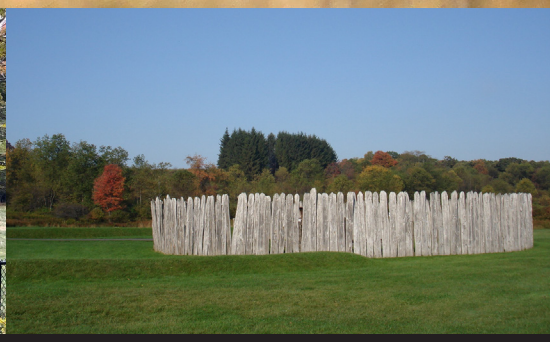
National Park Service
US Department of the Interior

National Parks of Western Pennsylvania

White-Tailed Deer Management Plan

Environmental Assessment

PEPC 123026



April 2026

This environmental assessment (EA) is substantially complete and fulfills factors mandated by the National Environmental Policy Act of 1969 within the statutorily mandated page and time limits. The National Park Service (NPS) used expert judgment to prioritize documentation of the most important relevant considerations. Therefore, this EA's analysis is adequate to inform and reasonably explain the NPS's decision. Any considerations addressed briefly or left unaddressed are, in the NPS's judgment, comparatively non-substantive and would not meaningfully inform the NPS's consideration of environmental effects and the resulting decision.

US Department of the Interior – National Park Service

Flight 93 National Memorial
Fort Necessity National Battlefield
Friendship Hill National Historic Site

White-Tailed Deer Management Plan
Environmental Assessment
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Over the past century, white-tailed deer (*Odocoileus virginianus*) densities have increased dramatically in states along the eastern seaboard. Deer overbrowsing on vegetation has decreased forest regeneration, resulting in forests being unable to replace themselves over time. The browsing pressure created by deer, in combination with other natural stressors—invasive plants, pests, pathogens, and increased storm severity and frequency—has driven eastern forests to such a degraded condition that many are experiencing severe regeneration failure and are one disturbance away from loss of forest. This means that canopy trees will be lost, and areas that are currently forest could become invasive shrub thickets or become dominated by different (and often shorter) tree species that are unpalatable to deer. Management action is difficult and costly at that point, and forests may take decades to recover. Deer browsing also impacts cultural landscapes within the parks by changing vegetation patterns, historic character, and memorial plantings.

The National Park Service (NPS) is proposing to develop a White-Tailed Deer Management Plan ("Plan") for Flight 93 National Memorial, Fort Necessity National Battlefield, and Friendship Hill National Historic Site. These three sites are units within the National Parks of Western Pennsylvania group, each with their own unique purposes and key resources. This Plan would establish a white-tailed deer management strategy that supports the preservation of these sites.

This environmental assessment (EA) evaluates the potential impacts of two alternatives: 1) take no action and 2) implement a white-tailed deer management plan. This EA has been prepared in accordance with the National Environmental Policy Act of 1969 (NEPA), as amended (42 United States Code [USC] 4332[2] [C]); the Department of the Interior NEPA regulations (43 CFR Part 46) and Part 516 of the Departmental Manual (2025); and NPS Director's Order #12: *Conservation Planning, Environmental Impact Analysis and Decision-Making* (NPS 2011) and the accompanying NEPA Handbook (NPS 2015).

This EA will be available for public and agency review for 30 days from the release date (from April 1-May 1, 2026). Comments may be submitted on the NPS Planning, Environment & Public Comment (PEPC) website at http://parkplanning.nps.gov/wepa-deer or by mailing to the name and address below. Before including your address, phone number, email address, or other personal identifying information in your comment, you should be aware that your entire comment, including your personal identifying information, may be made publicly available at any time. While you can ask us in your comment to withhold your personal identifying information from public review, we cannot guarantee that we will be able to do so.

Superintendent
RE: Deer Management Plan
Fort Necessity National Battlefield
1 Washington Parkway
Farmington, PA 15437

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CHAPTER 1: PURPOSE AND NEED

INTRODUCTION

Over the past century, white-tailed deer densities have increased dramatically in states along the eastern seaboard. Deer overbrowsing on vegetation has decreased forest regeneration, resulting in forests being unable to replace themselves over time. The browsing pressure created by deer, in combination with other natural stressors—invasive plants, pests, pathogens, and increased storm severity and frequency—has driven eastern forests to such a degraded condition that many are experiencing severe regeneration failure and are one disturbance away from loss of forest (Miller et al. 2023). This means that canopy trees will be lost, and areas that are currently forest could become invasive shrub thickets or become dominated by different (and often shorter) tree species that are unpalatable to deer. Management action is difficult and costly at that point, and forests take decades to recover. Deer browsing also impacts the cultural landscapes within the parks by changing vegetation patterns, historic character, and memorial plantings.

The National Park Service (NPS) is proposing to develop a White-Tailed Deer Management Plan ("Plan") for Flight 93 National Memorial (FLNI), Fort Necessity National Battlefield (FONE), and Friendship Hill National Historic Site (FRHI). These three sites are units within the National Parks of Western Pennsylvania (WEPA) group, each with their own unique purposes and key resources. This Plan would establish a deer management strategy for white-tailed deer (*Odocoileus virginianus*) that supports the preservation of these sites.

PROJECT LOCATION

These sites are located in the Appalachian Plateau region of western Pennsylvania, west of Interstate 70 and just north of the state's border with Maryland and West Virginia (Figure 1). The area is characterized by rolling hills, forests, and diverse wildlife habitats. The region's terrain ranges from gentle slopes and ridges to more dramatic changes in elevation, providing a variety of ecosystems. The project area for the proposed deer management plan generally applies to the entirety of these sites (all land within each park's boundary) with some exclusions:

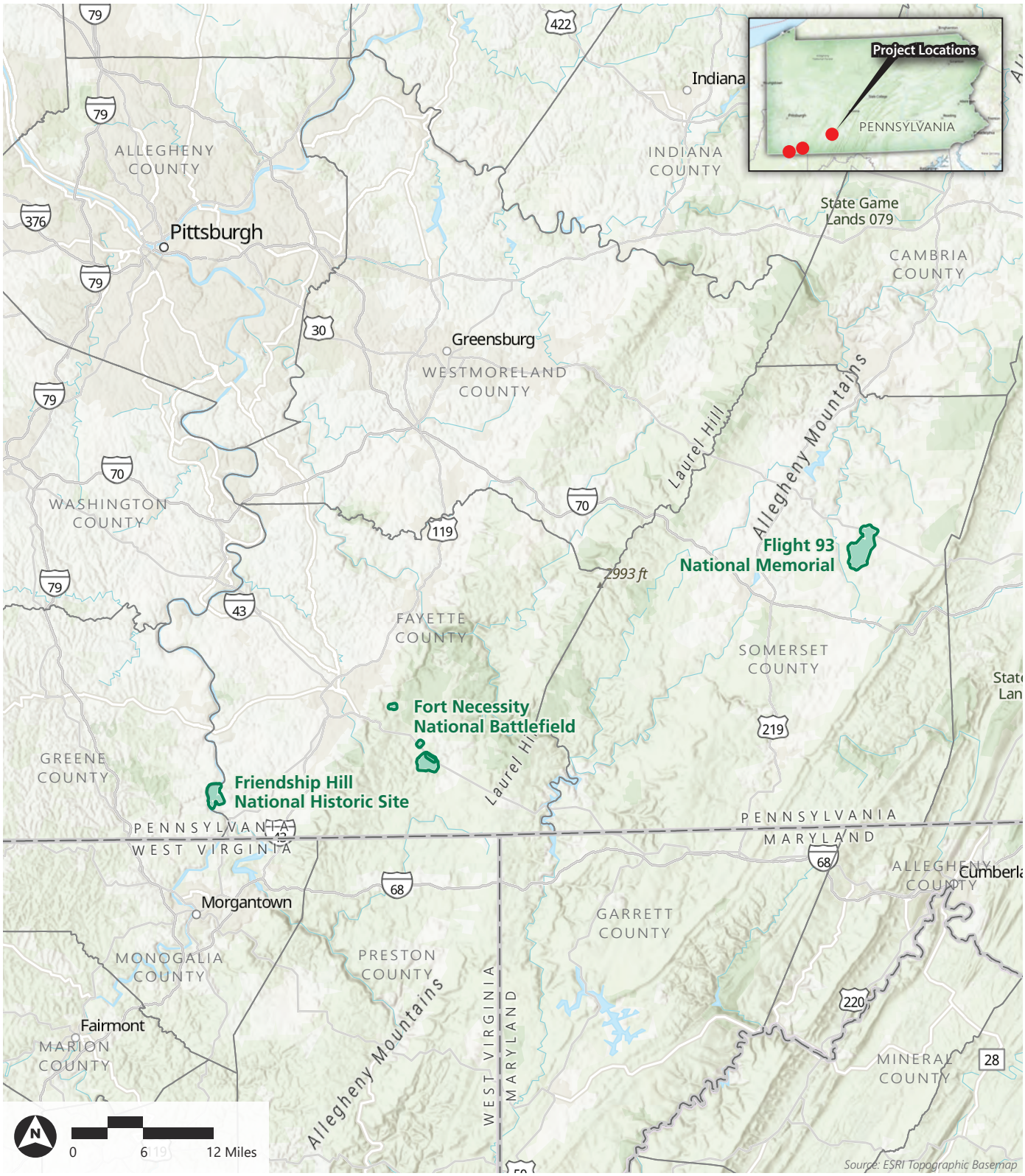
- Small outlier units of FONE (Braddock's Grave and Jumonville Glen)
- Life estate within FONE
- Inholding at FLNI

Specific implementation areas (or areas excluded from implementation) would be specified within a detailed operations plan, reviewed annually.

Located in Somerset County, FLNI honors the passengers and crew of United Airlines Flight 93 whose courageous actions thwarted terrorist hijackers from attacking our Nation's capital during the September 11, 2001 attacks. FLNI preserves the crash site and memorial landscape. The memorial sits within a quiet landscape of wetlands, forests, and fields, which are critical to maintaining the solemn and reflective environment of the site. The memorial is accessed via the 3.5-mile approach road off US Route 30 (Figure 2).

Situated in Fayette County, FONE commemorates the site of the first battle of the French and Indian War, and, notably, George Washington's early military career and the global consequences of this conflict. This park preserves the historic battlefield, associated structures, and natural landscapes that were significant during the 1754 engagement between French forces and colonial troops led by George Washington. The park comprises 852 acres within the Allegheny Mountains and is situated along US Route 40, historically known as the Cumberland Road, which later became known as the National Road (Figure 3).

Also in Fayette County, near the town of Point Marion, FRHI is the historic home of Albert Gallatin, an influential Jeffersonian-era statesman, public servant, and entrepreneur, whose contributions to the early foundations of the country included fiscal management, westward expansion, diplomacy, and scholarship. The residence is located on a knoll overlooking the Monongahela River and can be accessed by US Route 119 and Pennsylvania Routes 21, 88, and especially 166, which passes through the park (Figure 4). The park protects both the historic structures and the surrounding natural landscapes, including forests that are integral to understanding the historical context of Gallatin's life and legacy.



LEGEND

Park Boundary

FIGURE 1

Overall Project Vicinity Map

Somerset and Fayette Counties, Pennsylvania

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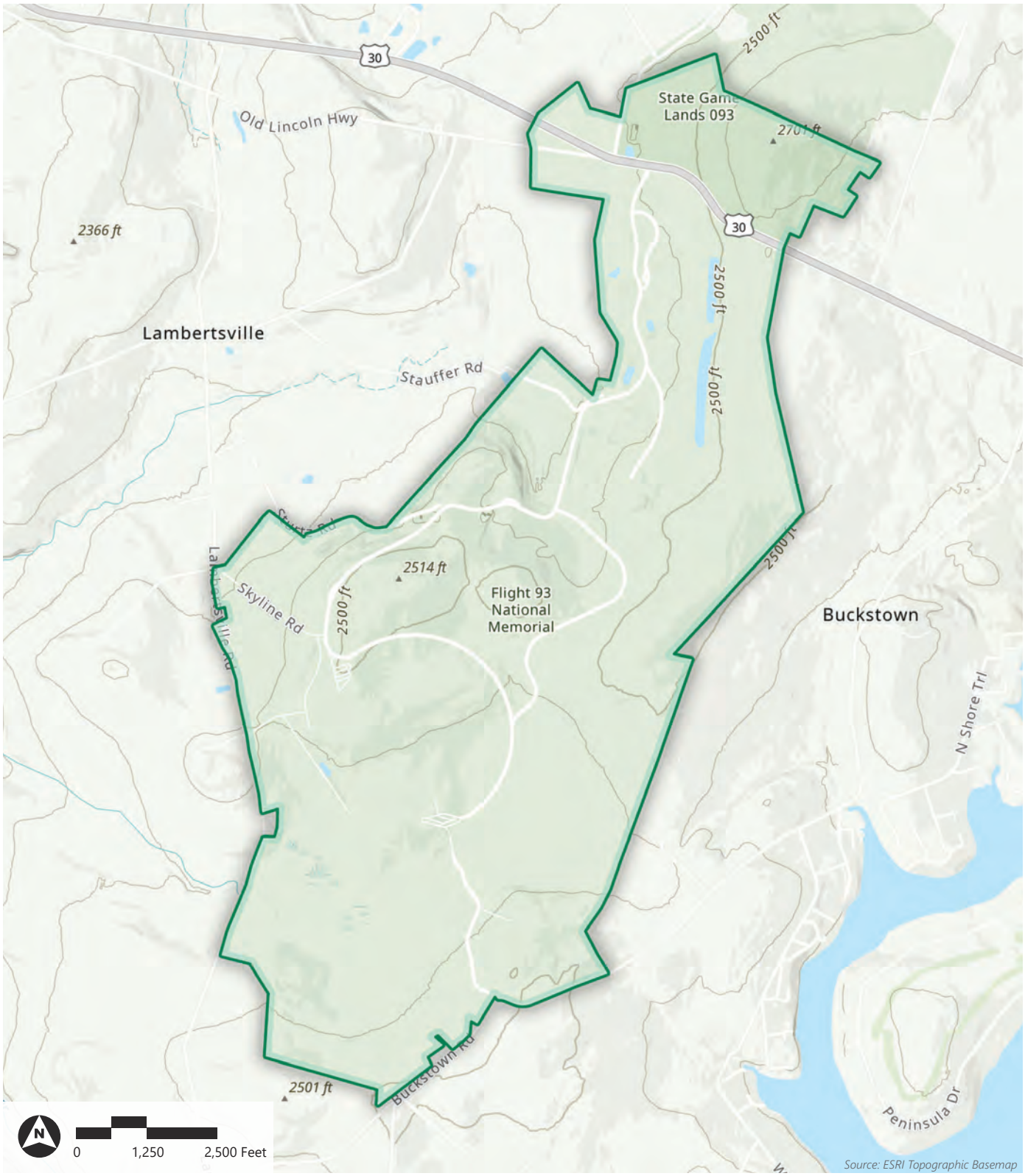

