

# THE BATTLE OF THE WABASH AND THE BATTLE OF FORT RECOVERY:

## MAPPING THE BATTLEFIELD LANDSCAPE AND

### PRESENT DAY FORT RECOVERY, OHIO

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# Acknowledgements

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# Chapter I – History and Overview

## Present Day Fort Recovery, Ohio



Fort Recovery in Mercer County, Ohio, is a village of 1400 people. The village was built on the site of the Battle of the Wabash and the Battle of Fort Recovery and was incorporated in 1858. The landmarks in the map above will help orient you in all subsequent maps. The Fort Recovery Monument was built in 1913 as a memorial to those killed in the Battle of the Wabash. It is located at the intersection of SR 49 and SR 119. The Fort Recovery Museum and reconstructed stockade are owned by the Ohio History Connection and managed by the Fort Recovery Historical Society and are located on Fort Site Street. The stoplight at the intersection of Wayne and Butler Streets and the caution light at the intersection of SR 49 and SR 119 are shown for additional reference.

# History and Overview – Background Information

The Battle of the Wabash in 1791 and the Battle of Fort Recovery in 1794 between American forces and a Native American alliance are two historically significant battles which occurred at the site of the present-day village of Fort Recovery, Ohio. The two battles are among the largest engagements of the United States Army and Native American forces in the history of the United States. They were important in defining the course of the nascent American nation and continued to contribute to loss of significant territory and independence for the Native Americans of the Northwest Territory.

The first battle, known variously as St. Clair's Defeat, Little Turtle's Victory, or the Battle of the Wabash, occurred on November 4, 1791. The United States Army, led by General Arthur St. Clair and consisting of approximately 1,400 soldiers, was swiftly devastated by a Native American alliance of approximately 1,500 Native Americans. Sources vary on the exact number, but it is estimated that around 800 American officers, soldiers and civilians were killed and another 350 were wounded. The exact casualty numbers for the Native American alliance are unknown. It is estimated that their casualties were around a tenth of the American's, with some estimates as low as 30 Native Americans killed. The stunning victory by the Native American forces was attributed to the skilled tactics of Mishikinakwa (Little Turtle) of the Miami and Weyapiersenwah (Blue Jacket) of the Shawnee coupled with missteps by the U.S. forces including a corrupt army quartermaster providing subpar supplies, poorly trained American soldiers, and unpreparedness on St. Clair's part.

The Native American victory at the Battle of the Wabash ultimately only delayed Euro-American settlement in the Northwest Territory. In 1793, General Anthony Wayne built a fort at the site of the defeat and it was named Fort Recovery. Between June 30 and July 1, 1794, an alliance of over 2,000 Native Americans with British support attacked the fort. Mishikinakwa (Little Turtle) again led the Native American alliance. This time the American forces held, and the Native Americans retreated. The second battle marked the defeat of one of the largest Native American forces ever assembled. The victories at Fort Recovery and at the Battle of Fallen Timbers on August 20, 1794, marked the end of the period of conflict known as the Northwest Indian War.

# History and Overview – KOCO A

The National Park Service American Battlefield Protection Program requires the use of KOCO A analysis in all of their grant projects. This KOCO A analysis is based on the U.S. military's process for evaluating significance of battlefield terrain and use of the landscape in battle strategy. Key landscape features of the Battle of the Wabash and the Battle of Fort Recovery were analyzed and characterized using KOCO A analysis.

Battlefield surveyors and archeologists learn to view the terrain through the soldiers' eyes using the five aspects of KOCO A: **K**ey/Decisive Terrain; **O**bservation and Fields of Fire; **C**oncealment and Cover; **O**bstacles; **A**venues of Approach/Withdrawal. Maps in this document are all results of our KOCO A analysis and we will use many of the KOCO A terms listed below throughout the rest of this document.

## Key and Decisive Terrain

**Key Terrain** is any local feature that dominates the immediate surroundings by relief or by some other quality that enhances attack or defense. Examples: high ground with good observation and clear fields of fire or a transportation choke point such as a water crossing, narrow gorge or road junction.

**Decisive Terrain** is ground that *must* be controlled in order to successfully accomplish the mission.

## Observation and Field of Fire

**Observation** is the ability to see friendly and enemy forces and key aspects of the terrain in order to judge strength, prevent surprise, and respond to threats.

**Field of fire** is an area that weapons may cover/fire upon effectively from a given position. A unit's field of fire is directly related to Observation.

**Dead Space** is an area within the maximum range of a weapon or observer, which cannot be covered or seen from a particular position.

## Cover and Concealment

**Cover** is protection from enemy fire. Examples: ditches, riverbanks, buildings, walls, or entrenchments.

**Concealment** is protection from enemy observation and surveillance. Examples: forests, ravines, dense vegetation, or reverse slope.

## Obstacles

**Obstacles** are natural or manmade terrain features that prevent, impede, or divert military movement.

*Existing obstacles* are already present on the battlefield and not placed there through military effort. They can be natural (swamp, forest, river) or cultural (town, railroad, bridge).

*Reinforcing obstacles* are placed on the battlefield through military effort and are designed to strengthen the terrain. Reinforcing obstacles include such things as entrenchments and earthworks.

## Avenue of Approach/Withdrawal

**Avenue of Approach** are relatively unobstructed ground routes that leads to an objective or to key terrain.

**Avenue of Withdrawal** are relatively unobstructed ground routes leading away from objective or key terrain.

**Mobility Corridor** are areas where movement is channeled due to terrain constrictions, e.g., road over a causeway.

# Chapter II – Battle of the Wabash

## Battle Overview

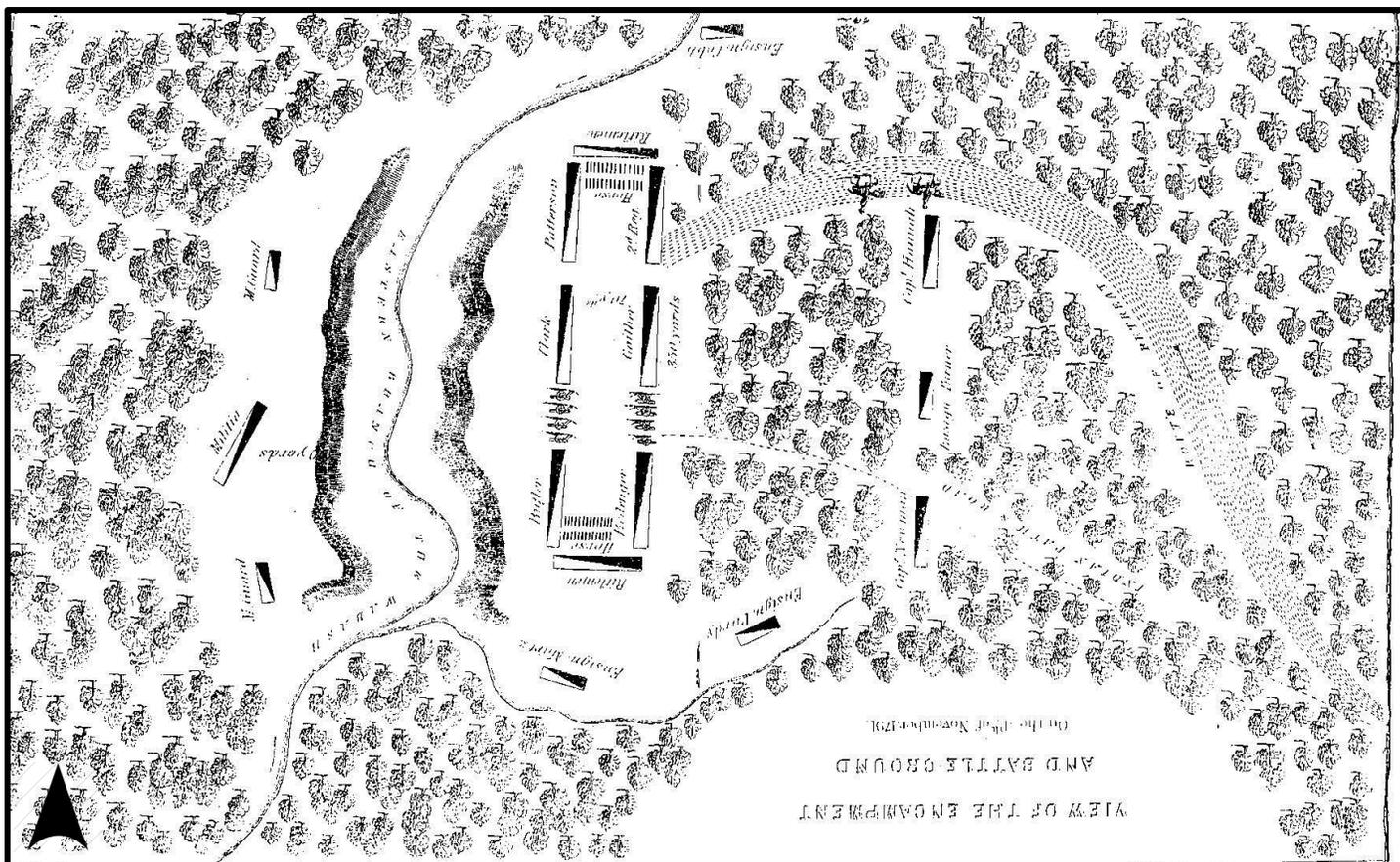
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In 1791, General Arthur St. Clair was commanded to build a series of forts from Fort Washington (present day Cincinnati, Ohio) to Kekionga, a Miami stronghold and village in present day Fort Wayne, Indiana. St. Clair and his forces constructed Fort Hamilton and then moved north and constructed Fort Jefferson (south of present day Greenville, Ohio) in October 1791. On October 24, St. Clair's Army moved north towards Kekionga setting up nightly camps. On November 3, thinking they were at the banks of the St. Mary's much farther north than their actual location, St. Clair and his forces made camp for the night on the banks of the Wabash River at the present day location of Fort Recovery, Ohio.

After several years of failed treaties and conflicts between the Native Americans and the Euro-American settlers and military, a Native American alliance was formed, led by Mishikinakwa (Little Turtle), a Miami chief, and Weyapiersenwah (Blue Jacket), a leader of the Shawnee. Native American scouts had been following St. Clair's movement north from Fort Washington through Fort Hamilton and Fort Jefferson, and to the banks of the Wabash. A total of nine tribes (Wyandots, Mingo, Cherokee, Ojibwe, Ottawa, Potawatomi, Shawnee, Delaware, and Miami) formed the Native American alliance when they gathered northwest of St. Clair's encampment on the night of November 3, 1791.

# Battle of the Wabash – Historic Battle Map A

## View of the Encampment and Battleground

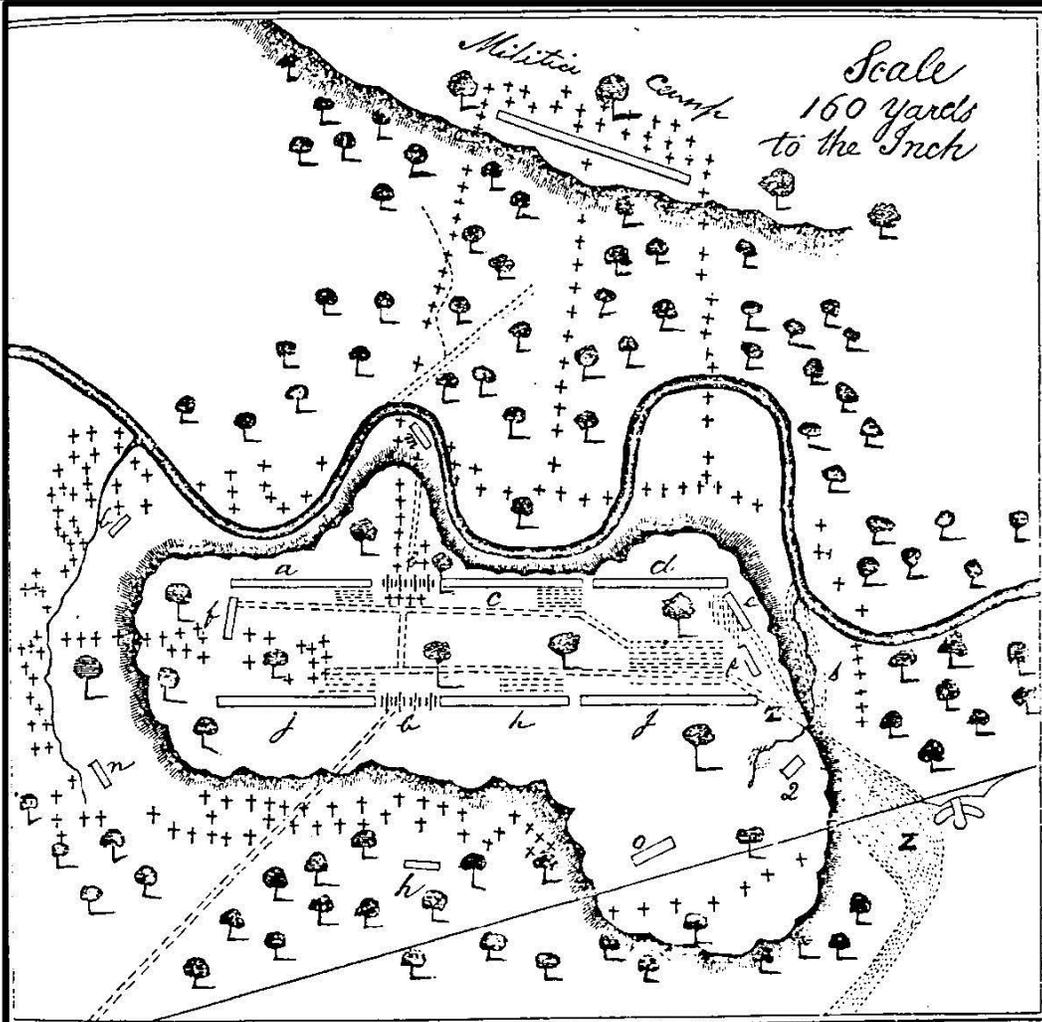


## From Lieutenant Ebenezer Denny's Diary

This is St. Clair's encampment drawn by Lt. Ebenezer Denny in his diary after being present at the battle. This map is upside down to correctly orient north on the present day landscape. From left to right, Denny shows the Kentucky militia camped across the Wabash River, the river banks, St. Clair's main encampment arranged in a rectangle (the location of present day downtown Fort Recovery), and St. Clair's outposts surrounding the encampment. The "Indian Path-Road" is St. Clair's Trace, carved out from the woods by the army from Fort Washington. An Indian path was discovered just four miles south of the November 3 encampment. St. Clair's Trace continued along this Indian path to the Wabash River. Lt. Denny described the evening of November 3: "The frequent firing of the sentinels through the night had disturbed the camp, and excited some concern among the officers. The guards had reported the Indians to lie skulking about in considerable numbers".

# Battle of the Wabash – Historic Battle Map B

## Battle of the Wabash



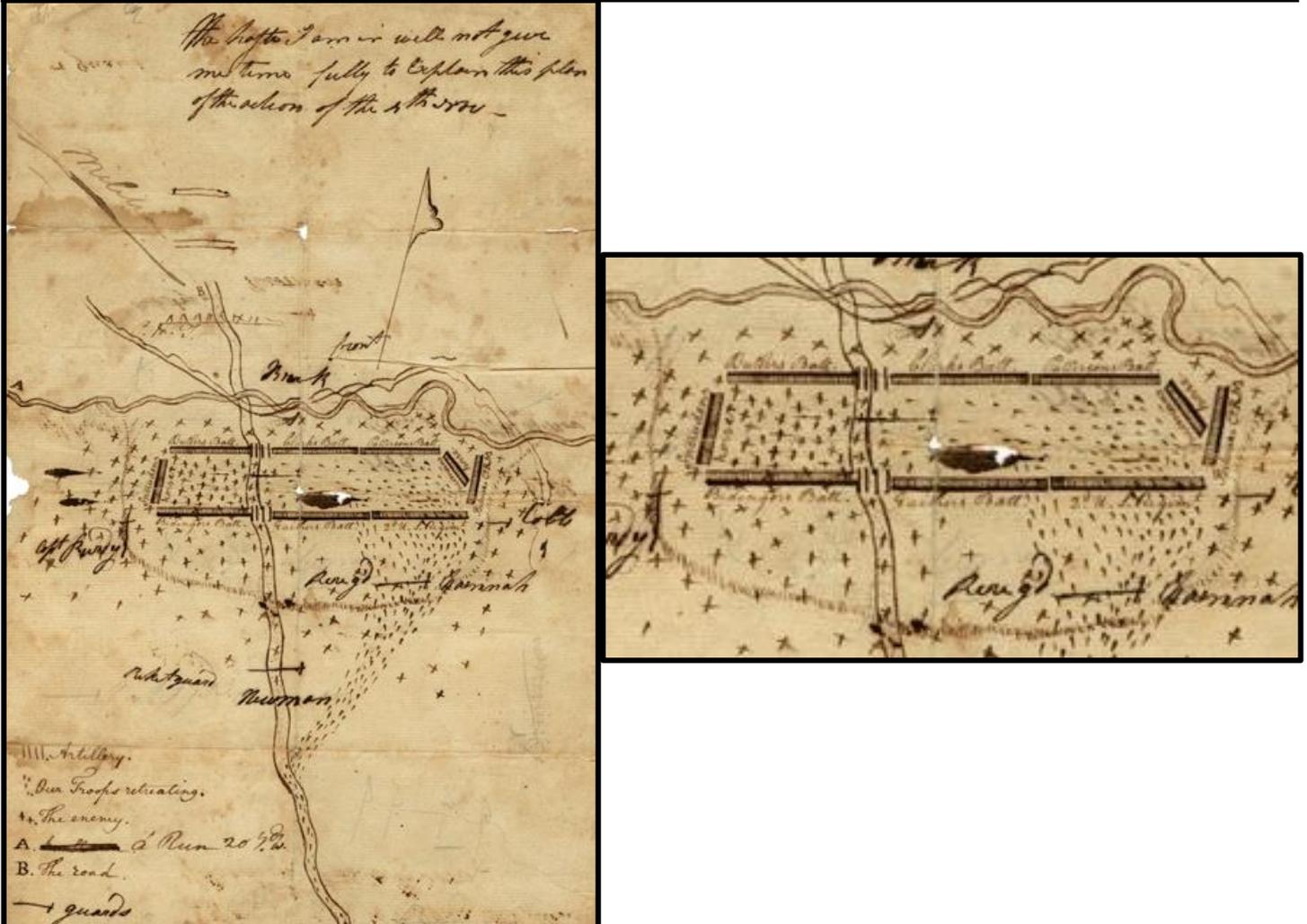
## From Winthrop Sargent's Diary

Shown is St. Clair's army surrounded by Native Americans as drawn by Winthrop Sargent, present at the battle as Secretary of the Northwest Territory. Sargent shows St. Clair's rectangular camp, outposts, and the Kentucky militia camp across the Wabash River. He depicts the Native Americans with small plus signs. Notice how the Native Americans used the river and landscape as cover and concealment to surround the army.

Sargent writes: "Our encampment is on a very handsome piece of rising ground, with a stream of forty feet running to the west...The militia across the stream (which is supposed to be the St. Mary, emptying itself into the Miami of the Lakes) and over a rich bottom of three hundred yards, upon a high extensive fine flat of open wood."

# Battle of the Wabash – Historic Battle Map C

Plan of St. Clair's Battle Ground, 1791



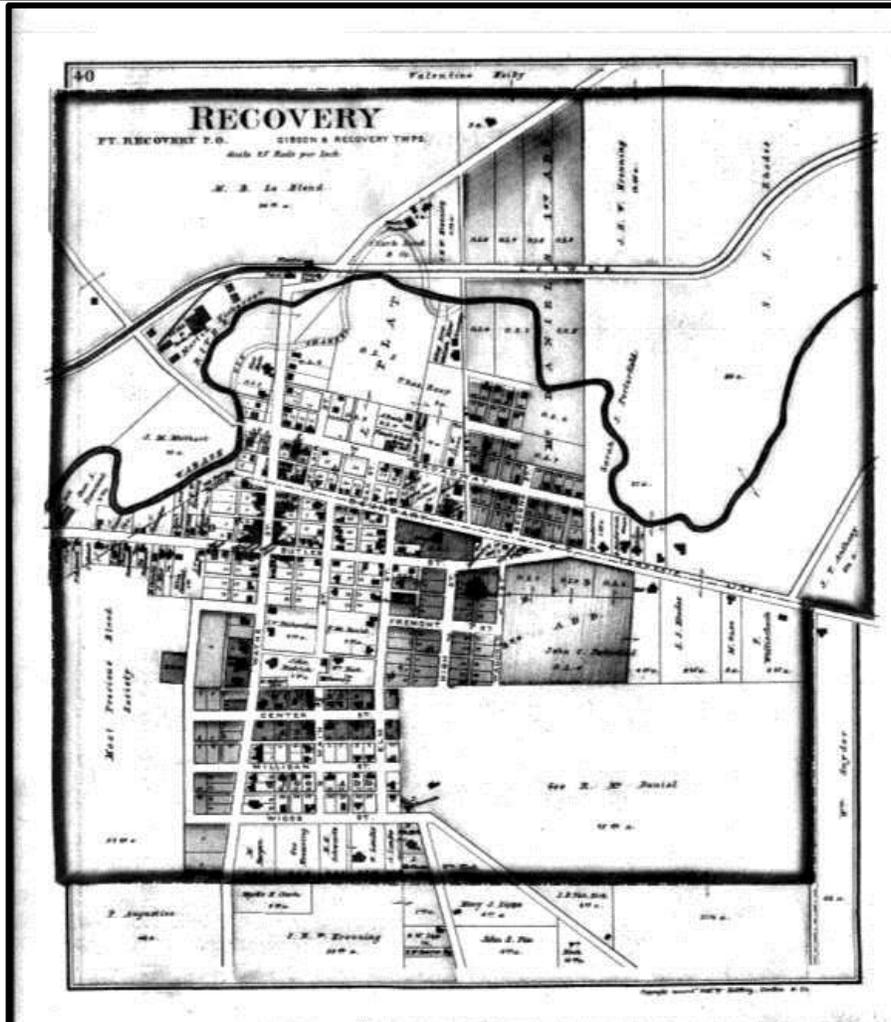
From the Swearingen-Bedinger Papers

This is another rendition of the Battle of the Wabash from George M. Bedinger, a sharpshooter commander. It shows the main rectangular encampment next to the Wabash River, the location of the artillery represented by four vertical lines, and the retreat of St. Clair's troops ("our troops retreating") as a cluster of dots trailing south towards St. Clair's Trace ("The road"). St. Clair and his troops erroneously thought they were on the St. Mary's River just 15 miles from Kekionga. This map shows the position of the Native Americans marked by small plus signs ("The enemy"). Notice the complete encirclement of St. Clair's forces by the Native American alliance.

