

National Park Service  
Cuyahoga Valley National Park

ENVIRONMENTAL ASSESSMENT FOR VIRGINIA  
KENDALL LAKE SEDIMENT REMOVAL



Prepared by:

**National Park Service**  
Cuyahoga Valley National Park  
15610 Vaughn Road  
Brecksville, OH 44141

**Bureau of Reclamation**  
Technical Service Center  
Environmental Service Division  
Fisheries and Wildlife Resources Group  
Denver, CO 80225

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CUYAHOGA VALLEY NATIONAL PARK  
Environmental Assessment for  
Virginia Kendall Lake Sediment Removal

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**CUYAHOGA VALLEY NATIONAL PARK**  
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**1.0 INTRODUCTION/PURPOSE AND NEED**

**1.1 About This Document**

In 1969, the United States Congress passed the National Environmental Policy Act (NEPA) (42 U.S.C. 4321 et seq.) to establish a national policy,

*“ . . . which will encourage productive and enjoyable harmony between man and his environment; to promote efforts which will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of man; to enrich the understanding of the ecological systems and natural resources important to the Nation; . . . ”*

NEPA also established the Council on Environmental Quality (CEQ) as an agency of the Executive Office of the President. In enacting NEPA, Congress recognized that nearly all Federal activities affect the environment in some way. Section 102 of NEPA mandates that before Federal agencies make decisions, they must consider the effects of their actions on the quality of the human environment. NEPA assigns CEQ the task of ensuring that Federal agencies meet their obligations under the Act.

The CEQ developed regulations (40 CFR 1500-1508) that describe the means for Federal agencies to develop the Environmental Impact Statements (EISs) mandated by NEPA in Section 102. The CEQ regulations developed the Environmental Assessment (EA) to be used when there is not enough information to decide whether a proposed action may have significant impacts. If an EA concludes that a Federal action will result in significant impacts, it becomes an EIS. Otherwise, it results in a Finding of No Significant Impact (FONSI).

Section 1508.09 of the CEQ regulations states that the purposes of an EA are to:

1. Briefly provide sufficient evidence and analysis for determining whether to prepare an EIS or a FONSI.
2. Aid an agency's compliance with the Act when no EIS is necessary.
3. Facilitate preparation of a statement when one is necessary.

Preparation of an EA is also used to aid in an agency's compliance with Section 102(2)E of NEPA, which requires an agency to “study, develop, and describe appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources.”

## 1.2 Background

### 1.2.1 Park History

The National Park Service (NPS) preserves outstanding representatives of the best of America's natural, cultural, and recreational resources of national significance. These resources constitute a significant part of the American heritage, its character, and future. Along with similar resources of local, state, tribal, and national significance administered by other public and private organizations and supported by NPS technical assistance and grant funding, Cuyahoga Valley National Park (CVNP) is a vital part of America's system of parks and other preserved resources. The NPS not only directly and indirectly preserves these irreplaceable national treasures, it also makes them available annually to millions of visitors from throughout both this country and the world.

The Cuyahoga River Valley was formed as the last glaciers retreated from northeastern Ohio about 15,000 years ago. The name "Cuyahoga" is a blend of several native peoples' names for the river, and is usually translated to mean "crooked river." The river flows to the north into Lake Erie. It allowed travel by canoe to an 8-mile portage trail leading to the south-flowing Tuscarawas River, which eventually feeds the Ohio River and was therefore deemed neutral territory for all passing tribes.

In December 1974, President Gerald Ford signed legislation creating the Cuyahoga Valley National Recreation Area (CVNRA), located along 22 miles of the Cuyahoga River between Cleveland and Akron, Ohio. It covers an area of over 32,800 acres and features a wide variety of natural, cultural, and historic resources. The purposes for the CVNRA included:

*“. . . preserving and protecting for public use and enjoyment the historic, scenic, natural, and recreational values of the Cuyahoga River and adjacent lands in the Cuyahoga Valley, and for the purpose of providing for the maintenance of needed recreational open space necessary to the urban environment . . .”*

Historic resources include the Ohio & Erie Canal (including the towpath), the Valley Railway, and numerous buildings and bridges. Many of these are on the National Register of Historic Places. A portion of the Ohio & Erie Canal National Heritage Corridor, which was established by Congress in 1996 under the Omnibus Parks Bill, runs through the area. Natural resources include the river and a number of ecosystems with associated flora and fauna located in the river and in the river valley. Other historical, scenic, and open space resources include the rural countryside in the area. The recreation area was redesignated as the Cuyahoga Valley National Park on October 11, 2000. It is now the 15<sup>th</sup> most-visited national park, with 3.5 million visitors a year.

Three major recreational/educational features have been established in the CVNP, including the 20-mile Towpath Trail, the Valley Railway, and the Cuyahoga Valley Environmental Education Center. These resources enhance opportunities for interpretation of the history of the valley and provide the visiting public with recreational opportunities. The Towpath Trail and the Valley Railway are both listed on the National Register of Historic Places and, therefore, require preservation and protection. A 4-mile section of the Towpath Trail is also a designated National

Historic Landmark. The Towpath Trail was originally constructed from 1825 to 1827 as part of the Ohio & Erie Canal and served as the path that mules and horses walked to pull canal boats. The Ohio & Erie Canal Corridor Coalition estimates that the Towpath Trail itself receives more than 2 million visitors each year.

