasing impervious surfaces and agricultural use in the watershed could lead to more surface runoff and increased flashiness and summer water temperatures, all of which would make the watershed less suitable for salmonids and less resilient to climate change.

Prior to the 2025 MDNR survey, the lower White River had not been surveyed since 1975. Given the importance of the lower river to both anglers and the surrounding communities, both fish community and habitat surveys should be conducted on at least a 10-year basis, rather than waiting another 50 years. More locations should also be surveyed to provide a comprehensive assessment of conditions both within the lower river and in more upstream reaches of the watershed. Given recent uncertainties related to both White Cloud and Hesperia Dams, additional temperature monitoring should also be planned to evaluate any changes related to removal or management of both structures. Other less comprehensive fisheries surveys should be conducted whenever possible at other locations throughout the watershed. Many of the tributaries of the lower White River have not been surveyed in decades and should be surveyed as soon as possible.

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Tables and Figures

Table 1. Fish stocked into the lower White River, below Hesperia Dam 1910–2025.

Year	Species	Number	Life Stage	Strain
1910	Brook Trout	1,000		
1935	Brook Trout	9,000	7-month	
1936	Brook Trout	1,500	7-month	
1942	Brook Trout	1,000	Yearling	
1945	Brown Trout	200	Adult	
1965	Rainbow Trout	2,000	Yearling	
1968	Rainbow Trout	25,000	Yearling	Michigan
1969	Rainbow Trout	8,000	Yearling	Michigan
1970	Rainbow Trout	19,000	Yearling	Michigan
1971	Rainbow Trout	20,000	Yearling	Michigan
1972	Rainbow Trout	20,361	Yearling	Michigan
1973	Rainbow Trout	37,500	Yearling	Michigan
1974	Rainbow Trout	33,092	Yearling	Michigan
1975	Rainbow Trout	10,120	Yearling	Michigan
1976	Brown Trout	5,017	Yearling	
	Brown Trout	7,500	Spring fingerling	
1977	Brown Trout	4,000	Yearling	
1978	Brown Trout	4,000	Yearling	
	Rainbow Trout	20,000	Yearling	Michigan
1979	Brown Trout	2,000	Yearling	
1980	Rainbow Trout	30,081	Spring fingerling	Michigan
1981	Brown Trout	2,000	Yearling	Michigan
	Rainbow Trout	20,000	Fall fingerling	Michigan
1982	Brown Trout	1,900	Yearling	Harrietta
	Rainbow Trout	20,000	Spring fingerling	Michigan
1983	Brown Trout	4,000	Yearling	Harrietta
	Rainbow Trout	25,000	Yearling	Michigan
1984	Brown Trout	4,000	Yearling	Harrietta
	Rainbow Trout	15,000	Yearling	Michigan
	Rainbow Trout	20,000	Yearling	Siletz
1985	Brown Trout	3,600	Yearling	Harrietta
	Rainbow Trout	10,000	Yearling	Michigan
1986	Brown Trout	3,700	Yearling	
	Brown Trout	6,000	Fall fingerling	Plymouth Rock
	Rainbow Trout	26,000	Yearling	Skamania
1987	Brown Trout	3,760	Yearling	Plymouth Rock
	Rainbow Trout	17,507	Yearling	Skamania
1988	Brown Trout	4,000	Yearling	Plymouth Rock
	Rainbow Trout	15,000	Yearling	Skamania

Table 1. –Continued.