LEGEND

Flight 93 National Memorial Boundary (2,264.25 acres)

FIGURE 2

Flight 93 National Memorial

Somerset County, Pennsylvania

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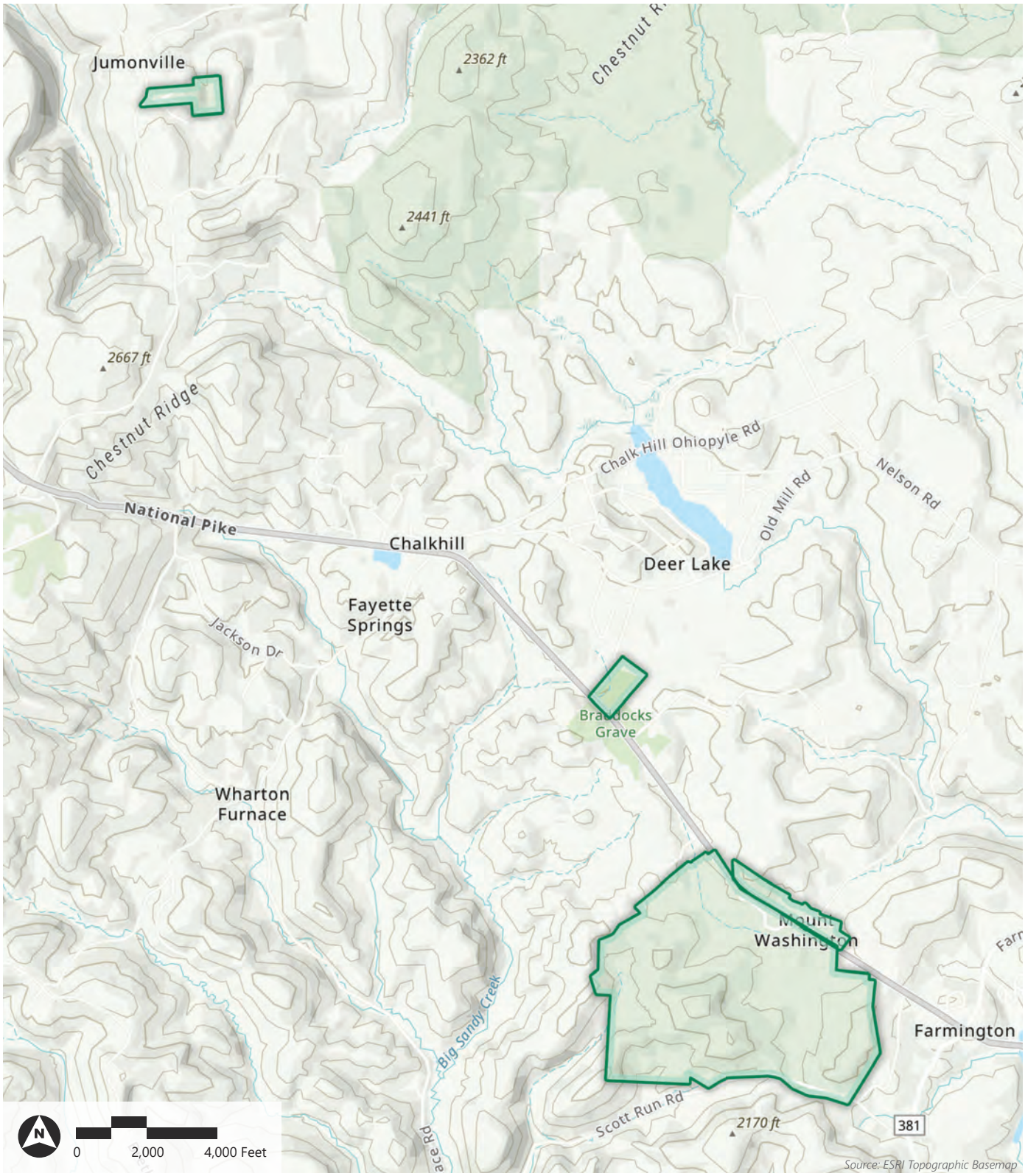

LEGEND

Fort Necessity National Battlefield Boundary (916.00 acres)

FIGURE 3

Fort Necessity National Battlefield

Fayette County, Pennsylvania

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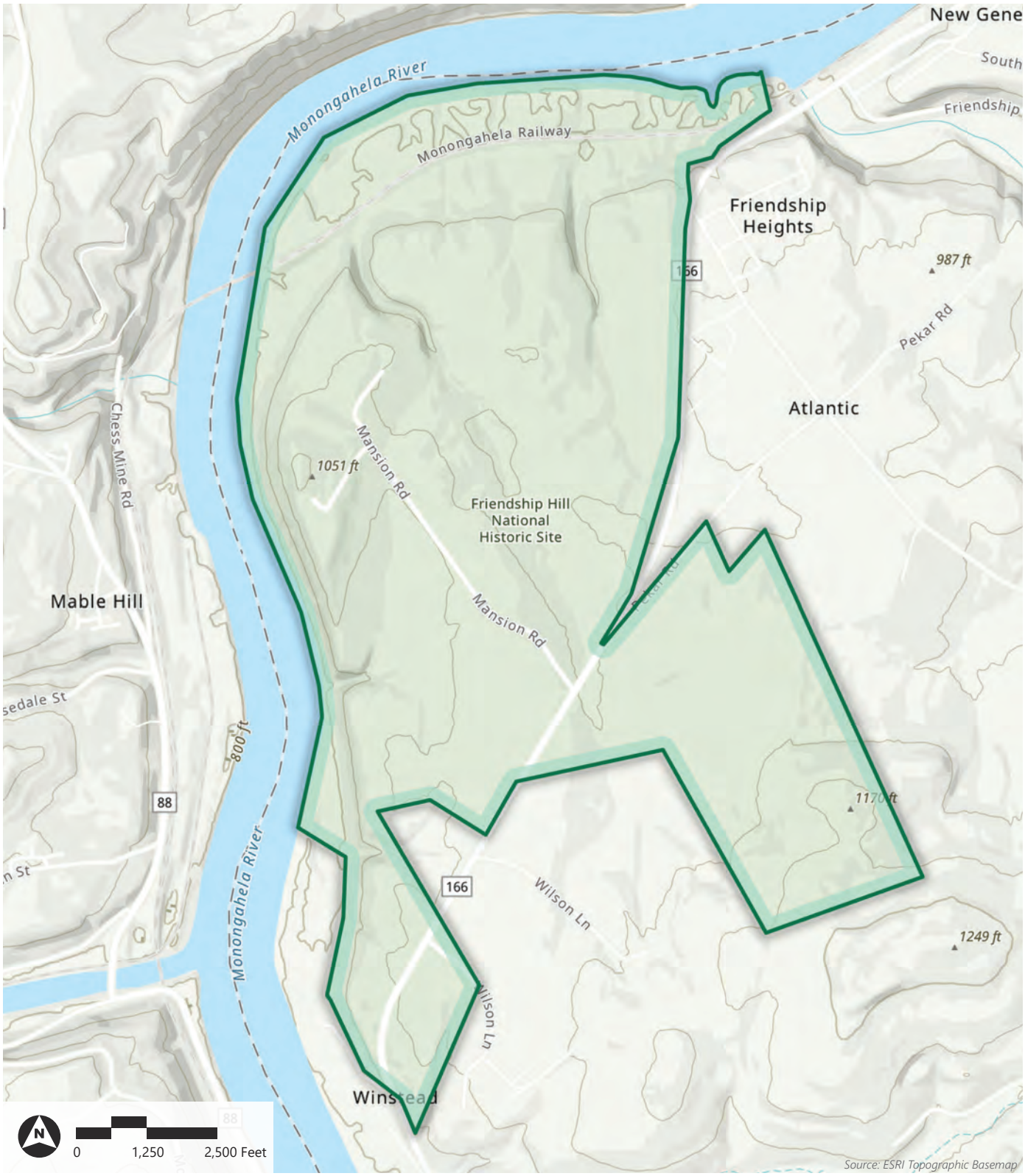


LEGEND

Friendship Hill National Historic Site Boundary (675.21 acres)

FIGURE 4

Friendship Hill National Historic Site

Fayette County, Pennsylvania

PURPOSE OF AND NEED FOR ACTION

The purpose of the Plan is to establish a comprehensive deer management strategy for FLNI, FONE, and FRHI in western Pennsylvania. This strategy aims to support protecting, recovering, and restoring native vegetation within the sites' cultural and natural landscapes by managing overabundant deer populations that lead to high deer densities within each park and result in overbrowsing. The NPS recognizes that deer play a crucial role within the natural ecosystem at these sites. Although this Plan aims to decrease their densities, the NPS would not reduce deer below a minimum level needed for forest regeneration, which is, historically, at or below 20 deer per square mile (Horsley et al. 2003).

The project is needed because the dramatic increase in deer densities over the past century (Miller et al. 2023) has led to substantial ecological and cultural changes in western Pennsylvania's landscapes, particularly in and around FLNI, FONE, and FRHI. Therefore, the sites need this Plan to support forest regeneration and reduce degradation of cultural landscapes.

Lack of Forest Regeneration

A network of permanent forest monitoring plots at parks across the northeast tracks forest health (NPS 2016). Since plots were established in 2007, the data specific to FONE and FRHI shows that their forests do not have sufficient regeneration (i.e., seedling and sapling survival rates and recruitment of mature trees) to replace canopy trees (NPS 2010, 2023a). One of the drivers of forest regeneration failure is excessive browsing by white-tailed deer. Because deer overbrowsing limits canopy tree seedlings, these sites are losing natural forest conditions. Predictive modeling has shown lack of forest regeneration to be so severe that FONE forests are headed toward probable failure and FRHI forests toward imminent failure (Miller et al. 2023).

Historically, to maintain natural forest regeneration, deer densities should be at or below 20 deer per square mile (Horsley et al. 2003). Currently, the sites experience the following approximate deer densities: 123 per square mile at FLNI; 74 per square mile at FONE; and 83 per square mile at FRHI (Steward Green 2024). Densities this high are likely creating a regeneration debt and threatening long-term forest health (Miller et al. 2023).

Degradation of Cultural Landscapes

The altered vegetation patterns driven by deer overabundance also affect the historic character and cultural landscapes within the sites. For example, dwindling native vegetation at FONE caused by deer browsing has allowed for the establishment of nonnative and invasive vegetation. This threatens the integrity of FONE's Great Meadows landscape and hinders efforts to reestablish the 1754 tree line (NPS 2013a). Heavy deer browsing could threaten the opportunity to establish historic plantings at the Friendship Hill estate, as identified in the FRHI Cultural Landscape Report (NPS 1993) and FRHI Foundation Document (NPS 2013b). Lastly, heavy deer browsing at FLNI hinders forest regeneration within the crash site at the Hemlock Grove and surrounding forest. It also affects the establishment of ornamental plantings within the

memorial landscape. Each of these efforts are connected to the FLNI's fundamental resources and values (NPS 2018).

Chapter 3: Affected Environment and Environmental Consequences provides additional information about how deer overbrowsing affects the sites' natural and cultural landscapes.

IMPACT TOPICS

In the context of NEPA reviews, issues can be problems, concerns, conflicts, obstacles, or benefits that would result by implementing the proposed action or alternatives, including the no-action alternative. Impact topics are a means of organizing the discussion of issues and analysis of impacts. During the scoping process, the NPS either retained impact topics for further analysis or dismissed them from further consideration. This section provides an overview of the impact topics that the NPS retained for analysis. The NPS retained a topic for analysis if it met one or more of the following conditions:

- Environmental impacts associated with the issue are central to the proposal or of critical importance;
- A detailed analysis of environmental impacts related to the issue is necessary to make a reasoned choice between alternatives;
- Environmental impacts associated with the issue are a significant point of contention among the public or other agencies; or
- There are potentially significant impacts to resources associated with the issue.

If none of the conditions above apply to an issue, the NPS *NEPA Handbook* recommends rejecting the resource concern from further consideration (NPS 2015).

For this project, the NPS identified the following impact topics to be retained and completed an impact analysis on those resources in Chapter 3: Affected Environment and Environmental Consequences:

- forest regeneration
- white-tailed deer population
- cultural resources

The NPS considered but dismissed the impact topics below from further analysis for the reasons provided. An impact topic was initially considered but dismissed from detailed analysis if it did not meet the conditions listed above for retention.

Archeological Resources

The Plan does not currently propose ground disturbance. If future operational plans warrant the use of fencing or pits, the NPS would ensure surveys take place beforehand and that workers follow appropriate avoidance measures. If avoidance is not possible or if an unanticipated

discovery takes place, the NPS would reinitiate Section 106 consultation (initial consultation is taking place concurrently with this EA).

Special Status Species

Federally listed species that may use the sites are primarily bat species: Indiana bat (*Myotis sodalis*), northern long-eared bat (*Myotis septentrionalis*), and tricolored bat (*Perimyotis subflavus*). The monarch butterfly (*Danaus plexippus*) is proposed for listing and may also use the sites (though the sites are not included within the proposed critical habitat for this species). State-listed species that inhabit Somerset and Fayette counties (where the sites are located) include a variety of plants, mammals, and birds.

