

West Nishnabotna River Water Trail Plan

Existing Conditions Assessment

The West Nishnabotna River in Shelby County is located directly adjacent and connected to the Pottawattamie County segment of the river, which is a state designated water trail. The river has been a source of recreation for many years, primarily canoeing and fishing, according to old 1980s river and float guides (cite). However, the past few years local leaders have reported a huge increase in activity on this reach of the river, primarily with kayaking and tubing.

This water trail effort began in 2019 when the City of Harlan contacted the DNR asking for a river access at Highway 44. It was later learned that Shelby County Conservation had drafted a letter of intent and support for a water trail on June 11, 2012. The DNR enlisted the assistance of Golden Hills RC&D, and together with the City of Harlan and Shelby County Conservation Board are gauging local interest, and determining the feasibility of state designated water trail from Reinig Access to the southern Shelby County line, approximately 18 miles.

Water Trails are recreational corridors and routes on rivers and lakes that provide a unique experience. Water trails help re-connect Iowans to their waterways' history, heritage, geology, fisheries, and wildlife. Water trails provide adequate access and can include amenities like riverside camping, wild spaces, picnic areas, and restrooms. Water trails attract watercraft rentals provided by local, state, and federal partners. Coordinated signage and mapping systems guide users toward the types of experiences they seek, ranging from highly social first-time river experiences lasting a few hours to multi-day solo adventures.

Water trail partners are encouraged to steward the natural and economic values of their waterways to help boost local economies and provide Iowans with outdoor experiences right out their back doors. Iowa DNR water trails staff lead through setting standards for planning requirements, providing funding and technical assistance, and maintaining the framework of the overall system. Likewise, a sponsor is needed to lead the local effort to help manage and maintain the water trail, assisting with safety and interpretive campaigns and programming to provide high quality recreational experiences. Shelby County Conservation Board has agreed to be the water trail sponsor should the West Nishnabotna receive state designation.

THE RIVER ITSELF

The West Nishnabotna is a non-meandered stream beginning in Carroll county and flowing southwesterly into Fremont County, where it meets the East Nishnabotna River to form the Nishnabotna River. The Nishnabotna River flows south into northwestern Missouri, where it meets the Missouri River.

The study segment begins at Reinig Access northeast of Harlan and ends at the Shelby-Pottawattamie County line less than a mile north of Avoca (pop. 1,506). It passes through the east side of the City of Harlan (population 5,106), and to the east of the unincorporated community of Corley. It passes through Nishna Bend Recreation Area and a small riparian prairie area, both managed by Shelby County Conservation Board. .

The river is currently used for fishing, paddling and tubing, and likely other less popular activities, as well. Shelby County Conservation and other groups host occasional float trips. Large motor boats are typically not able to use the river due to shallow flows, but smaller Jon boats are able to navigate at high flows. No liveries or boat rental businesses are currently based in Shelby County, though a livery based downstream in Pottawattamie County occasionally uses Nishna Bend as access starting point for longer paddling trips.

There are only two official public accesses on this stretch of river. One located at Reinig Access Area and the other at Nishna Bend Recreation Area. Both are poorly located, and in poor condition.

The water access at Nishna Bend is located perpendicular to the river on a point bar in what Iowa Flood Center has identified as the two-year flood inundation area. It can only be reached with certainty by walking down a steep eroded incline. In dry conditions, 4-wheel drive vehicles have access to the point bar, but it is nearly impossible to turn a trailer around. High water events have been common in the past few years, and structures in areas like this are vulnerable to high water velocities during the event and are left with high volume sediment deposition after the event.

The water access at Reinig is also perpendicular to the river. Banks are steep and have not been shaped, therefore the ramp area catches tons of sediment during high water events. The parking area has severe drainage issues

Access to the river is also gained from private land and road crossings. Highway 44 on the east side of Harlan is one of the most heavily used undeveloped access points, but river users must park their cars on the side of a busy highway and climb more than 200 feet down a steep earthen bank to launch their tubes and/or paddlecraft. On the north side of Harlan, river users launch from the M36 Bridge onto the West Fork of the West Nishnabotna and float just under a mile until they reach the main branch.. Other bridge crossings offer undeveloped access at county road F58 near Corley, F66 just north of the southern county line, and G18 west of Avoca in Pottawattamie County. Some adventurous kayakers reported paddling from

The current water trail designation in Pottawattamie County begins at the Shelby County line, but the first access on this stretch of river is about 11 miles downstream from the county line at Botna Bend Park in Hancock. Instead, in Avoca, the water trail access is located on the East Branch of the West Nishnabotna River at Edgington Memorial Park, a city park on the east side of Avoca. The East Branch meets the main branch two miles south of Avoca. The East Branch

has a smaller watershed and thus a narrower channel with different characteristics than the main branch. The Pottawattamie County Water Trail plan recommends a new access on the west side of Avoca. The most likely site for a new access would be along county road G18 (Tamarack Road) less than a mile west of Avoca.