Year	Species	Number	Life stage	Strain
1989	Brown Trout	4,000	Yearling	Plymouth Rock
	Rainbow Trout	100,875	Fry	Michigan
	Rainbow Trout	15,000	Fall Fingerling	Skamania
	Rainbow Trout	15,000	Yearling	Skamania
1990	Brown Trout	3,999	Yearling	Soda Lake
	Rainbow Trout	14,650	Yearling	Michigan
	Rainbow Trout	11,551	Yearling	Skamania
1991	Brown Trout	3,980	Yearling	Plymouth Rock
	Rainbow Trout	14,000	Yearling	Michigan
1992	Rainbow Trout	17,500	Yearling	Michigan
1993	Rainbow Trout	21,300	Yearling	Michigan
1994	Rainbow Trout	22,000	Yearling	Michigan
1995	Rainbow Trout	23,500	Yearling	Michigan
1996	Rainbow Trout	21,300	Yearling	Michigan
1997	Rainbow Trout	24,000	Yearling	Michigan
1998	Rainbow Trout	20,505	Yearling	Michigan
1999	Rainbow Trout	22,187	Yearling	Michigan
2000	Rainbow Trout	25,001	Yearling	Michigan
2001	Rainbow Trout	21,998	Yearling	Michigan
2002	Rainbow Trout	23,100	Yearling	Michigan
2003	Rainbow Trout		Yearling	Michigan
2004	Rainbow Trout	22,300	Yearling	Michigan
2005	Rainbow Trout	22,000	Yearling	Michigan
2006	Rainbow Trout	24,419	Yearling	Michigan
2007	Rainbow Trout	22,207	Yearling	Michigan
2008	Rainbow Trout	23,585	Yearling	Michigan
2009	Rainbow Trout	22,000	Yearling	Michigan
2010	Rainbow Trout	24,208	Yearling	Michigan
2011	Rainbow Trout	22,519	Yearling	Michigan
2012	Rainbow Trout	23,599	Yearling	Michigan
2013	Rainbow Trout	22,988	Yearling	Michigan
2014	Rainbow Trout	24,545	Yearling	Michigan
2015	Rainbow Trout	23,710	Yearling	Michigan
2016	Rainbow Trout	23,337	Yearling	Michigan
2017	Rainbow Trout	24,202	Yearling	Michigan
2018	Rainbow Trout	23,877	Yearling	Michigan
2019	Rainbow Trout	23,998	Yearling	Michigan
2020	Rainbow Trout	24,000	Yearling	Michigan
2021	Rainbow Trout		Yearling	Michigan
2022	Rainbow Trout	24,174	Yearling	Michigan
2023	Rainbow Trout	23,998	Yearling	Michigan
2024	Rainbow Trout	25,683	Yearling	Michigan
2025	Rainbow Trout	24,065	Yearling	Michigan

Table 2. DNR Fisheries Division Master Angler program entries for fish caught from the lower White River, 1994–2025.

Species	Number of Entries
White Sucker	51
Redhorse species	46
Rainbow Trout	45
Chinook Salmon	26
Walleye	11
Hognose Sucker	7
Brown Trout	3
Common Carp	4
Northern Pike	2
Bluegill	1
Channel Catfish	1
Coho salmon	1
Gizzard Shad	1
Total	199

Table 3. Presence/absence of fish species in historical fisheries surveys conducted at various locations in the lower White River.

Species	1952	1975	2025
Banded Killifish	x		
Black Bullhead		x	
Blacknose Dace	x	x	x
Blackside Darter	x	x	x
Blacknose Shiner	x		
Bluegill			x
Bluntnose Minnow	x	x	x
Bowfin		x	x
Brown Trout			x
Burbot	x	x	x
Central Mudminnow	x		
Central Stoneroller	x	x	
Chinook Salmon		x	
Common Shiner	x	x	x
Creek Chub	x	x	x
Golden Redhorse			x
Golden Shiner	x	x	
Grass Pickerel	x		
Green Sunfish		x	
Hornyhead Chub			x
Hybrid Sunfish		x	
Johnny Darter	x	x	x
Largemouth Bass	x	x	
Logperch	x		
Longnose Dace	x	x	x
Mottled Sculpin	x	x	
Northern Hog Sucker	x	x	x
Northern Pike	x	x	x
Pumpkinseed	x	x	x
Rainbow Darter	x	x	x
Rainbow Trout		x	x
Redside Dace*		x	
Redfin Shiner			x
Redhorse spp.	x		
River Chub		x	
Rock Bass	x		x
Round Goby			x
Shorthead Redhorse			x
Silver Redhorse			x
Smallmouth Bass	x	x	x
Spotfin Shiner			x

Table 3. –Continued.