Similar deer management strategies at other parks used by bats and butterflies have not resulted in a substantial impact on those species. As such, this Plan is unlikely to have adverse impacts on special status species, and any benefits from a more naturally regenerating forest ecosystem would likely be subtle and take place over the course of decades. A detailed analysis of impacts on special status species is not necessary to make a reasoned choice between alternatives.

Other Wildlife and Wildlife Habitat

General benefits are likely to result from a naturally regenerating forest, including to some wildlife habitats. A potential improvement to habitat could also benefit wildlife such as small mammals and birds. However, the Plan is not expected to impact population levels of existing wildlife. Again, benefits from a more naturally regenerating forest ecosystem would likely be subtle and take place over the course of decades. Therefore, a detailed analysis of this likely benefit is not necessary to make a reasoned choice between alternatives.

Public Health and Safety

The Plan would include measures to avoid impacts on public safety, such as sharpshooting at night while the park is closed to the public. Supplemental operations plans would include more detailed safety measures to ensure safe implementation of sharpshooting. Therefore, the Plan is not expected to affect safety or other elements of visitor use and experience and a detailed analysis is not necessary.

CHAPTER 2: ALTERNATIVES

This section of the EA describes two alternative actions considered for deer management at the sites. The description and evaluation of a no-action alternative provides a baseline to which action alternatives can be measured. This EA evaluates two alternatives: 1) Alternative A: No Action and 2) Alternative B: White-Tailed Deer Management Plan (Proposed Action and NPS Preferred). The following sections describe the elements of these alternatives. Chapter 3: Affected Environment and Environmental Consequences describes impacts associated with the alternatives. In addition, the NPS dismissed several deer management strategies from further consideration; this section describes those strategies under "Alternatives Considered but Dismissed from Further Analysis."

ALTERNATIVE A: NO ACTION

Under the no-action alternative, the NPS would continue current management and monitoring of park resources. The NPS would not take action to manage the deer population, although the NPS may take some action to limit deer browsing on an as-needed basis (such as small-scale fencing of individual trees as seen in the landscape surrounding FONE).

The NPS would continue to monitor deer and vegetation at all three sites. Deer monitoring would likely use methods such as uncrewed aircraft system (UAS) surveys, game cameras, and/or other methods. The protocols, locations, and level of effort for these surveys could change over time depending on staffing, funding, or data needs. The NPS Inventory and Monitoring Division would continue to use the existing long-term vegetation plots to assess the effects of deer overbrowsing on forest regeneration at FONE and FRHI. At FLNI, the NPS would continue to work with the Western Pennsylvania Conservancy or a similarly skilled partner to implement the same NPS protocol for long-term vegetation monitoring at that site.

The NPS recommendations for monitoring of chronic wasting disease (CWD) are laid out in NPS Director's CWD Guidance Memorandum (NPS 2002) and the *NPS Manager's Reference Notebook to Understanding Chronic Wasting Disease* (NPS 2012). CWD is a transmissible neurological disease of deer that produces small lesions in the brains of infected animals, resulting in death. Although CWD has not been observed within the deer populations at the three sites, the NPS continues to track known occurrences within the region. The NPS also observes deer within the sites for possible signs of CWD during population density surveys. Occurrences of CWD have been documented:

- near FLNI in eastern Somerset County and north in Cambria County approximately 13 to 15 miles from the park (PGC 2025a);
- within 60 miles of FONE, also in Somerset County, considered "close proximity" according to the *NPS Manager's Reference Notebook to Understanding Chronic Wasting Disease* (NPS 2012, PGC 2025a); and
- near FRHI within the 60-mile radius of the nearest known CWD case in Somerset County.

The NPS may coordinate with the Pennsylvania Game Commission (PGC) to conduct opportunistic surveillance and sampling for CWD in deer found dead within the sites. To date,

the NPS has not collected any deer for testing through opportunistic surveillance. If there are positive test results from deer in the sites, the NPS would notify the NPS Washington Office – Biological Resources Division. Any deer with confirmed CWD would be disposed of in accordance with NPS Public Health Service disposal guidelines, and the NPS would coordinate with the PGC as appropriate. Carcasses that are negative for CWD would either be allowed to decompose in place for ecological benefits or would be disposed of using typical methods (e.g., on-site burial in previously disturbed areas, away from any visitor use areas, or in off-site landfills), depending on the circumstances (e.g., location or number of carcasses).

ALTERNATIVE B: WHITE-TAILED DEER MANAGEMENT PLAN (PROPOSED ACTION AND NPS PREFERRED)

The proposed action includes continuation of current management described under the no-action alternative to document deer population density, monitor forest regeneration, and conduct opportunistic surveillance of the deer population for CWD.

In addition to the continuation of these activities, the proposed action includes culling via sharpshooting to reduce the deer population at these sites. The reduction's primary goal is promoting forest regeneration in support of natural ecosystems and cultural landscapes. The NPS would measure forest regeneration with ongoing monitoring of metrics such as establishment of canopy tree seedlings, average diameter of saplings and trees at breast height (DBH), live tree density, and composition of saplings and seedlings (Miller et al. 2023).

Sharpshooting

The NPS would accomplish culling of the deer population with sharpshooting by trained firearms experts experienced in conducting wildlife reduction operations. Sharpshooting would occur at night (between dusk and dawn, when the park is closed), likely between November and March. Temporary bait stations may be used to attract deer to safe sharpshooting areas. Sharpshooters would use:

- high-powered, small-caliber rifles at a range close enough to ensure a predictable outcome,
- non-lead ammunition to avoid contamination of the meat, and
- noise suppression devices to reduce disturbance both to the public and other wildlife (including other deer).

Sharpshooting would be conducted in compliance with NPS directives related to firearm use in parks and relevant federal firearm laws and regulations. The NPS will ensure that the culling would be conducted in a humane manner.

To guide initial and subsequent culling efforts, the NPS would develop an annual operations plan for deer management that would define:

- the implementation areas (areas of the sites where culling operations would take place);
- how culling activities would be conducted;

- that year's goals for culling (allowing for an aggressive approach during early implementation to reduce the deer population to an initial target amount and allowing for more flexible culling efforts once the target population indices have been reached and vegetation recovery is evident);
- plans for the disposition of the deer (donation of meat and/or disposal of waste and/or carcasses); and
- measures to ensure safety, which may include timing, park closures, required staff, maps of park neighbors, and other information.

The NPS would notify the public of any park closures and deer management activities in advance via media releases and alerts posted to the sites' websites and social media venues. In addition, printed notifications posted at visitor contact areas, park bulletin boards, and public billboards located within adjacent communities would be used as necessary. The NPS would also notify state wildlife officers and state police before operations and would enforce park closures during activities.

Number of Deer Culled

Under the proposed action, the NPS would continue to conduct field surveys to estimate the deer population within park boundaries. Survey data would be used to calculate a population index that is related to deer density. While the index's assumptions would not allow the NPS to determine the exact deer density, it would be designed to closely correlate with deer density and provide sufficient information for operational decision-making. At the outset of the Plan, deer culling would be intensive to quickly bring down deer numbers to levels equivalent to 20 deer per square mile based on the Horsley et al. (2003) study. Culling of deer in later years would be based on a variety of factors such as past and current experience of other deer management programs, technical feasibility, and success of forest regeneration. The NPS may adjust the target population index based on the results of vegetation and deer population monitoring. On an annual basis, the NPS would determine if management actions are warranted based on the latest survey data.

At the outset of culling operations, the NPS may remove both does and bucks to more quickly and cost-effectively decrease the future recruitment of fawns, as well as reduce the overall deer population to a level that can sustain forest regeneration. The NPS would prioritize the removal of female deer. Where feasible, the NPS would avoid culling large bucks and would conduct culling operations after the conclusion of the regular hunting season, giving hunters on neighboring properties the first opportunity to harvest large bucks that may range beyond the park. The focus on does aligns with survey data showing that over 50 percent of the post-hunt population in this area are reproducing females (PGC, Fleegle, pers. comm., 2025b).

Disposal

The NPS may donate suitable deer meat as permitted by regulations and NPS guidelines (NPS 2012). Possible recipients include (but are not limited to) local charitable organizations, nonprofit food banks, or zoos that keep large predators.

For meat donation from areas affected by CWD, the NPS would follow current guidance from several sources, including the NPS Office of Public Health and the Washington Office – Biological Resources Division, *NPS Manager's Reference Notebook to Understanding Chronic Wasting Disease* (2012), expert advice from NPS wildlife disease staff, and state and local requirements. Following testing for CWD as applicable, if results are negative and meat is deemed suitable for donation, the deer would be field dressed in the sites by experienced staff or sent to a processer off-site. Carcasses would be safely stored during testing, if needed. The entrails would likely be disposed of off-site in all cases. If a suitable location (away from visitor use areas and avoiding sensitive resources such as archeological sites) is available, the entrails could be buried on-site. If the location is particularly remote, entrails could be left on the surface to decay or be scavenged. Similarly, any deer carcasses that are not suitable for consumption or for surface disposal would be disposed of at an approved local landfill or other disposal facility that accepts deer carcasses.

Monitoring

Under the proposed action, the NPS would continue to conduct periodic monitoring to ensure progress towards the Plan's purpose. Specific monitoring would include:

- deer population size monitoring with the continued use of UAS, wildlife cameras, and/or other methods.
- vegetation monitoring to document changes in forest regeneration resulting from a reduced deer population.

Resource managers expect it would take up to five years for seedling numbers to respond to lower deer numbers, and up to 10 years for saplings. Therefore, the NPS would continue deer culling efforts to maintain the target levels and allow vegetation time to respond to the reduced deer population numbers. This response would depend directly on how quickly the population is reduced. Likewise, the number of deer to be culled in subsequent years would be adjusted based on the success of previous removal efforts, projected population size, vegetation response, and deer monitoring results. Park management could adjust the initial deer population goal in either direction depending on how well the sites' forest regeneration objectives are being met.

ALTERNATIVES CONSIDERED BUT DISMISSED FROM FURTHER ANALYSIS

Managed / Public Hunting

The NPS dismissed public hunting from detailed analysis because it is inconsistent with existing laws, policies, and regulations for these and all other units of the national park system where hunting is not included in the enabling legislation. Therefore, the NPS dismissed managed/public hunting to control the deer population from consideration. While public hunting is not allowed, use of approaches like sharpshooting to cull the deer population is an allowable management action to support forest regeneration.

Large-Scale Fencing / Exclosures

The NPS considered and dismissed from detailed analysis the use of fencing to exclude deer from the implementation areas to allow for forest regeneration. A large-scale deer exclosure is defined as a fenced area of one or more acres constructed for the purpose of excluding deer. Fencing would need to be at least 8 feet high to prevent deer from jumping over. Large-scale exclosures would not be feasible due to the costly and time-intensive installation and frequent maintenance required to protect the large, forested areas within the sites. Additionally, placing fencing at key access points (such as front gates) and throughout cultural landscapes would have potential impacts on visitor experience and viewsheds. Therefore, the NPS dismissed large-scale fencing / exclosures from consideration because it is technically and economically infeasible, would have too great of an impact on the character of cultural landscapes, and would not resolve the purpose and need for taking action because of its impact to the cultural landscapes in all three sites. However, the park may continue to use small-scale fencing to protect key resources or for educational purposes.

Reintroducing or Increasing Predators

North American predators that could affect the size of a deer population include timber wolves (*Canis lupus*) and cougars (*Puma concolor*). Both species are extirpated from Pennsylvania. Wolves and cougars in the wild both require very large territories to survive (wolves have home ranges of about 30 square miles when deer are the primary prey, for example, and male cougars require even larger ranges of greater than 100 square miles [US Forest Service 2025]). For comparison, FLNI comprises approximately 3.5 square miles, FONE is a little over 1 square mile, and FRHI is approximately 1 square mile. Each of these is far too small to support a viable population of cougars or wolves. Furthermore, attempting to control deer in the three sites by introducing these large predators would require that the released animals have free roam into the neighboring human environment consisting of small farms, woodlots, and rural homes, which could create conflicts with residents. For these reasons, the NPS dismissed releasing wolves and cougars into these sites because it is not technically feasible.

Other natural predators of deer include coyotes (*Canis latrans*) and black bears (*Ursus americanus*). Coyotes are generalist feeders (PGC 2021a), meaning that they search for any easy meal of meat (live prey/carrion) or fruits/berries. Research indicates that coyotes do prey on newborn white-tailed deer and that fawns are most vulnerable to coyote predation during the spring/summer months. Healthy adult deer are rarely taken by an adult coyote, but adult coyotes can take an ailing adult deer (Ogle 1971). Coyotes take very few fawns if an alternate prey, such as rabbits, is available. Black bears will also prey on deer fawns, but to a lesser extent than coyotes, as black bears are opportunistic feeders (meaning they will eat whatever is readily available [Maryland DNR 2017]). Pennsylvania black bear populations have increased over the past two decades (PGC 2021b), as have coyote populations in North America (PGC 2021a). Park staff have observed both coyotes and black bears near wildlife camera sites. Since coyotes and black bears do not specifically rely on deer as their primary food source, their population sizes would have to be increased substantially (over and above their already existing natural population

numbers) to make a noticeable impact on the deer population at the sites. For this reason, the NPS dismissed adding coyotes and black bears as a deer-density reduction or maintenance strategy because this is both an infeasible and ineffective method to control deer numbers.

Reproductive Control

The NPS considered but dismissed using surgical and nonsurgical reproductive control on does or bucks due to issues related to effectiveness and animal treatment, as well as the required cost, staff time, and management. Surgical methods include sterilization, while nonsurgical methods include the use of chemical reproductive control agents (i.e., immunocontraceptives) and contragestives.

The use of immunocontraception is complex because of application timing, the large number of does that would need to be treated, the need to capture the deer to administer the first dose, and the need for consistent administration of subsequent doses and tracking of doses for each individual deer.