The West Nishnabotna River is the most popular interior river in southwest Iowa for recreation Study (Iowa State University 2009). The study segment included the entire West Nishnabotna River in Iowa, and we do not have accurate statistics for the Shelby County portion alone, nor do we have more recent data. According to the 2009 study, almost one-third of West Nish users used some sort of boat while recreating on the river.

There is no formalized local paddling group, although the Nish Nut Yakers group does organized floats. There is also a Facebook group, "Iowa's Nishnabotna Kayakers," where members share information about group outings on the river. Golden Hills RC&D manages a Facebook page and website for the West Nishnabotna Water Trail in Pottawattamie County and hosts regular educational programs, often in partnership with Pottawattamie Conservation and other groups.

Table 1. Recreational Use Reported on Southwest Iowa Rivers*

River Segment	Trips Reported to River in 2009	Fish-ing	Hunt-ing	Boat with Motor	Kayak or Canoe	Swim, Tube, Play in Water	Trails	Camp-ing	Relaxing, Picnicking	Wildlife Watching
West Nishnabotna	117	63.2%	37.6%	5.1%	23.1%	22.2%	35.0%	35.0%	36.8%	49.6%

*Source: Iowa Rivers and River Corridors Recreation Survey 2009 (Iowa State University)

Water Trail Existing Conditions

No dams are located on this reach of the river. Several hazards have been identified, including woody debris, strainers, and snags. Some junk can be seen from the stream but is generally not in the channel and thus poses little risk to river users, with the exception of one river-wide log jam less than a mile upstream of the proposed Avoca West access. Severe to extreme streambank erosion can be seen along the river, particularly on outer bends.

Based on anecdotal evidence, the most heavily used portion of the river in Shelby County is between Harlan (Highway 44) and Nishna Bend.

In addition to the main branch of the West Nishnabotna, some people access the West Branch, which flows into the main branch just north of Harlan. People currently put in along County Road M36 on the northeast edge of Harlan near the county fairgrounds. Some people also enter farther upstream at County Road F32 east of the Rosman Glendale Farms Golf Course.

Segment	Stream Speed	Segment Distance	Paddling Use * Volume	debris, trees, blockage notes
Reinig Access to Highway 44	slow		Medium	Some large strainers
Highway 44 to Nishna Bend	slow		High	Some strainers but not blocking entire channel
Nishna Bend to F66	slow		Medium	Some strainers but not blocking entire channel
F66 to Avoca West	slow		Medium	Strainers/debris nearly blocking entire channel

*Use volume estimates are relative only to other segments in the county and were generated by anecdotal observations

Water Trail Access Points

Table 3. River Access Ownership and Basic Characteristics

Facility Where Access is Located	Access Number	Access Owner	Access Manager	Launch Type	Streambank Height
Reinig Access	xx	SCCB	SCCB	Carry down	15
Nishna Bend	xx	SCCB	SCCB	Carry down	10

Public facilities and other recreational opportunities are only available at Nishna Bend Recreation Area (Table 4).

Table 4. River Access Amenities

Facility Where Access is Located	River Access Number	Restrooms	Amenities at Launch	Drinking Water within 1/4 mile	Camping	Other Points of Interest at Access

Reinig Access	xx	No	None	No	No	N/A
Nishna Bend	xx	Yes		Yes	Yes	Ponds for fishing/paddling; hunting; nature center

River Management Conditions on the West Nishnabotna. Law enforcement along the water trail is conducted by the Shelby County Sheriff's office and City of Harlan Police Department. One conservation officer is assigned to Shelby County by Iowa Department of Natural Resources. Local law enforcement agencies use compatible communications systems that meet federal requirements. Iowa DNR uses a different radio frequency than the county, though, so communication can be an issue.

According to the DNR conservation officer, underage drinking and irresponsible activities are the main concerns with law enforcement on this stretch of the river. In most cases, the sheriff will wait until people get off the river and make sure someone is sober to drive. Local authorities occasionally receive calls about parking issues on roads where people access the river, especially at Highway 44, F66, and the bridge by the race track on the north side of Harlan.

Although there is not an official protocol or plan for incidents on the river, local and state agencies generally have expertise and equipment to access the river. The steep banks can be a challenge, however, and some portions of the river are a mile or more from the nearest road.

Harlan Volunteer Fire Department (VFD) helps with river incidents and has rope rescue equipment and an ATV available. County sheriff has an ATV with a basket. Avoca and Kirkman VFDs also respond to calls on this stretch of the West Nish. Many volunteer firefighters have completed swiftwater rescue training. They also have access to drones, which can be used to help find people on the river, and can carry life jacket out if needed. Shelby County Conservation has flat bottom boat that can be used to reach people on the river.