Species	1952	1975	2025
Western Lake Chubsucker	x		
White Sucker	x	x	x
Yellow Bullhead	x	x	x

*Referred to as "N. Redside Dace" on the survey sheet. The White River is not within the native range of Redside Dace, and it is possible this refers to Northern Redbelly Dace.

Table 4. Results of the most recent MDNR temperature study in the lower White River conducted during the summer of 2018. Temperatures are provided in degrees Fahrenheit (°F).

Location	Month	Min.	Ave.	Max.
Michigan Avenue	June	60.4	67.5	81.4
Michigan Avenue	July	63.7	72.0	82.0
Michigan Avenue	August	62.9	69.5	78.1
184th Avenue	June	60.0	67.6	80.4
184th Avenue	July	64.2	72.0	81.2
184th Avenue	August	63.0	69.7	76.1

Table 5. Number, weight, and length of fish species collected from the lower White River during the Stream Status and Trends electrofishing survey conducted on July 7, 2025.

Species	Number	Percent by Number	Weight (pounds)	Percent by Weight	Length Range (inches)[1]	Average Length	Percent Legal Size[2]
Blacknose Dace	20	0.9	0.2	0.1	2–3	2.6	
Blackside Darter	15	0.6	0.1	0.0	2–3	2.7	
Bluegill	1	0.0	0.1	0.0	5–5	5.5	100 (6)
Bluntnose Minnow	40	1.7	0.2	0.1	1–3	2.2	
Bowfin	1	0.0	1.1	0.4	14–14	14.5	
Brown Trout	34	1.5	9.9	3.7	2–16	8.1	24 (10)
Burbot	2	0.1	1.3	0.5	11–14	13.0	
Common Shiner	1359	58.2	23.2	8.8	1–6	3.4	
Creek Chub	69	3.0	1.0	0.4	1–5	3.2	
Golden Redhorse	22	0.9	40.8	15.4	13–19	17.3	
Hornyhead Chub	139	6.0	6.9	2.6	2–7	4.6	
Johnny Darter	12	0.5	0.0	0.0	1–2	2.1	
Longnose Dace	7	0.3	0.1	0.0	1–3	2.6	
Northern Hog Sucker	60	2.6	51.9	19.6	4–16	12.3	
Northern Pike	10	0.4	24.8	9.4	18–26	22.1	30 (24)
Pumpkinseed	2	0.1	0.2	0.1	3–5	4.5	0 (6)
Rainbow Darter	15	0.6	0.1	0.0	1–2	2.0	
Rainbow Trout	23	1.0	0.1	0.0	1–6	1.9	0 (10)
Redfin Shiner	20	0.9	0.2	0.1	2–3	2.9	
Rock Bass	4	0.2	1.7	0.6	6–9	8.0	100 (6)
Round Goby	234	10.0	0.0	0.0	1–4	2.7	
Shorthead Redhorse	3	0.1	7.6	2.9	17–19	18.5	
Silver Redhorse	1	0.0	3.2	1.2	21–21	21.5	
Smallmouth Bass	86	3.7	52.4	19.8	1–19	8.5	13 (14)
Spotfin Shiner	1	0.0	0.0	0.0	2–2	2.5	
White Sucker	155	6.6	37.3	14.1	1–17	5.2	
Yellow Bullhead	1	0.0	0.1	0.0	6–6	6.5	
Total	2,336	100	264.5	100			

[1]Note that some fish were measured to 0.1 inch and others were measured to inch group (e.g., "5" = 5.0–5.9 inches, "12" = 12.0–12.9 inches, etc.)

[2]Percent legal size or acceptable size for angling are provided in parentheses in units of inches.

Table 6. Length-frequency distributions collected from the lower White River during the Stream Status and Trends electrofishing survey conducted on July 7, 2025.