Contragestives require capturing does while they are pregnant on an annual basis. Timing the application is difficult and could potentially harm the doe if administered too late in the pregnancy.

Surgical sterilization would require capturing a large number of does or bucks to treat them. This method requires substantial labor to manage surgical sterilization (particularly for does). Additionally, it could cause animal stress, is cost-prohibitive, and impractical to implement across such a broad rural environment.

The NPS determined that reproductive control agents for does would only be considered feasible when the following criteria are met:

1. The reproductive control agent is federally approved for application to free-ranging populations.
2. The agent provides multiple years (more than 3 years) of efficacy. Studies show that without multi-year efficacy, culling is more efficient (Hobbs, Bowden, and Baker 2000).
3. The agent can be administered through remote injection to reduce the frequency of stressful capture and/or drug delivery operations. Capture would be necessary for the initial application because the animals would need to be marked, but it must be feasible to deliver the agent remotely for any subsequent doses.
4. The agent would leave no residual in the meat (i.e., meat would be safe for human consumption in instances where does travel outside of the sites into an area where they could be hunted).
5. Substantial proof that the agent can be successful in reducing a free-ranging deer population based on scientific review. At this time, the NPS is not aware of any study demonstrating that reproductive controls work to reduce deer numbers in free-ranging populations to the extent needed at the sites to enable forest regeneration.

To date, no reproductive control agents are available that meet all these criteria. There is an agent available that meets criteria 1, 3, and 4 (GonaCon) (USDA 2022). This agent is federally approved for application to free-ranging populations and leaves no residual in the meat (meat would be safe for human consumption). However, agents are not available that also meet criteria 2 and 5.

The NPS will review the status of ongoing reproductive control research on a periodic basis through consultation with subject matter experts and review of new publications. When there are advances in technology that could benefit deer management in the sites, the decision to use an appropriate agent would be based on how well the above criteria are met, as well as availability, cost, efficacy, duration, safety, and feasibility.

MITIGATION MEASURES AND BEST MANAGEMENT PRACTICES

The 1916 Organic Act and its associated *Management Policies* (2006) task the NPS with preventing impairment of park resources. This mandate gives the NPS authority to adopt mitigation measures. The NPS places a strong emphasis on avoiding, minimizing, and mitigating potentially adverse impacts to affected resources, whether under the jurisdiction of the NPS or as a result of an NPS decision. The NPS would apply the following mitigation measures and best management practices to avoid or minimize potential adverse impacts from implementation of deer management actions:

- Qualified individuals trained in firearm use would conduct sharpshooting. An operation plan would ensure safety protocols are in place.
- The NPS would make public notifications prior to sharpshooting activities to remove deer. In addition, sections of the park would be closed to the public during sharpshooting activities for public safety. NPS personnel (or contractors) would patrol public areas to ensure compliance with park closures and public safety measures.

CHAPTER 3: AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

This chapter describes the current environmental conditions in the three sites as they relate to each impact topic retained for analysis. These conditions are known as the "affected environment." The no-action alternative's impacts are the affected environment, including reasonably foreseeable environmental trends and planned actions. These conditions serve as the baseline for evaluating how the Plan could affect each impact topic. This chapter discusses beneficial and adverse impacts from both alternatives considered in this EA.

METHODOLOGY FOR ANALYZING IMPACTS

In accordance with the Department of the Interior (DOI) NEPA Handbook (2025b) and NPS guidance, this section's impact evaluation emphasizes direct effects that occur at the same time and place as an alternative. This analysis also considers reasonably foreseeable indirect effects with a demonstrable connection to the alternative. Where practicable, the NPS considered environmental effects of the proposed action that extend outside the project location.

Impact assessments incorporate existing scientific literature, park-specific studies and inventories, consultations with subject-matter experts and cooperating agencies, and the professional judgment and institutional knowledge of NPS staff. The significance discussion considers the degree of effects, including context (importance or value of the resource) and intensity (severity of impacts). Where applicable, the analysis incorporates impact minimization or mitigation measures that are integral to the alternatives.

FOREST REGENERATION

Methodology and Assumptions

The scientific literature clearly documents the correlation between white-tailed deer population densities and the abundance and diversity of native vegetation throughout the northeast. For more than 15 years, NPS staff have been collecting vegetation data from permanent sampling plots at FONE and FRHI. The staff use these data to observe vegetation trends and document ecosystem alterations caused by deer. Scientists use these baseline data to document the effects of sustained high deer populations on native and nonnative plant species. The analysis of impacts for each alternative at FONE and FRHI relies on the vegetation data collected at these sites across multiple sampling years. Reasonably foreseeable environmental trends based on survey data show that deer densities under the no-action alternative would remain relatively stable within the range of 70 deer per square mile. Trending data, scientific literature, and studies at other NPS parks in the northeast inform the no-action alternative's vegetation impacts.

Based on implementation of similar deer management plans, the impacts analysis for the proposed action assumes that 1) the deer population density goal of less than 20 deer per square mile would be reached within a span of approximately 3 to 5 years and 2) the populations would remain relatively consistent beyond 5 years through regular management actions. Impacts on vegetation from NPS implementation of the action alternative relies upon predictions supported

by scientific literature and by data at other parks where deer management is ongoing. The analysis assumes the effects of the proposed action on forest regeneration would be similar for each of the three sites because of geographic proximity and ecological similarities.

Much of the FLNI property was formerly used for strip mining. Although forest restoration efforts are underway, the majority of the NPS's management efforts have focused on establishing and maintaining the property as a memorial. Additionally, because the park was created relatively recently, baseline vegetation data is not as robust as at the other sites. Vegetation data collected at this park consists of forest monitoring data from the Western Pennsylvania Conservancy, data about planted tree seedlings in the mined restoration areas, and documented observations of browsing impacts within the Memorial Groves. Analysis of impacts for each alternative, therefore, relied upon the forest seedling monitoring reports and anecdotal observations throughout the remainder of the park. Similar to FONE and FRHI, the analysis relied on predictions of vegetation changes supported by scientific literature.

Current and Expected Future Condition Under No Action

The current condition of forest regeneration is described below, along with the expected future conditions if ongoing trends continue. Under the no-action alternative, the NPS expects the qualities of forest regeneration to follow the foreseeable future environmental trends if the NPS takes no action to reduce deer browse. Therefore, the projected future conditions and impacts of the no-action alternative are the same and discussed below.

The three NPS units addressed in this Plan are located within the Allegheny Plateau (FONE, FRHI) and Central Appalachian (FLNI) physiographic provinces of western Pennsylvania. Historically, forests in the region were dominated by plants that thrive in moderate moisture conditions (that are neither excessively dry nor wet), including American chestnut (*Castanea dentata*), oaks (*Quercus* spp.), hickories (*Carya* spp.), maples (*Acer* spp.), and other hardwood species (NPS 2019). However, over the past two centuries, anthropogenic disturbances from logging, agriculture, and mining have altered forest structure and composition throughout the region (Rentch and Anderson 2006).

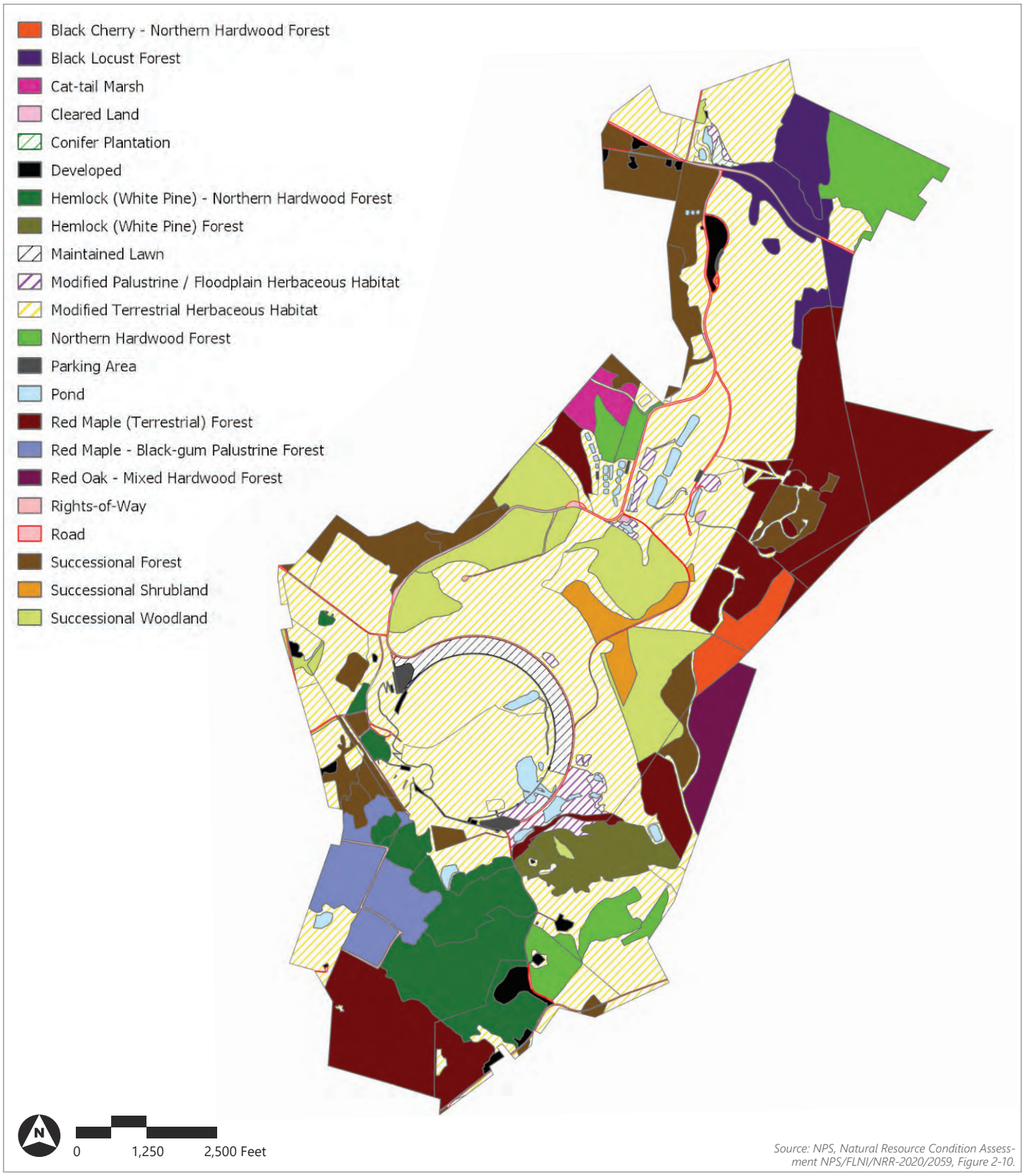
In the early 20th century, chestnut blight (*Cryphonectria parasitica*) led to a shift in forest composition to oak and other deciduous hardwood species (NPS 2008). These forests were later subjected to defoliation events by the invasive spongy moth (*Lymantria dispar*) during the late 1980s and early 1990s, further impacting forest composition and regeneration dynamics (NPS 2019). At present, forested ecosystems in the region continue to be influenced by stressors such as invasive insect pests (e.g., emerald ash borer, hemlock woody adelgid, and spotted lanternfly), acidic atmospheric deposition, and land use change (Poland and McCullough 2006).

One of the current, most influential ecological drivers of forest change is selective browsing by white-tailed deer (Rooney and Waller 2003). In many regions of Pennsylvania, high deer densities have led to a decline in forest regeneration, particularly for palatable native tree species in early developmental stages (such as seedlings and saplings) (Pastor and Naiman 1992).

White-tailed deer are the dominant large herbivore across FLNI, FONE, and FRHI, with population densities reaching unprecedented levels today due to a lack of predators and their ability to adapt to fragmented agricultural and suburban landscapes (McCabe and McCabe 1997).

The landscape of FLNI reflects historical disturbance from surface coal mining, agriculture, and logging prior to the park's designation as a national memorial in 2002. This history of disturbance has substantially altered the ecological integrity and successional dynamics of vegetation across the park. Today, FLNI supports a mosaic of forests, meadows, shrublands, and wetland community types that reflect a legacy of disturbance from human land uses. As part of the 2020 Natural Resource Condition Assessment (NRCA), 18 distinct vegetation community types were mapped across the memorial landscape (see Figure 5) (NPS 2020). There are also numerous culturally significant vegetated areas within the park that are at risk of deer overbrowsing, including the Allée and Memorial Groves, Visitor Center Complex, Tower of Voices, crash site, and the Memorial Plaza. In 2012, the NPS launched a large-scale reforestation and vegetation monitoring effort, named the Flight 93 Reforestation Monitoring Project (RMP). Since then, volunteers have helped restore 890 acres of lands previously subjected to surface mining, planting over 150,000 native tree and shrub seedlings comprised of 42 species. Vegetation establishment and restoration progress was monitored via 285 randomly distributed permanent vegetation sampling plots. Data were collected in 2015, 2017, and 2022, evaluating metrics of seedling survival, growth, composition, and the influence of white-tailed deer browsing. Since 2015, monitoring results show that chronic deer browsing is an important stressor affecting vegetation height and growth in palatable species (Tyree, Larkin, and Eggerud 2022). This trend corresponds to regional patterns of "regeneration debt" in national parks, a condition in which forests lack adequate juvenile canopy species capable of replacing mature trees at the canopy level (Miller et al. 2023).

At FONE, vegetation mapping conducted by the United States Geological Survey (USGS)–NPS Vegetation Mapping Program identified eight distinct vegetation community types within the park, based on the National Vegetation Classification Standard (NVCS) (NPS 2006a). The most prevalent upland forest communities at FONE include White Oak–Mixed Hardwood Forest and Northern Red Oak–Mixed Hardwood Forest. To assess how forests in national parks are changing in response to anthropogenic stressors (e.g., landscape dynamics, invasive species, deer herbivory), the Eastern Rivers and Mountains Inventory and Monitoring Network (ERMN) of the NPS Inventory and Monitoring Division conducts annual vegetation monitoring and deer monitoring across in-network parks, including FONE. At FONE, oak species comprised approximately 25 percent of the forest canopy yet represented only 4 percent of the seedling layer, demonstrating a significant gap in regeneration dynamics largely attributed to preferential deer browsing of oak seedlings (Miller et al. 2023). In contrast, seedling strata were predominantly comprised of red maple, black cherry, and white ash. Although white ash exhibited the fastest seedling growth rate, its long-term contribution to forest structure is likely limited due to mortality caused by the invasive emerald ash borer at mature life stages.