The note from Bedinger in the top right hand corner states: "The haste I am in will not give me time fully to explain this plan of the action of the 4<sup>th</sup> Nov".

# Battle of the Wabash – Historic Battle Map

The Village of Fort Recovery, circa 1888 by M.B. LeBlond



Area of the Battle of the Wabash, railroad, and original Wabash River

The actual Fort Recovery was destroyed about 1814, settlers came into the area in 1817, and the village of Fort Recovery was incorporated in 1858. In the latter half of the nineteenth century, many businesses rose up in Fort Recovery including banks, clothing stores, hardware stores, grocery stores, tin shops, harness shops and jewelry shops. Some of the most significant changes to the town included rerouting the Wabash River three times from the late 1800s to the mid-1900s. The construction of the railroad in the 1880s allowed many businesses to come to Fort Recovery providing a means of shipping for the area. However, it also required the Wabash River to be rerouted. In addition, the Wabash River was rerouted to alleviate flooding in the area and because of highway construction. Although the Wabash River has been rerouted, parts of the original river channel are easily visible on the present day landscape and is an existing key defining feature of the battlefield.

# Battle of the Wabash

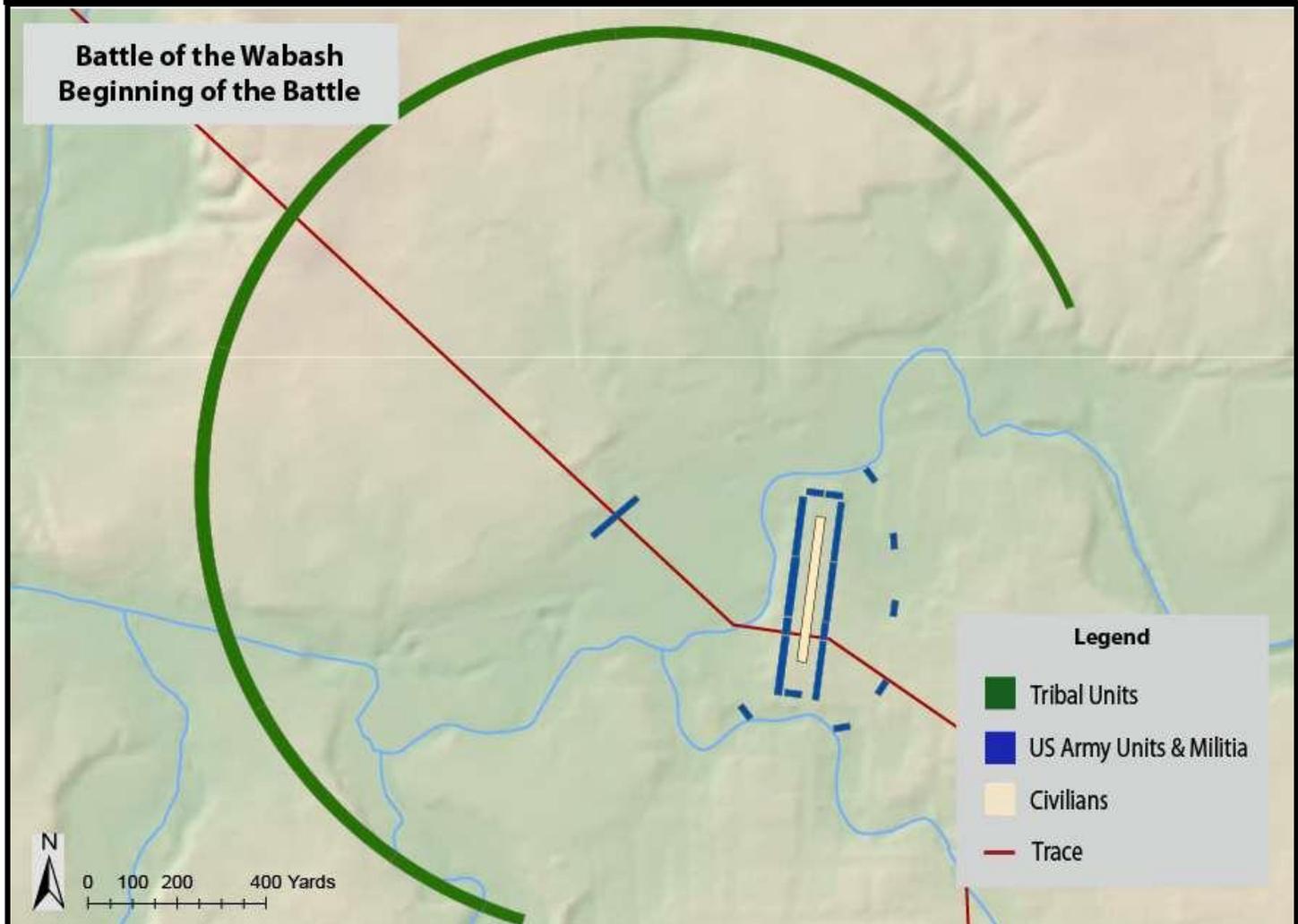
## Battle Progression

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Major Jacob Fowler describes his own experiences on the day on November 4, 1791: “Excepting in a single instance, St. Clair kept out no scouting parties during his march, and we should have been completely surprised by the attack when it was made, if it had not been that volunteer scouting parties from the militia were out on the evening before and the constant discharge of rifles throughout the night warned us to prepare for the event”.

# Battle of the Wabash – Initial Battle Map A

## Beginning of the Battle

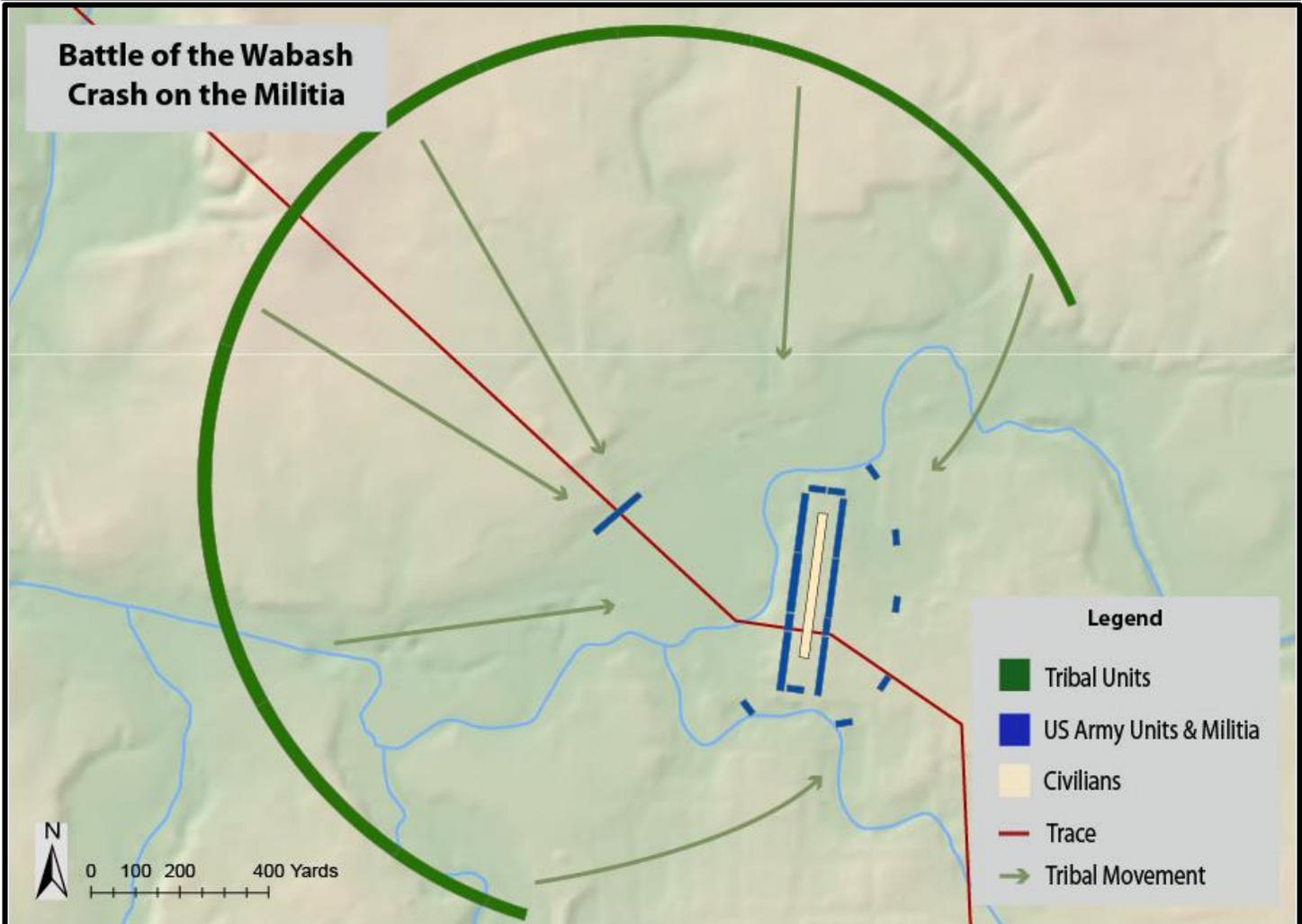


November 3, 1791 - late afternoon & evening

On November 3, 1791, General St. Clair's U.S. Army numbering 1,200 to 1,400 soldiers and 200 to 250 civilians arrived on the banks of the Wabash River. St. Clair ordered the Kentucky militia to set up camp west across the river (light blue line). The infantry camped in six outposts (small blue blocks) between the river and tributary Buck Run. The riflemen and dragoons were on the north and south sides of main camp (blue rectangle) with civilians camped within. At the same time, the Native American alliance was finalizing a battle strategy based upon St. Clair's position. Led by Mishikinakwa and Weyapiersenwah, Native Americans from nine tribes were organizing for a morning surprise attack to surround the entire U.S. Army from the north and south (green arc). Most of the night was spent establishing the Native American's positions. Information received during the night from volunteer militia scouts regarding Indians "skulking about" the area was not relayed to St. Clair.

# Battle of the Wabash – Initial Battle Map B

## Native American Alliance Attack on St. Clair's Militia

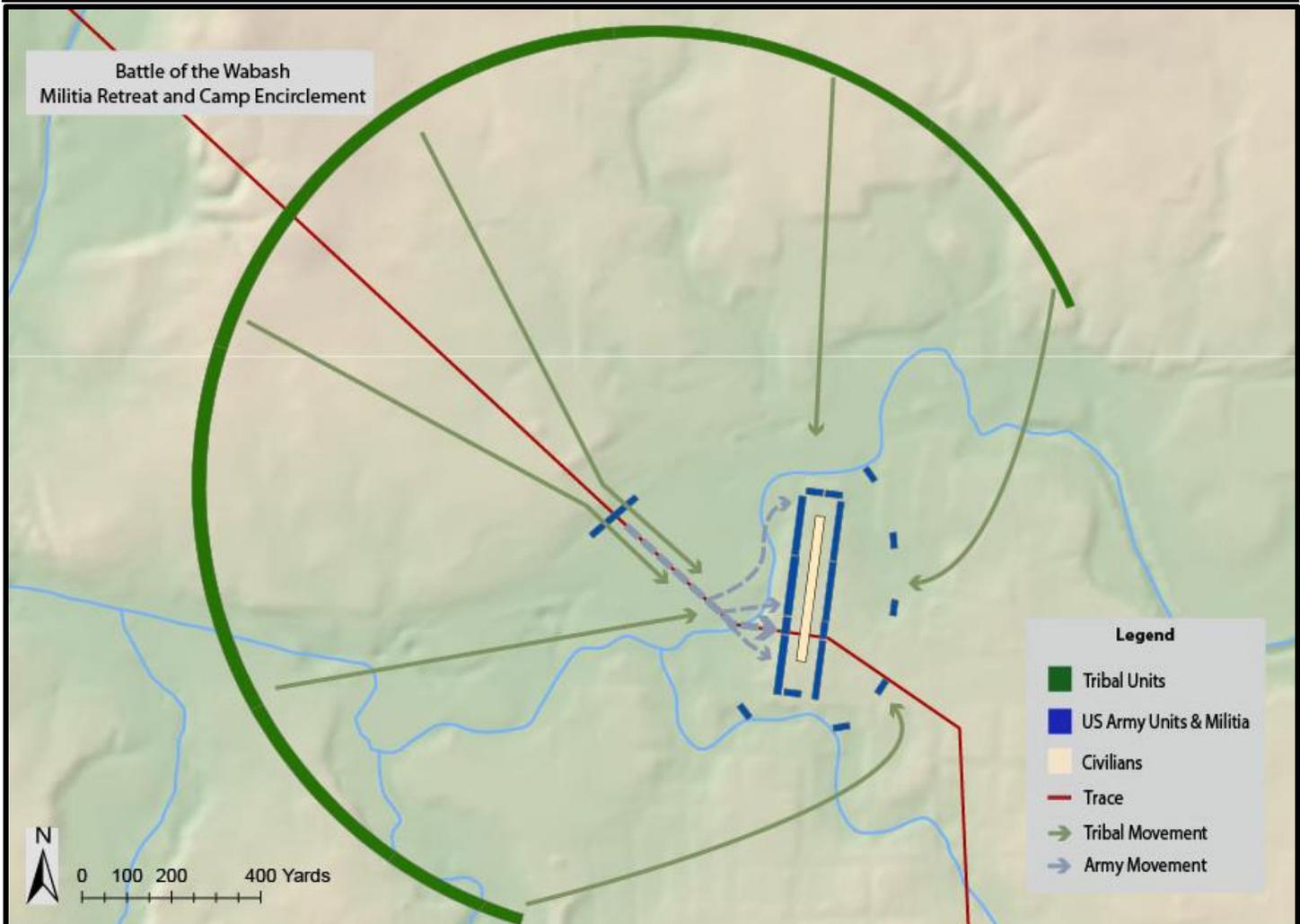


November 4, 1791 - daybreak, approximately 6:30 am

At daybreak the next morning, after the Native Americans established their positions, the sound of musket fire was the signal for the two sides of the Native American crescent to surround the military outposts. The Kentucky militia was attacked by a small group of Native Americans forcing them to flee back across the Wabash River, towards St. Clair's main camp. The terrain was a critical factor at this point in the battle. The low ground the Kentucky militia camped on was not defensible. Cannon fire from St. Clair's main camp could not travel downward from the high position on the Wabash River floodplain, shooting over incoming Native Americans. The Wabash River and its banks slowed the ability of the militia to retreat. The high ground of the American military encampment may have been an effective defense of the initial Native American charge if the lines had not been broken by the Kentucky militia's retreat.

# Battle of the Wabash – Initial Battle Map C

## St. Clair's Militia Retreat and Camp Encirclement

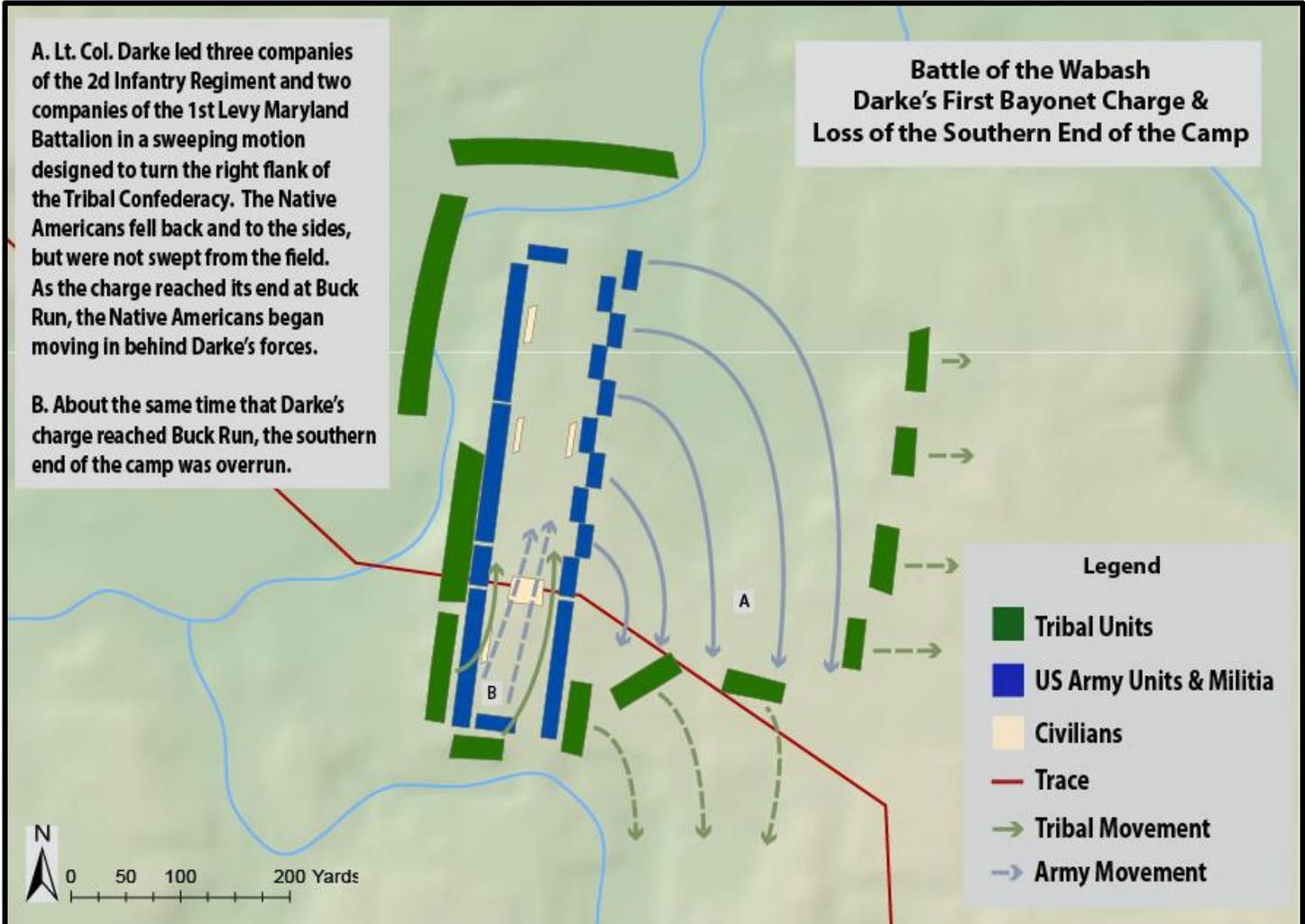


Key terrain elements include the Wabash River, Buck Run, and high ground

As the sounds of the attack on the Kentucky militia reached St. Clair, the military was ordered into position. The artillery was ineffective since the retreating Kentucky militia blocked their field of fire. The fleeing militiamen broke through camp followed directly by attacking Native Americans. Civilians scattered and soldiers scrambled for cover behind trees and wagons. While mayhem was setting in on the front line, the outposts on the far side of the camp had a few more moments to prepare. The Native Americans at the ends of the crescent moved quickly, concealed by trees and brush. Artillerymen, the Native American's first targets, were unable to fire effectively due to the large amount of natural cover found on the battlefield. The Native Americans, concealed by a thick cloud of artillery smoke, aimed for the flames of their enemy's fire. They broke the lines of the outposts and forced the military to fall back towards the center of camp.