### 1.2.2 Project History

Virginia Kendall Lake is located within CVNP on Salt Run, approximately 10 miles north of Akron, Ohio (Figure 1). Principal benefits of the reservoir include recreation and wildlife habitat. The Virginia Kendall Dam was constructed in the 1930s and is a homogeneous earthfill structure containing a reinforced concrete core wall, with a structural height of 25 feet and a crest length of 565 feet. The core wall extends from the foundation to above the spillway sill elevation. Release facilities at the dam consist of a combined service spillway/outlet works structure and an emergency spillway. The service spillway/outlet works contains a vertical square concrete drop inlet spillway crest structure and a horizontal 66-inch-diameter concrete conduit through the dam. The concrete conduit is a replacement for the original corrugated metal pipe conduit, which failed by piping in about 1980. The lake was completely drained in order to install the concrete conduit and complete the dam repair. A 12-inch-diameter horizontal cast iron outlet works pipe enters the spillway drop inlet near its base. Releases via this pipe are controlled by a 12-inch gate valve, which is manually operated by a long gate key from the spillway crest. The emergency spillway is located at a natural saddle on the left reservoir rim, with a low area approximately 50 feet wide.

On July 21, 2003, an intense local rain storm caused Virginia Kendall Lake to overtop the dam. The depth of overtopping was determined by NPS personnel to be a little over 1 foot. Although the dam did not fail, there was severe erosion of the downstream face in three areas. The Bureau of Reclamation (Reclamation) was contacted to provide technical assistance in repairing the damage and evaluating future actions to reduce the chance of a recurrence of this event. The dam was reconstructed in late summer 2003, which included: draining the lake, placement of compacted embankment materials to original grade, resetting of the downstream-most section of the spillway/outlet works conduit, and construction of a new downstream spillway/outlet works portal. Additionally, the outlet works valve was repaired, railings around the service spillway were replaced, and an access ramp to the service spillway was provided.

Virginia Kendall Dam has been determined to be a downstream significant-hazard potential structure. This classification is not a rating of the condition of the dam, but rather for the potential loss of life and property if the dam were to fail.

Reclamation entered into an interagency agreement with the NPS in 2005 for Reclamation to conduct investigations, design, and provide construction management services for the repair and modification of Virginia Kendall Dam. Because of Reclamation's expertise and oversight of the Department of the Interior (DOI) Maintenance, Operations, and Safety of Dams work, NPS has regularly used Reclamation's services and advice in maintaining NPS dams. Reclamation is currently in the process of developing design specifications, contracting, and construction management services for the repair and modification of Virginia Kendall Dam to correct Safety of Dams deficiencies. The primary goal of the modification is to safely pass 50 percent of the



**Figure 1.** Project location.

probable maximum flood. The NEPA portion of the safety of dams work was covered by a Categorical Exclusion by NPS for maintenance of an existing facility.

### 1.3 Purpose and Need Statement

The purpose of the proposed Federal action is to remove a portion of the accumulated sediments in Virginia Kendall Lake. The sediment removal would restore recreational, aesthetic, and wildlife habitat values and increase the storage volume of the lake. The areas proposed for dredging have silted in and developed dense submerged aquatic vegetation to the point where recreational usage for fishing, boating, and swimming has become very limited. The sediment removal would also retain the desired appearance of the constructed landscape built in the 1930s.

This EA has been prepared to assess the potential environmental effects of the disturbance associated with construction activities needed to dredge/remove bottom sediments from Virginia Kendall Lake.

## 1.4 Laws (Statutes), Executive Orders (EOs), Regulations, Policies and Guidelines

The resources of CVNP are protected under the authorities of the National Park Service Organic Act of 1916 (16 U.S.C. § 1), the National Park System General Authorities Act (16 U.S.C. §§ 1a-1 et seq.), Part 36 of the Code of Federal Regulations (CFR), and the park's enabling legislation (Public Law 93-555).

The CVNRA was established by Public Law 93-555 on December 27, 1974, and was renamed Cuyahoga Valley National Park on October 11, 2000. Section 1 of PL 93-555 states the purpose of the park:

*“For the purpose of preserving and protecting the historic, scenic, natural, and recreational values of the Cuyahoga River and the adjacent lands of the Cuyahoga Valley and for the purpose of providing for the maintenance of needed recreational open space necessary to the urban environment, the Cuyahoga Valley National Recreation Area . . . In the management of the recreation area, the Secretary of the Interior shall utilize the recreation area resources in a manner which will preserve its scenic, natural, and historic setting while providing for the recreational and educational needs of the visiting public.”*

Section 4 (d) of PL 93-555 addresses the duties of the Secretary of the Interior:

*“The Secretary, . . . shall inventory and evaluate all sites and structures within the recreation area having present and potential historic, cultural, or architectural significance and shall provide for appropriate programs for the preservation, restoration, interpretation and utilization of them.”*

In addition to the language presented in PL 93-555 that created CVNRA, general preservation and management direction is provided by the National Park Service Organic Act of August 25, 1916. This act established the NPS and, by extension, states the overall mission for areas managed by the NPS:

*“. . . promote and regulate the use of the Federal areas known as national parks, monuments, and reservations . . . by such means and measures as conform to the fundamental purpose of said parks, monuments, and reservations, which purpose is to conserve the scenery and the natural and historic objects and the wild life therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations.”*

Additional laws, regulations and policies that have bearing on this action are listed below. See Appendix A for a brief description of each.