Source: NPS, Natural Resource Condition Assessment NPS/FLNI/NRR-2020/2059, Figure 2-10.

FIGURE 5

Natural Plant Communities, Designed Landscape, and Infrastructure at FLNI

Somerset County, Pennsylvania

White-Tailed Deer Management Plan | Environmental Assessment
National Parks of Western Pennsylvania
United States Department of the Interior / National Park Service

Additionally, deer browse assessments conducted between 2019 and 2024 showed medium to high impact in 17 out of 20 established permanent plots (NPS 2025a; see Figure 6). The assessment results corroborate findings by Miller et al. (2023), who classified FONE's regeneration status as one of "probable failure." These results suggest that without management intervention, forests within the park face a high risk of long-term compositional change, with trickledown effects on the integrity and resilience of the park's ecosystem and historic character.

FRHI has a centuries-long history of human land use, including logging, agriculture, horticulture, and surface mining. ERMN conducted a vegetation community mapping assessment of FRHI in 2004, identifying a total of seven vegetation associations found within the park's boundary based on the NVCS: Northern Red Oak–Mixed Hardwood Forest, Tuliptree–Beech–Maple Forest, Sycamore Floodplain Forest, Early Successional Hardwood Forest, Conifer Plantation, Successional Old Field, and Mixed Forb Marsh. These vegetation communities reflect a variety of successional stages and the park's legacy of different land uses throughout history (NPS 2006b). ERMN conducts annual vegetation and deer browsing monitoring at FRHI to evaluate changes in forest structure and composition over time. Findings from Miller et al. (2023) indicate poorer regeneration than at FONE, and the authors classified FRHI with the most severe forest regeneration status of "Imminent Failure." An analysis of tree regeneration stocking index at FRHI by the ERMN Forest Health and Monitoring Program also supports this assessment, with regeneration in 14 of 20 permanent monitoring plots classified as severely understocked or moderately stocked. The stocking index quantifies whether current seedling numbers are sufficient to restock a hardwood forest stand (NPS 2014); in other words, whether native canopy-forming seedling and sapling aged tree species are regenerating at a rate sufficient to replace the forest canopy given the impacts of deer browse (NPS 2025a; see Figure 7). Furthermore, other regeneration stressors, on top of deer browsing, including invasive insects and invasive plants, work together to alter the trajectory of forest regeneration at FRHI. For example, severe storms may result in downed trees that create canopy gaps, creating available space and light. Invasive shrubs and herbaceous species outcompete native tree seedlings for these available resources (in part because deer prefer to browse the native species over the invasive species). This enables their rapid establishment and spread in the understory, altering the future of natural forest regeneration in the park (Miller et al. 2023).

Numerous studies document reductions in seedling and sapling abundance, shifts in species composition, and altered successional trajectories in forests experiencing high levels of deer browsing (Tilghman 1989; Royo and Carson 2006; Nuttle et al. 2014).

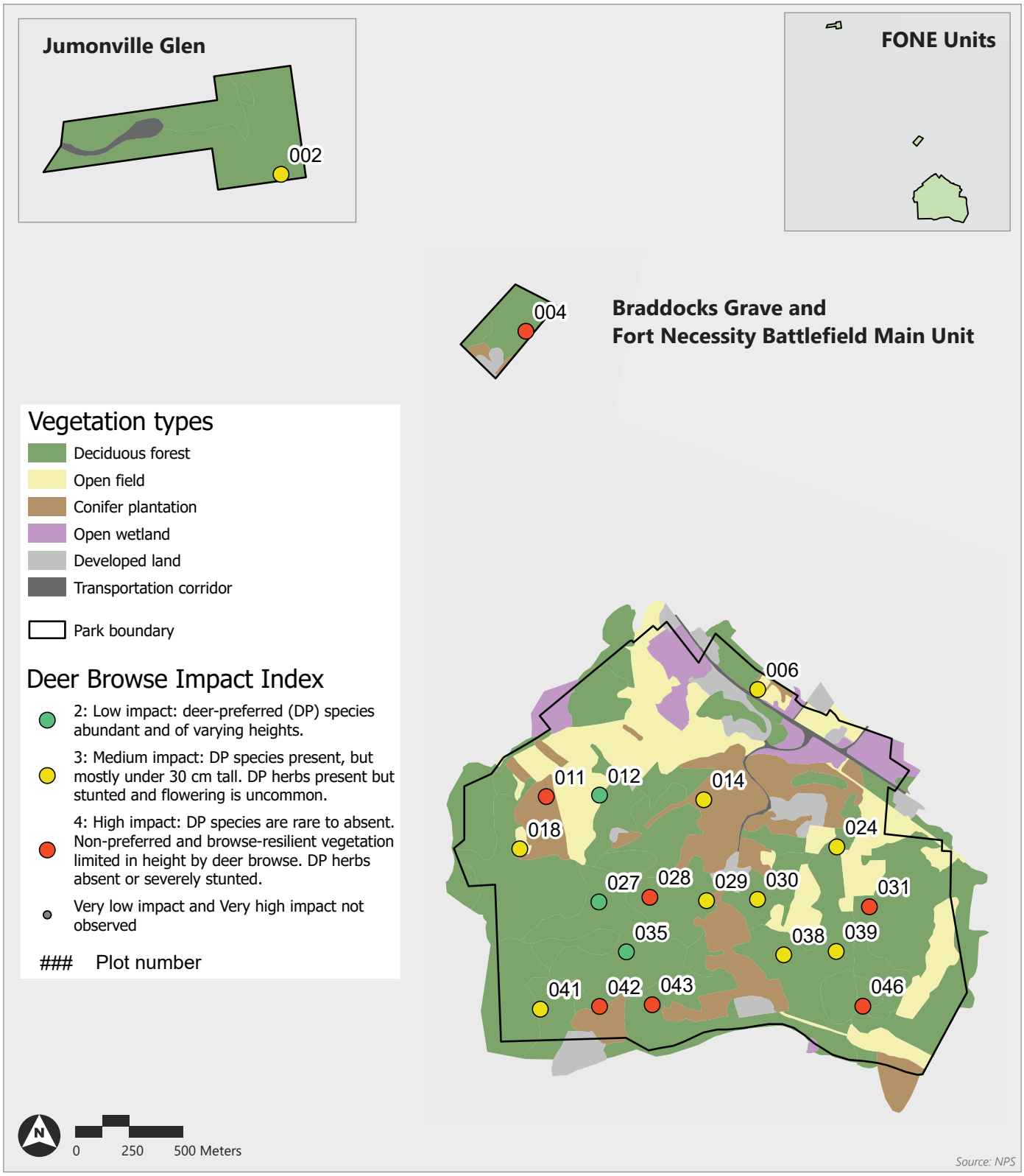


FIGURE 6

Index of Deer Browse Impacts at FONE

Fayette County, Pennsylvania

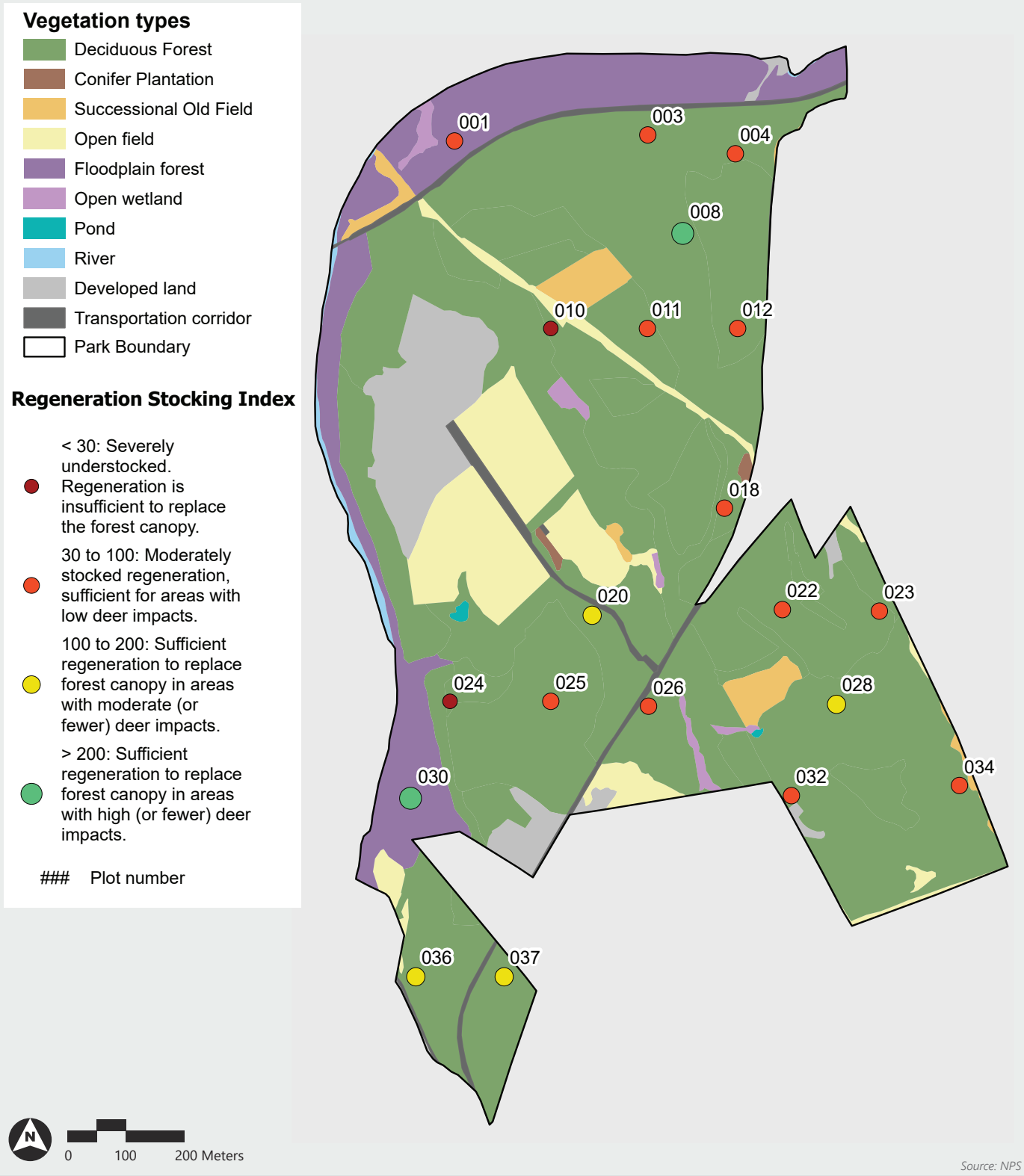


FIGURE 7

Tree Regeneration Stocking Index at FRHI

Fayette County, Pennsylvania

Under the no-action alternative, deer populations would remain unchecked within the sites, continuing to stress regeneration of native tree species in early life stages. At high densities, deer browsing exerts substantial direct impacts on vegetation, including reducing abundance, diversity, and height of tree seedlings and saplings (Rooney and Waller 2003; Shelton et al. 2014). Over the course of decades, deer browsing pressure shifts the composition of native plant communities towards unpalatable, browse-tolerant species—changing the generational dynamics of forest composition (Côté et al. 2004). These impacts are evident in the reduced recruitment of palatable, canopy-forming species which are preferentially browsed during juvenile life stages. In contrast, browse- and shade-tolerant, non-canopy forming species of shrubs, including pawpaw (*Asimina triloba*), American holly (*Ilex opaca*), and ironwood (*Carpinus caroliniana*), are becoming increasingly prevalent throughout understory habitats, fulfilling open ecological niches in the absence of regeneration of canopy-forming species (Miller at al. 2023).

Shifts in vegetation dynamics set the scene for the establishment and spread of aggressive invasive vegetation. Research shows that excessive deer browsing facilitates the expansion of locally established populations of invasive herbaceous plants because deer prefer to consume native species over nonnatives, with observations of much higher cover of invasive species in plots with deer browsing compared to plots without (Averill et al. 2017; Knight et al. 2009). Uncontrolled deer browsing also disrupts composition and vertical stratification of distinct vegetation layers (e.g., understory, canopy) in forested communities (Rooney and Waller 2003).

Under the no-action alternative, native canopy-forming trees would continue failing to recruit and develop seedlings and saplings to canopy-forming age. Deer would continue to exert uncontrollable, top-down browsing pressure that facilitates an assemblage of unpalatable, browse-tolerant trees, shrubs, and invasive species across the three sites. These changes ultimately degrade the quality of ecosystem attributes provided by forested systems. Without a deer management intervention, these changes would lead to widespread forest loss due to forest regeneration failure (Miller et al. 2023).

While invasive vegetation species are also present throughout the region and within each of the three NPS units, their proliferation is not the direct focus of this analysis. However, it is worth noting that deer browsing plays a substantial indirect role in supporting conditions for the spread and establishment of invasive plants. Deer's preferential consumption of native species reduces competitive pressure on nonnative species that are typically unpalatable to deer (Eschtruth and Battles 2009). The NPS currently conducts invasive vegetation management interventions, such as the spot treatment of invasive species with herbicide, which may reduce native species' competition with invasives. Many common methods of invasive vegetation treatment involves the use of non-selective herbicides, which may remain active within the soil for extended periods of time and alter soil biochemistry (Rose et al. 2016). The mechanical removal of invasive vegetation species may reduce native species' competition for critical resources such as nutrients, light, water, and space. Even with invasive species treatment, white-tailed deer's ongoing preference to browse native vegetation would continue limiting native seedling and sapling growth below levels adequate for replacing the native canopy.