# Battle of the Wabash – Initial Battle Map D

## Lieutenant Colonel Darke's First Bayonet Charge

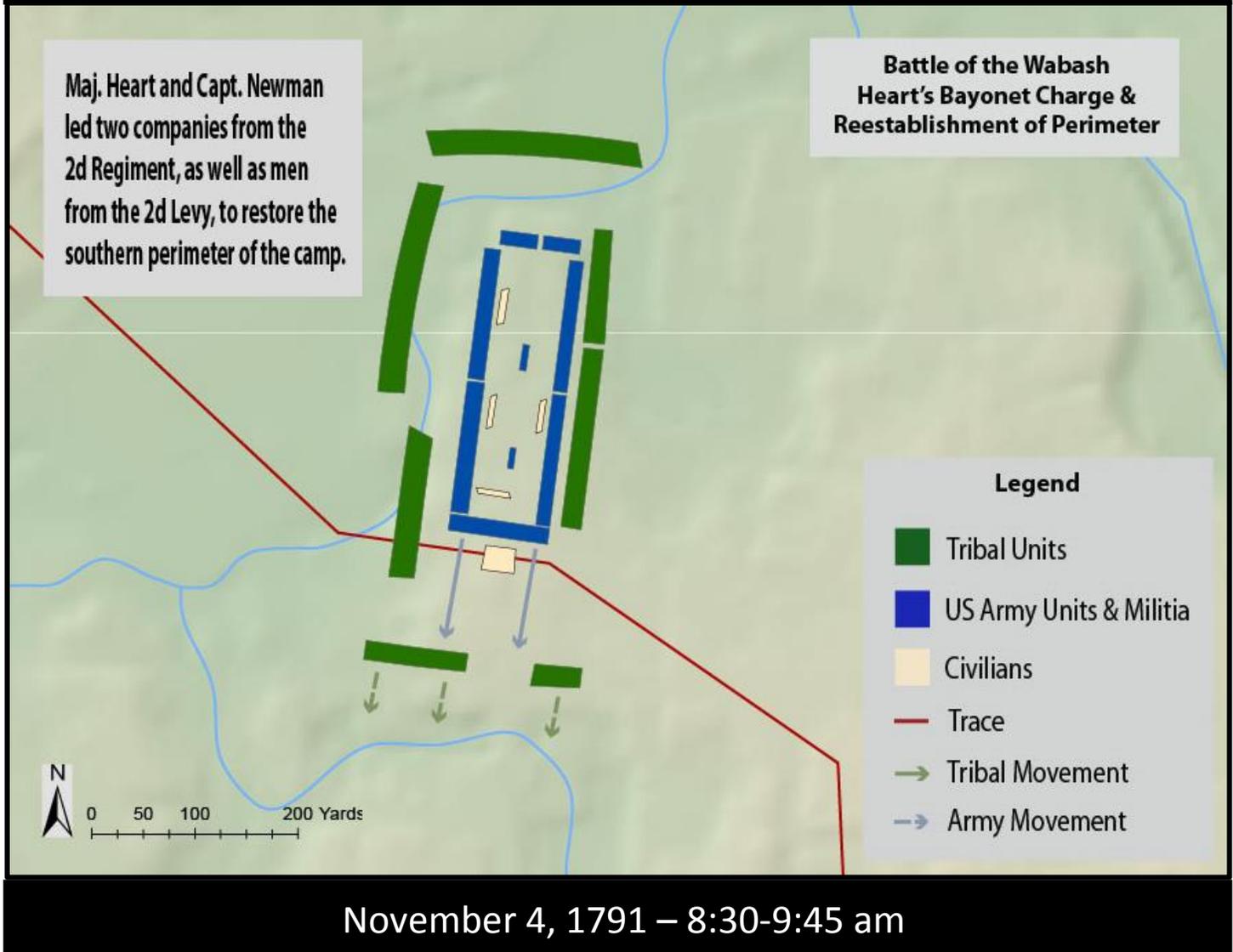


November 4, 1791 – 7:15-8:30 am

By this time the Native Americans at the northern end of the camp were being held back by the United States Army. The wind helped the U.S. Army by clearing the battlefield of smoke allowing men to see. Taking advantage of the stabilized situation, General St. Clair ordered Lieutenant Colonel Darke to make a bayonet charge and take pressure off the soldiers in the south. Darke took the rear line which contained about 300 men and moved clockwise, flanking the Native Americans and driving them south to Buck Run. Many of the Native Americans looped around west and up into the center of the camp as Darke returned. Other Native Americans followed Darke's path and attacked his rear, surrounding St. Clair's forces again.

# Battle of the Wabash – Initial Battle Map E

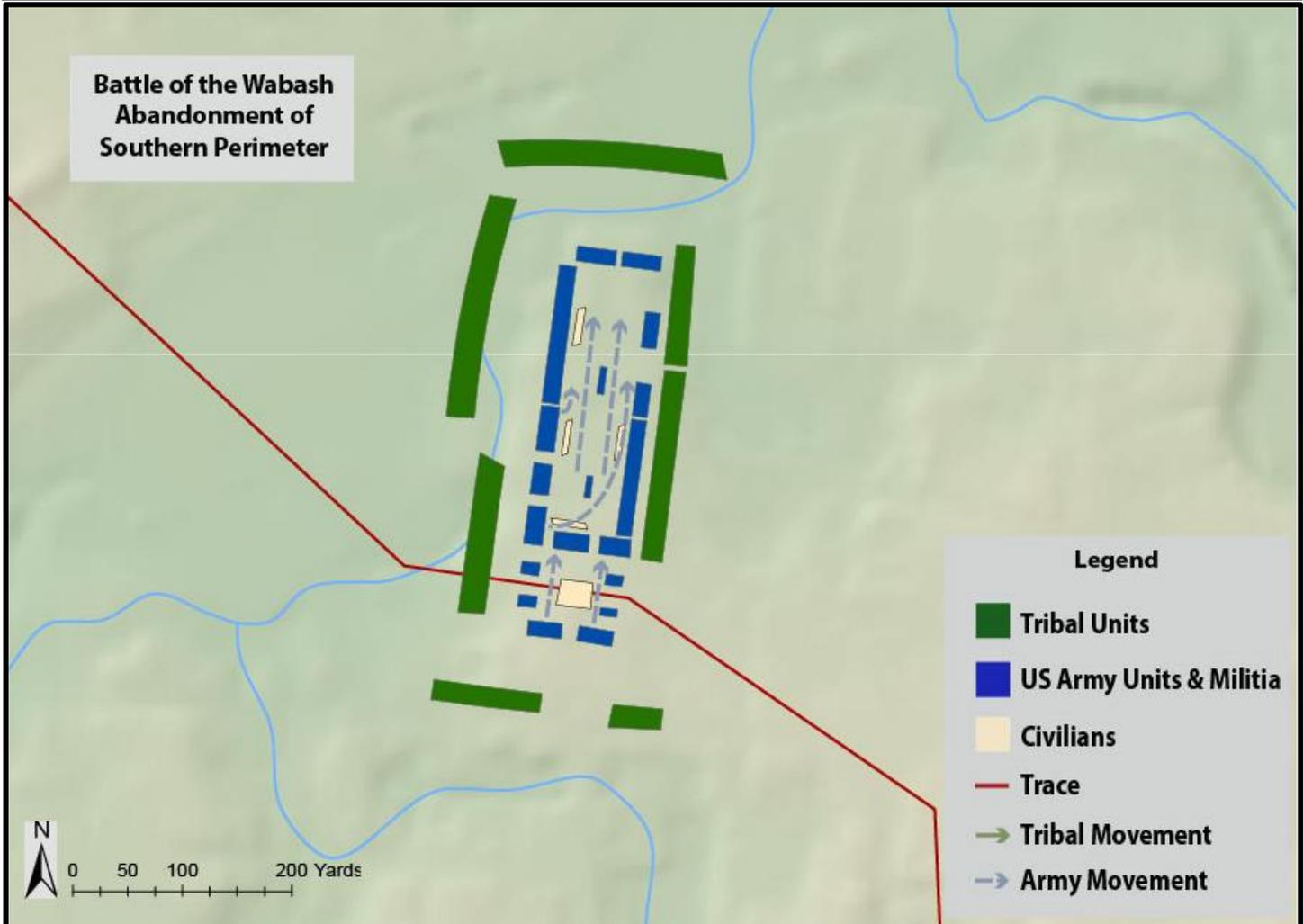
## Major Heart's Bayonet Charge to Re-establish Perimeter



St. Clair and Major Heart gathered troops for another bayonet charge and were able to push the Native Americans south out of the camp at a great cost of life. The terrain enabled the Native Americans to gain the upper hand in this segment of the battle. There were many fallen trees or underbrush to provide cover for the Native Americans and heavy smoke clouds from weapons fire concealed their movements. There were no steep banks present here to aid in military defense of the center of camp. The bayonet charge was the only U.S. military maneuver that pushed the Native Americans south, and was followed by a 15 minute break in the fighting. During this break, the Native American alliance's leaders weighed the benefits of a second attack.

# Battle of the Wabash – Initial Battle Map F

## Abandonment of the Southern Perimeter

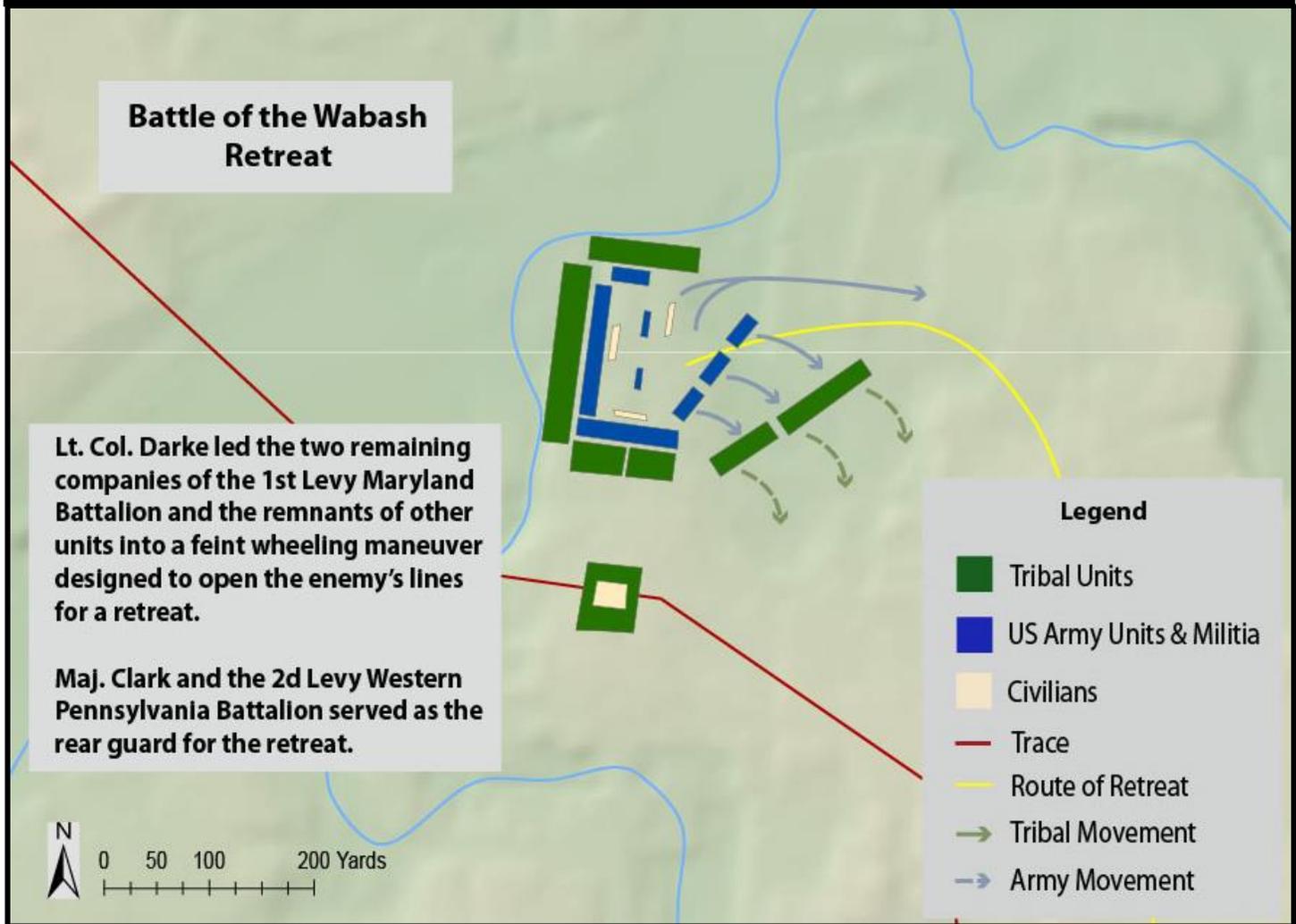


November 4, 1791 – 8:30-9:45 am

During the 15 minute break, St. Clair condensed the troops, pulling wounded soldiers north and clearing the southern portion of the battlefield. He ordered a southern line to be formed, and the military now occupied a three acre area, a small portion of the original encampment. This condensed area was completely surrounded by Native American forces. Many of St. Clair's forces had abandoned their positions at this point and formed small unorganized groups throughout the camp. The few remaining lines held their positions against musket fire and arrows from the Native Americans. At this late stage in the battle, bows and arrows were used in addition to musket fire because of the lack of gunpowder available to the Native Americans.

# Battle of the Wabash – Initial Battle Map G

## Retreat



November 4, 1791 – 9:45 am

Acknowledging that retreat was the only option, St. Clair ordered a charge east through the Native American line. Darke and his soldiers made a final bayonet charge south in order to clear an avenue of retreat down St. Clair's Trace that the soldiers had cleared the day before. As the unorganized lines of retreat cleared the area, the bayonet charge turned and fled down the road. Native Americans continued to fire upon soldiers as they fled. The soldiers hastily discarded the equipment and weapons that slowed them down and fled back towards Fort Jefferson, 26 miles to the south. Back at camp, Native Americans killed the remaining wounded American soldiers and civilians. Approximately 800 American officers, soldiers, and civilians were killed, with at least 300 more soldiers and civilians wounded. Estimates for Native American killed in battle range from 35 to 70.

# Battle of the Wabash

## Battle Analysis: Field of Fire

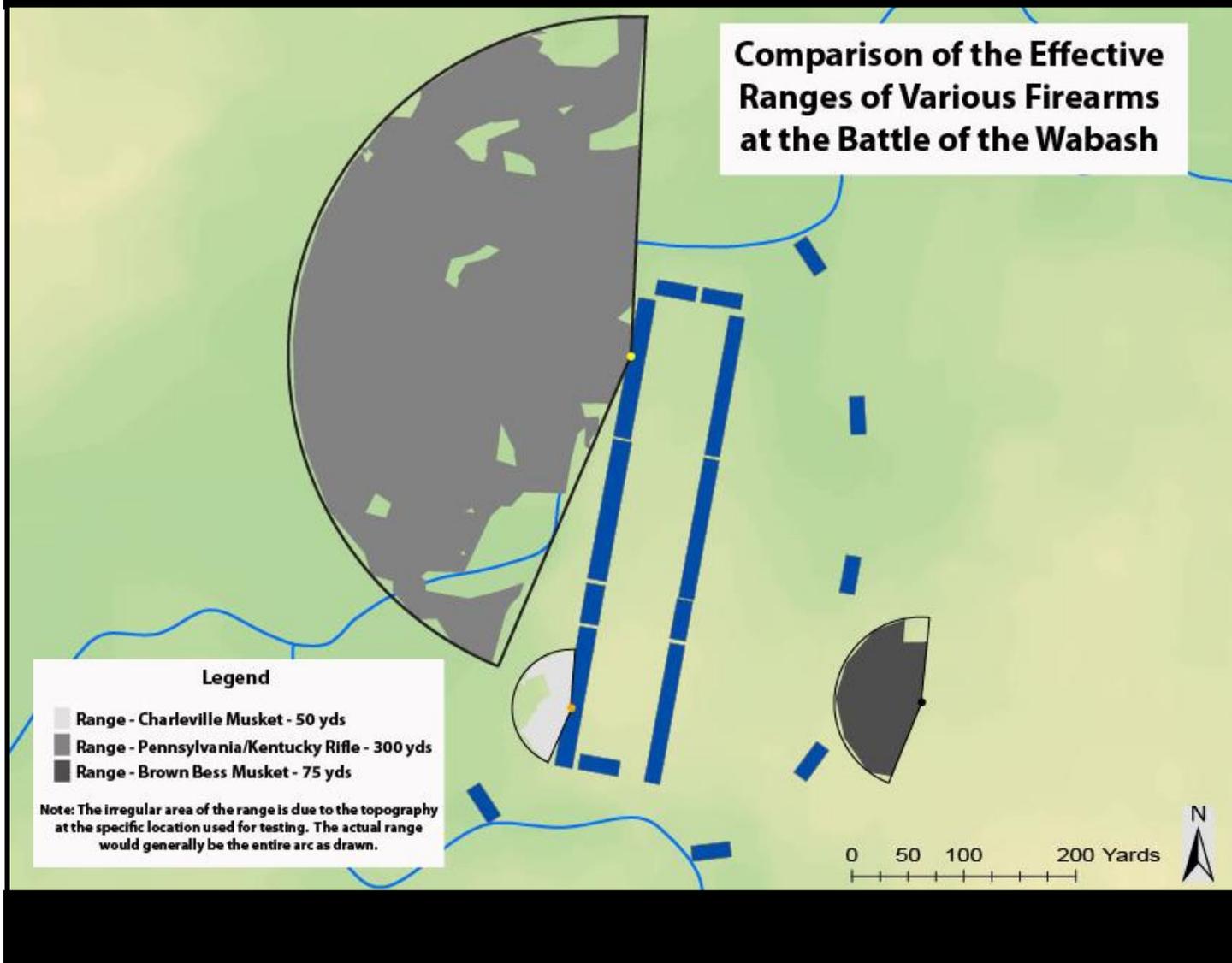
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In his diary, Winthrop Sargent recounts the events of the battle:  
“Concealed as the Indians were, it was almost impossible to discover them and aim the pieces to advantage; but a large quantity of canister and some round shot were, however, thrown in amongst them”.

# Battle of the Wabash – Field of Fire Map A

## Firearms' Field of Fire

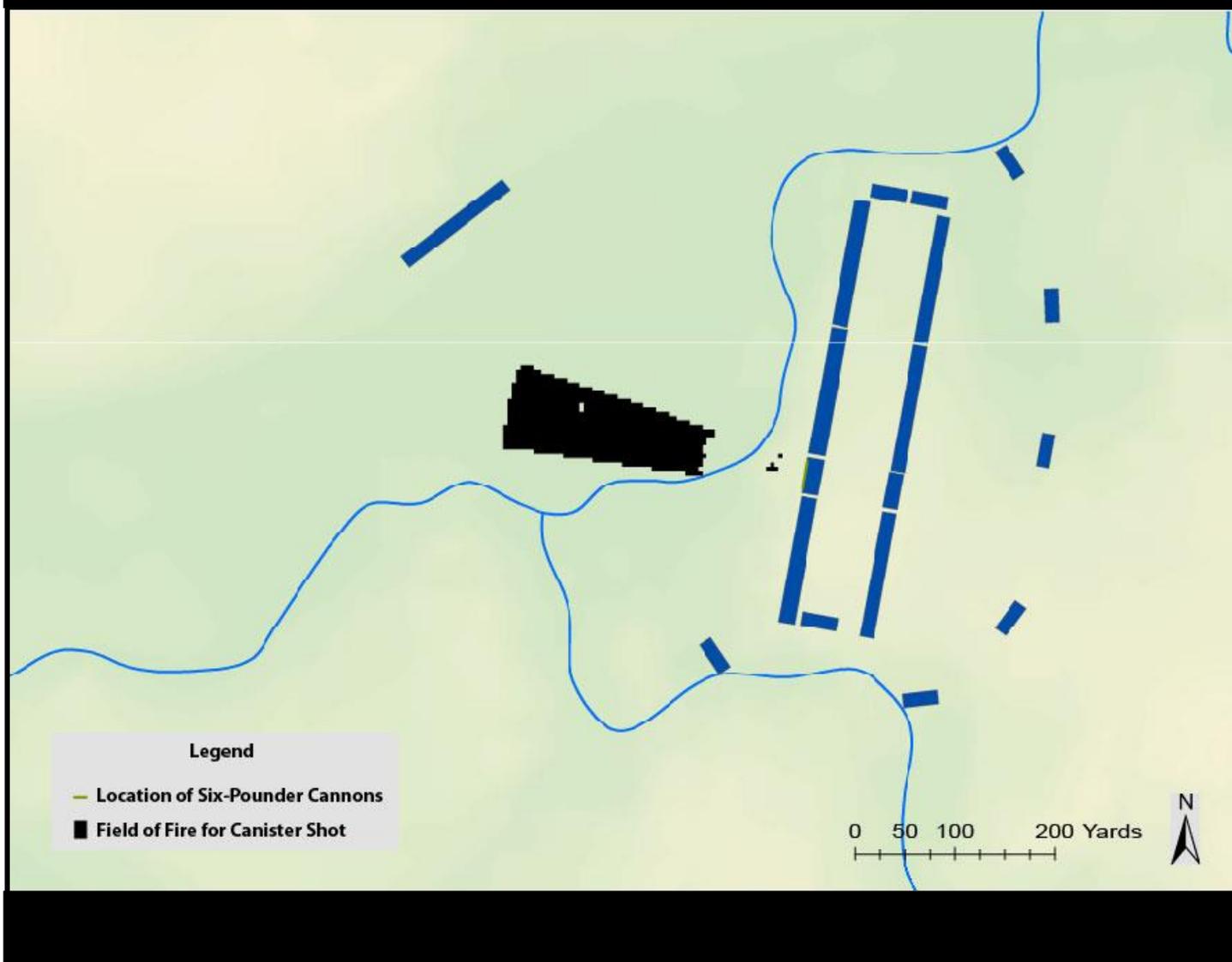
### Comparison of the Effective Ranges of Various Firearms at the Battle of the Wabash



The ability to see the enemy and the ability to effectively fire upon the enemy are not necessarily the same thing. In this analysis, the field of fire of individual weapons was considered. Field of fire calculations include variables such as height between the muzzle and ground, effective range of the firearm, and general accuracy of the firearm. A comparison of the relative fields of fire for the Charleville musket (carried by most of the U.S. Army), Brown Bess musket (carried by most of the Native Americans), and Pennsylvania Kentucky rifles (carried by most of the Kentucky militia) reveals the obvious advantage of a rifle in effective range.