- ❑ Antiquities Act of 1906
- ❑ The Endangered Species Act of 1973
- ❑ Archaeological and Historic Preservation Act of 1974
- ❑ Archaeological Resources Protection Act (ARPA) of 1979
- ❑ EO 11988 (Flood Plains)

- ❑ EO 11990 (Wetlands)
- ❑ EO 13112 (Invasive Species)
- ❑ The National Historic Preservation Act (NHPA) of 1966
- ❑ EO 11593 (Cultural Properties)
- ❑ The Native American Graves Protection and Repatriation Act (NAGPRA) of 1990
- ❑ 40 CFR 1500-1508 (Council on Environmental Quality NEPA Regulations of 1978)
- ❑ 43 CFR 3 (Antiquities Act)
- ❑ 43 CFR 7, Subparts A and B (ARPA, as amended), "Protection of Archaeological Resources, Uniform Regulations" and "Department of the Interior Supplemental Regulations"
- ❑ Historic Sites Act of 1935

All of Part 36 of the CFR provides for the proper use, management, government, and protection of persons, property, and natural and cultural resources within areas under the jurisdiction of the NPS. Some sections are specifically noted here.

- ❑ 36 CFR 18 (NHPA of 1966), "Leases and Exchanges of Historic Property"
- ❑ 36 CFR 60 (NHPA and EO 11593), "National Register of Historic Places"
- ❑ 36 CFR 63 (NHPA and EO 11593), "Determinations of Eligibility for inclusion in the National Register of Historic Places"
- ❑ 36 CFR 65 (Historic Sites Act of 1935), "National Historic Landmarks Program"
- ❑ 36 CFR 68 (NHPA)
- ❑ 36 CFR 79 (NHPA and ARPA), "Curation of Federally-owned and Administered Archeological Collections"
- ❑ 36 CFR 800 (NHPA and EO 11593), "Protection of Historic and Cultural Properties"

The *Management Policies* (NPS 2006) provide general guidance for managing natural resources.

Section 4.6.6 of the *Management Policies* (NPS 2006) provides guidance on watershed and stream processes. This includes erosion, deposition, woody debris, stream migration, and watershed management.

*"The Service will manage watersheds as complete hydrologic systems . . . The Service will manage streams to protect stream processes that create habitat features such as floodplains, riparian systems, woody debris accumulations, terraces, gravel bars, riffles, and pools. Stream processes include flooding, stream migration, and associated erosion and deposition.*

*The Service will protect watershed and stream features primarily by avoiding impacts to watershed and riparian vegetation, and by allowing natural fluvial processes to proceed unimpeded."*

The introduction to Section 9 of the *Management Policies* (NPS, 2006) describes the approach of NPS to park facilities:

*“The National Park Service will provide visitor and administrative facilities that are necessary, appropriate, and consistent with the conservation of park resources and values. Facilities will be harmonious with park resources, compatible with natural processes, esthetically pleasing, functional, energy and water-efficient, cost effective, universally designed, and as welcoming as possible to all segments of the population. Park facilities and operations will demonstrate environmental leadership by incorporating sustainable practices to the maximum extent practicable in planning, design, siting, construction, and maintenance.”*

CVNP’s General Management Plan (GMP; NPS, 1977) provides the overall concept for management and resource preservation for compatible recreational use. Among the policies for cultural resource management, the General Management Plan for the CVNP states:

*“The National Park Service will faithfully preserve all significant historic and archaeological resources and will provide for their interpretation, use, and/or protection through adequate research and programming.”*

Among the policies for natural resource management, the GMP for the CVNP states:

*“During construction of any facilities or systems required to properly manage and protect the park, the National Park Service will employ technology that has the least effect on surrounding ecosystems. Planning and design of such structures will take into consideration energy requirements and will stress energy conservation and economy of construction.”*

The aforementioned references provide the legislative and policy guidance against which the feasible alternatives will be evaluated. The consistent message of the guidance is the need to consider both the continuity of natural processes and the preservation of historic, cultural, and recreational features (NPS 1987).

## **2.0 ISSUE/IMPACT IDENTIFICATION**

Issues, as discussed in NEPA, describe the relationships between the action being proposed and the environmental (natural, cultural, and socioeconomic) resources. Issues describe an association or a link between the action and the resource. Issues are not the same as impacts, which include the intensity or results of those relationships. Internal scoping (defining the range of potential issues) was conducted for this EA to identify what relationships exist between the proposed action and environmental resources. Internal scoping was conducted through numerous meetings in 2006 and 2007 between the Interdisciplinary Team which included both Reclamation and CVNP staff, and an Environmental Screening Form was prepared.

The following issues were identified through the internal scoping process:

- Virginia Kendall Lake is an important resource within CVNP for fish and wildlife habitat. Draining the lake and removing the accumulated sediments have the potential to interfere with the natural processes and to temporarily eliminate habitat for some species.

- Wetlands surrounding Virginia Kendall Lake could potentially be modified by dredging of sediment.
- Unique or important habitat including that for threatened or endangered species could be impacted by the construction operations at the dam.
- Recreational use could be disrupted during the construction operations due to closure of Park trails and draining of the lake.