If resources are needed that are not currently available within Shelby County, emergency management and first responders can typically receive assistance from nearby counties. A local saw team can help with tree/log clearing on the river when needed. Cass County, about 20-30 miles southeast of the water trail, has a dive team that can be used. Crawford County, immediately north of Shelby County, has a motorboat. Shelby County would be more likely to purchase a boat if they saw increased demand, which could happen with water trail improvements and increase use.

Shelby County Sheriff has river gages at Irwin and Harlan. People can call non-emergency line and get info on river levels, which can be helpful for ensuring water levels are safe for paddling and other recreation.

Recreational Conditions Related to the Water Trail.

Due to streambank, gully, rill, and sheet erosion throughout the watershed, the West Nish carries significant amounts of sediment. This can cause issues with accesses, and they may need to be frequently cleared after river levels rise. The steep and tall streambanks also mean that adding new or improving existing accesses can require major earthwork.

As stated earlier, aligning how a river is managed with the type and volume of water trail users is a key goal of the state water trails program. Generally, Iowa DNR finds that the greater the volume of use and the shorter the segment length, the greater need exists for management of people and river conditions. Both types of management are important and needed. River condition management includes the level of ongoing removal of large woody debris snags and the maintenance of launches; Table 6 aligns the level of river management expected for the four types of experience classification on state-designated water trails. People management can include littering and disruptive behavior, as well as illegal activities such as vandalism, alcohol consumption while paddling, and trespassing; Table 7 aligns people management elements suggested for experience classifications.

Current river infrastructure and management of this section of this river segment precludes it from being assigned an experience classification. Iowa DNR does not promote entry onto and off the river at road intersections due to safety and trespassing concerns.

Beginner	Intermediate	Advanced
Segments are generally less than six miles. Hazards are few and easy to avoid in normally slow-moving currents. Users can easily access these segments from parking areas, and will not need to portage, except to walk a boat around some shallow riffles or make the going easier around an obstacle.	Segments are generally less than nine miles. Users should have the ability to recognize and avoid hazards in moderate river flow. The need to portage is rare, but users should be able and willing to carry boats and gear a short distance. Access to the river may involve a short portage, and the launch or take-out may be a bit difficult.	Segments may exceed nine miles. Hazards are likely and often occur in fast-moving water. The need to portage may be frequent or may involve carrying boats and gear a long distance. Access to the river may involve a long portage, and the launch or take-out may be from steeper banks or faster moving water.

Table 6. Water Trail Access & River Management Elements Relating to Water Trail Classification

	Gateway	Recreational	Challenge	Wilderness
Accesses	Maintenance plan for at least a pair of accesses cleaned within 1-2 weeks of siltation, or rapidly repaired after flood damage.	Maintenance plan for accesses cleaned within a month of siltation, or rapidly repaired after flood damage.	Maintenance can be sporadic, and may be at a scale volunteers or small work parties can conduct.	
On-Land	Weekly mowing along edges of roadways and pedestrian areas, scheduled resurfacing plans are employed	Edges of roadways and pedestrian areas mowed approximately monthly.	Any amenities are intentionally kept light and remote -- paddle in campsites may be considered appropriate.	
On-River	Response plan for river-wide tree/debris blockage may be developed	Only major, river-wide obstructions that become chronic, cannot be easily portaged, and result in temporary "challenge" condition should be addressed.	Woody debris never maintained in a channel.	
Resources	Public launch fees may be considered to support maintenance. Pooled resources among various local and DNR water trail partners to create management / maintenance entities or jointly fund staff is encouraged.	Pooled resources among various local and DNR water trail partners to create management / maintenance entities or jointly fund staff is encouraged.	Cooperative funding can be explored if need arises.	Pooled resources among various local and DNR water trail partners to create management / maintenance entities or jointly fund staff is encouraged. Public launch fees or back-country-type camping permits may be considered.
Water Trail Signage	Sign maintenance: Inspected three times per warm season and replacements made immediately	Sign maintenance: Inspected two times per warm season and replacements made within a month	Fewer signs placed; inspected once per year and replacements made within a month	
	May be eligible for annual maintenance inspection / sign replacement funding.			