# Battle of the Wabash – Field of Fire Map B

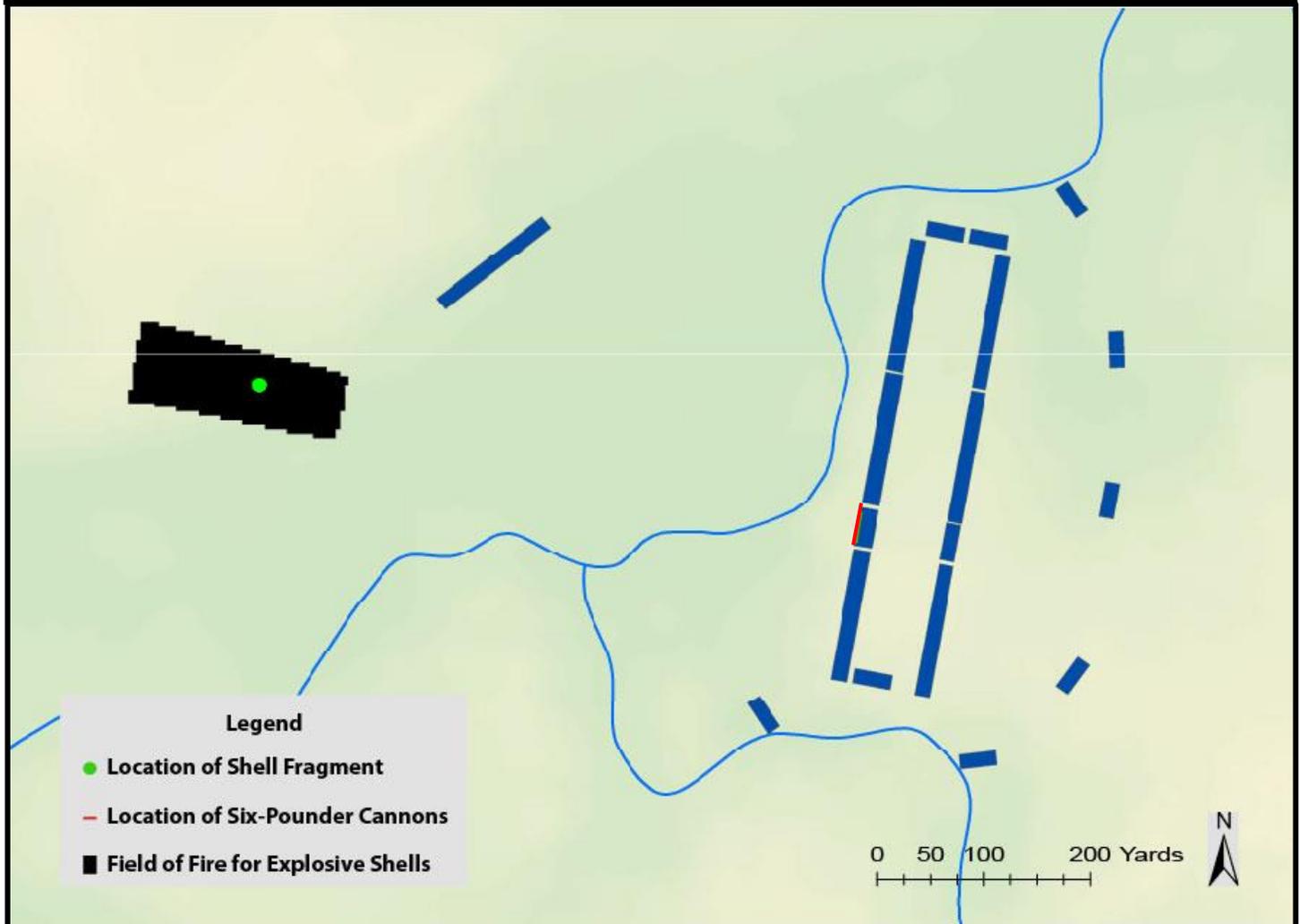
## Field of Fire for Three Six-Pounders Firing Canister Shot



There were two types of cannons used by St. Clair's army, six-pounders and three-pounders, named for the weight of their firing load. In addition, two carronades were brought along for the new fort the army was to build. Three three-pounder cannons were located along the rear of the camp pointing back down the military trace. Three six-pounder cannons were located along the front line of the camp facing to towards the northwest. Shown above is the field of fire for the three six-pounder cannons shooting canister shot. Notice the area of dead ground directly in front of the cannon. This is due to the fact that the cannons could not be lowered to shoot into the ravine of the Wabash River. Diaries and eye witness accounts mention how the cannons shot over the head of the Native Americans as they were approaching the main camp.

# Battle of the Wabash – Field of Fire Map C

## Field of Fire for Three Six-Pounders Firing Explosive Shell

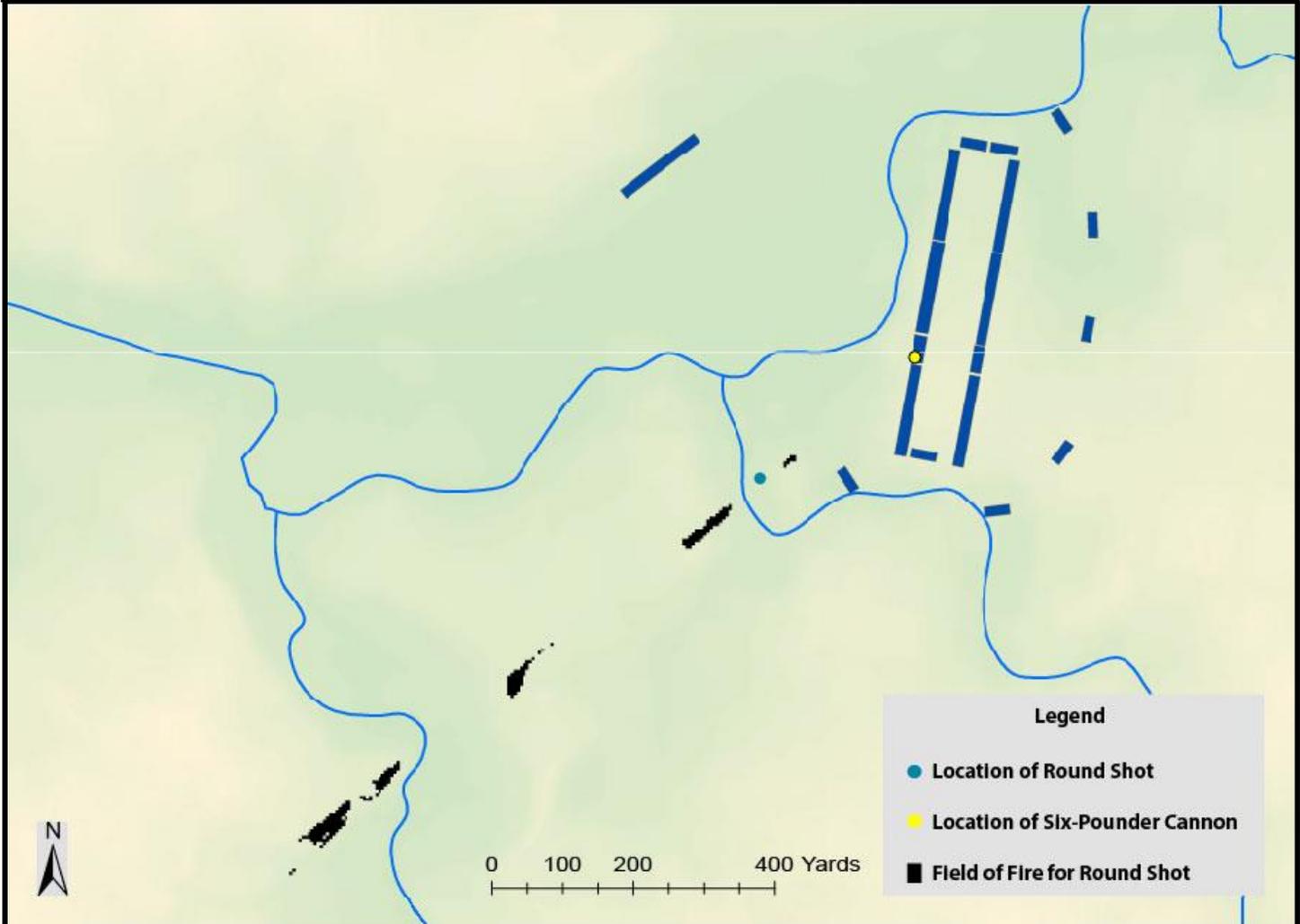


## Shell fragment found in 1983

A shell fragment was found on the battlefield in 1983 and included in an inventory of collector artifacts. Its location (indicated by the green dot above) was approximately 580 yards northwest of the U.S. Army's encampment. When the cannon field of fire is adjusted to account for the range of a six-pounder cannon firing explosive shell, the location of the shell fragment falls right in the middle of the calculated field of fire. The shell fragment's location in relation to the guns discussed in the historical accounts and sketches of the camp would seem to indicate that the fragment was placed at its location during the Battle of the Wabash. The location of this shell fragment supports the location of St. Clair's encampment based on historic documents and confirms our cannon field of fire calculations.

# Battle of the Wabash – Field of Fire Map D

## Field of Fire for Six-Pounders Firing Round Shot



## Round shot found in 2009

The location of a round shot found in 2009 in a former gully of Buck Run does not seem to fit within a battle scenario. It does not seem to match the field of fire of the gun locations from known historical accounts. Due to the chaos and element of surprise during the battle and the effect of the landscape on the field of fire, the cannons were generally ineffective against the Native American attack. It seems unlikely that St. Clair's remaining troops would have had time to move the cannons from pointing northwest to a more southerly direction. If this scenario had managed to occur, the location of the round shot would have been near the edge of the range of a six-pounder firing solid shot or much farther southwest than where the round shot was found. This analysis seems to show that the Buck Run gully is not the original location of the round shot.

# Battle of the Wabash

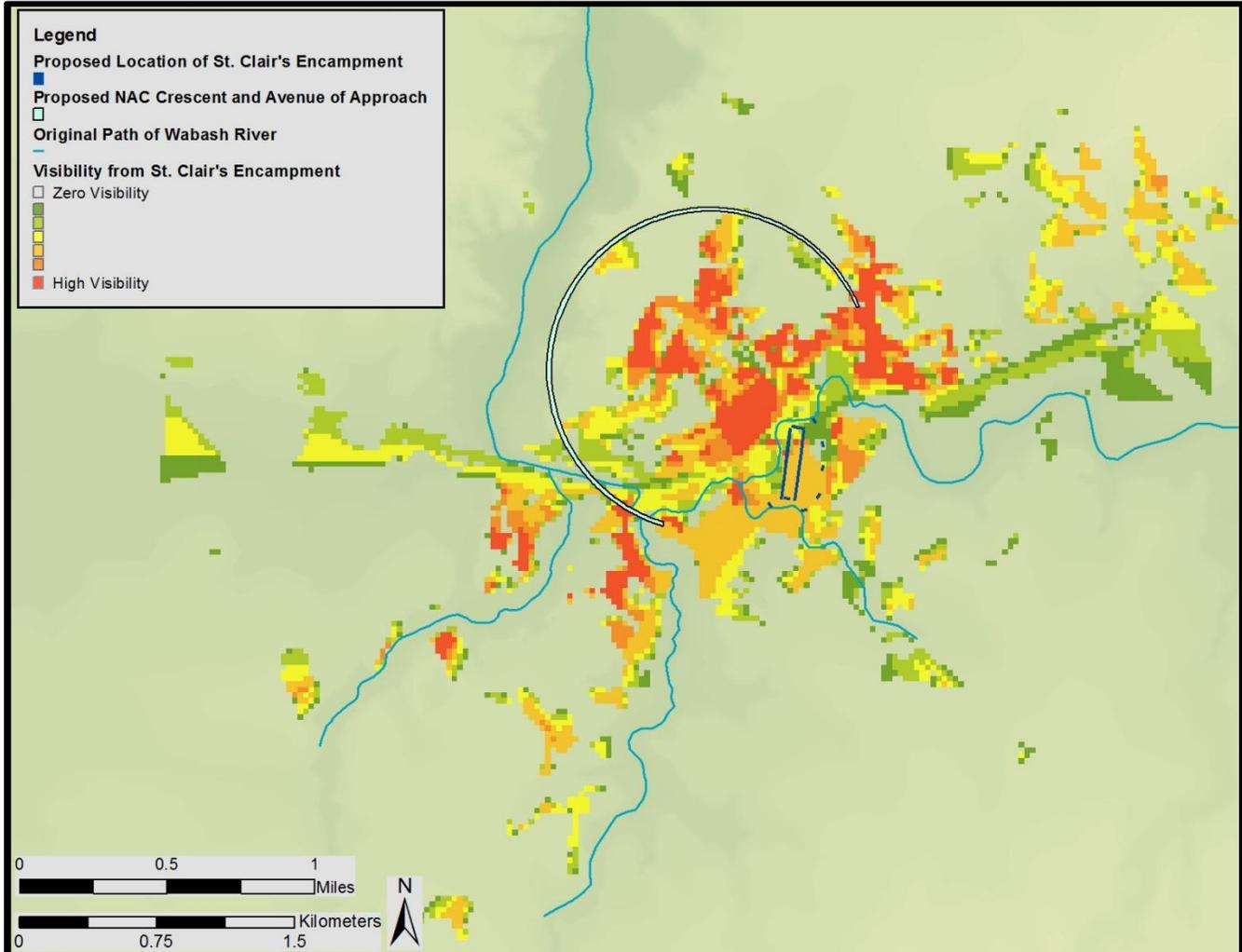
## Battle Analysis: Visibility

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Major Ebenezer Denny describes the movement and concealment of the Native Americans in his journal: “They advanced from one tree, log, or stump to another, under the cover of the smoke of our fire”.

# Battle of the Wabash – Visibility Map A

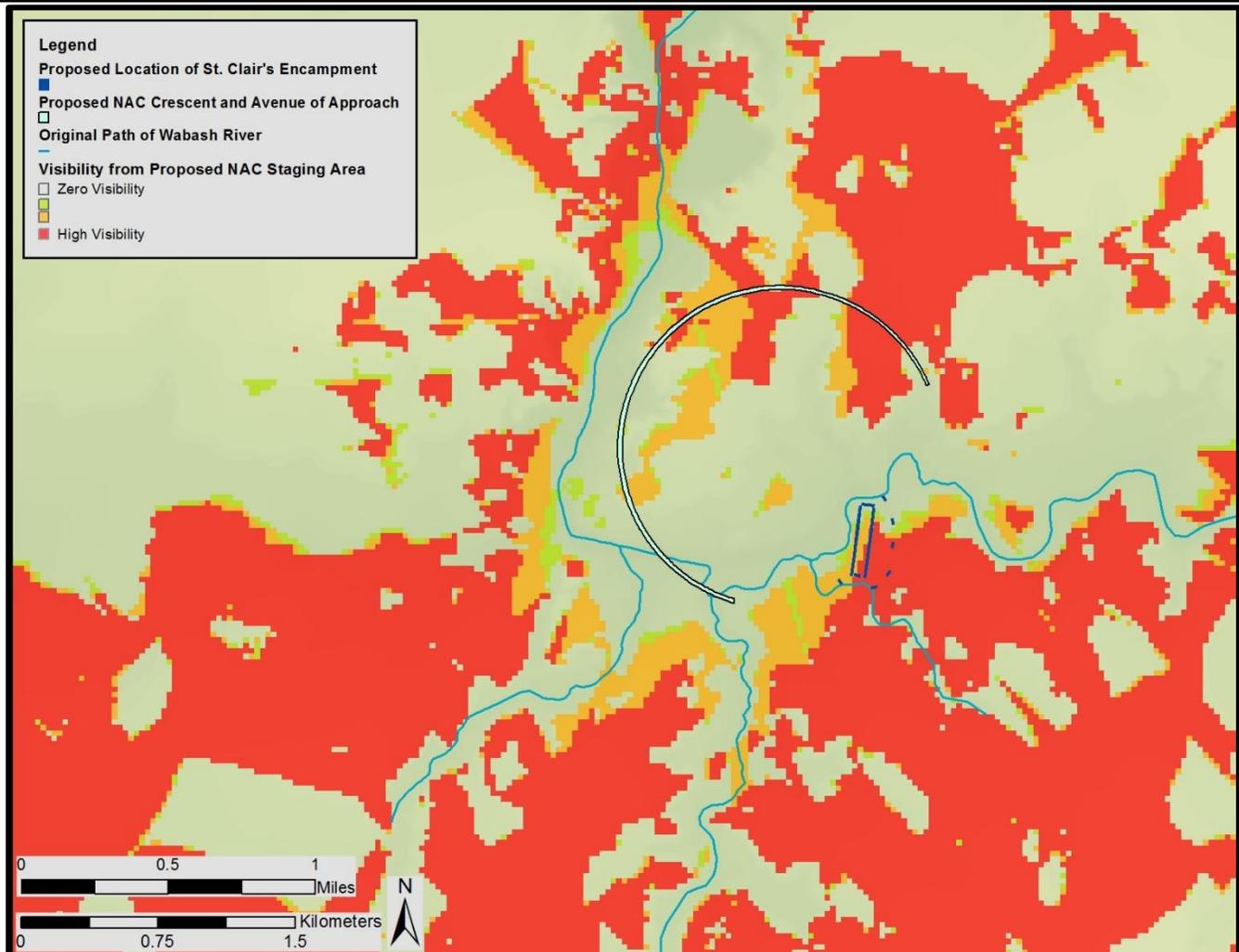
## Areas that St. Clair's Main Encampment Could See



An organized main camp along the steep banks of the Wabash River with the Kentucky militia posted across the river seemed to St. Clair to provide a good defensive post. The map above shows the extent of the visibility that St. Clair and the soldiers had of the camp area (notated in blue). Areas without any additional shading show locations that were not visible to any parts of the camp. Shaded areas were visible to one or more of the camp locations, ranging from low visibility (light green) to high visibility (red). *St. Clair's main camp had virtually no visibility of the Native American Confederacy (NAC) crescent formation and their avenue of approach.* The results of this analysis have provided a much clearer insight into what role the landscape played in the 1791 Battle of the Wabash. St. Clair did not make a great choice for the location of his camp based on terrain, the Wabash River, and his ability to see his surroundings.

# Battle of the Wabash – Visibility Map B

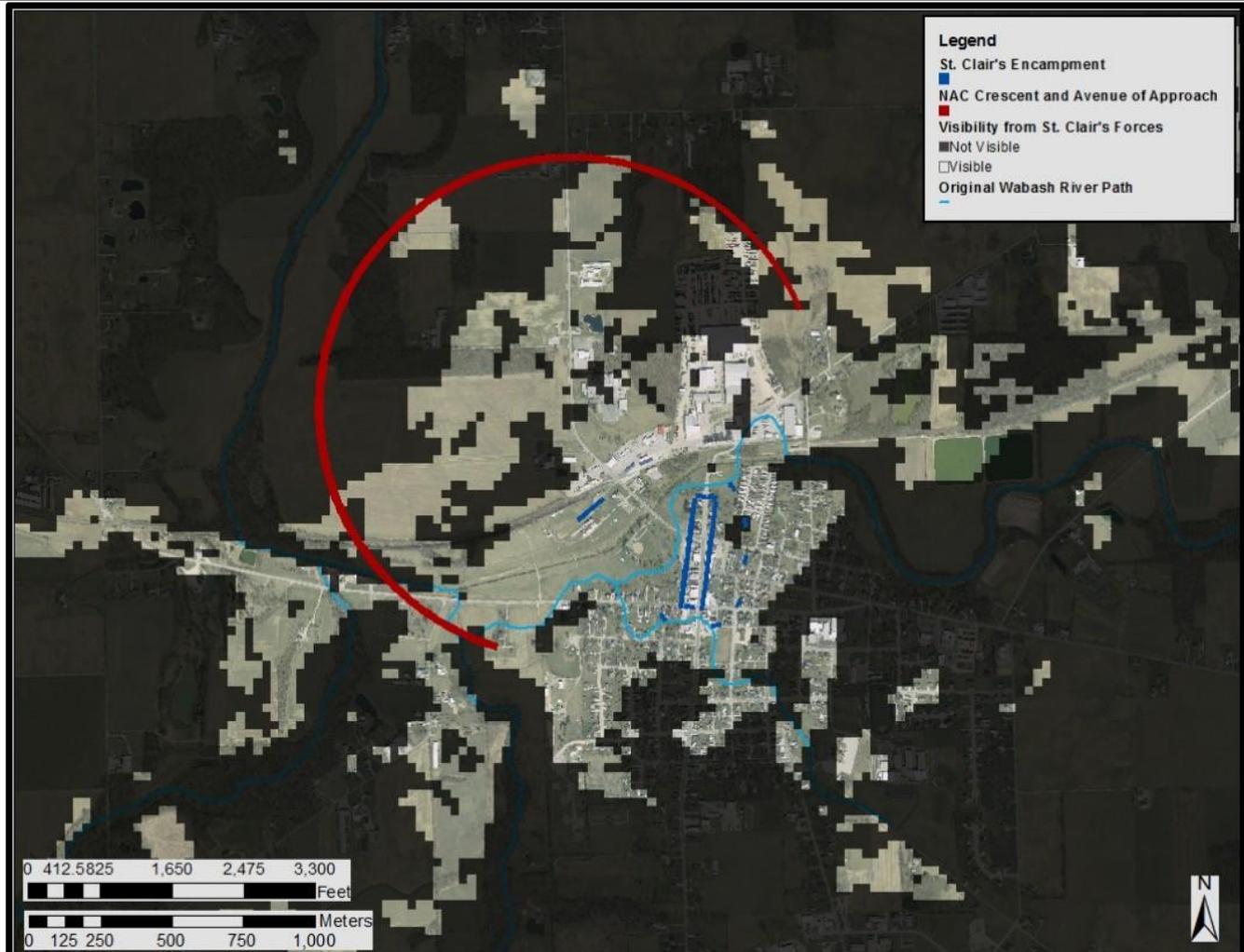
## Areas that the Native American Alliance Could See



The Native American alliance (also known as a confederacy) knew the area and topography surrounding the Wabash River. This was the home to many of the tribes within the alliance. The map above shows visibility for the Native Americans. The crescent shape shows the generalized staging area of the Native Americans. Areas without any shading show locations that were not visible to the Native Americans. Shaded areas were visible to one or more areas of the Native American Confederacy (NAC) crescent formation, ranging from low visibility (light green) to high visibility (red). *Notice how St. Clair's main camp is on the first high ground that the Native Americans would see looking southeast.* The ability of the Native Americans to see such a vast expanse of the landscape, including St. Clair's entire main encampment, allowed them to plan an effective attack that utilized the contours of the land and the Wabash River to their advantage.