Inch Class	Black-nose Dace	Black-Side Darter	Bluegill	Bluntnose Minnow	Bowfin	Brown Trout	Burbot	Common Shiner	Creek Chub
1				14				32	4
2	19	12		24		7		250	27
3	1	3		2				926	27
4								110	8
5			1					37	3
6						1		4	
7						4			
8						8			
9						6			
10						3			
11							1		
12						4			
13									
14					1		1		
15									
16						1			
17									
18									
19									
20									
21									
22									
23									
24									
25									
26									
Total	20	15	1	40	1	34	2	1359	69

Table 6. –Continued.

Inch Class	Golden Redhorse	Horny-Head Chub	Johnny Darter	Longnose Dace	Northern Hog Sucker	Northern Pike	Pumpkin-seed
1			5	3			
2		2	7				
3		33		4			1
4		57			3		
5		41					1
6		3					
7		3			1		
8					3		
9					2		
10					4		
11					6		
12					14		
13	3				12		
14					9		
15					4		
16	3				2		
17	7						
18	8					2	
19	1					1	
20						2	
21							
22						1	
23						1	
24						1	
25							
26						2	
Total	22	139	12	7	60	10	2

Table 6. –Continued.

Inch Class	Rainbow Darter	Rainbow Trout	Redfin Shiner	Rock Bass	Round goby	Short-Head Redhorse	Silver Redhorse
1	7	18			7		
2	8	4	12		170		
3			8		52		
4					5		
5							
6		1		2			
7							
8							
9				2			
10							
11							
12							
13							
14							
15							
16							
17						1	
18						1	
19						1	
20							
21							1
22							
23							
24							
25							
26							
Total	15	23	20	4	234	3	1

Table 6. –Continued.

Inch Class	Small-Mouth Bass	Spot-Fin Shiner	White Sucker	Yellow Bullhead
1	16		57	
2		1	6	
3	1		40	
4	11		11	
5	2			
6	5		3	1
7	3		1	
8	2			
9	10		1	
10	5		4	
11	7		6	
12	6		5	
13	7		5	
14	6		13	
15	2		1	
16	1			
17	1		2	
18				
19	1			
20				
21				
22				
23				
24				
25				
26				
Total	86	1	155	1

Table 7. Comparison of weighted mean length-at-age for selected fish species collected from the lower White River during the Stream Status and Trends electrofishing survey conducted on July 7, 2025. Growth comparisons in the last column are collected across all ages. Number of fish aged is provided in parentheses.

Species	0	I	II	III	IV	V	VI	VII	X	Growth Compared to State Average (inches)
Bluegill					5.9					--
Bluegill					(1)					
Brown Trout	2.5	7.4	9.2	12.6	16.7					+1.0
Brown Trout	(7)	(6)	(15)	(2)	(1)					
Northern Pike			20.1	23.9						+1.6
Northern Pike			(5)	(5)						
Pumpkinseed				5.4						--
Pumpkinseed				(1)						
Rainbow Trout	1.5	6.3								-0.5
Rainbow Trout	(14)	(1)								
Smallmouth Bass	1.3	4.6	6.8	10.2	12.8	14.5	15.0	17.0	19.3	-0.9
Smallmouth Bass	(10)	(12)	(8)	(23)	(14)	(6)	(1)	(2)	(1)	

Table 8. Selected habitat data for the lower White River collected during the Stream Status and Trends habitat survey conducted on July 7, 2025.

Reach Classification	Percentage
Riffle	7.7
Run	92.3
Pool	0
Miscellaneous Characteristics	**Value**
Average Width (ft)	90.9
Average Depth (ft)	1.6
Max Depth (ft)	4.1
Discharge (cfs)	108.4
Woody Cover (sq ft)	1,390
Linear Wood (ft)	552
Substrate Composition	**Percentage**
Clay	0.0
Detritus/Silt	1.5
Sand	1.5
Gravel	29.2
Small Cobble	18.5
Large Cobble	20.0
Boulder	29.2
Wood	0.0
Island	0.0

Figure 1. The lower White River, Oceana and Muskegon Counties, Michigan.