Table 7. Water Trail User Elements Relating to Water Trail Classification

	Gateway	Recreational	Challenge	Wilderness
River User Safety	Public communication describes river and access conditions as better for novices	Public communication describes river conditions, and on rivers warns strainers are high potential for hazard.	Public communication describes why river conditions are not appropriate for novices, and on rivers warns strainers are high potential for hazard.	Public communication describes river conditions, length and distance commitments, and on rivers warns strainers are high potential for hazard.
	Emergency action plan is required, and includes egresses including private lane accesses. Plan is communicated among landowners and responders; E911 communication framework for locating distraught users established	Emergency action plan identified and communicated among landowners and responders; E911 communication framework for locations established	Communication to public implies they should have skills and equipment in order to commit to segment, some planning for landmark-based communication for locations and rescue methods among emergency responders discussed	
River User Behavior	Water trail manager locally leads in litter control, etiquette, and safety education and enforcement programs and campaigns. Trash receptacles available at controlled settings.	Water trail manager participates in litter control, etiquette, and safety education and enforcement programs and campaigns	Leave No Trace ethic is encouraged through materials and literature.	
	Law enforcement presence is moderately visible and law enforcement is briefed in dealing with problem users	Law enforcement presence is occasionally visible and law enforcement is briefed in dealing with problem users	Law enforcement presence rarely needed.	
Services	Management of liveries through requiring concessionaire agreements, fees, and conditions placed on operation is strongly encouraged.	Management of liveries through low-cost concessionaire agreements with some conditions placed on operation is encouraged.	Skilled guide services may be more appropriate than standard rental businesses. System to vet guides for use of public access may be considered for public safety.	Guide services may be more appropriate than standard rental businesses

Existing Water Trail Experience Classification. All segments of the West Nishnabotna River Water Trail in Shelby County as they exist today would be assigned as recreational, which is the most common classification in Iowa. This assumes new accesses will be constructed at some of the proposed sites, such as Highway 44, F66, Avoca West). The existing water trail in Pottawattamie County is entirely classified as recreational. There are opportunities for a gateway classification if new accesses are built closer together. The Pottawattamie County Water Trail plan recommends a new access somewhere between Avoca and Hancock. If a new access is added at Avoca West, then another one downstream 3-5 miles could become a gateway segment. This would likely require an easement or land acquisition, since the land is privately owned and there are no bridges in that section.

Table 8, Water Trail Experience Classification Summary, summarizes key elements from the classification criteria (Developing Water Trails in Iowa 2010).

Table 8. Water Trail Experience Classification Summary

	Gateway	Recreational	Challenge	Wilderness
User Expectations	<ul style="list-style-type: none"> — Most predictable, particularly for those with less experience — A paired launch and landing with ramped, hard-surface or well-maintained compacted aggregate — Slopes generally 12% and accommodating widths of 4' or greater — A readily enjoyable setting that will be attractive to new users — Exposure to few hazards relative to other segment types 	<ul style="list-style-type: none"> — Requires some boat control — Intended for users with some experience — Low-head dam hazard signage present, as needed — Varied settings — Basic level of navigational aid available (maps, signage) 	<ul style="list-style-type: none"> — User expects to manage risk in hands-on ways — Good boat control necessary — Launch and/or parking may be slightly to very difficult to use — Low-head dam hazard signage present, as needed 	<ul style="list-style-type: none"> — Some degree of solitude and wildlife viewing — Paddling endurance and skill required — Launch and parking areas can be very undeveloped in context with the setting — Wayfinding signage not always present at accesses and on-river — Low-head dam hazard signage present, as needed

Typical Development Goals	<ul style="list-style-type: none"> — Exposing the greatest number of new users to water trails — Appropriate for extended families and groups of friends — Part-day to full-day trip opportunity — Strong emphasis on building user confidence through signage and ultra-easy launch and parking — Launches, parking, trails designed with Universal Design standards — High degree of environmental educational / interpretive opportunity 	<ul style="list-style-type: none"> — Offers a typical Iowa water trail experience — Day-trip opportunity — Family and group experiences — Access points may be less developed compared with Gateway experience — Access surfaces may not be stable 	<ul style="list-style-type: none"> — Day- and multi-day-trip opportunity — Low-impact access development may result in more difficult movement from parking to launch: steep slopes, tight turn on trails, or long distances from parking to launch 	<ul style="list-style-type: none"> — Day- and multi-day-trip opportunity — Less development, more restoration and protection of habitats — May include parking in already impacted areas, rustic launches, and rustic remote campsites — Low-impact practices required in all water trails-related construction
Accesses	≤ 6 miles apart	≤ 9 miles on average	Varies	> 9 miles
Amenities such as restrooms, running water, picnic areas, camping	<ul style="list-style-type: none"> — Often available at accesses — Liveries, shuttle often operating — Wayfinding signage on roadways is more extensive to clearly identify driving route, turns, etc. 	<ul style="list-style-type: none"> — May be available but usually not as developed — Liveries, shuttle desirable 	<ul style="list-style-type: none"> — May be available but usually not — Guided experiences may be encouraged 	<ul style="list-style-type: none"> — Any facilities present, such as remote campsites, are minimal, primitive, and without signage — Guided experiences may be encouraged over rental

The Reinig and Nishna Bend Accesses have gravel driveways and parking areas. Nishna Bend is the only access with additional amenities. The possible new accesses at Harlan, F66, and Avoca West likely would have minimal amenities beyond parking areas.