# Battle of the Wabash – Visibility Map C

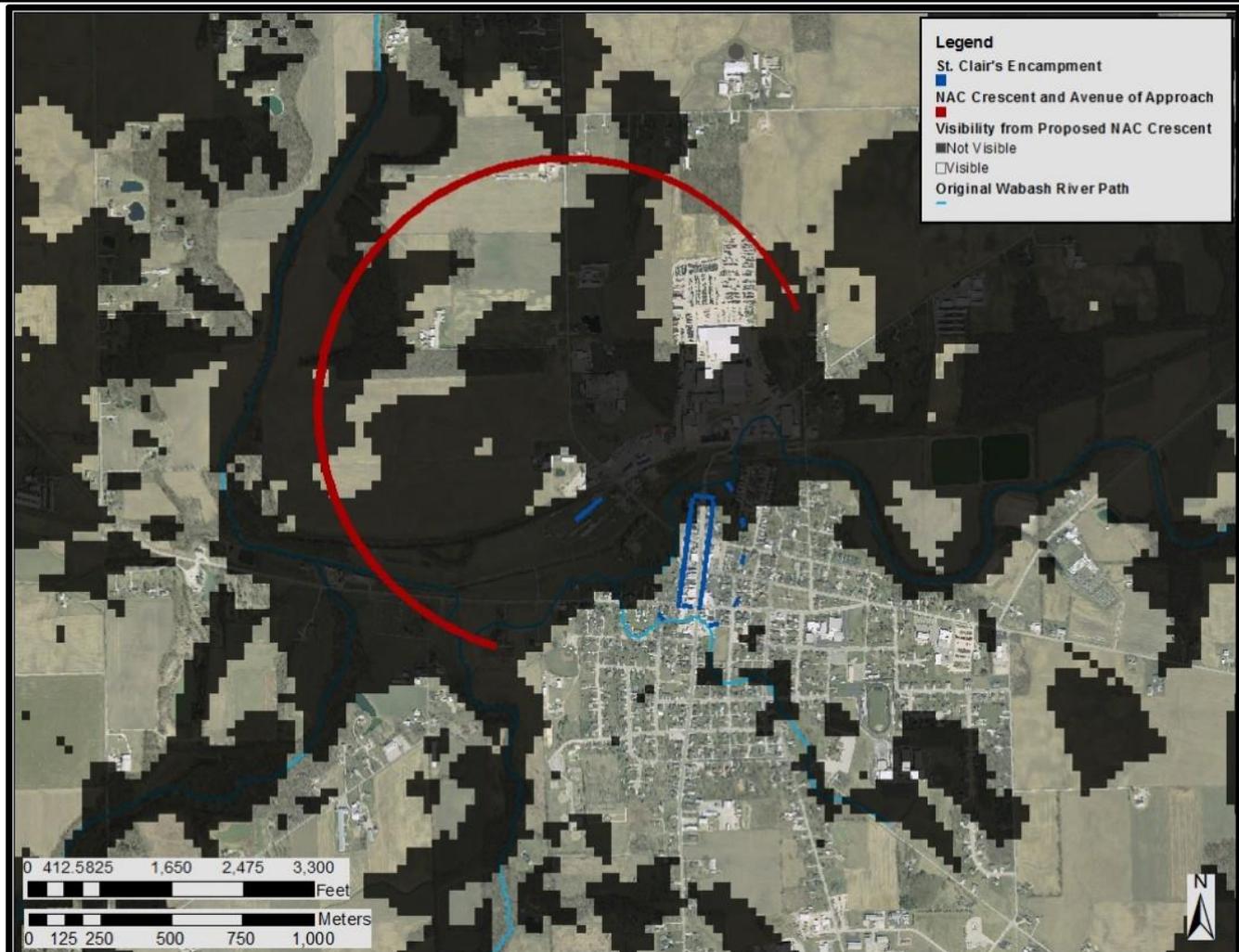
## Areas that St. Clair's Main Encampment Could Not See



Although the U.S. Army could see some of the surrounding landscape, they had limited visibility beyond the Kentucky militia camped across the Wabash River. The darkened areas above illustrate just how much of the surrounding landscape St. Clair and the U.S. Army were unable to see. According to various historical documents, the ability to see much beyond the camp was of little worry to St. Clair. However, these invisible areas provided the Native American alliance with the cover and concealment needed to effectively surround the U.S. Army camp. The red crescent shows the generalized location of the Native American staging area prior to the onset of the battle. At the beginning of the battle, the Native Americans were completely invisible but very close to St. Clair and his army.

# Battle of the Wabash – Visibility Map D

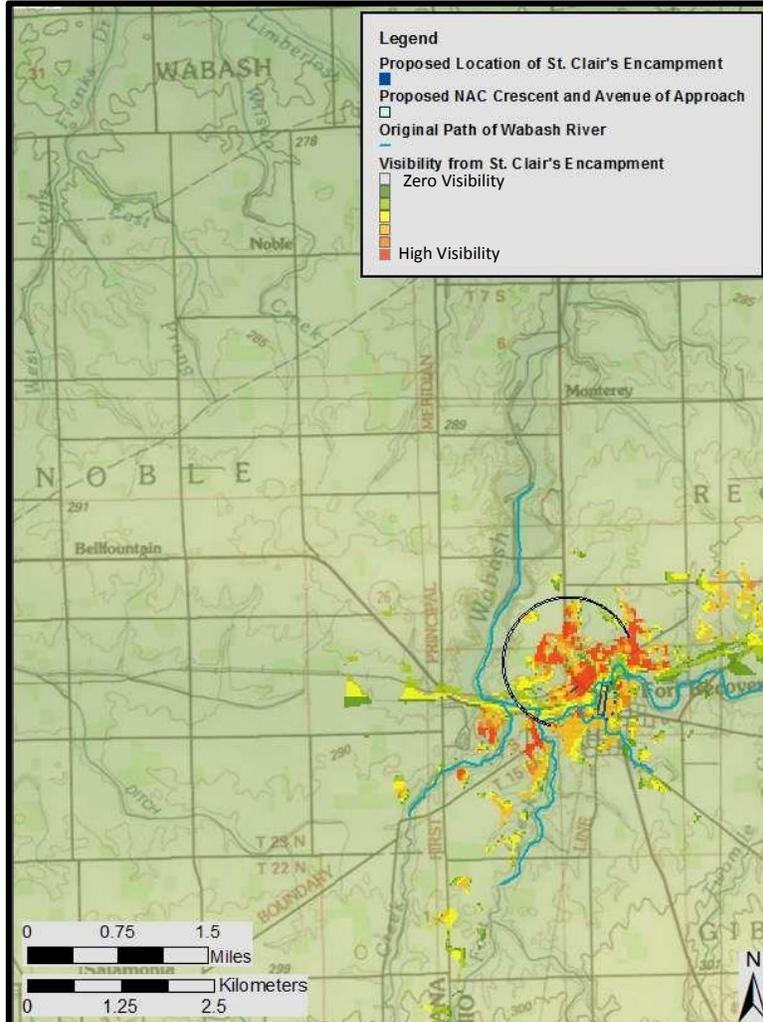
## Areas that the Native American Alliance Could Not See



The Native American leadership could see a large portion of the landscape from their ridgetop staging area, including St. Clair's main camp. The darkened areas above shows the areas that were invisible to the Native Americans. Although the Kentucky militia camp could not be seen from the ridgetop, Native American scouts had explored the area the night of November 3, and knew exactly where the Kentucky militia were camped. This stark contrast between the visibility of the Native American alliance and that of the U.S. Army further illustrates the important role the landscape played in the events that unfolded at the Battle of the Wabash.

# Battle of the Wabash – Visibility Map E

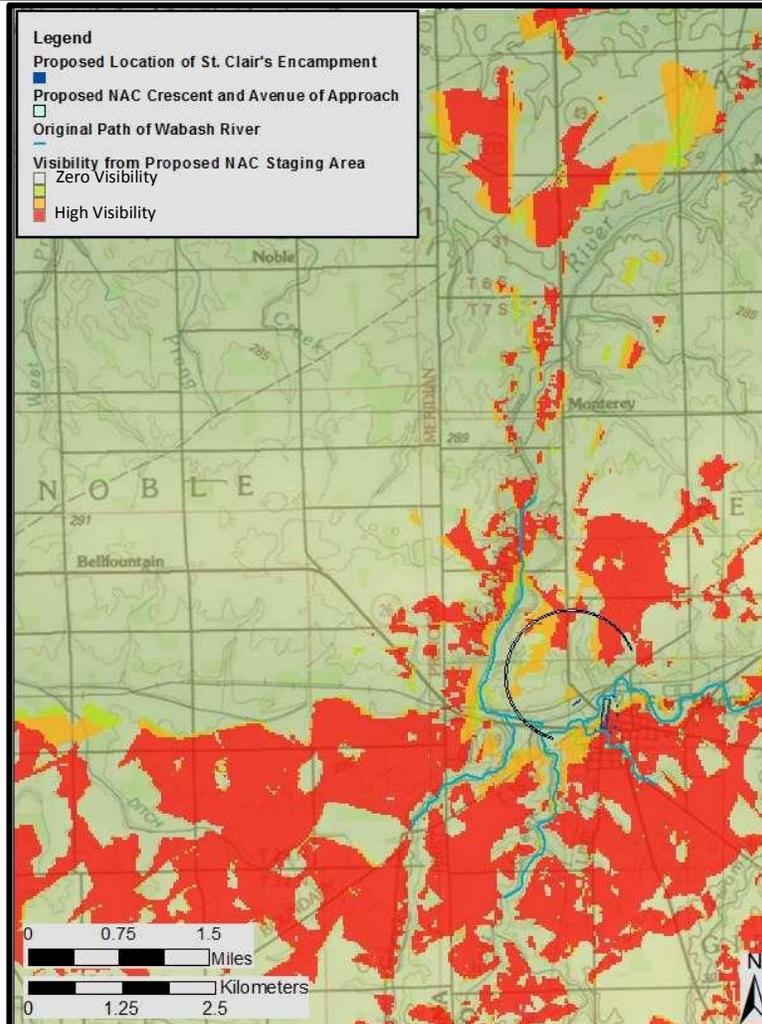
## Areas Visible to St. Clair's Forces



Elevation played a key role in the Battle of the Wabash, as the ability to observe and be observed was crucial. These are the areas in the greater surrounding landscape (3-5 miles) that St. Clair would have been able to see. St. Clair's main encampment was virtually sitting in a bowl and could see very little of the outlying area. Various aspects of the terrain and environment, along with St. Clair's lack of visibility, provided much cover and concealment for the attacking Native Americans. Visibility was also affected by the low light of dawn, although the snowfall the night before could have brightened the landscape. Elevation and the heavily wooded landscape would have put St. Clair's forces at a great disadvantage in their ability to see the approaching Native Americans.

# Battle of the Wabash – Visibility Map F

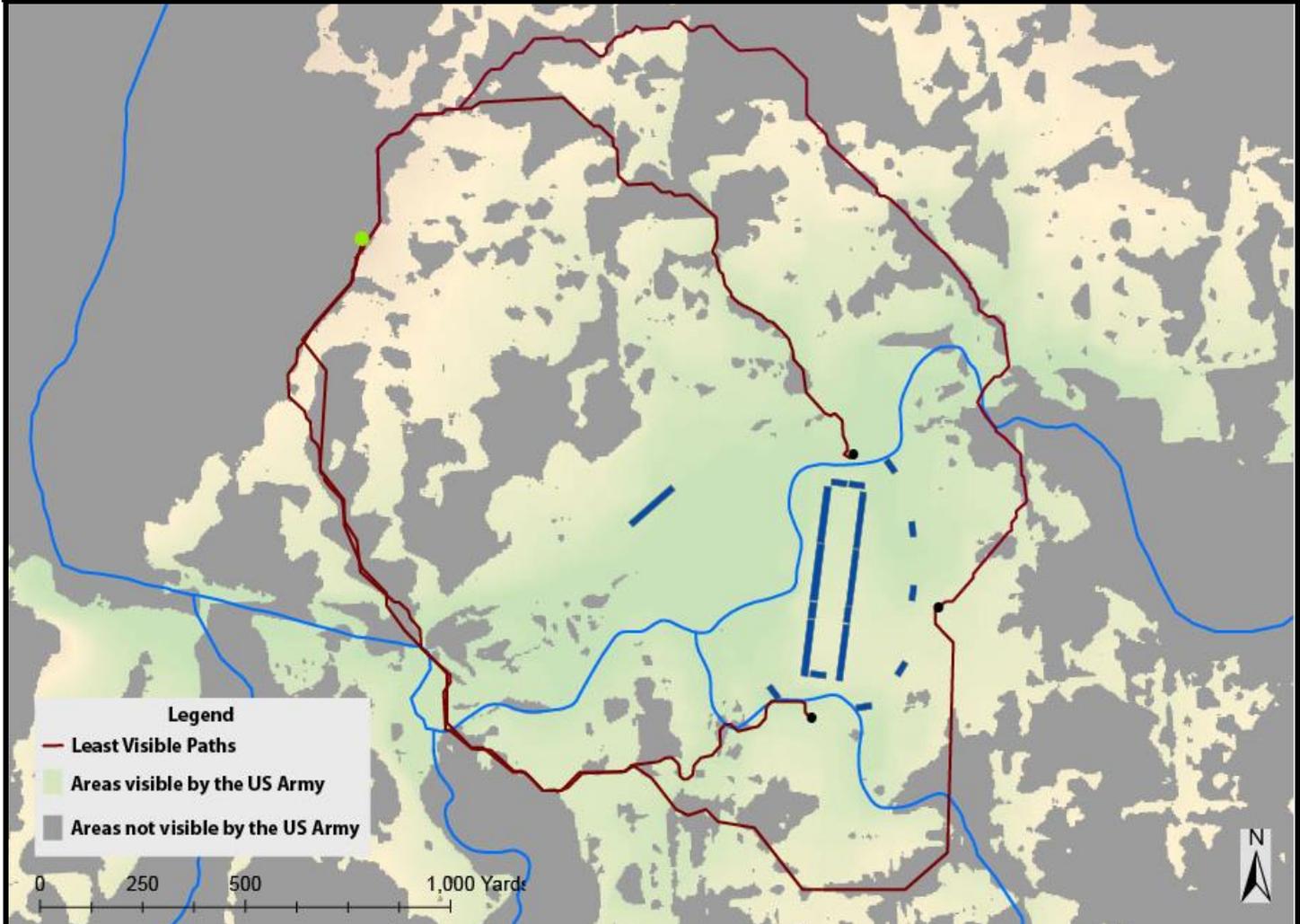
## Areas Visible to the Native American Alliance



These are the areas in the greater surrounding landscape (3-5 miles) that the Native American alliance would have been able to see. St. Clair did not have the heavily wooded terrain for cover like the Native American alliance did. The Native Americans could see a far greater amount of the surrounding landscape than St. Clair's Army. The ability of the Native American alliance to see a large amount of the surrounding landscape allowed them to not only move throughout the battle but to plan the best avenues of attack on St. Clair's forces.

# Battle of the Wabash – Least Visible Path Map A

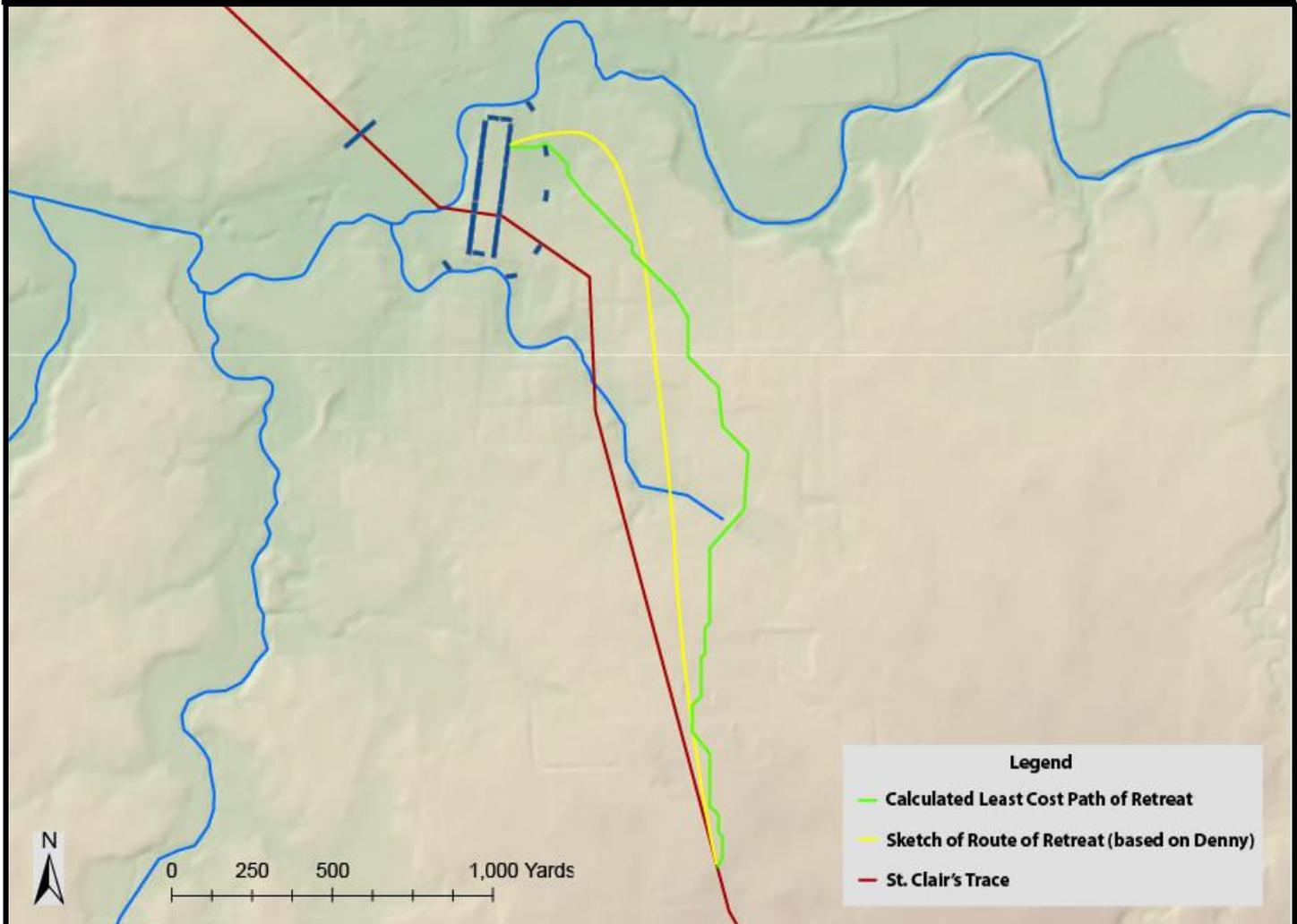
## Least Visible Paths for Native American Encirclement and Attack



Concealment of the surprisingly large size of the Native American alliance and the Native Americans' ability to surround St. Clair's camp virtually undetected were the keys to their successful battle plan. A possible least visible path that the Native Americans took to surround St. Clair's army (noted in red) was created based on the number of army observers along their formation that could see a particular spot on the landscape. This least visible path was calculated from a starting point at the top of the ridge across from the camp to points surrounding the camp. While not suggesting that these were the exact routes taken by the attacking Native Americans, the paths do show the possibility of moving through the landscape with a minimum risk of detection within an hour (according to historical accounts) to completely surround St. Clair's Army.

# Battle of the Wabash – Least Cost Path Map B

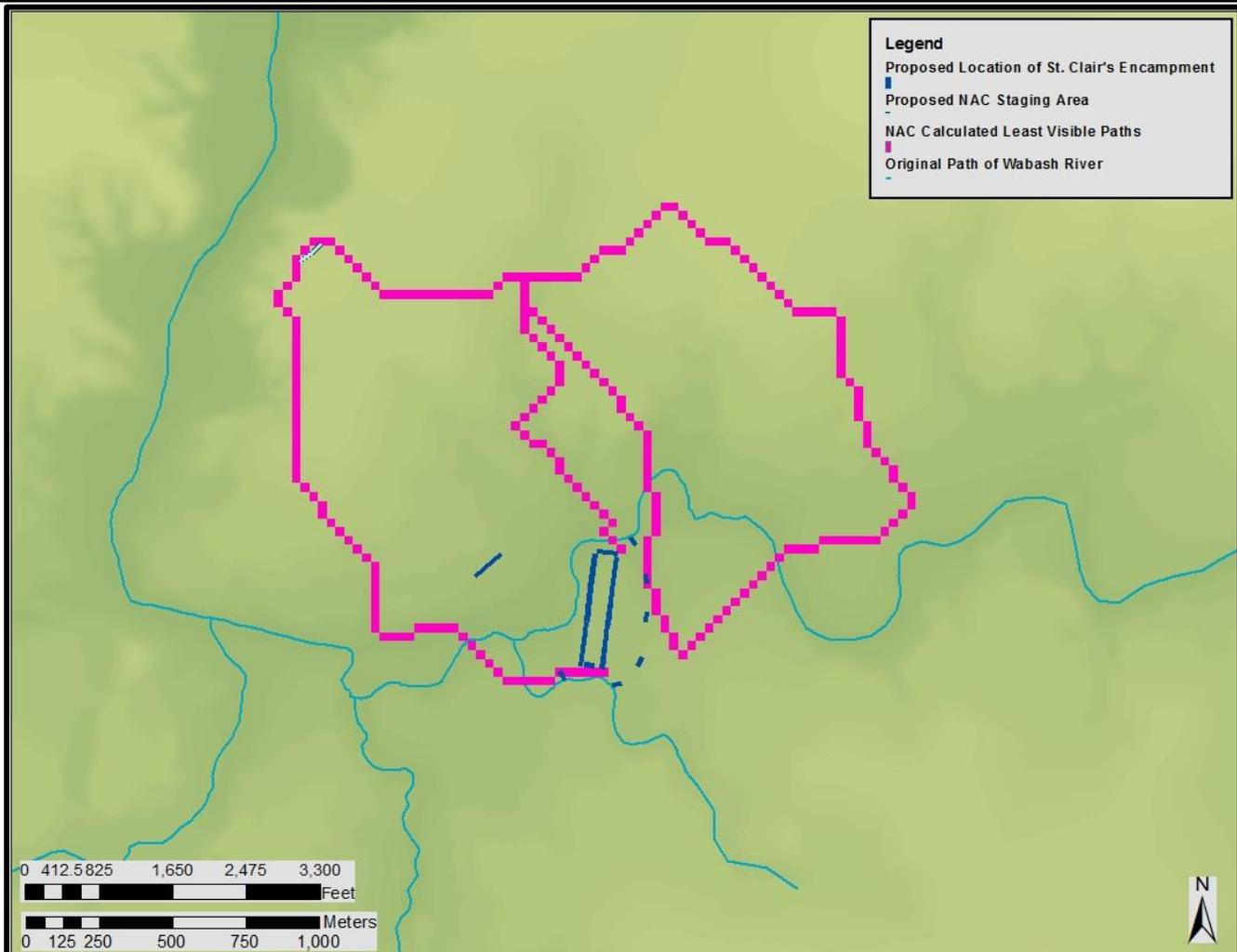
## St. Clair's Army Route of Retreat to Fort Jefferson



St. Clair's Army left Fort Jefferson on October 29, 1791 and arrived at the banks of the Wabash on November 3. They cut their way through the woods and the road they created became known as St. Clair's Trace. According to historical accounts, the army's retreat from the battle was hastily organized and options were limited due to the presence of Native Americans on all sides. A sweeping move created an opening in the lines on the northeast corner of the U.S. Army formation to begin the retreat. Based on sketches and historical accounts, the retreating army's path (yellow) met up with St. Clair's Trace (red) in approximately one-and-a-half miles. A least cost path (green) was created to estimate the most efficient avenue of retreat for the army. The similarities of these paths seem to corroborate the historical accounts.