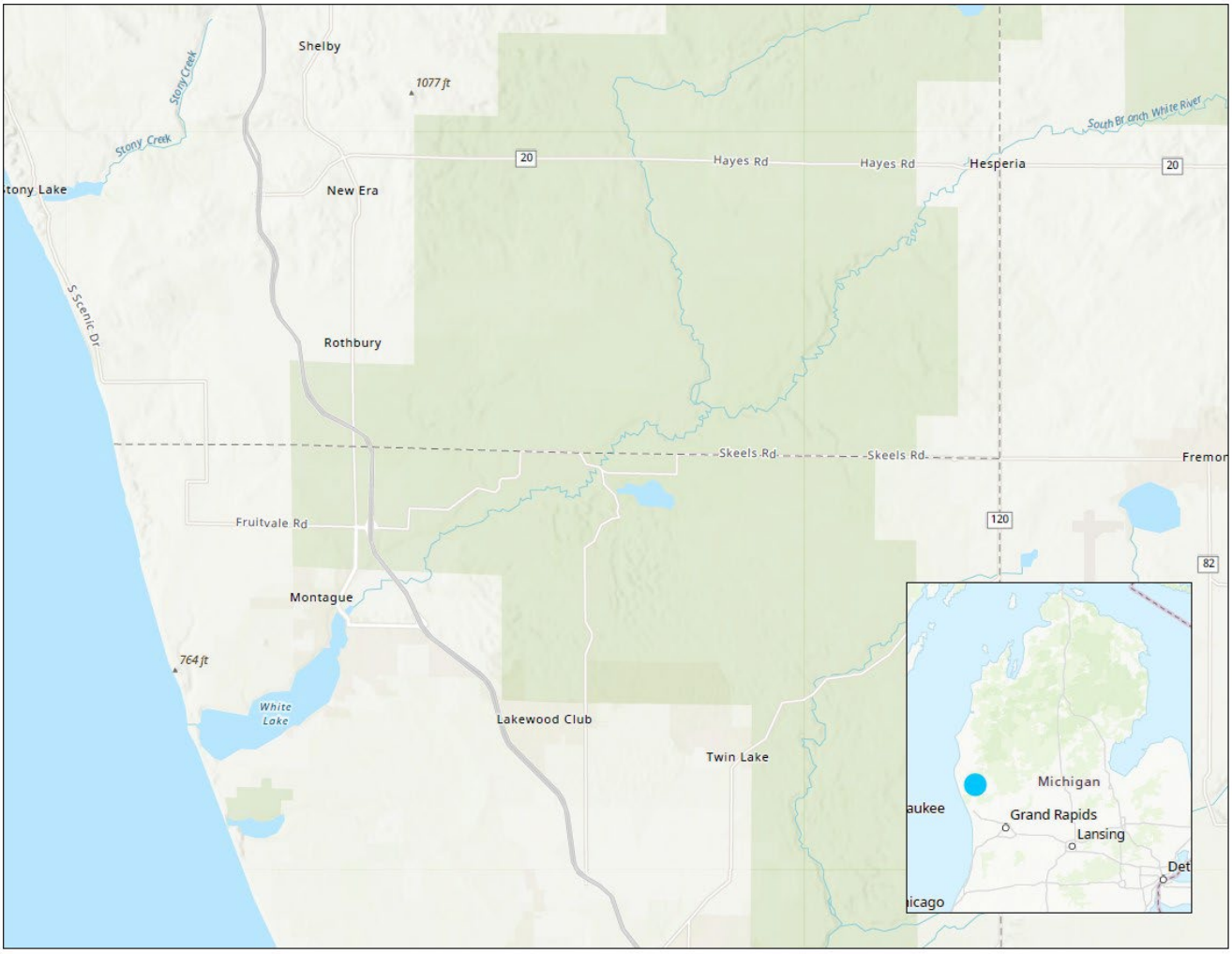

Figure 2. The 2025 MDNR survey station on the lower White River, Oceana County, Michigan.

Literature Path

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Scott Heintzelman, Unit Review and Approval
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