Social Considerations. Shelby County Conservation Board is supportive of state designation and planning for enhanced conditions on the river. Currently, however, they only own land at the Reinig Access and Nishna Bend. New accesses at bridge crossings will be located within county or state highway rights of way, or land owned by the City of Harlan. Additional accesses or on-land amenities would require either land purchase or easements on private property.

Landowners along the study segment were mailed surveys in spring 2019. Forty-four (44) surveys were mailed based on county assessor data, and 18 were returned completed. The

primary concerns included trespassing, littering, liability, vandalism, property rights, and costs/funding of construction and maintenance.

Some landowners and nearby residents fear that a state designation would attract “outsiders” to Shelby County. They believe that the river belongs to local residents. Several landowners expressed opposition to a water trail designation in Shelby County. Other concerns included increased traffic and damage to crops, streambanks, and habitat areas along the river. Of the survey respondents, approximately 50% were “Opposed” or “Strongly Opposed,” 11% were “In Favor,” and 39% said they need more information to make a decision.

In July 2019, all landowners were invited to a meeting held in Harlan. Eleven (11) landowners attended. Representatives from DNR, Shelby County Sheriff, Pottawattamie County Sheriff, Shelby County Conservation, Pottawattamie Conservation, City of Harlan, and Golden Hills RC&D also attended.

At this meeting, John Wenck with DNR gave an informational presentation about the state water trails program. The presentation included information about who uses water trails, common problems and barriers, and DNR's roles and responsibilities for water trails. Landowners were encouraged to ask questions and express concerns. Landowners asked about liability, trespassing, who is responsible for removing log jams,

One attendee asked how landowners would continue to be engaged through the planning/designation process. Typically the landowners are not continuously engaged after this step of the process, but conservation staff at the meeting agreed to keep that landowner informed moving forward.

In August 2019, a public meeting was held at Nishna Bend for paddlers, anglers and others who currently use the West Nishnabotna recreationally in Shelby County. Ninety-four (94) invitations were mailed to registered canoes and kayak owners (vessels over 13 feet) within 10-mile radius of the West Nishnabotna from Reinig Access to Avoca. Emails were also sent to those owners who included email address in their DNR registration. Similarly, people with fishing licenses in the same area with a listed email address were emailed invitations. A press release was sent to local radio and newspapers, and a Facebook event also helped promote the meeting.

Thirty-two (32) people attended the recreational user meeting. At this meeting, conservation staff gave a brief presentation and DNR discussed the water trail program. Attendees were split into two groups for an interactive mapping activity. One map showed the proposed new water trail, and people were asked to put stickers where they are currently accessing the river for recreation, including both existing accesses and places without an official access. A second map identifying two general areas for new accesses (one near Harlan and one near Avoca) was also presented. Attendees were asked to put up to three dots each on the map

for sites where they would like to see new or improved accesses. The chart below includes a summary of the map activity. Photos of the maps and of the meeting are also below.

Some attendees had questions about accesses (what they might look like), if funding would be available from DNR for improvements, and long-term maintenance of the accesses, but overall there were not many questions or concerns expressed.



Access Name	Currently Accessing	New/Improved Access
Reinig Access	12	9
M36 Bridge	6	3
F32 Bridge (east of golf course)	3	3
Highway 44 Bridge	15	15
Between Harlan & Corley (near 700 th St.)	0	1
Nishna Ave./1120 th St.	0	2
Nishna Bend	14	18
F66 Bridge	1	11
Avoca West (G8L Bridge)	3	6

Physical Conditions of the West Nishnabotna River

The West Nish is one of Iowa's most physically altered waterways. When the native tallgrass prairies were plowed for agriculture with few conservation practices in place, massive

amounts of soil erosion caused sedimentation in the river and its tributaries, leading to more flooding. In the early 20th Century, the West Nish and nearly all of its tributaries were straightened through channelization to reduce flood impacts and improve farmland. Additionally, the channelization shortened the length of the river and increased its slope, which increased flow velocities. This in turn caused the streambed to downcut. As the river has naturally begun to meander, the channel has experienced lateral migration with extreme streambank erosion in many places.