# Battle of the Wabash – Least Visible Path Map C

## Native American Alliance Least Visible Path



Calculated by combining topography and visibility

The movements of the Native American alliance are not well documented historically; this calculated path (in pink) provides insight into the possible movements of the Native American alliance as they prepared to attack. Battle related artifacts found during Ball State University's most recent archeology surveys have helped us test the reconstruction presented above in Least Visible Path Map A and propose a new starting point or staging area for the Native American crescent. The pink path indicates the quickest path that the Native Americans could have taken to surround St. Clair's Army in less than an hour without being seen by the soldiers. By considering their environment and using landscape as part of their battle strategy, the Native American alliance were able to surround and surprise the army.

# Battle of the Wabash – Least Cost Path Map D

## St. Clair's Least Cost Path and Proposed Best Path of Retreat



Historical documents show the U.S. Army retreated back to Fort Jefferson along St. Clair's Trace (in red) which was made the week before as St. Clair's troops marched north from Fort Jefferson. An Indian path was discovered four miles south of St. Clair's encampment on the Wabash River; the last four miles of St. Clair's Trace followed this Indian path. The purple line is the calculated least cost path of retreat for the U.S. Army created with topography and least cost analysis. It is interesting to note how different the calculated least cost path of retreat is from the actual St. Clair's Trace. This contradiction in paths shows just how differently the U.S. Army and Native Americans regarded the use of their environment. The Native Americans knew the landscape intimately and used it to their advantage, while St. Clair and the army molded the environment to build a road where they wanted it, not where it was the easiest or would take the least amount of work.

# Chapter III – Battle of Fort Recovery

## Battle Overview

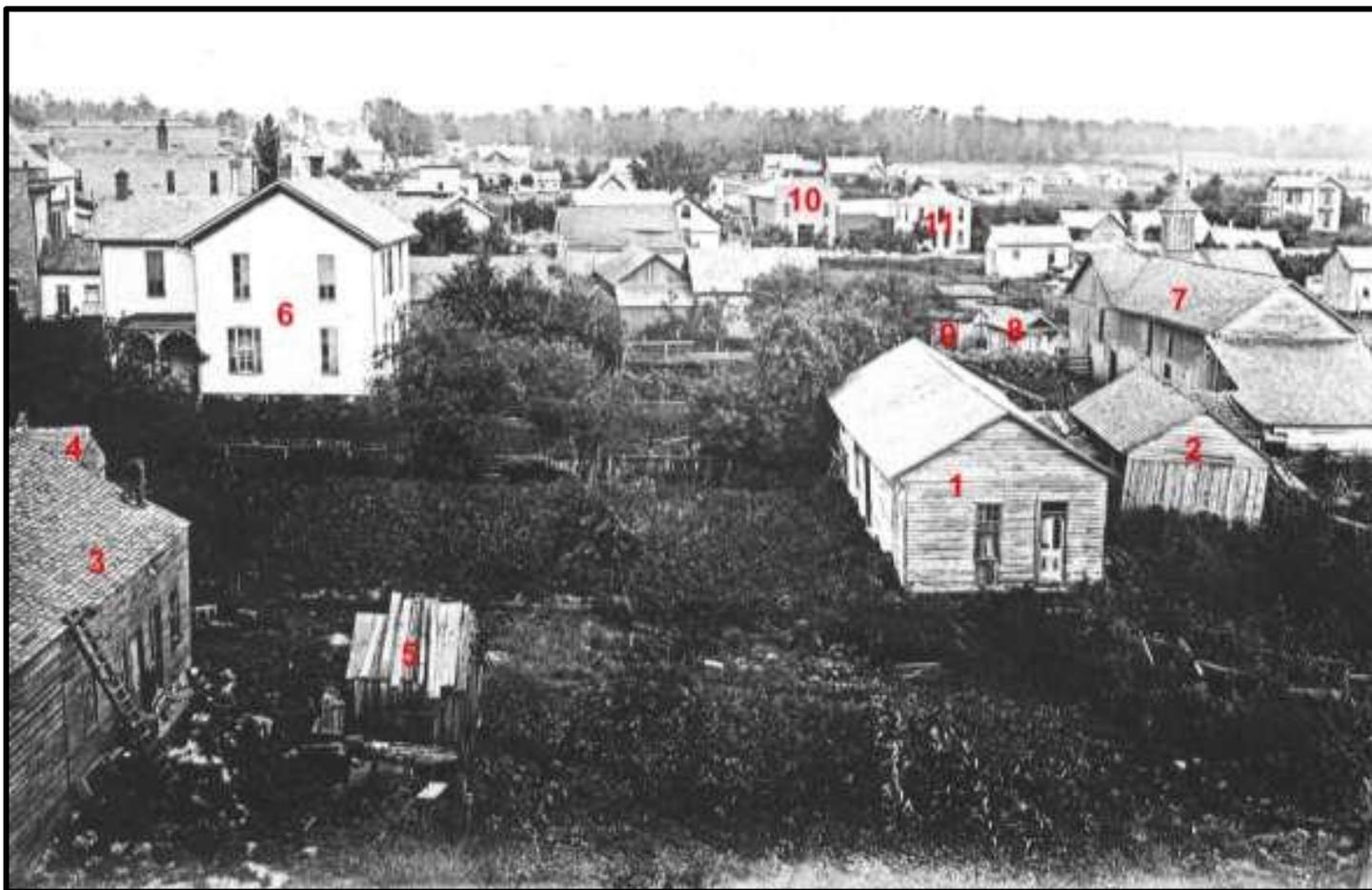
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After the Battle of the Wabash, St. Clair was the subject of the first congressional investigation and the entire battle was investigated by a group of the President's trusted advisors. St. Clair was not found to be completely at fault for the crushing defeat but was still relieved of his duties. Anthony Wayne, Revolutionary War hero, was chosen by President Washington to replace him. Wayne restructured the army and wouldn't march until he had properly trained soldiers and adequate supplies. He ordered Major Henry Burbeck to march from Greene Ville to the site of the Battle of the Wabash to construct a fort. Wayne decided to name the fort "Fort Recovery", since the site was recovered from the Native Americans.

After being so successful at the Battle of the Wabash, the Native Americans were confident in their engagements with U.S. soldiers. In the days leading up to the Battle of Fort Recovery, many Native American tribes in the area were assembling to attack Wayne's Army and hoped to locate artillery supposedly buried after the defeat of St. Clair's army. Because of their previous success, they wanted to use their large numbers and position of strength to try and take Fort Recovery. However, the Native American alliance needed to sustain themselves by hunting in smaller groups, and the alliance was growing so large it was becoming unmanageable. There were small skirmishes and feuds between different tribes within the Native American alliance and it was difficult to move as a cohesive unit towards Fort Recovery. Despite these challenges, the Native American alliance moved into position to attack a supply train on St. Clair's Trace on June 29, 1794.

# Battle of Fort Recovery – Photograph A

## View of Area that is Currently Fort Stockade and Museum



Circa Early 1900s

This photograph shows a view of the Fort Site Street area in the early 1900s, looking from north to south, and shows the area that became the fort reconstruction and Fort Recovery Museum. We believe the photo is taken from the bell tower of the Lutheran church at the corner of SR 49 and Wayne Street. Buildings 1, 2, 7, 8, and 9 were on the location of the current fort reconstruction and museum. Building 7 was located in the area of the well and flagpole. Buildings 3, 4, 5 were located at the corner of Boundary Street and Fort Site Street. House 6 was located at the back of the vacant lot along Boundary Street between Wayne Street and Fort Site Street. The presumed location of the original fort is in the area of former structures 1, 2, 6, 7, 8, and 9. Building 10 currently houses a local business, the Fashionette. Building 11 is currently a private home that was the longtime residence of the Bonvillian family. Photo courtesy of the Fort Recovery Historical Society.

# Battle of Fort Recovery – Photograph B

## 1936 Fort Recovery Reconstruction



The first reconstruction of Fort Recovery was built in 1936, over 100 years after the original fort was burned down. This fort reconstruction project was financed as part of the New Deal relief program through the Works Progress Administration (WPA). The current Fort Recovery Museum building was built at the same time by the WPA. At the time of the 1936 construction, there was no drawing or information as to the actual size of the original Fort Recovery. Testimony from the local people of Fort Recovery and other reconstructions such as Fort Dearborn and Fort Jefferson served as vital information for the fort reconstruction. This reconstruction started deteriorating in the early 1950s. Photo courtesy of Fort Recovery Historical Society.

# Battle of Fort Recovery – Historic Photograph C

## 1956 Fort Recovery Reconstruction



In 1952, the Anthony Wayne Parkway Board proposed that the 1936 reconstruction be replaced with a new reconstruction. In 1956 the Anthony Wayne Park Board in cooperation with the Ohio Historical Society and the Fort Recovery Historical Society began the replacement of the original reconstruction. This new reconstruction, which still stands today, consists of two blockhouses connected by stockades with a gate, measuring about 150 feet long. Two major differences existed between the 1936 and 1956 reconstruction. Instead of a miniature version of the complete fort, the 1956 reconstruction is one side of the fort “built in scale and character with the original”, although there were no original plans of the fort existing in 1956. The blockhouses of the 1956 reconstruction sit at an angle to the walls, while the blockhouses of the first reconstruction formed a perfect square with walls. Photo courtesy of David Barker, Ohio History Connection.

# Battle of Fort Recovery – Photograph D

View of Fort Recovery from the Corner of Wayne and Boundary Streets



Location of archeological excavation in 2011

This photograph was taken at the corner of the Wayne and Boundary Street intersection. This long, narrow lot likely would have been located near the original fort. This lot has been home to two buildings since the late 1800s. There was a house located in the western half of the lot in the late 1890s, but gone by 1946. A second small structure was present near the east end of the lot in 1914, and it appears to be labeled “lunch stand.” In 2011, archeologists from Ball State University excavated an area of this plot and found a 17 foot section of what appears to be the original fort stockade wall, with large post holes and battle era artifacts. The 17 foot section runs parallel to Boundary Street (shown on the right) which was the location of the original Greenville Treaty Line.

# Battle of Fort Recovery

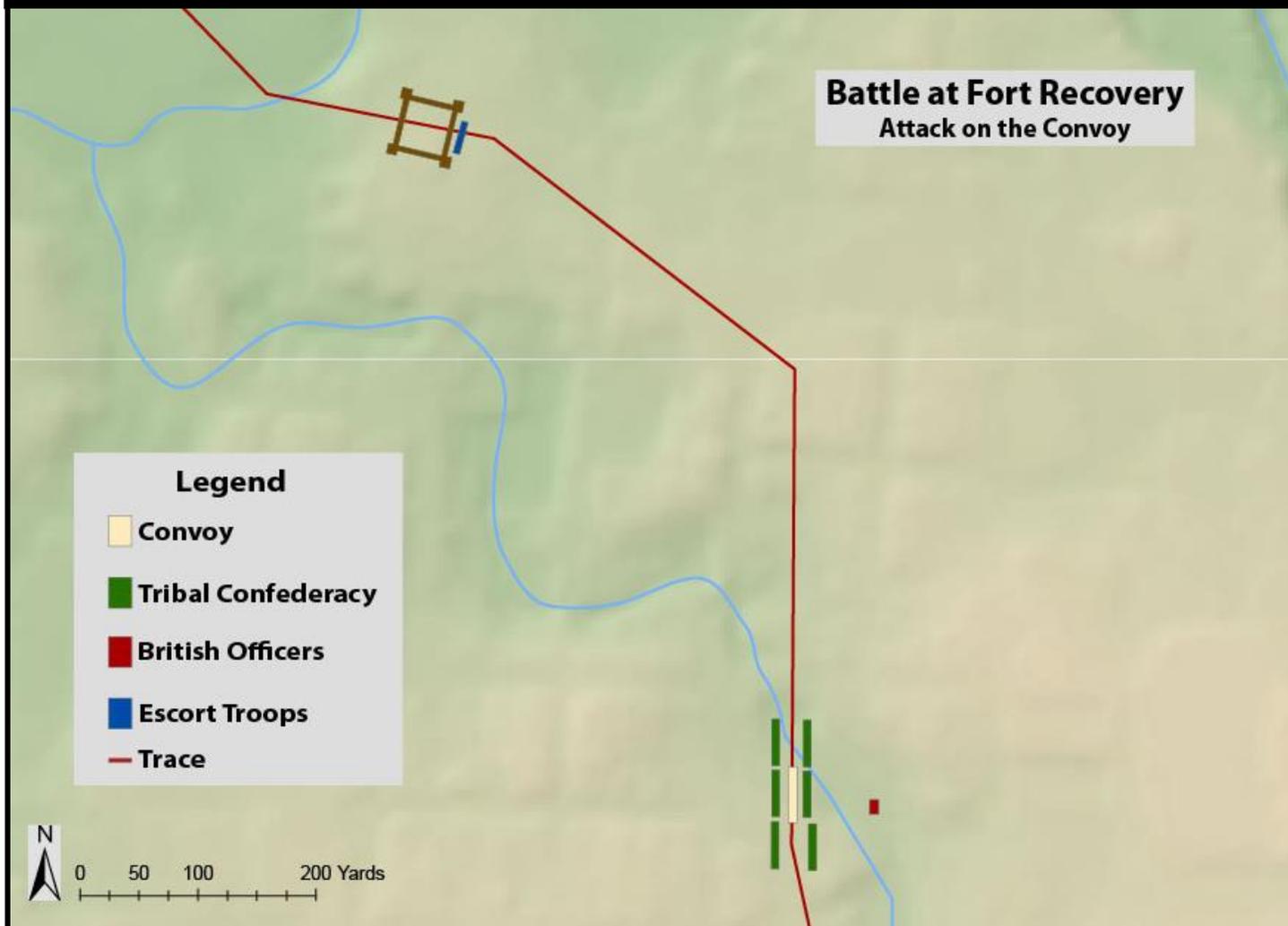
## Battle Progression

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**John Hutchinson Buell recounts the day of the battle in his diary detailing his life events from 1775-1803: "A friendly Indian by the name of 'Joe' went into Fort Recovery and made signs to Major McMahan that there were a great many bad Indians near the Fort. The Major laughed at Joe and did not believe him".**

# Battle of Fort Recovery – Initial Battle Map A

## Attack on the Convoy

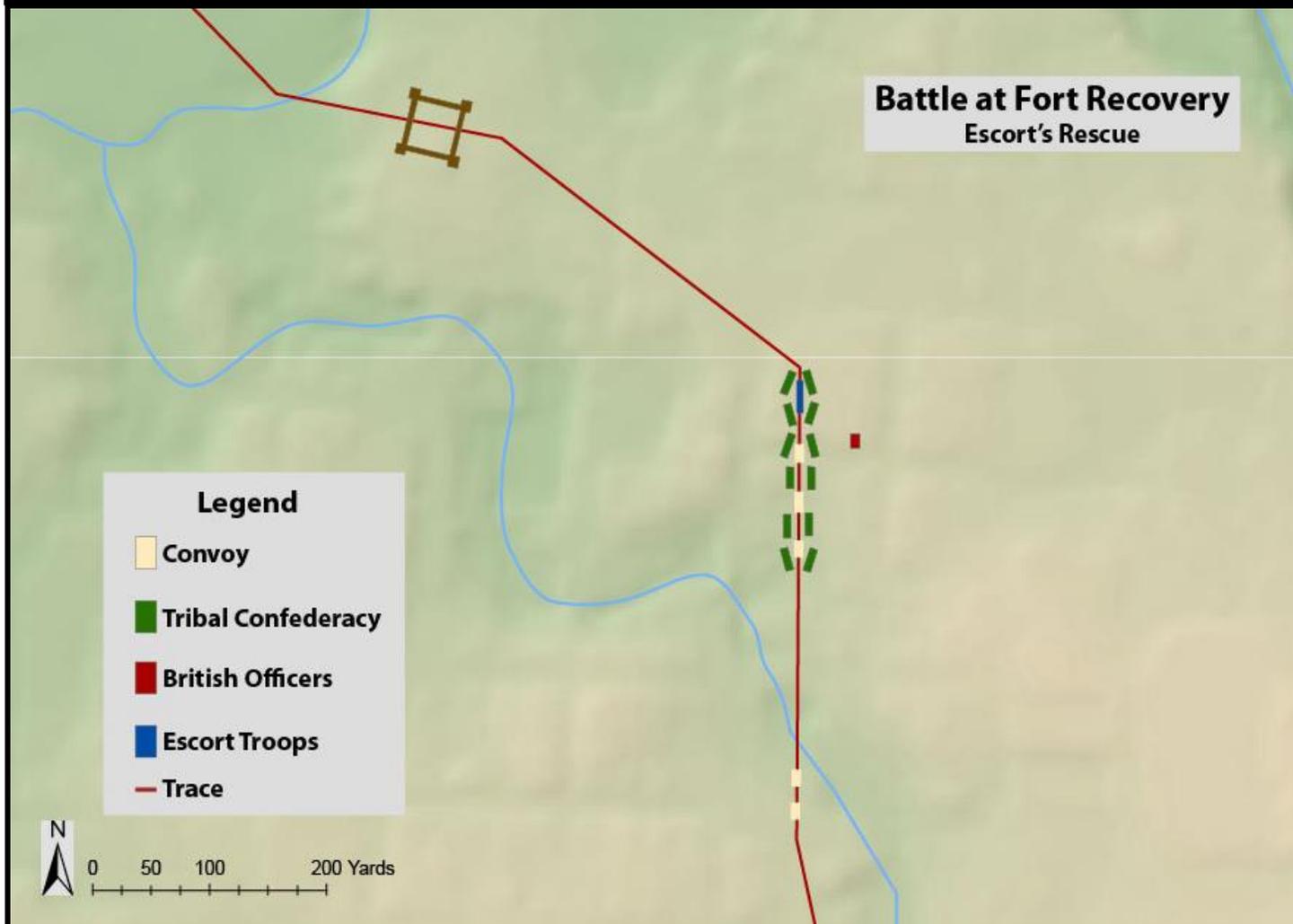


June 29 and the morning of June 30, 1794

In 1793, there was a second U.S. Military campaign to take control of the Northwest Territory led by General Anthony Wayne. He made dramatic changes to the military and was prepared with supplies, trained soldiers, and upgraded artillery. In December 1793, he commanded a fort to be built on the site of St. Clair's defeat to be named on Fort Recovery. On June 29, 1794, a convoy led by Major William McMahan traveled to Fort Recovery from Greene Ville. The convoy included 360 packhorses loaded with supplies and defended by 50 dragoons and 90 riflemen. The convoy couldn't fit inside the fort and had to camp a short distance south on St. Clair's Trace with no defenses. The Native American alliance, still under the guidance of Mishikinakwa and Weyapiersenwah, attacked the convoy as they left the fort on the morning of June 30. Their plan was to steal as many packhorses and supplies as they could. The initial attack on the convoy and soldiers was successful.