External scoping was conducted with Federal, State, and local agencies, along with solicitation for public comment in the region surrounding CVNP. A request for public comment and project description was posted on the CVNP website at <https://pepc.nps.gov> from 5/22/07 until 6/30/07. A notice was also published in the Akron Beacon Journal in June of 2007 requesting comments on the scope of the project and impact topics. A radio interview was conducted between WAKR (AM 1590, Akron, Ohio) and Robert W. Bobel, Park Engineer, on June 1, 2007. The interview included a description of the project and encouraged comments from the public on the scope of the project.

There were no comments or new issues identified during the comment period that would require further consideration in this EA.

## **2.1 Issues and Impact Topics Addressed in this EA**

The issues identified above were translated and focused into impact topics, or a more specific description of resources that may be impacted by the action. These impact topics are then carried through the analysis in the EA. The affected environment under each of the impact topics identified is presented in Chapter 4. An analysis of the impacts on these resources from each alternative is evaluated in Chapter 5.

### Wildlife and Wildlife Habitat

Virginia Kendall Lake provides habitat for several species of fish, amphibians, and mollusks. Lake level fluctuations during construction operations could impact both population levels and potential habitat for species in and around the lake.

### Vegetation

A forested area adjacent to Virginia Kendall Dam could be impacted during construction of a temporary access road. Potential tree removal could convert a small forested area to native grasses and forbs.

### Wetlands

Presidential EO 11990, Protection of Wetlands, requires Federal agencies to take in account the effects of their actions on surface waters and wetlands. Compliance is also required with Sections 401 and 404 of the Clean Water Act (CWA) for Federal actions that could potentially impact wetlands and waters of the United States. Wetlands within the reservoir pool of Virginia Kendall Lake could potentially be impacted by dredging accumulated sediments from the lake.

### Threatened, Endangered, or Special Concern Species

The ESA of 1973, as amended, requires Federal land managers to consider the effects their planned activities may have on species listed as endangered or threatened. The proposed project lies within the range of the Indiana bat (*Myotis sodalis*), a Federally-listed endangered species. Potential summer habitat in the CVNP area includes both dead and live trees (oaks and hickories) which have exfoliating bark, split tree trunks, and cavities which could be used as maternity roosts, and stream corridors/upland areas provide foraging habitat.

### Visitor Experience

The *Management Policies* (NPS 2006) state that the enjoyment of park resources and values by the people of the United States is part of the fundamental purpose of all parks and that the NPS is committed to providing appropriate, high-quality opportunities for visitors to enjoy the parks. Virginia Kendall Lake is used by recreation groups and local residents for fishing in the spring, summer, and fall. Trails surrounding the lake are used year round for hiking, running, and winter sports. The lake and portions of the trails across the dam and emergency spillway area would be temporarily closed to recreational use during construction operations.

## **2.2 Issues and Impact Topics Identified and Considered but not Addressed in this EA**

Some issues and impact topics were brought up in the scoping process because they could potentially be problematic, but after further consideration, were thought not to be. These issues and impact topics are therefore not considered further in this document.

### Water Quality

During the construction period there will be various water levels maintained depending on whether the work is being done on the dam or if sediments are being dredged from the lake bottom. Erosion control and Best Management Practices (BMP) will be employed by the contractor to eliminate impacts at all construction disturbance sites including the access roads. A Storm Water Pollution Prevention Plan (SWPPP), as described by Section 402 of the CWA, will be prepared by the contractor prior to construction operations. The SWPPP will (1) identify pollutant sources that may affect the quality of stormwater discharges, and (2) identify practices to reduce pollutants in stormwater discharge during and after construction. Reclamation will review and approve the plan; then, NPS will submit it to the State in order to obtain coverage under a general permit for controlling stormwater from the construction site.

The contractor will be required to submit a water control plan describing the proposed method for diversion and care of the streams during construction/dredging and measures that will be required to meet water quality standards. Construction activities will not be permitted in the stream channel below the dam.

Section 404 of the CWA identifies conditions under which a regulatory permit is required for projects that result in the placement of dredged or fill materials into waters of the United States. The NPS has applied for an Individual Permit from the Corps of Engineers (COE) and a 401 Certification from Environmental Protection Agency (EPA) for all operations associated with the project. With the controls on water quality being taken, water quality is not expected to be affected.

### Ecologically Significant or Critical Areas

The ESA of 1973, as amended, prohibits Federal actions from jeopardizing the existence of Federally-listed threatened or endangered species or adversely affecting designated critical habitat. There are no designated critical habitats or ecologically significant areas within the area of influence of this project.

### Invasive Species

EO 13112 requires Federal agencies act to prevent the introduction of invasive species; provide for their control; and minimize the economic, ecological, and human health impacts that invasive species cause. All areas of disturbance will be revegetated with native species specifically selected by CVNP personnel.

### Air Quality

The 1963 Clean Air Act (42 USC 7401 et seq., as amended) requires Federal land managers to responsibly protect CVNP's air quality from adverse air pollution impacts.

CVNP is situated between two industrialized urban centers (Cleveland and Akron) and is paralleled and crossed by major highways and interstates. The Park is a Class II air quality area and is an "island" amid an industrial complex with much of the existing air pollution originating outside the Park boundary. Air quality sometimes violates Federal EPA standards due to the combined effects of land configurations, prevailing winds, and a variety of pollution sources in the heavily industrialized areas north of the Park. Currently there is no established air quality monitoring program in the Park.

The contractor will be required to obtain an Air Quality Permit from the Ohio EPA for construction-related activities and will be required to provide dust control and abatement during operations. With the controls on air quality being taken, air quality is not expected to be affected.