Streambank Conditions

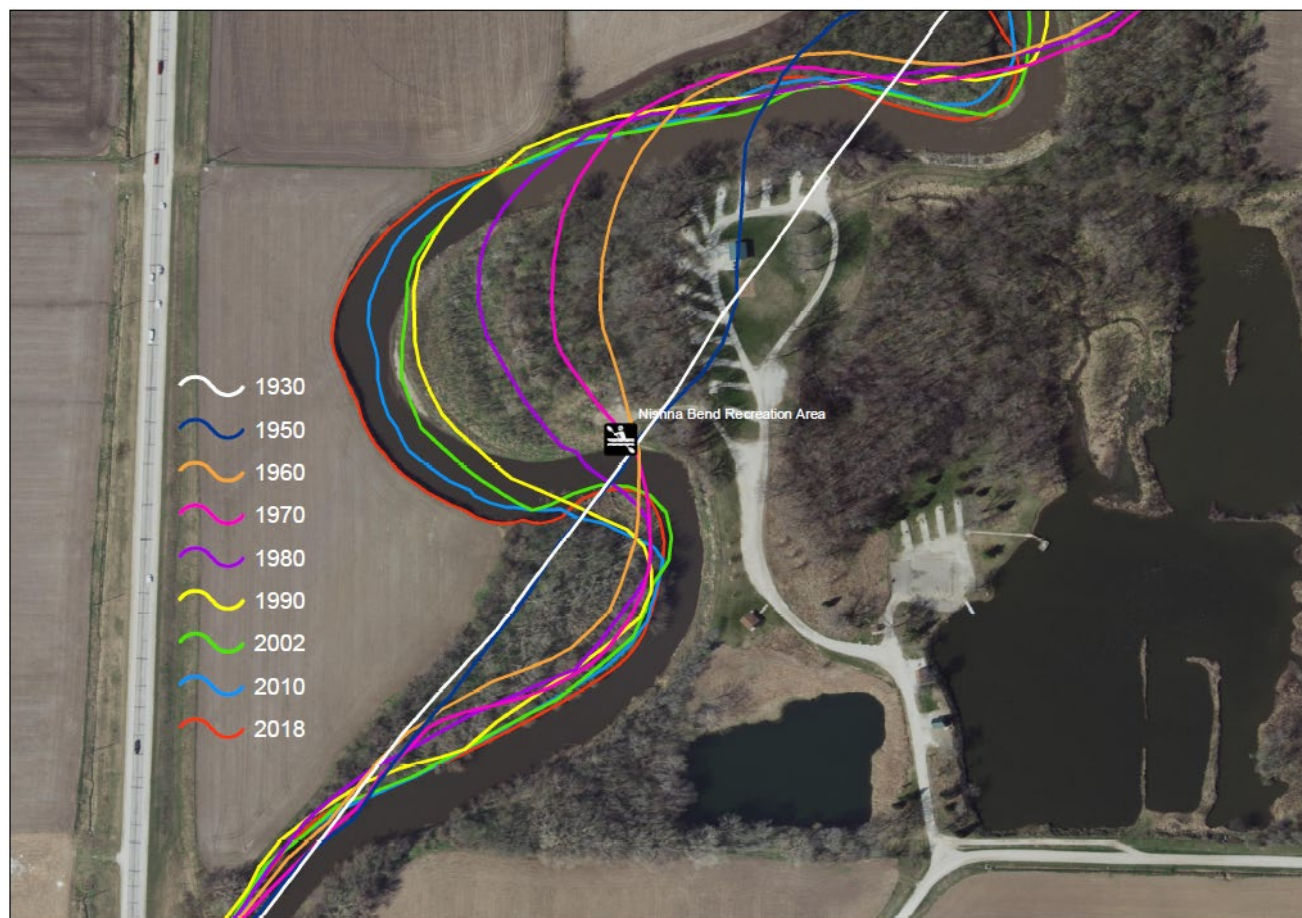
The West Nishnabotna in Shelby County has slowly begun to meander into a more natural state since it was channelized. The river is deeply incised, and streambanks are typically 10-15 feet tall or higher.

In Shelby County, much the stream is still incising, though areas farther downstream have begun to stabilize and even aggrade. Because of the deep incision, the West Nishnabotna only floods outside of its channel and onto the floodplain during the most extreme flooding events. The amount of aggradation downstream, increases flooding probability.

Much of the river lacks perennial buffers and crops are planted up to the top of the bank in many areas. Some areas do have a narrow tree buffer, but usually not more than 100 feet wide. Even fewer areas have perennial grass buffers, and those that do exist are also mostly less than 100 feet wide.

Aerial imagery shows how some bends have migrated laterally over time, and in many cases continue to advance rapidly. The image below shows an example of bank migration at Nishna Bend Recreation Area.

Migration of western bank of the West Nish at Nishna Bend



Water Quality

According to the Iowa Department of Natural Resources' Impaired Water list, a portion of the West Nishnabotna River in northeastern Shelby County is identified as impaired, as are several other streams and lakes in the county. In the water trail study area, however, the West Nishnabotna is not currently listed as impaired. Farther downstream in Mills County, the river again meets the criteria for impairment. Although the study area is not listed, water quality could certainly be improved. As part of the Missouri and Mississippi watersheds, the West Nishnabotna contributes to the hypoxic zone in the Gulf of Mexico. Thus, even though the water quality is not poor enough to be called impaired, it is still contributing to water quality issues downstream.