# Battle of Fort Recovery – Initial Battle Map B

## Escort to the Rescue

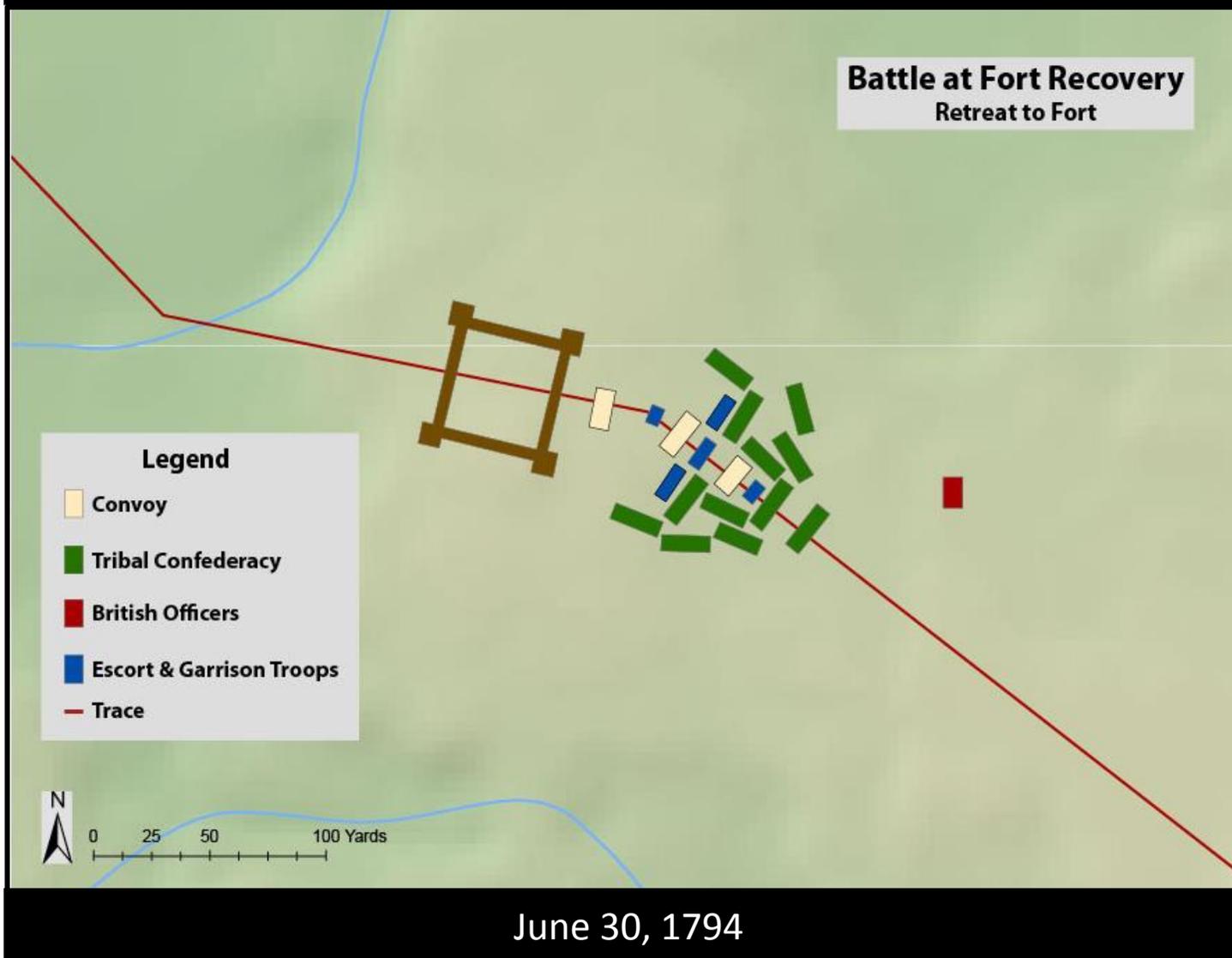


June 30, 1794

Reinforcements left the fort to support the convoy. Part of the large Native American alliance had moved southwest to attack the convoy and concealed themselves in the woods, flanking the road on either side. The Native Americans were successful in their convoy attack, wounding a large number of U.S. soldiers, capturing many horses, and taking supplies. This initial successful attack encouraged some tribes of the large Native American alliance to proceed with an attack on Fort Recovery.

# Battle of Fort Recovery – Initial Battle Map C

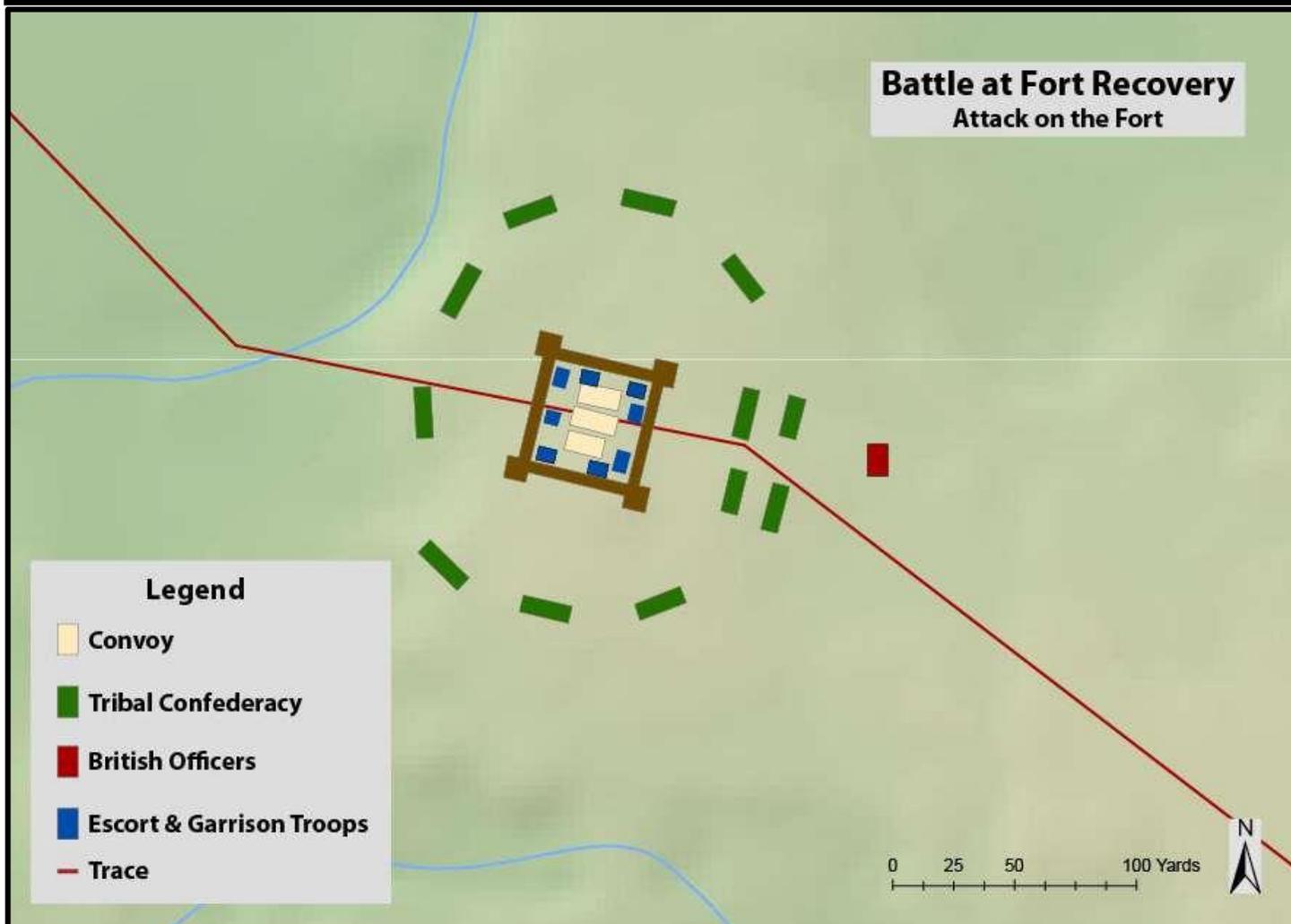
## Retreat to the Fort



All the soldiers were quickly forced to retreat back to Fort Recovery, using St. Clair's Trace. The terrain played an important part in the Battle of Fort Recovery. St. Clair's Trace provided an avenue of retreat for the soldiers who were attacked in the convoy. In addition, Fort Recovery itself was a significant alteration to the landscape and key defining feature. It provided protection for the soldiers as they were greatly outnumbered. In order to build the fort the previous December, a large portion of the surrounding area was cleared for building materials and firewood. This gave the U.S. Army an advantage because it eliminated cover and concealment for the Native Americans and provided more visibility for artillery and riflemen from within the protection of the fort.

# Battle of Fort Recovery – Initial Battle Map D

## Attack on the Fort



July 1, 1794

The Native American leaders, Mishikinakwa and Weyapiersenwah, wanted to fall back and end the battle after the successful attack on the convoy. However, some tribes were encouraged by their successful convoy attack and decided to attempt a siege on the fort, while other tribes did not approve of an attack on the fort. The battle raged for several hours. After four hours the Native Americans retreated but staged a second attack later in the day. Again, the Native Americans were pushed back from the fort walls. The battle raged another day, but the Native Americans were no match for Wayne's improved artillery and accuracy of the rifle fire. In total, 22 U.S. soldiers were killed with 30 injured and three missing in action. Native American losses were noted as 50 dead, but the number was likely higher given the practice of removing dead and injured Native Americans from the battlefield.

# Battle of Fort Recovery

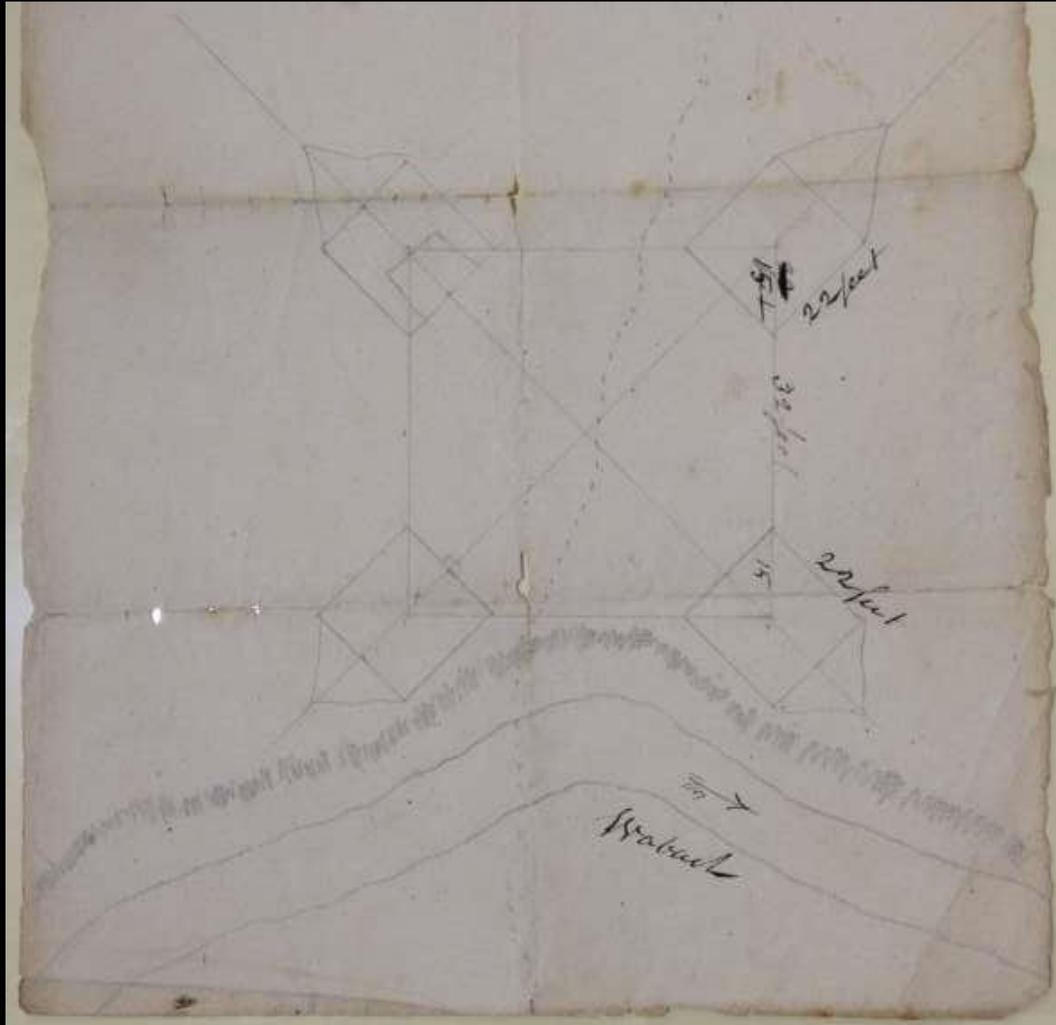
## Battle Analysis: Proposed Fort Location

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In a letter sent from Wayne to Burbeck on December 22, 1793 Wayne discusses how exactly he wants the fort built: “Let the ends of the block houses present outwards, with three embrasures on each for a small howitzer the shutters of which must be musket proof as well as the door or doors of the sally ports”.

# Battle of Fort Recovery – Historic Map

## Sketch Map of Fort Recovery



Sent from Wayne to Burbeck December 22, 1793

The Clements Library at the University of Michigan has been collecting papers of colonial era military leader Henry Burbeck since 1951. In 2014, the library bought a large collection of Burbeck materials from a private dealer. Among the thousands of documents enclosed in the collection was a never before seen map of Fort Recovery. This map was originally enclosed in a letter, which was already archived at the Historical Society of Pennsylvania, from General Anthony Wayne to Burbeck. The letter instructed Burbeck to go to the site of the Battle of the Wabash and construct a fort based on the enclosed map. Until the map's discovery, Wayne's instructions had been incomplete. It appears that the map is not drawn to scale in relation to the bend in the original river, as it would make the fort much, much larger than the dimensions notated on the map. If these instructions were followed, Fort Recovery would have been 62 feet square not including the blockhouses.

# Battle of Fort Recovery – Proposed Location A

## Wayne's Sketch of Fort Recovery on the Landscape



After hearing of the map's discovery, an archeologist from Ball State University and an historian from the Ohio History Connection went to the Clements Library to study the document. Dimensions from the map, details from Wayne's letter, and previous archeological results were all uploaded into GIS software. This software allowed us to place the map sent from Wayne to Burbeck on the present day landscape of Fort Recovery. In 2011, archeologists from Ball State University excavated in this same area and found a 17 foot section of what appears to be the original fort stockade wall, with large post holes and battle era artifacts. The 17 foot section runs parallel to Boundary Street which was the location of the original Greenville Treaty Line.

# Battle of Fort Recovery – Proposed Location B

## Proposed Fort Recovery Location – Trench as South Wall



Here, the south wall of the fort (brown) is sized to match Anthony Wayne's hand drawn map and aligned with the 17 foot trench (red) discovered during Ball State University's 2011 field school. This possible location places the original Fort Recovery outside of the Greenville Treaty Line (yellow). In 1795, it is possible that the actual location of the treaty line wasn't specifically marked, or that it was a general definition of an area instead of a specific line. Additional archeological investigation utilizing ground penetrating radar could be used on the streets and parking lots in this area to obtain more information.

Also shown are the supposed site of the original well (dark blue), the location of the original Wabash River (light blue), and the Greenville Treaty Line Marker (yellow diamond).

# Battle of Fort Recovery – Proposed Location C

## Proposed Fort Recovery Location – Trench as North Wall



Replacing the sketch map with an outline of the fort allows us to view the fort on the current landscape. In this map, the north wall of the fort is sized to match Wayne's hand drawn map and aligned with the 17 foot trench discovered in Ball State University's 2011 field school. This possible location is interesting because the fort is within the Greenville Treaty Line and the fort lines up with the 17 foot trench. However, if the well is truly in its original position then the well is not within the fort walls. Further archeological investigations could help determine if there are other wells in the area or exactly what the 17 foot trench represents.

# Battle of Fort Recovery – Proposed Location D

## Proposed Fort Recovery Location – Corner of Greenville Treaty Line



Here, the proposed fort location is sized to match Anthony Wayne's hand drawn map and aligned with the corner of the Greenville Treaty Line. This location is interesting because the fort is lined up almost exactly with the Greenville Treaty Line. It is possible that Israel Ludlow used the original Fort Recovery to line up the Greenville Treaty Line and place the marker at the North West corner of the fort.

# Battle of Fort Recovery – Proposed Location E

## Proposed Fort Recovery Location - Well in the Center



Here, the fort is aligned with the supposed location of the original well placed in the middle of the fort. This possible fort location places the fort outside of the Greenville Treaty Line, does not line the fort up with the treaty line, and does not include the 17 foot trench discovered in 2011 during a Ball State University field school. It is difficult to do additional archeological investigations in this area because the ground has been greatly disturbed in 1936 and 1956 during fort reconstructions. Additional archeological investigations in this general location would be beneficial in determining a more exact location of the fort.

# Battle of Fort Recovery

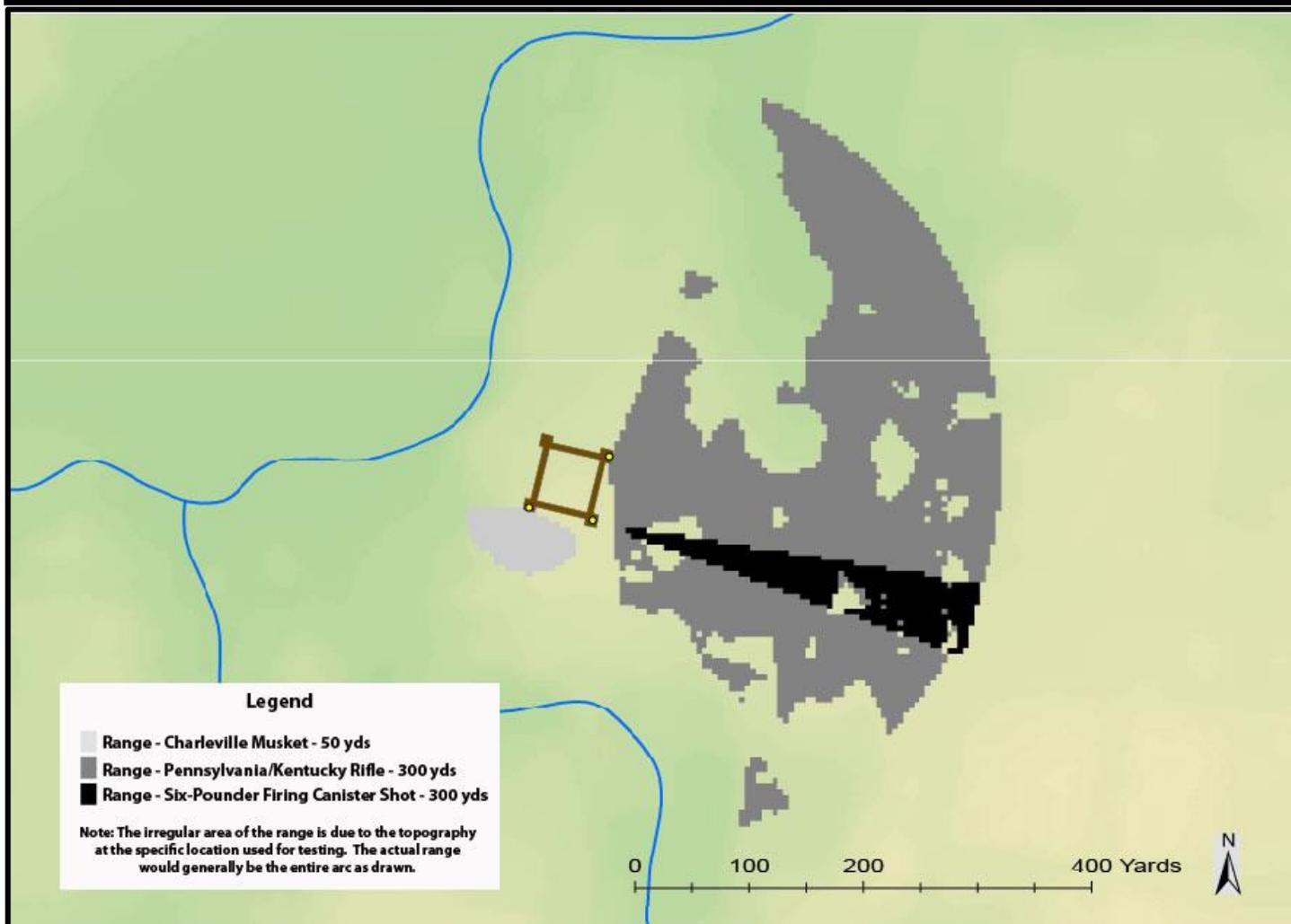
## Battle Analysis: Field of Fire

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John Hutchinson Buell recounts the day of the battle in his diary detailing his life events from 1775-1803: "...the Indians were entirely around the fort and in ambush, the major had got within a few yards of the line of Indians".