Ongoing implementation of cultural resource treatment plans, including reforestation efforts, would have negligible effects on forest regeneration due to susceptibility of the vegetation to deer browsing. Without deer exclusion methods around individual memorial trees and native tree plantings, deer would continue to consume and damage young seedlings and saplings. Thus, deer would diminish the effect of the revegetation intervention strategies in culturally important locations across all three sites. The impacts on cultural resources are described in more detail under the "Cultural Landscapes" section of this chapter.

Overall, under the no-action alternative, deer would continue to adversely impact the composition and structural complexity of forest habitats across the three sites—reducing the regeneration of native vegetation species and facilitating the proliferation of invasives.

Effects of Proposed Action

Reducing deer densities strategically would relieve browse pressure and support forest regeneration across park landscapes. Deer can affect successional dynamics through their preference for native woody and perennial species over browse-tolerant and often nonnative, herbaceous annual plants with shorter life spans that depend on frequent regeneration from the seed bank (DiTommaso et al. 2014). Reducing deer densities would effectively allow for the recovery of native species in the seed bank, enabling seedling and sapling layers to develop to maturity.

While it can take decades for forests to fully regenerate, some incremental changes may be observed sooner that indicate regeneration is occurring. Population control of white-tailed deer increases seedling density and height in palatable canopy-forming species. This is particularly true when maintaining deer densities below 15-20 deer per square mile throughout the region (5.8-7.7 deer per square kilometer) (Russell et al. 2017). Reducing browsing pressure allows for greater species and structural complexity in understory layers, supporting a greater diversity of native canopy and subcanopy species (Nuttle et al. 2014). Lower browsing pressure is also associated with higher-quality soil conditions that support nutrient cycling and retention of moisture conducive to forest regeneration and long-term ecological health (Bressette et al. 2012). Under reduced deer densities, invasive species would also face greater competition from native species, potentially reducing their prevalence in the understory herbaceous and seedling layer.

The proposed Plan's strategic reductions in deer densities would transition the sites' forested areas from the current trajectory of ecological degradation toward recovery and resilience. The Plan would support ecosystem function, increase biodiversity, and restore the structural integrity of remnant eastern deciduous forest habitats over the course of decades across the three park landscapes.

Under the Plan, efforts at meadow restoration, planting, and reforestation would become more successful as new plantings are no longer immediately browsed by deer. Management of invasive plants would become more effective over time because native species could more successfully compete with invasive vegetation. With reduced deer browsing, the NPS expects that native trees

and shrubs would start to reestablish in areas where they were formerly extant . Furthermore, the NPS anticipates reduced spread of invasive vegetation to novel habitats (those that are modified or created by human activities and differ from natural ecosystems) across the sites as robust native plant communities would be more adequate at competing with new invasive plants dispersed across park landscapes. Finally, controlling deer populations gives existing vegetation management efforts a better chance of producing positive returns on investment of time and money, which would also help accelerate vegetation restoration efforts aimed at forest regeneration.

Under the deer management Plan, improved forest regeneration from reduction in deer browsing would support other NPS management and restoration strategies and ultimately the health of the forested landscapes at FLNI, FONE, and FRHI. Overall, this alternative would provide beneficial impacts to forest regeneration and would not have any significant adverse effects.

WHITE-TAILED DEER POPULATION

Methodology and Assumptions

The evaluation of impacts on the white-tailed deer population at each of the three sites is based on a qualitative assessment of deer health, condition, and behavior resulting from the population effects of each alternative. Scientific literature and deer management results at other parks support the analysis.

As noted under the “Forest Regeneration” methodology, the impacts analysis for the proposed action assumes that 1) the deer population density goal of less than 20 deer per square mile would be reached within a span of approximately 3 to 5 years following implementation of the deer management plan and 2) the populations would remain relatively consistent beyond 5 years through regular management actions. These assumptions are based on implementation of similar deer management plans.

Current and Expected Future Condition Under No Action

The current condition of the white-tailed deer population is described below, along with the expected future conditions with ongoing trends. Under the no-action alternative, the NPS expects the characteristics of the deer population to follow the foreseeable future environmental trends. Therefore, the projected future conditions and impacts of the no-action alternative are the same and discussed below.

The impacts of no action are assessed by considering the three sites as a single unit due to their similar outcomes. The analysis considers impacts as a whole to the deer population regarding the overall health of the herd and the population’s ability to function as an integral part of the ecosystem across the three sites.

Around the end of the 1800s, the white-tailed deer population in Pennsylvania was low due to over-hunting for food subsistence (and absence of hunting regulations) and the clearing of forests for fuel and agriculture. In contrast, the estimated deer population in Pennsylvania by 2001 grew

to 1.5 million deer (equivalent to over 30 deer per square mile) due to people's lifestyle changes, hunting laws, and habitat shifts beneficial to deer (Pennsylvania State University 2007).

Although the NPS has management authority over wildlife populations on park lands, the PGC is the agency responsible for managing the deer population on most other properties in the state. The PGC makes management decisions annually based on a variety of data sources that include hunter harvests, vegetation sampling, and public surveys. Management decisions are implemented across 22 geographical wildlife management units. FRHI falls within the PGC wildlife management unit 2A, and FLNI and FONE occupy the 2C unit (PGC 2025c). The PGC data reflect a trend of increasing deer population within the 2A unit, whereas the deer population is reported as stable across the 2C unit (PGC 2025c).

Deer Density

Until recently (within the past 5 years), NPS resource managers at FLNI, FONE, and FRHI had no data to reasonably estimate the population density of deer. However, they anecdotally understood deer numbers were high from observations of deer and the effects of deer browsing on vegetation. The NPS decided to begin a program of conducting deer population surveys at the sites using motion-sensitive ground cameras based on a method established by the National Deer Association (Thomas 2012) that is supported by a similar protocol created by Mississippi State University extension (Hamrick et al. 2013). Two photographic sampling collections were performed at FLNI in 2021 and 2023, and one sampling collection was conducted in the fall of 2023 at FRHI (NPS 2024). In 2024, the NPS implemented a more advanced approach of counting deer using thermal infrared imagery from small unmanned aerial systems (sUAS) at all three sites (Steward Green 2024). These deer survey results, presented in Table 1, gauge the relative abundance of deer for management purposes.

TABLE 1. WHITE-TAILED DEER CENSUS RESULTS FROM TWO SURVEY METHODS (DEER PER SQUARE MILE)

Park Unit	Camera Survey (2021)	Camera Survey (2023)	Thermal Infrared Survey (2024)
FLNI	93	102	123
FONE	---	---	74
FRHI	---	102	83

While both survey methods have some degree of sampling error, the thermal infrared survey method provides a more accurate look at deer numbers in the sites because it offers a single snapshot in time, provides 100 percent coverage of the properties, and the sUAS can be piloted to hover over questionable heat-sensing detections to verify observations in areas of thick cover. Although surveys specific to these sites started recently, the current deer densities likely reflect the recent past densities and the expected future densities in the absence of management action.

Under the no-action alternative, the three sites would continue to monitor population levels with no means to control deer numbers. Habitat-level improvements such as invasive species control would continue. However, the deer population levels would remain in the range of

approximately 70 to 120 deer per square mile with the potential to double based on deer densities observed at other units of the national park system within the northeastern US. Densities at this level would continue to be incompatible with sustainable ecosystem balance, affecting the quality of habitat and the amount of available browse. Forested habitats would continue to experience excessive browsing pressure, reducing food availability and habitat quality (Tilghman 1989; Horsley et al. 2003; Côté et al. 2004). Under this alternative, habitat quality could degrade to the point that the deer populations experience nutritional decline affecting body weight, particularly in fawns and yearlings (Dechert 1968; Marchinton and Hirth 1984). Studies further support this trend while also documenting negative effects on growth rates and antler development in yearling bucks (Leberg and Smith 1993; Keyser et al. 2005). Once under nutritional stress, fawns are more likely to be abandoned (Beier 1987), and deer are less likely to survive harsh winters.

White-tailed deer have a strong fidelity to their home range (Porter et al. 2004) and are not likely to leave their familiar surroundings unless under extreme duress. Under this alternative, deer would continue to occupy the sites at excessive numbers, causing a continuation of habitat degradation both immediately and in the long term (decades). As food sources decline in the coming years, deer would eventually seek out available food sources across a wider landscape, which would place them in unfamiliar adjacent properties and make them more vulnerable to mortality from hunting and vehicular collisions.

Chronic Wasting Disease

Another trend affecting the deer populations within the state is the occurrence of CWD. CWD is a transmissible spongiform encephalopathy (TSE) among cervid species that spreads via direct contact among animals and consumption of food sources contaminated by infected saliva, urine, and feces. CWD infects brain tissue and is incurable and fatal. Denser deer populations are more likely to encounter infected material and spread the disease. CWD is known to spread in deer via breeding, social interactions, and ingestion of food sources contaminated by urine, feces, and saliva (Joly et al. 2006; PGC 2025d).

In 2012, the first Pennsylvania cases of free-ranging deer infected with CWD occurred in Bedford and Blair counties immediately east of Somerset County where FLNI is located (PGC 2025d). Today, the disease has spread across the central and eastern regions of the state, with the south-central region having the highest concentration of cases (Figure 8). While no cases of the disease have been detected in the three sites or in adjacent West Virginia counties south and west of FONE and FRHI (WVDNR 2025), the PGC has detected CWD cases in Somerset County approximately 9 to 15 miles southeast and north of FLNI and approximately 40 miles east of FONE. The PGC has confirmed the presence of the disease across much of central Pennsylvania and the disease appears to be spreading towards the western part of the state. Under the no-action alternative, high deer densities would increase the potential for an outbreak of CWD that could spread across the landscape among deer on adjacent properties.

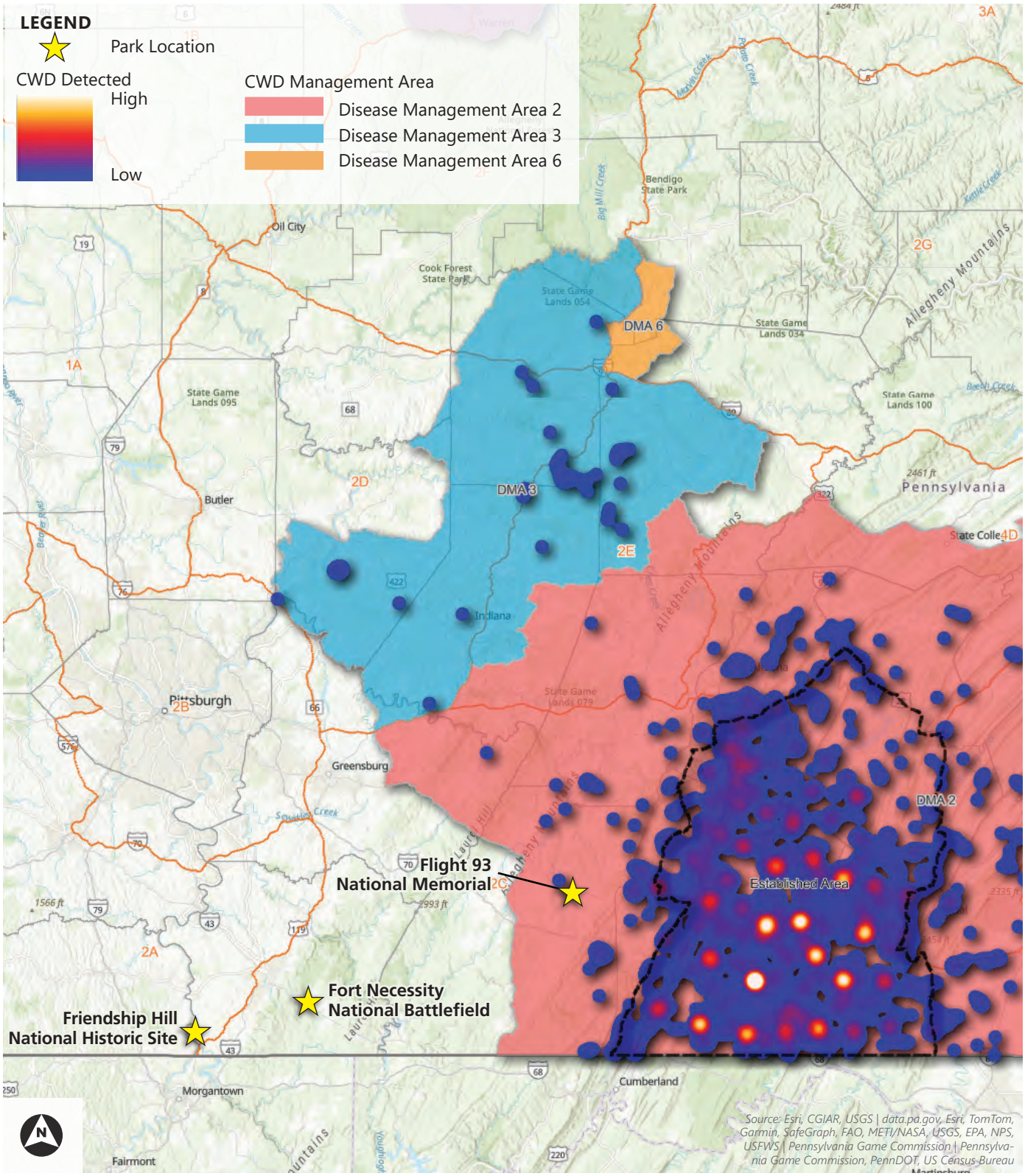


FIGURE 8

Chronic Wasting Disease Map

Somerset and Fayette Counties, Pennsylvania

Because deer prefer to congregate in matriarchal groups (Marchinton and Hirth 1984; Nixon et al. 1991), space shared within park boundaries among multiple groups is a factor that heightens the potential for CWD spread and animal infection. Furthermore, the no-action alternative provides no means of early CWD detection necessary for management intervention.