The West Nishnabotna watershed is designated as a Prioritized Nutrient Strategy Watershed by the Water Resources Coordinating Council, meaning it is a high priority area for demonstrating conservation practices and technologies to reduce nutrient (nitrogen and phosphorus) loading to surface waters.

Golden Hills RC&D coordinates the West Nishnabotna Watershed Management Coalition, a group of local leaders working collaboratively to reduce flood risks to life and property and improve the water quality within the Nishnabotna Watershed for future generations. The watershed plan was completed in 2019. It includes recommendations for practices that improve water quality. Currently the cost-share funding for practice implantation through this program is only available in Fremont and Mills counties, but the plan is intended to help bring additional resources to the entire watershed, including Shelby County.

Golden Hills RC&D also works with several communities in the watershed on installing urban water quality practices like bioretention cells and raingardens. The City of Harlan is considering adding some of these practices too. Shelby County Soil and Water Conservation District (SWCD) works directly with landowners to implement on-farm conservation practices.

CONTEXT OF THE RIVER

Watershed Characteristics and Condition

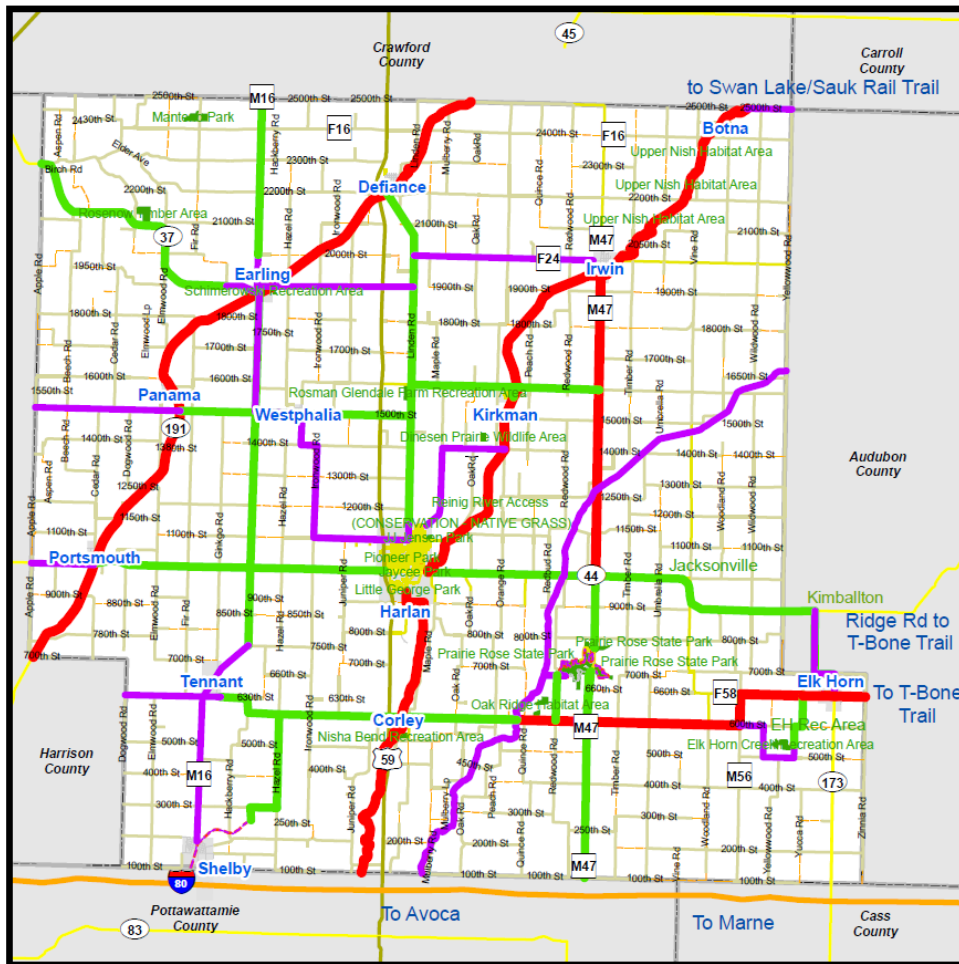
The West Nishnabotna River is located in Iowa's Steeply Rolling Loess Prairies ecoregion. An ecoregion is an area of similar climate, soils, and topography, with unique flora, fauna, and ecological patterns. The Pottawattamie County segment of the West Nishnabotna is the only state-designated water trail in this ecoregion.

The Steeply Rolling Loess Prairies ecoregion is characterized by rolling hills of deep loess deposits above glacial till. Most of the ecoregion is prime farmland and thus mostly used for rowcrop agriculture. Major sheet erosion and gulying occurred after the native prairies were plowed for agriculture (Chapman et al. 2002). Much of the loess soil has been washed downhill and into waterways like the West Nishnabotna.