# Battle of Fort Recovery – Field of Fire Map A

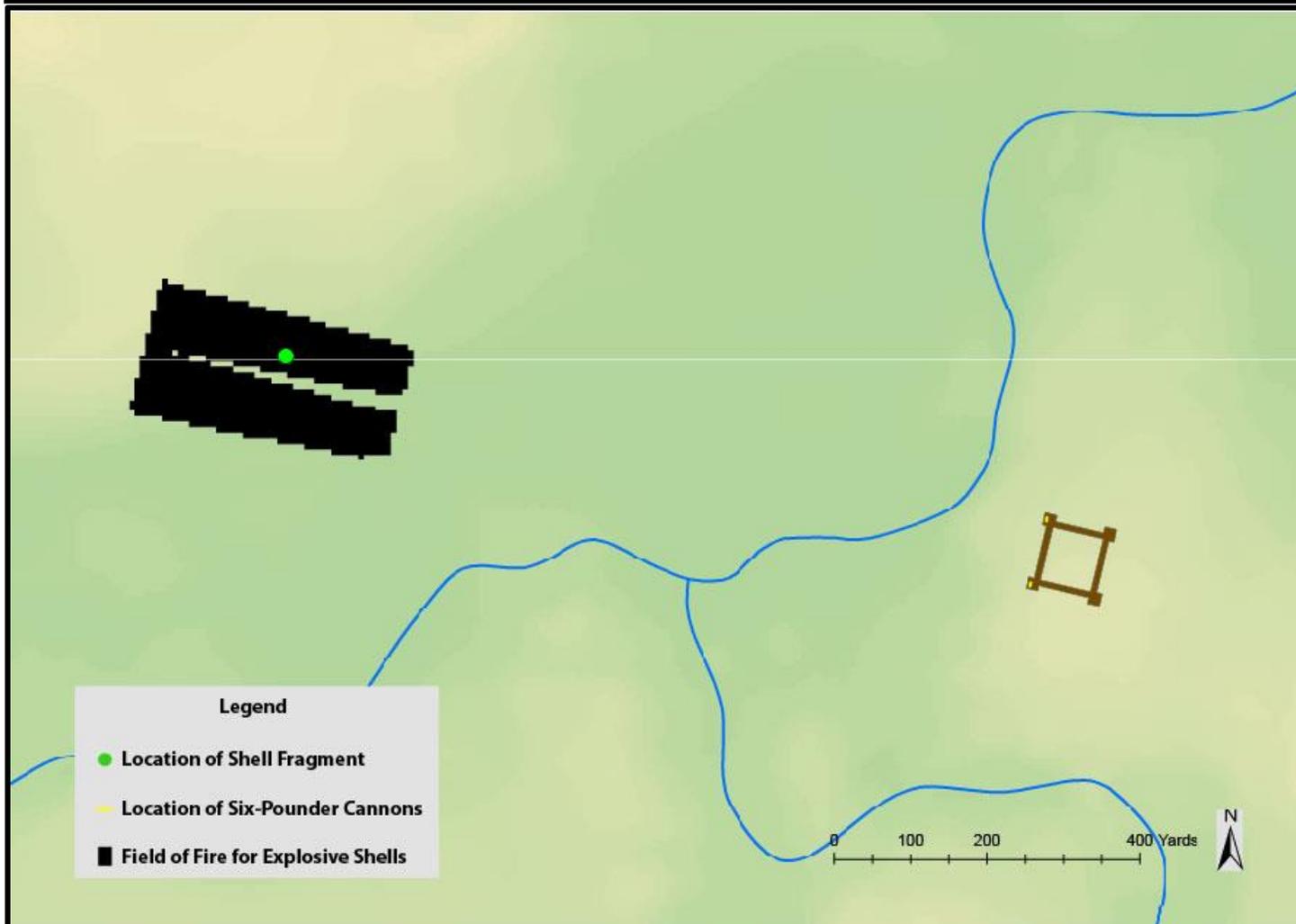
## Field of Fire for Weapons Fired From the Fort



Weaponry at the Battle of Fort Recovery was very similar to that of the Battle of the Wabash three years earlier – Charleville and Brown Bess muskets, rifles, and six- and three-pounder cannon. In addition, Wayne’s troops had brought howitzers on the campaign. The field of fire for each individual weapon was constructed using a viewshed analysis. The fields of fire for the Charleville musket, rifle, and six-pounder shooting canister shot from the fort are shown above. The lack of tree cover for the Native Americans in the second battle would have greatly impacted the outcome of the battle.

# Battle of Fort Recovery – Field of Fire Map B

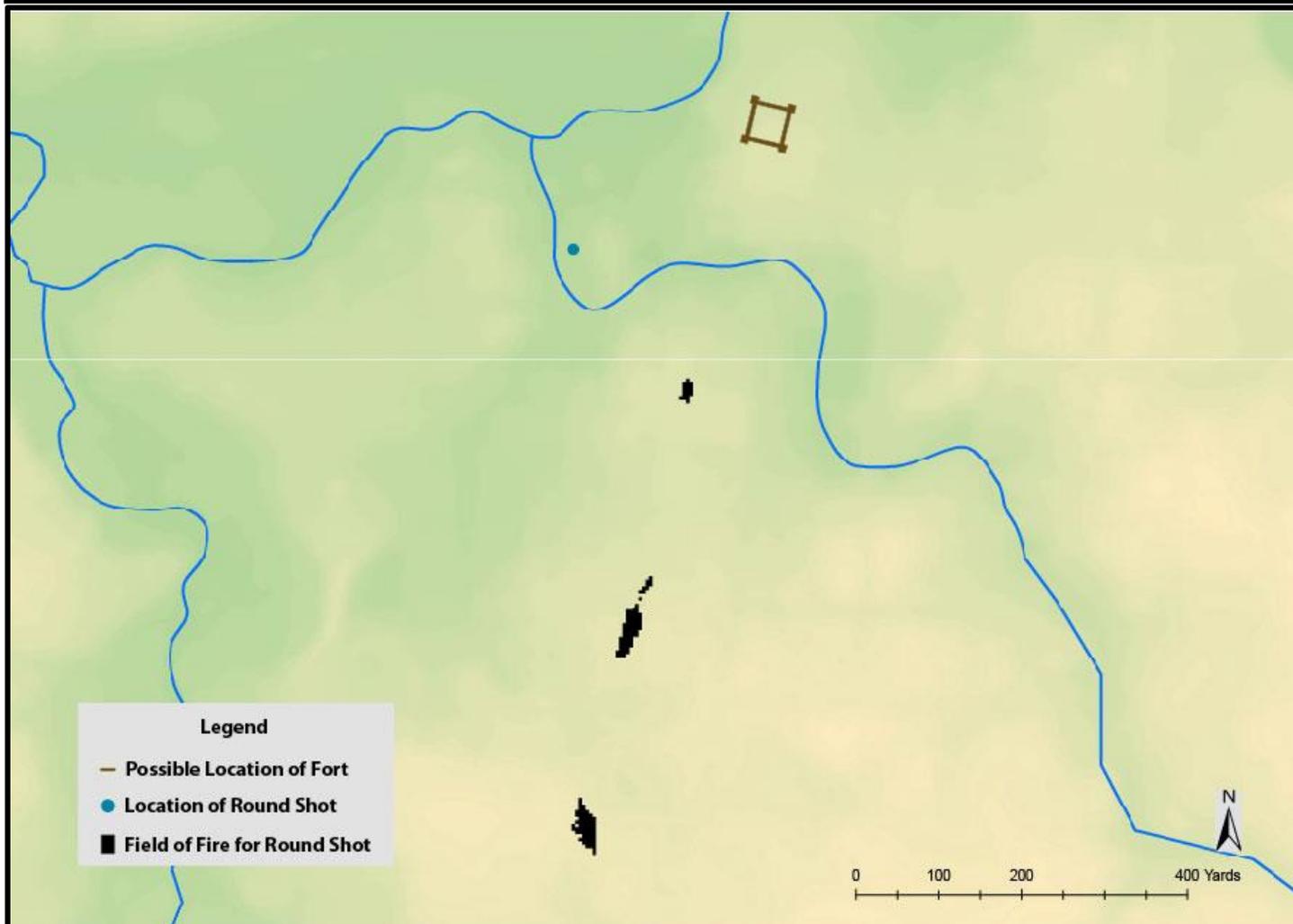
## Field of Fire for Explosive Shell Fired from the Fort



A shell fragment was included in the collector artifacts investigated. The shell fragment was found approximately 600 yards to the west-northwest of the general fort location. The shell fragment's location is represented by a green dot. When the cannon field of fire is adjusted to account for the range of a six-pounder firing explosive shell, the location of the shell fragment falls well within the calculated field of fire. The shell fragment's location in relation to the guns as stated in the historical accounts and sketches of the camp would seem to indicate that the fragment was placed at its location during one of the two battles. Based on historical accounts of the battles, the shell fragment is most likely from the Battle of the Wabash in 1791 and not from the Battle of Fort Recovery in 1794.

# Battle of Fort Recovery – Field of Fire Map C

## Field of Fire for Round Shot Fired from the Fort



A round shot fragment was included in the collector artifacts investigated. The round shot was found by a landowner in Buck Run gully and discussed in association with the 1791 Battle of the Wabash. A round shot of this type could have also been fired from the fort during the 1794 Battle of Fort Recovery since the same six- and three-pounder guns were at both battles. The fort as shown here is based on the known general location of the original Fort Recovery, as an exact location is not known. The field of fire analysis shows that the round shot, if fired from the southern-most blockhouses from this general fort location, would have most likely fallen farther southeast of the location where the round shot was found. However, depending on the exact location of the fort, the orientation of the blockhouses, and the angle of the cannon being fired, the round shot could have possibly been from the Battle of Fort Recovery in 1794.

# Battle of Fort Recovery

## Battle Analysis: Visibility

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In a letter sent from Wayne to Burbeck on December 22, 1793 Wayne discusses clearing the area around the fort: "Order your front flank and rear guards to cover themselves by felled trees; at a proper distance from where you erect the works".

# Battle of Fort Recovery – Visibility Map

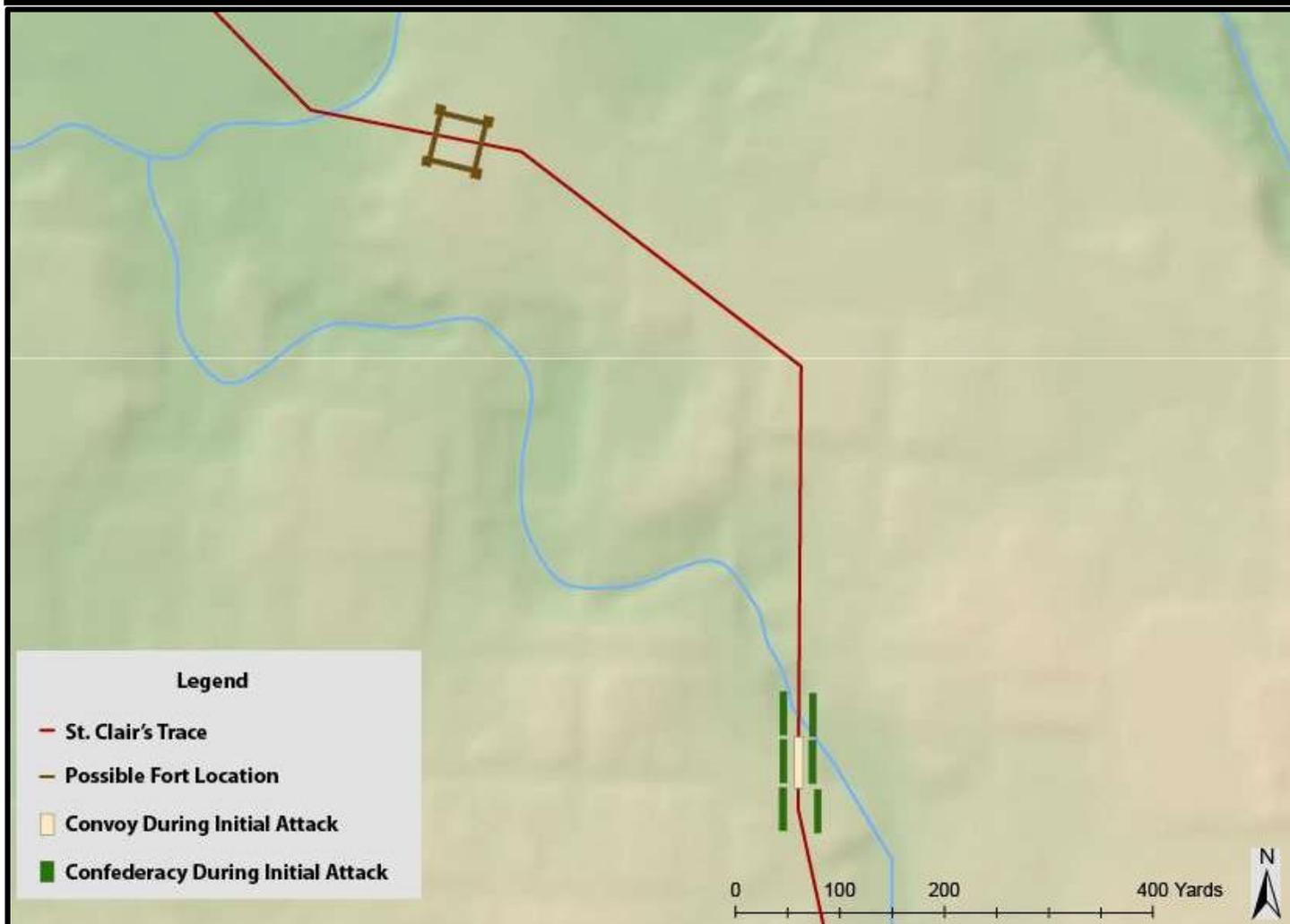
## Areas Visible by St. Clair's Forces



As with the earlier battle, the ability of the soldiers in the fort to see the gathering Native Americans played a significant part in the beginning stages of the Battle of Fort Recovery. The colored areas are parts of the landscape that were visible from the fort. The areas in gray were not visible from the fort. It should be noted that this analysis is based only on elevation and does not include information concerning ground cover. This was a highly wooded area which would have decreased overall visibility.

# Battle of Fort Recovery – Least Visible Path Map

## Avenue of Retreat for the U.S. Army and Convoy



The convoy moved southward along St. Clair's Trace the morning of June 30, 1794 as it left Fort Recovery to return to Fort Washington. After the attack, that same road served as an avenue of retreat for the convoy back to the fort. That avenue of retreat was limited to the road due to the dense woods on either side.

# Chapter IV – Summary of Research

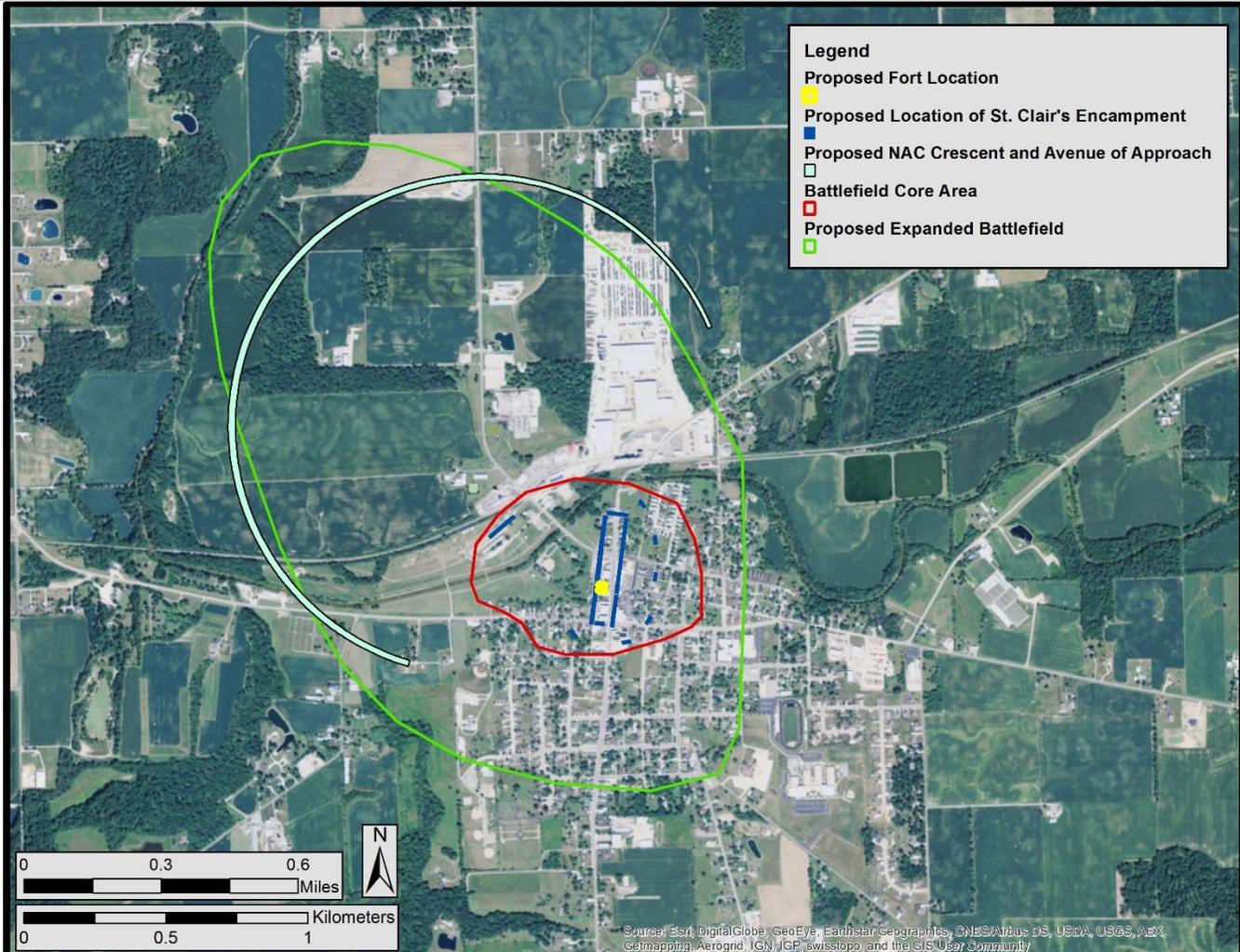
## Research Conclusions

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**Ball State University's five years of archeological and preservation research has led to the discovery of much new information regarding the Battle of the Wabash, the construction of Fort Recovery, and the Battle of Fort Recovery. These results are being shared with the community and the public through various ways including presentations, research exhibits, technical reports, videos, and this document. In addition to providing interesting historical and archeological information, the research results are being used by the village of Fort Recovery as part of their overall community planning.**

# Summary of Research

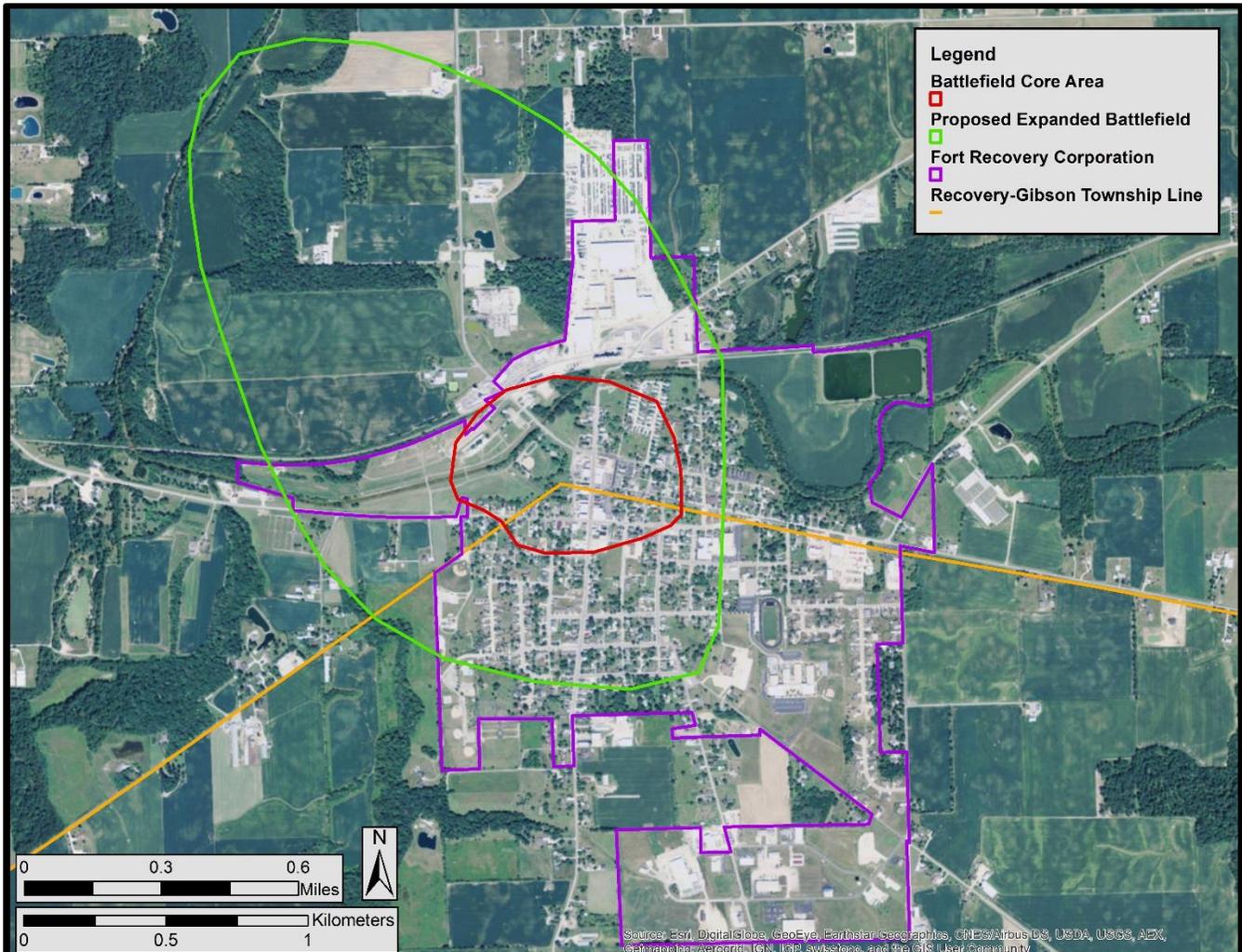
## Expanded Battlefield Area



Based upon the results of the archeological investigations and GIS data modeling, the battlefield boundary was expanded to include the ridgetop area. This includes the Native American alliance staging area (interpreted on the map above as the Proposed NAC Crescent and Avenue of Approach) and portions of the calculated least cost path. The Proposed NAC Crescent is based on the calculated least visible paths. Expanding the boundary of the 1791 Battle of the Wabash to 787 acres allows for the inclusion of the artifacts recovered from metal detector surveys, the proposed staging area of the Native American alliance, and the calculated least cost/least visible paths of approach of the Native American alliance. The core battlefield, a 97 acres area, is now only 12% of our 787 acre expanded battlefield research area.

# Summary of Research

## Modern Day Fort Recovery, Ohio



This map shows the expanded battlefield research area on a modern day aerial of Fort Recovery. The red line shows the core battlefield boundaries and the green line shows the expanded battlefield research area. The purple line shows the current Fort Recovery corporation limits and the orange line shows the Recovery and Gibson township line. This map illustrates how the battlefield overlays the current village of Fort Recovery and what portions of the battlefield are still relatively undisturbed and maintain integrity.

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