### Visual Resources

Preservation of the natural and scenic values of the Cuyahoga River and adjacent lands is central to CVNP's legislative mandate. The Park is a large natural preserve that is surrounded by an area that is highly developed for residential, industrial, and transportation uses. The construction operations will occur during a period of time when there is little visitor use, and the area will be restored to a similar viewscape.

### Cultural Landscapes

According to *Management Policies* (NPS 2006) and *Cultural Resource Management Guidelines* (NPS 1997), all cultural landscapes are to be managed as cultural resources regardless of the type or level of significance. Management actions are to focus on preserving the physical attributes, biotic systems, and uses of a landscape as they contribute to historic significance. No cultural landscapes have been identified in the project area.

### Environmental Justice

EO 12898, Environmental Justice in Minority and Low-Income Populations, directs Federal agencies to assess whether their actions have disproportionately high and adverse human health

or environmental effects on minority and low-income populations. There are no identifiable minority or low-income populations within CVNP or influenced by CVNP. It is therefore concluded that the actions of CVNP will have no disproportionately high and adverse human health or environmental effects on minority and low-income populations.

### **3.0 ALTERNATIVES**

The CEQ has provided guidance on the development and analysis of alternatives under NEPA. A full range of alternatives, framed by the purpose and need, must be developed for analysis for any Federal action. They should meet the project/proposal purpose and need, at least to a large degree. They should also be developed to minimize impacts to environmental resources. Alternatives should also be “reasonable,” which CEQ has defined as those that are economically and technically feasible, and show evidence of common sense. Alternatives that could not be implemented if they were chosen (for economic or technical reasons), or do not resolve the need for action and fulfill the stated purpose in taking action to a large degree, are therefore not considered reasonable.

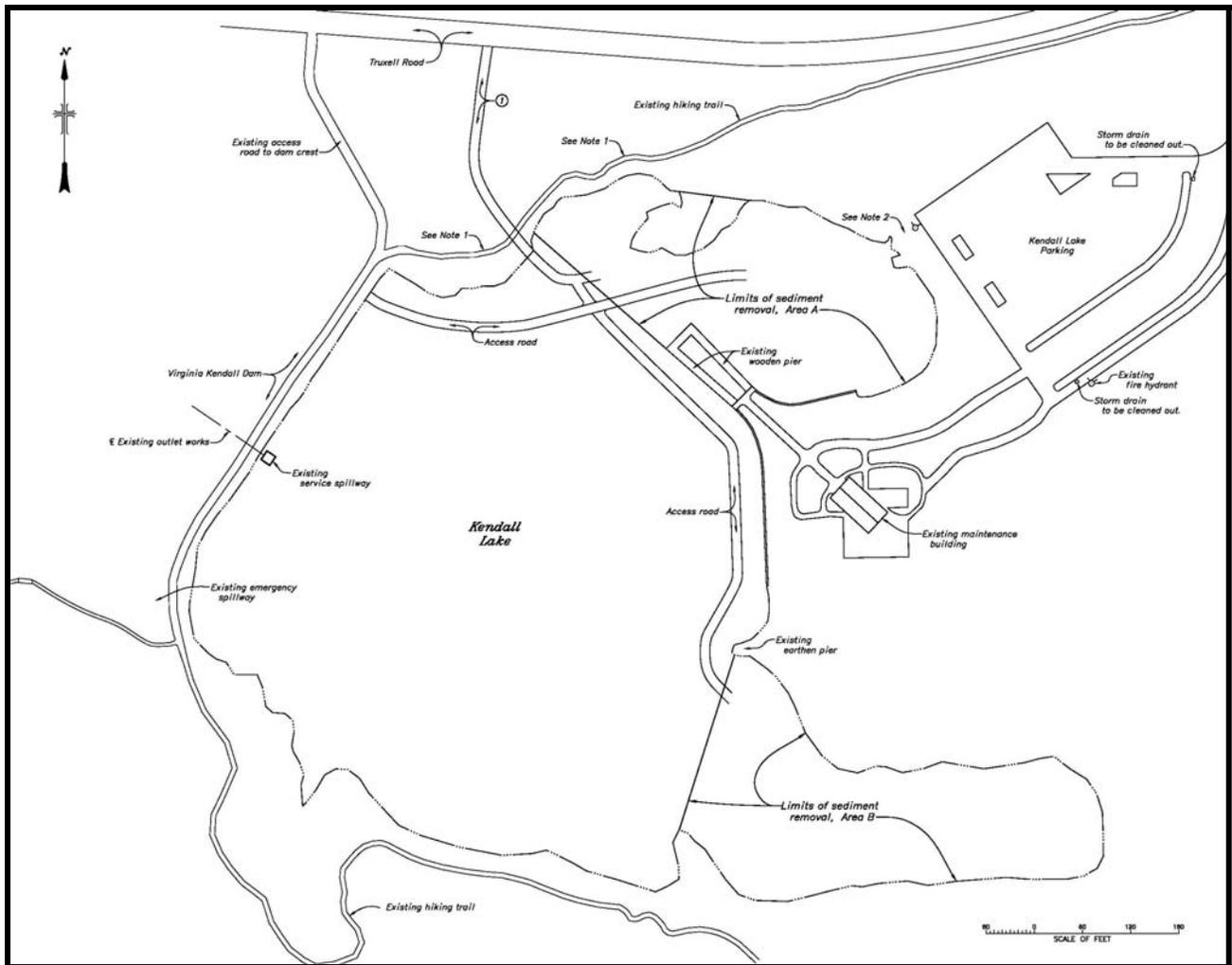
#### **3.1 Alternative 1 - No Action**

The CEQ has specified that one of the alternatives must be the “no action” alternative for two reasons. One is that it is almost always a viable choice in the range of alternatives, and the other is that it sets a baseline of existing impact that may be projected into the future against which to compare impacts of action alternatives.