The NPS has long recognized CWD as a concern among ungulate populations within parks. The initial version of the *NPS Manager's Reference Notebook to Understanding Chronic Wasting Disease* (NPS 2005) outlined steps to coordinate with state agencies, initiate a surveillance and testing program for the disease, and establish a communication plan to surrounding communities and park visitors. Under the no-action alternative, the NPS would continue to coordinate with PGC as needed to manage CWD in the sites.

Conclusion

Under the no-action alternative, the NPS would continue to allow high deer densities within the sites, which would have both ongoing and long-term, adverse impacts on the deer population due to habitat degradation, behavior modifications, decline in health and overall fitness, and risk of exposure to disease outbreaks. Under this alternative, ongoing actions to control invasive species would be less effective due to continued deer browsing or would be more costly due to the need for fencing and other mitigations.

Effects of Proposed Action

Under the proposed action, sharpshooting would reduce deer numbers within the sites from current levels and then maintain them. Initial reduction targets would reduce population density to approximately 20 deer per square mile, and future targets could be adjusted as needed to meet key forest regeneration indicator targets. This action would eventually reduce nutritional stress among the deer herds, resulting in an overall increase in health and vitality of the remaining deer. Immediate changes in health and vitality in the deer herd may include reduced competition for available food sources due to fewer deer in the vicinity. Positive effects to deer health from habitat improvements would take longer to notice because their forested habitats would take several years to recover from over browsing. Over the span of decades, reduced deer density is likely to allow for a recovery of forest habitats. This, in turn, would bring the overall ecosystem into a balance that allows the forest to sustain a healthy deer herd by increasing the supply of native, palatable browse and mast-producing trees. Fawn mortality due to nutritional stress is expected to decrease (Dechert 1968; NPS 2005), and deer weight and antler development could increase due to habitat improvements (Leberg and Smith 1993; Keyser et al. 2005).

Reducing deer density under this alternative provides additional opportunities for collection of tissue samples for CWD testing from deer occupying park property. Testing carcasses could give NPS early indication of CWD occurring within the sites, enabling staff to initiate immediate coordination with state agencies and to implement any further actions necessary to control the spread of the disease. The proposed action would provide an opportunity for more active, long-term surveillance of the disease to the benefit of the deer population.

In combination with current vegetation management actions (invasive species treatments), a reduction of the deer population size would decrease browsing pressure and allow increases of native ground cover and the establishment of tree seedlings necessary to replace existing canopy trees as they eventually die from natural causes. In particular, the reduction of invasive plants would provide added space and nutrients for native species suitable for deer browsing, thereby enhancing long-term herd health and population viability.

Overall, this alternative would provide beneficial impacts to the deer population across the three sites with no significant adverse effects.

CULTURAL LANDSCAPES

Methodology and Assumptions

Potential impacts on the cultural landscape are analyzed in terms of changes to character-defining features of the resources. Director's Order No. 28: *Cultural Resource Management Guidelines* defines a cultural landscape as "a reflection of human adaptation and use of natural resources and is often expressed in the way land is organized and divided, patterns of settlement, land use, systems of circulation, and the types of structures that are built. The character of a cultural landscape is defined both by physical materials, such as roads, buildings, walls, and vegetation, and by use reflecting cultural values and traditions. These character-defining features contribute to the property's integrity, which is composed of location, design, setting, materials, workmanship, feeling, and/or association. The analysis below includes a qualitative assessment of how increases or decreases in deer overbrowsing affect forest regeneration, and how these effects degrade or restore character-defining features of the cultural landscapes.

Current and Expected Future Condition Under No Action

The sections below describe the current condition of cultural resources in the three sites, along with the expected future conditions if ongoing trends continue. Under the no-action alternative, the NPS expects the qualities of the cultural resources to follow the foreseeable future environmental trends if the NPS takes no action to reduce deer browse. Therefore, the projected future conditions and impacts of the no-action alternative are the same.

The "Forest Regeneration" impact topic above describes current and expected future condition of forest vegetation that contributes to the historic integrity of cultural landscapes throughout the three sites. The ongoing trend of limited forest regeneration is anticipated to continue if the NPS takes no action, which would in turn diminish the overall appearance, setting, and feeling of the cultural landscapes in the park. Specific existing and expected future conditions of cultural landscapes and the impacts of taking no action at each park are described below.

Flight 93 National Memorial

FLNI honors the seven crew members and 33 passengers of United Airlines Flight 93 who lost their lives on the morning of September 11, 2001, when their hijacked plane crashed in a field at

this location. Elements of the park include the designed memorial area opened in 2011 as well as the crash site and adjacent debris field. The NPS is currently developing a cultural landscape report to document the landscape elements of FLNI and provide treatment recommendations. The FLNI landscape encompasses a variety of buildings, designed features, meadows, and wooded areas across 2,200 acres.

The Wall of Names is visible in the distance across the Field of Honor; rolling hills and forested background provide a setting for tranquility and reflection.

The designed memorial area is situated in an open meadow previously used for surface mining and agriculture. The land was mined from the 1950s through the mid-1990s. After the mines closed, the area was recontoured and seeded for revegetation. Between 2012 and 2022, volunteers planted over 152,000 trees and shrubs throughout the park (Tyree, Larkin, and Eggerud 2022). That project resulted in substantial reforestation and improvements to soil conditions, which contribute to the tranquil forested setting and perimeter viewshed.

The Visitor Center Complex is on an exposed hilltop and leads to the 1-mile semicircular Ring Road to the Memorial Plaza at the heart of the designed memorial area. The Memorial Plaza includes elements such as the Wall of Names, the Field of Honor, the Hemlock Grove, and other associated memorial features. The Ring Road travels through an Allée of 316 trees and past forty Memorial Groves consisting of 40 trees each. Through a separate but ongoing restoration project for the 40 Memorial Groves and Allée, the NPS is restoring the living memorial consisting of 2,000 deciduous trees. This restoration project would improve the soil conditions and benefit the overall health of the trees in the Memorial Groves and Allée, which contributes a benefit to the memorial landscape.

Heavy deer browsing in the area is one factor currently hindering the NPS efforts to establish and maintain a designed memorial landscape, including the establishment of designed ornamental plantings and regeneration of the Hemlock Grove and surrounding forests. Clear browse lines are visible at the edges of the forested areas in and around the park where deer have cleared the understory and lower vegetation. A 2022 reforestation monitoring report confirmed this and noted that heavy deer browsing was preventing growth of the deciduous tree species in the park forests (NPS 2022). Although the separate reforestation and restoration projects have improved and could continue to improve the cultural landscape, without NPS action to manage the deer population, trees in the reforested areas, Memorial Groves, and Allée would remain vulnerable to damage from overbrowsing, limiting the potential benefits.

The crash site is southwest of the Memorial Plaza, encompassing approximately 10 acres of mowed turf and meadow at the edge of a wooded area known as the Hemlock Grove. The crash site is the final resting place for the 40 passengers and crew of Flight 93 and is only open to family members. The edge of the impact site is marked by a 17.5-ton sandstone boulder placed in 2011. The Hemlock Grove is an approximately 11-acre area of mature, dense woodlands directly south of the crash site where debris and human remains were found. The Hemlock Grove's land was not mined during the 20th century and thus retains a natural character that the NPS intends to preserve (NPS 2023b). According to the 2018 Foundation Document for FLNI, the Hemlock Grove is in fair to poor condition due to stunted hemlock regeneration caused by a combination of invasive overgrowth and deer browsing (NPS 2018).

The crash site and Hemlock Grove are visible beyond the open area of the Memorial Plaza; deer are seen browsing on vegetation in front of the forest, NPS photo.

If the NPS takes no action to reduce deer browse at FLNI, the continuation of limited forest regeneration would change the appearance of the Hemlock Grove that bore witness to the crash of Flight 93. These changes would include browse lines created by deer clearing all lower vegetation within their reach; visitors in the memorial's viewing areas would see these distinct horizontal lines across the Hemlock Grove, which would alter the feeling of the natural forested area. Deer browsing seedlings and saplings in the understory would result in fewer young hemlock trees to replace the mature trees as they die through natural processes or a disturbance such as a wind event. While the length of time for these impacts to occur is difficult to define due to the unpredictable nature of these events, it would ultimately result in a less-dense grove and a softer forest-meadow boundary between the grove and the adjacent open crash site. A substantial change in the Hemlock Grove would alter the historic setting and character of the crash site and final resting place for the passengers and crew.

The deer browse line indicated by the red arrow is clearly visible at the edge of the forests at FLNI.

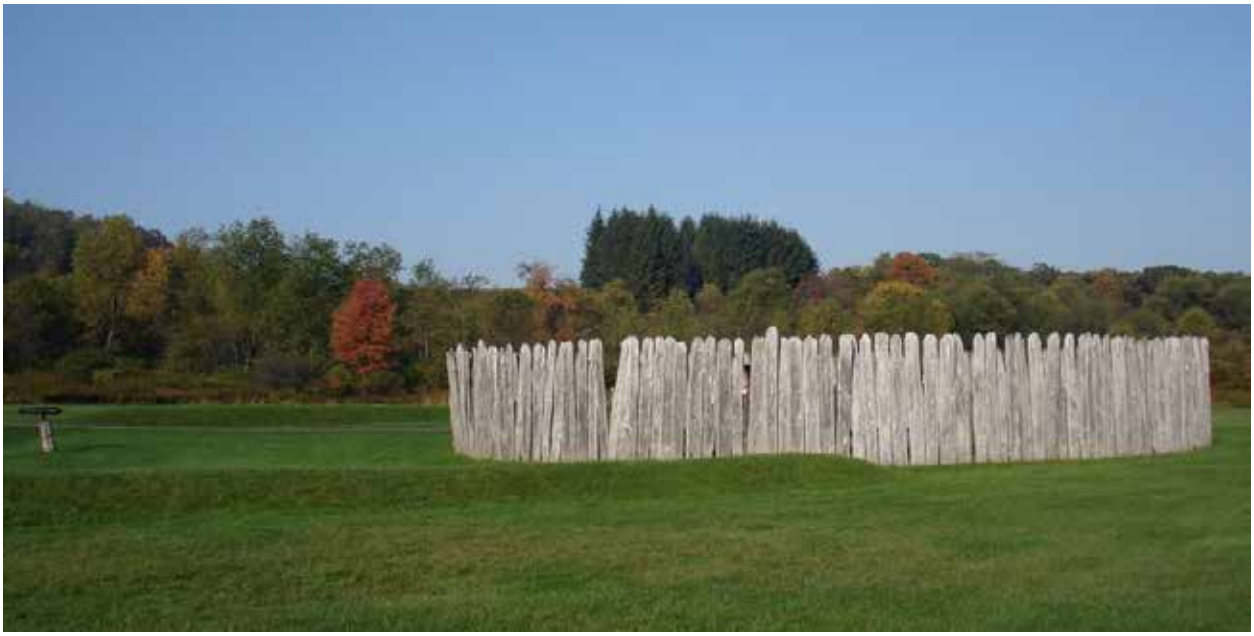
The designed memorial landscape of FLNI is set within a broader perimeter viewshed of approximately 907 additional acres that includes fields, wooded groves, and rolling hills visible from the overlook areas throughout the memorial. This perimeter viewshed provides a sense of tranquility conducive to reflection and sense of place, which are some of the park's fundamental resources and values (NPS 2018). The overall natural landscape of the park and surrounding viewshed is largely in recovery after decades of surface mining followed by NPS and volunteer efforts for revegetation discussed above.

The perimeter viewshed is expected to continue to consist of a combination of meadows, open fields, and forests; however, if the NPS takes no action to reduce deer browse, the forests would continue to experience insufficient regeneration, and these perimeter forests may lose their dense canopy. This loss would alter the setting and feeling of the tranquil landscape, and nearby development, such as roads, may no longer be screened from the designed memorial area. The Tower of Voices area may be most affected by the loss of dense canopy, as it is closest to Lincoln Highway (Route 30) and thus is most vulnerable to a loss of noise buffering and visual screening.

The NPS would continue to maintain a reflective atmosphere throughout all areas of the park under the no-action alternative to the extent possible with ongoing maintenance and management; however, as deer overbrowse continues, a loss of forest regeneration would diminish the quiet, reflective quality of the designed memorial landscape at FLNI.

Fort Necessity National Battlefield

At FONE, the NPS tells the stories of the first battles of the French and Indian War (1754-1763) and the role that George Washington played in each. The cultural landscape within FONE helps convey these stories through natural and manmade elements such as landforms, spatial organization, vegetation, and structures. The NPS documented the Fort Necessity National Battlefield Landscape (NB Landscape) in a 2022 cultural landscapes inventory; the NB Landscape encompasses most of the FONE area including component landscapes of the Great Meadows (including Fort Necessity) and the Civilian Conservation Corps (CCC) Picnic Grounds (NPS 2022).



The reconstruction of Fort Necessity sits in the open meadow surrounded by forested areas visible in background, NPS photo.

The Great Meadows, where the Battle of Fort Necessity occurred, is a prominent visitor experience at FONE. The NPS documented the Great Meadows as a cultural landscape in a 1998 cultural landscape report and noted that it retains its historic character as a battlefield (NPS 1998a). The Great Meadows cultural landscape encompasses 42 acres, including the meadows and surrounding hillsides as well as the reconstructed Fort Necessity site where Washington held his defensive position. Important character-defining features of the cultural landscape include the spatial organization of the flat, open terrain of the meadow, contrasted with the surrounding forested hills. According to the Great Meadows cultural landscape report, the forest/meadow border was a factor in the positioning of men and supplies during the Battle of Fort Necessity that impacted the outcome of the battle. The forest vegetation created a dense, continuous canopy that allowed the French troops to retreat to cover while engaging in battle, giving them the advantage over Washington's troops in the open meadow (NPS 1998a).

The historic forest/meadow border is still evident today, but the strong boundary has diminished over time, and deer browsing has hindered NPS efforts to reestablish it (NPS 2013b). A 2019-2024 NPS census of forest plots at FONE showed varying levels of deer browse throughout the forested areas surrounding the Great Meadows and indicated that the area is currently experiencing deer browsing that has altered the forest composition (NPS 2025a). In a 2023 report, the NPS Inventory and Monitoring Division assessed the forests at FONE and documented a trend of decreasing number of saplings and seedlings, which limits the ability of the forest to replace mature canopy trees that are lost (Miller et al. 2023).