Resource Experiences Near the West Nishnabotna River

Recreation & Tourism in the Region. Paddlers are the primary target demographic for water trails, but rivers are often used for other outdoor recreation such as fishing, hunting, birding and wildlife watching.

There are few recreation and tourism opportunities that exist near the river in Shelby County to complement paddling. Western Skies Scenic Byway passes through Shelby County and crosses the West Nishnabotna on Highway 44. Shelby County has a countywide, multi-use trails plan that includes a preferred route along the West Nishnabotna River and connections to parks and communities around the county.



Shelby County Roads & Trails

Proposed Trails	
—	Priority 1
—	Priority 2
—	Priority 3



Print Date: January 13, 2016
Trails_Proposed_Maps_8x11.mxd
Shelby County GIS
612 Court Street
Harlan, IA 51537
(712) 755-1306

Coordinate System: NAD 1983, Iowa State Plane South
Projection: Lambert Conformal Conic

Cultural Resources

In 2019, the Office of the State Archaeologist (OSA) completed a Cultural Resources Desktop Evaluation of this reach of the West Nishnabotna to assess the archaeological and historic resources within the corridor, especially any sites that may be impacted by water trail development. This survey was primarily completed with aerial imagery, historic documentation, and previous archaeological reports. The report summarized areas with known or likely cultural resources along the West Nishnabotna in Shelby County.

People have lived near and traveled along the West Nish for thousands of years, leaving traces of their presence over time. Although flooding, channelization, and decades of farming have likely removed or buried many artifacts, archaeologists know from previous excavations and historical records that remnants of previous residents abound throughout the study area.

Because water trails typically do not cause significant impacts to the landscape except for at river accesses, these sites were analyzed to determine if Phase 1 archaeological investigations

would likely be required before constructing new or improving existing river accesses. The OSA's recommendations are as follows:

- "Should improvements be proposed at the Reinig Access, Phase I archaeological investigation would likely be required."
- "Should improvements be proposed at the J. J. Jensen Access, Phase I archaeological investigation would likely be required, unless prior disturbances can be verified."
- "Should improvements occur in the immediate vicinity of the Highway 44 Bridge West Access, aerial photographic evidence and mapped soil type supports a recommendation that no further archaeological investigation is warranted"
- Should improvements be proposed at the Nishna Bend Recreation Area Access, considering the history of disturbance in the area, no further archaeological investigation would likely be required.
- "Should improvements be proposed at the Highway F66 East and Highway F66 West accesses, considering the history of disturbance in the area and mapped soil types with limited archaeological potential, no further archaeological investigation would likely be required."
- "Should improvements be proposed at the Avoca G18 East and Avoca G18 West accesses, considering the history of disturbance in the area and mapped soil types with limited archaeological potential, no further archaeological investigation would likely be required."

Summarize Aquatic & Species - focus on rare/endangered species

Visual Resources

The recreational quality of a water trail is impacted by its visual aesthetics. On the West Nish, streambank erosion and lack of riparian buffers can lead to a less-than-ideal recreational experience but also provide an educational opportunity for paddlers to learn about the highly-erodible deep loess soils and the long-term effects of stream channelization. In many places, due to the extreme downcutting of the river into its bed, water trail users cannot see above the streambanks. Areas with trees or grass not only reduce erosion but improve the water trail experience.



Interpretation Programs and Efforts. Shelby County Conservation Board has public education programs at Nishna Bend Recreation Area, including some paddling events on the West Nishnabotna.

Shelby County Conservation hosts an annual “Beyond Becoming an Outdoors Woman” program in August that includes a paddling trip on the West Nishnabotna. They also do three events with summer camp children on the river each summer. These events all include interpretive education about wildlife and conservation.

OSA's cultural resources report recognizes several interpretation opportunities in the water trail corridor, including historic trails (from Native Americans and early settlers), historic grove settlements, early Mormon history, railroad history, early mills and other industry, and historic buildings and districts.

The Western Skies Scenic Byway has a Corridor Management Plan and an Interpretive Master Plan that include recommendations for cultural, historical, and environmental resources throughout Shelby County. If a new access is added at Highway 44, that would be an ideal

location for an interpretive panel or kiosk since it is located directly along the Byway. Other sites along the West Nishnabotna and Highway 44 could integrate the water trail and scenic byway programs.

WATER TRAIL POTENTIAL

Based on the information presented above, this reach of the West Nishnabotna River in Shelby County is recommended for state designation as a water trail.

Landowner concerns must be considered and addressed to ensure local support into the future.

Shelby County Conservation Board already owns and manages land and accesses on the river, and they have agreed to be the water trail sponsor.

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