Under the No Action Alternative the work required to remove the accumulated sediment at Virginia Kendall Lake would not occur. The recreational use of the lake would continue to be reduced along with a reduction of retention time for flood events due to sedimentation and increases in the amount of aquatic vegetation in the lake.

#### **3.2 Alternative 2 – Virginia Kendall Lake Sediment Removal (Preferred)**

The primary goal of the action is to remove accumulated sediment only from selected portions of Virginia Kendall Lake. Bathymetry surveys were conducted at the lake in July 2007 and determined that 3 to 4 feet of sediment had accumulated in shallows when compared to the original bottom contours from 1934. NPS is proposing to remove up to 6,000 cubic yards (yd<sup>3</sup>) of sediment from the lake bottom in areas A (3,700 yd<sup>3</sup>) and B (2,300 yd<sup>3</sup>). The area of potential lake bottom disturbance for Area A covers approximately 2.0 acres and 1.6 acres for Area B (Figure 2). Equipment would access the site from Truxell Road to an existing access road to the dam crest or on an optional, new access road approximately 180 feet east of the existing road. The disturbance associated with the new access road would be approximately 180 feet long and 25 feet wide. No heavy equipment will be taken across the historic bridge to the existing Kendall Lake parking lot. Prior to the beginning of operations, the lake will be drained so that the sediments can dry enough to support equipment operations. Prior to excavation, the contractor would be required to divert the existing streamflow from Salt Run and an unnamed tributary to avoid wetting the sediment removal areas, reduce the amount of sedimentation, and to keep construction equipment out of wet areas. The contractor could potentially use a combination of



**Figure 2.** Limits of sediment removal in Areas A and B.

channels, drains, cofferdams, and culverts to divert the streamflow within the existing reservoir bottom. Mud mats or something similar will be used in the lake bottom to help support equipment which will likely consist of a track-mounted backhoe and 10-yard dump trucks. All haul trucks will be covered when traveling on public roads. No fill will be placed in the lake bottom for access road construction or sediment removal operations. All mud mats or similar protection will be removed when the operations are complete.

Reclamation developed a field sampling plan (Bureau of Reclamation 2007) for the sediments, collected samples, and had the samples analyzed to determine if bottom sediments would meet the requirements for disposal in a State-approved landfill and requirements for disposal in the CVNP. Reclamation (2008) analysis of the samples determined that no target analytes were detected at concentrations above the local landfill disposal criteria or above the two selected land disposal screening criteria. Based on the analytical results, sediments excavated from Virginia Kendall Lake can be disposed of at a local landfill or stored within the Park for future use.

The contractor has the option to haul the sediments to an approved State landfill or the Shultz Barn site which is an existing Park maintenance and storage facility (Figure 3). If the Shultz site is used, berms will be constructed from clean, impervious materials that are free of organics and will be hauled in from an approved site outside of the Park. No land surface disturbance will occur from the disposal activities. The sediment material will be contained onsite, and silt fence/hay bales will be used to control surface drainage. The maximum area to be covered with sediment will be approximately 3.6 acres. This area to be used for storage consists of pasture grass that is regularly mown by NPS maintenance staff. When the sediment material has dried, the contractor will grade it to contour, then seed and mulch with a native seed mix approved by NPS. The Park would then have the option to use the sediment material at the other sites in the Park where clean fill material is needed. Construction activities/disturbance would only occur in the vicinity of the dam area and the lake bottom during sediment removal. Contractor access to the site will be limited to the existing dam road that is closed to public vehicle traffic. The established Ledges Parking Area (Figure 3) would be available for use by the contractor for vehicle, construction machinery, and construction materials storage. All public use of the Lake Trail across the dam will be closed during the construction period, however, the Virginia Kendall Lake Shelter and surrounding trails will remain open (Figure 4).

Three existing culverts in the main parking area for the lake will also be cleaned out during construction. The culverts have become plugged with sediment and obstruct drainage from adjacent parking areas. The sediment obstructions will be removed without damaging the existing culverts, and the material will be disposed of with the lake bottom sediments. After construction is complete, all areas that were disturbed in the vicinity of the dam will be reseeded with a mix of native species that have been selected by NPS. The existing maintenance access road to the dam will be restored using aggregate base and the hiking trail will be reconstructed near its original location. If the alternate access road is used by the contractor, it will be reclaimed by removing the aggregate base and then will be reseeded with an NPS-approved native species mix. All construction activities will be completed in the fall/winter between November and March.