If the NPS takes no action to reduce the heavy deer browse at FONE, forest regeneration is expected to remain low. As the forest fails to sufficiently regenerate, the tree canopy would become less dense and the tree line that was historically strong would continue to diminish. This would alter the historic appearance and character of the forest, the density of which played a key role in the positioning of troops and the outcome of the 1754 Battle of Fort Necessity. As the forest becomes less dense due to a lack of regeneration, the landscape would be less able to accurately convey the historic characteristics that drew Washington to establish a fort at this location, and which allowed the French army to succeed in the battle (NPS 2013b).

Trees planted by NPS in an effort to reestablish the 1754 tree line (dotted line) are visible in front of the existing natural forest line (dashed line) at the Great Meadows, VHB photo.

Located immediately to the southwest of the Great Meadows is the CCC Picnic Grounds Landscape (CCC Landscape). The CCC Landscape is considered a component of the NB Landscape, but with a different historic association than the Great Meadows (NPS 2004). The CCC Landscape area is associated with the CCC, a federal relief program initiated by Franklin Roosevelt's New Deal to provide employment for young men during the Great Depression. The program created work projects focused on conservation of natural resources. When the CCC set up the camp in 1935, much of the land surrounding the Great Meadows was open after having been cleared for farming and pasturing in the 19th century. Between June 1935 and December 1937, the CCC planted over 50,000 trees and built bridges, culverts, picnic areas and roads to create a more historic appearance for the area surrounding the Great Meadows. Today, the area is predominantly wooded, with CCC picnic shelters and features clustered in clearings. According to the cultural landscape inventory, many vegetation ecotypes exist within the CCC Landscape, ranging from second growth deciduous forest, to wetland, to CCC pine plantations. Reforestation efforts resulting in tree growth has somewhat changed the site's character since its initial opening, but it retains the major elements established by the CCC (NPS 2004).

If the NPS takes no action to reduce the heavy deer browse at FONE, the lack of sufficient forest regeneration would diminish the CCC Landscape's setting and appearance adjacent to the Great

Meadows, and the landscape would no longer accurately reflect the efforts of the CCC to reestablish the deciduous forests in the 1930s.

Ongoing invasive vegetation management may help native vegetation outcompete invasive species, as noted under "Forest Regeneration." However, without deer management, native vegetation of the cultural landscape would continue to suffer from overbrowsing due to white-tailed deer preference for native vegetation, limiting the effectiveness of these efforts. When considered with these other ongoing actions, the no-action alternative would result in overall adverse impacts on the cultural landscape at FONE as deer overbrowse continues.

Friendship Hill National Historic Site

At FRHI, the NPS preserves the Friendship Hill Estate to commemorate the life of Albert Gallatin, an accomplished statesman and scholar who served as Secretary of the Treasury for 13 years under the Jefferson and Madison administrations. Gallatin purchased the property in 1786 and developed the site into a pastoral estate for his family throughout the late 18th and early 19th centuries. The frontier of western Pennsylvania represented Gallatin's ideals of returning to the land and investing in the western frontier for the early United States. The Friendship Hill Estate gives visitors a sense of the historic landscape that existed during Gallatin's time (NPS 2013b).

The NPS formally documented the Friendship Hill Cultural Landscape in a 1993 cultural landscape report. The cultural landscape is characterized by a scenic knoll that rises before falling off along a bluff over the Monongahela River. The Friendship Hill Estate is located in a clearing on the knoll with pastures and agricultural fields to the southeast; the rest of the landscape generally consists of secondary growth hardwood forests.

The landscape of Friendship Hill has been substantially altered over time. When Gallatin purchased the site, the land was mostly covered in virgin timber; Gallatin cleared up to 20 acres of land for his estate, including for a garden, orchard, and meadow. As tenants, ownership, and use changed in the decades after Gallatin left the estate, the cleared land increased to several hundred acres for pastures and crop land. In the 1920s, over 80 acres of the forest on the property were logged and reforested, and by 1940, over 110,000 new trees were planted at Friendship Hill. In the 1950s, almost 320 acres were cleared for agriculture, leaving only areas with natural constraints vegetated. The NPS worked to restore the landscape after acquisition of the land in 1979 and abandoned many of the cleared agricultural fields; by 1986, 419 acres of land had been reverted to forests (NPS 1993).

View of the Friendship Hill landscape looking west from the open meadow towards the estate on the knoll surrounded by forested areas, VHB photo.

Today, the NPS makes efforts to maintain the cultural landscape to represent the Gallatin era, including a hay harvest twice per year to maintain the meadow and its relationship to the forested areas. There is an opportunity to establish historic plantings of the garden and orchard at the Friendship Hill Estate, as identified in its 2013 Foundation Document (NPS 2013b); however, heavy deer browsing in the area hinders the ability to successfully grow the plantings. In a 2023 report, the NPS Inventory and Monitoring Division assessed FRHI as having a forest regeneration status of imminent failure, meaning the forests within FRHI do not have enough native seedlings and saplings to replace the forest as mature canopy trees are lost (NPS 2023a; Miller et al. 2023). Heavy deer browsing is contributing to the lack of seedlings and saplings within FRHI, as described in "Forest Regeneration" above.

If the NPS takes no action to reduce the heavy deer browse at FRHI, the ongoing trend of insufficient forest regeneration would persist. Deer overbrowsing of park vegetation would continue to diminish the dense forest that drew Gallatin to the undeveloped frontier. Even with the NPS's continued maintenance of the established meadow and its relationship to the forest, insufficient forest regeneration would hinder the ability of the site to convey the strong boundaries between forest and meadow that Gallatin established. The no-action alternative would also limit the NPS's ability to reestablish historic plantings of the garden and orchard because of heavy deer browsing hindering successful growth of the plantings. Overall, the no-action alternative would diminish the character of the cultural landscape, and the landscape would be less able to successfully convey the setting and feeling of the Friendship Hill estate during the Gallatin era.

Ongoing invasive vegetation management may help native vegetation to thrive over invasive species, as discussed under "Forest Regeneration"; however, without deer management, native vegetation of the cultural landscape would continue to suffer from overbrowsing due to the white-tailed deer's preference for native vegetation, limiting the effectiveness of these efforts. When considered with these other ongoing actions, the no-action alternative would overall result in adverse impacts on the cultural landscape at FRHI as deer overbrowse continues.

Effects of Proposed Action

Under the proposed action, forest vegetation supporting the historic integrity of the sites' cultural landscapes would be protected from deer overbrowsing, allowing the forests to regenerate as described under "Forest Regeneration." Sharpshooting and disposal under the proposed action would not affect the cultural landscapes at any of the sites because these actions would be temporary in nature and occur at night when the park is closed to visitors. This would minimize changes to the sights and sounds of the cultural landscape as experienced by visitors. Additionally, each of these sites are in areas where game hunting regularly occurs; therefore, the occasional sound of gunshots related to hunting are not unusual to the landscapes' existing soundscapes, and the impact would not approach the level of significant. Specific impacts at each park are described below.

Flight 93 National Memorial

At FLNI, the proposed action would reduce the number of deer browsing within the memorial landscape. In the Memorial Plaza area, this would mitigate one of the obstacles to successful maintenance of the designed ornamental vegetation. This would ensure the memorial's designed character, feeling, setting, and appearance are protected and maintained. The reduction in deer overbrowsing would also improve the forests' overall condition and health within and adjacent to the park through forest regeneration. At the Hemlock Grove, this would allow the NPS to preserve the natural grove that witnessed the crash of Flight 93, and maintain the setting, feeling, and association of the landscape. The open meadow character of the crash site adjacent to the Hemlock Grove would be retained, and the strong boundary between the meadow and forest would be preserved. The forests of the perimeter viewshed surrounding FLNI would be restored to their natural appearance, and the severe deer browse lines would be diminished to allow for a more natural forest appearance. This would preserve and protect the tranquil natural viewshed.

Sharpshooting and disposal actions would occur when the park is closed to visitors, thus avoiding disruption of the tranquil, reflective feeling and character of the park due to the noise and sights of actions unrelated to the memorial atmosphere. Therefore, the adverse impacts of sharpshooting and disposal would not approach the level of significant.

The past and ongoing reforestation and restoration projects would contribute the same beneficial impacts as described in "Current and Expected Future Conditions Under No Action." When considered together, the proposed action would protect forest vegetation from overbrowsing and improve overall tree regeneration, thus increasing the potential beneficial impact of these other

projects. Overall, the proposed action would result in beneficial impacts on the cultural landscape at the park.

Fort Necessity National Battlefield

Implementation of the proposed action at FONE would improve the NPS's ability to reestablish the historic 1754 forest line, which would improve the overall setting, feeling, and association of the National Battlefield Landscape. The proposed action would result in a landscape with strong forest-meadow boundaries that convey the contrasting positions of the French Army in the dense forest and Washington's troops in the fort surrounded by open meadow. Through this improved landscape, the NPS would be able to accurately portray the appearance of the dense forest canopy that allowed the French army to retreat to cover during battle. Similarly, under the proposed action, natural forest regeneration would improve and protect the historic integrity and character of the CCC Landscape, which would continue to reflect the CCC efforts to reestablish the once-cleared deciduous forest.

The ongoing actions related to invasive species management would contribute the same beneficial impacts as described in "Current and Expected Future Conditions Under No Action." When considered together, the proposed action would protect forest vegetation from overbrowsing and improve overall tree regeneration, thus increasing the potential beneficial impact of these other actions. Overall, the proposed action would improve the appearance and integrity of the National Battlefield Landscape at FONE.

Friendship Hill National Historic Site

At FRHI, implementing the proposed action would improve the historic character and setting of the cultural landscape as the forested areas are able to regenerate and retain their dense canopy. This would allow the landscape to more fully convey the historic frontier setting and feeling of the site, as dense forest would continue to screen nearby contemporary development from view within the estate. The landscape would be further improved as the historically strong boundaries between meadows and forests are reestablished. As fewer deer are present to browse on vegetation, the NPS would be better able to successfully reestablish designed plantings of the historic garden and orchard; this would allow the site to more accurately reflect the estate land's appearance and uses during the Gallatin era.

The ongoing actions related to invasive species management would contribute the same beneficial impacts as described in "Current and Expected Future Conditions Under No Action." When considered together, the proposed action would protect forest vegetation from overbrowsing and improve overall tree regeneration, thus increasing the potential beneficial impact of these other actions. Overall, the proposed action would improve the setting, feeling, and historic appearance of the Friendship Hill estate.

CHAPTER 4: CONSULTATION AND COORDINATION

The NPS places a high priority on giving the public an opportunity to comment on the proposed action. The NPS also conducted consultation and coordination with federal, state, and local agencies, and American Indian tribes to refine the alternatives and identify issues and/or concerns related to environmental impact topics. This section summarizes the public involvement, and agency consultation and coordination that occurred during planning.

PUBLIC INVOLVEMENT

On February 26, 2025, the NPS issued an informational newsletter and news release notifying the public about the project, the comment period, and public meetings. The comment period lasted 30 days, through March 28, 2025. During this comment period, the NPS shared information about the purpose of and need for the project as well as potential issues and management strategies.

The NPS held two public meetings during the comment period, the first at Flight 93 National Memorial Learning Center on March 11, 2025, and the second at the Fort Necessity National Battlefield Visitor Center on March 12, 2025. At the meetings, the NPS provided information about the project and received questions from members of the public. A total of 49 individuals attended the first meeting at Flight 93 National Memorial, and 11 individuals attended the second meeting at Fort Necessity National Battlefield. At the meetings, the NPS encouraged participants to submit formal comments. During the open comment period, the NPS received 32 pieces of correspondence, which contained 74 distinct comments.

TRIBAL COORDINATION

During the planning and compliance processes, the NPS consulted with the following culturally affiliated tribal nations:

- Delaware Nation of Oklahoma
- Delaware Tribe of Indians
- Eastern Shawnee Tribe of Oklahoma
- Osage Nation
- Seneca Cayuga Nation
- Shawnee Tribe

AGENCY COORDINATION

Section 7 of the Endangered Species Act

To comply with Section 7 of the Endangered Species Act, the NPS evaluated the project areas to determine the likelihood of special status species occurring within the project area. As described in Chapter 1, the NPS does not expect that the project would affect federally listed species using the sites nor any designated critical habitat.

Section 106 of The National Historic Preservation Act

The NPS is complying with Section 106 of the National Historic Preservation Act concurrently with, but separately from, the NEPA process. The NPS consulted with the PA State Historic Preservation Office (SHPO) and six culturally affiliated, federally recognized tribes (see list of tribes under Tribal Coordination heading above). On September 3, 2025, NPS staff entered information on the proposed undertaking into PA-SHARE (SHPO's environmental review database) (ER #2025PR04306.001) to initiate SHPO review. On September 9, 2025, SHPO issued a determination that the proposed undertaking would have no adverse effect on historic properties and no effect on archeological resources. On February 29, 2024, the NPS mailed and emailed consultation initiation packets to the six tribes listed above. The NPS followed up with calls to each on March 21, 2024, and emails on March 26, 2024. Comments were received from three of the tribes: the Delaware Nation of Oklahoma and the Osage Nation stated they want to stay informed on the project, but since it does not currently involve any ground disturbance, they do not require further consultation; the Delaware Tribe of Indians stated they are not interested in participating in the project.

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As the nation's principal conservation agency, the Department of the Interior has responsibilities for most of our nationally owned public lands and natural resources. This includes fostering wise use of our land and water resources, protecting our fish and wildlife, preserving the environmental and cultural values of our national parks and historic places, and providing for the enjoyment of life through outdoor recreation. The department assesses our energy and mineral resources and works to ensure that their development is in the best interests of all our people. The department also promotes the goals of the Take Pride in America campaign by encouraging stewardship and citizen responsibility for American Indian reservation communities and for people who live in island territories under U.S. administration.

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