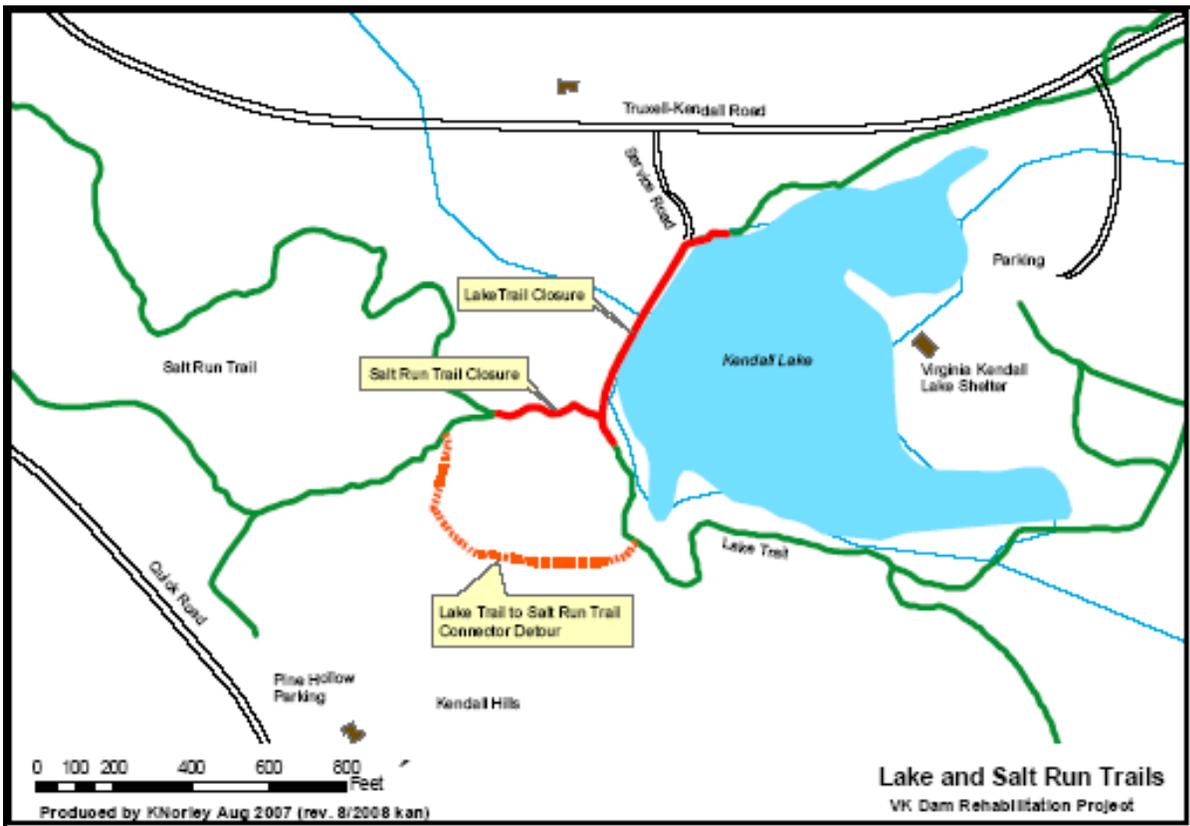
### **3.3 Alternatives Considered but Rejected**

As mentioned above, alternatives should be “reasonable.” Unreasonable alternatives may be those that are unreasonably expensive; that cannot be implemented for technical or logistic reasons; that do not meet park mandates; that are inconsistent with carefully considered, up-to-date park statements of purpose and significance or management objectives; or that have severe environmental impacts (DO-12 Handbook).

- Initially, it was proposed to remove sediment from the entire lake bottom. This proposal was abandoned due to the costs and the potential reduction of all existing wetland vegetation/habitat in the lake.
- The existing access road to Virginia Kendall Lake across the bridge at Salt Run to the parking lot adjacent to the lake was considered as an alternate haul route for the dredged sediments. This haul route was eliminated from consideration because of the potential



**Figure 3.** Shultz Barn and Ledges locations.



**Figure 4.** Virginia Kendall Lake trail closure during construction.

disturbance to a historically significant structure (bridge) and impacts to visitor use of the area.

### **3.4 Environmentally Preferable Alternative**

The environmentally preferable alternative is the alternative that causes the least damage to the biological and physical environment and best protects, preserves, and enhances historic, cultural, and natural resources. When identifying the environmentally preferable alternative, economic, recreational, and technical issues are not considered. The environmentally preferable alternative is the alternative that will promote the national environmental policy expressed in NEPA (Section 101(b)) as the alternative that will help the Nation:

1. Fulfill the responsibilities of each generation as trustee of the environment for succeeding generations;
2. Assure for all Americans safe, healthful, productive, and aesthetically and culturally pleasing surroundings;
3. Attain the widest range of beneficial uses of the environment without degradation, risk to health or safety, or other undesirable and unintended consequences;
4. Preserve important historic, cultural, and natural aspects of our national heritage, and maintain, wherever possible, an environment which supports diversity and variety of individual choice;
5. Achieve a balance between population and resource use which will permit high standards of living and a wide sharing of life's amenities; and
6. Enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources.

Alternative 2 best fulfills the responsibility of this generation as trustee of the environment for succeeding generations. This is based primarily on the design objective of Alternative 2 to maintain the naturally occurring wetlands along Salt Run and the unnamed tributary into Virginia Kendall Lake and to retain the desired look of the constructed landscape built in the 1930s.

Alternative 2 fulfills the second objective by maximizing the assurance of safety, health, productivity, and culturally pleasing surroundings. Alternative 2 has the potential to be more aesthetically pleasing since it promotes the restoration of a portion of the original lake contours and enhances recreational use.

Alternative 2 fulfills the third objective by aspiring to the widest range of beneficial uses of the environment without degradation or risk to health and safety. The restoration of recreational uses including fishing and boating expands the beneficial uses.

Both of the alternatives are intended to meet the fourth objective, and the differences between them are indistinguishable in meeting the objective.

Alternative 2 balances population and resource use by providing a high quality experience for visitors to Virginia Kendall Lake without promoting degradation of the resource through over-use. This experience would be of higher quality than Alternative 1 because of the improvements to boating and fishing.

Alternative 1 utilizes the fewest depletable resources of the two alternatives, however Alternative 2 could potentially provide a source of clean material for assisting in the reclamation and restoration of other sites within the Park.

Alternative 2 is considered the environmentally preferred alternative, as it meets four of the six NEPA objectives.

## **4.0 AFFECTED ENVIRONMENT**

### **4.1 Wildlife and Wildlife Habitat**

Faunal species that have been detected in the Park include 194 species of birds, 91 aquatic macroinvertebrates, 43 fish, 32 mammals, 22 amphibians, and 20 species of reptiles. In addition, 61 butterfly species have been documented in the Park.

Lakes, tributaries, and shallow areas of the Cuyahoga River within the CVNP were surveyed for freshwater mollusks and other mussels from 1997-1999 (Smith, et al. 2002). This survey recorded five species of freshwater mussels, with only one, the paper pondshell (*Utterbackia imbecillis*), found in Virginia Kendall Lake. Two individual mussels were found in the initial shore survey. Subsequently, divers found 1 live individual and 11 shells in the lake. This species prefers ponds, lakes, and slow moving rivers with a muddy substrate and is common throughout its range.

Amphibians have been surveyed in CVNP as part of a long-term monitoring program. Periodic surveys in 1984 and 1995 included the Virginia Kendall Lake area. Anuran surveys by Varhegyi et al. (1998) recorded the eastern American toad (*Bufo americanus americanus*), common tree frog (*Hyla versicolor*), spring peeper (*Psuedacris crucifer*), chorus frog (*Psuedacris triseriata*), bullfrog (*Rana catesbeiana*), green frog (*Rana clamitans melanota*), pickerel frog (*Rana palustris*), northern leopard frog (*Rana pipens*), and the wood frog (*Rana sylvatica*). Salamander surveys in the area surrounding the lake recorded the dusky salamander (*Desmognathus fuscus*), two-lined salamander (*Eurycea bislineata*), red-backed salamander (*Plethodon cinereus*), and the red salamander (*Psuedotriton ruber*).

Turtle surveys were conducted by Cleveland Metroparks in the Cuyahoga watershed in 1999 where six species were recorded (Skowronski 2000), however this survey did not include the vicinity of Virginia Kendall Lake. Recent surveys by NPS and Reclamation (July 2007) used similar methodology to the 1999 survey and only recorded the common snapping turtle (*Chelydra serpentina serpentina*) in the lake.

Fish population surveys conducted by NPS in 2007 provided detailed information on fish populations within the reservoir (NPS 2007). Although a total of 156 fish were caught during the survey, only 5 species of fish were represented within the samples obtained. All of these were Centrarchids (i.e., sunfish and bass). This is a little surprising given that at least a dozen species of minnows/shiners and three catfish species are known to occur within the broader waters of CVNP (NPS Species Database), but none were found within this reservoir. The most abundant and frequently caught species overall was bluegill (*Lepomis macrochirus*). The second most abundant was largemouth bass (*Micropterus salmoides*). These are also the only two species that were caught in all three habitat types (i.e., sparsely vegetated deep water, moderately vegetated intermediate water depth, and heavily vegetated shallow water habitats). There are an estimated 8 to 10 times as many largemouth bass and bluegill within the reservoir as any of the other three species captured (i.e., warmouth (*L. gulosus*), pumpkinseed (*L. gibbosus*), or black crappie (*Pomoxis nigromaculatus*). However, no estimates of total population number were made for any of the species.

## 4.2 Vegetation

CVNP encompasses a diverse mosaic of natural vegetation types interspersed among various human-developed land uses. Located in the glaciated Allegheny Plateau of northeastern Ohio, natural vegetation of the Park currently is comprised of approximately 80 percent mixed-mesophytic forest (Braun 1961), predominantly of oak-hickory associations but also including maple-oak, oak-beech-maple, maple-sycamore, pine-spruce, and hemlock-beech associations. The long history of intensive land uses has left the Park with forests possessing vast differences in community age and structure.

Interspersed among these forests are other natural habitats including older field habitats in various stages of succession (approximately 6 percent), wet meadows, and other wetland habitats (approximately 5 percent). Suburban lands comprise approximately 3 percent of the landscape, and include regularly mowed open areas such as lawns, golf courses, and cemeteries. Cultivated agricultural lands make up approximately 4 percent of the Park. Over 900 plant species occur in these various habitats. Nearly 20 percent of the species found in CVNP are non-native to the area. The high number of exotics is probably due to the disturbance history of the Park. While there are many exotic species, 14 are considered invasive species that CVNP actively manages. Invasive plants are those which invade a habitat, displacing native vegetation and often forming large monocultures with limited habitat value.

The upland area on the dam where the access road construction could potentially occur primarily consists of mixed oak (*Quercus* sp.), green ash (*Fraxinus pennsylvanica*), red maple (*Acer rubrum*) and tulip trees (*Liriodendron tulipifera*). The existing emergency spillway and the entire dam area are mowed regularly as part of the NPS maintenance program.

## 4.3 Wetlands

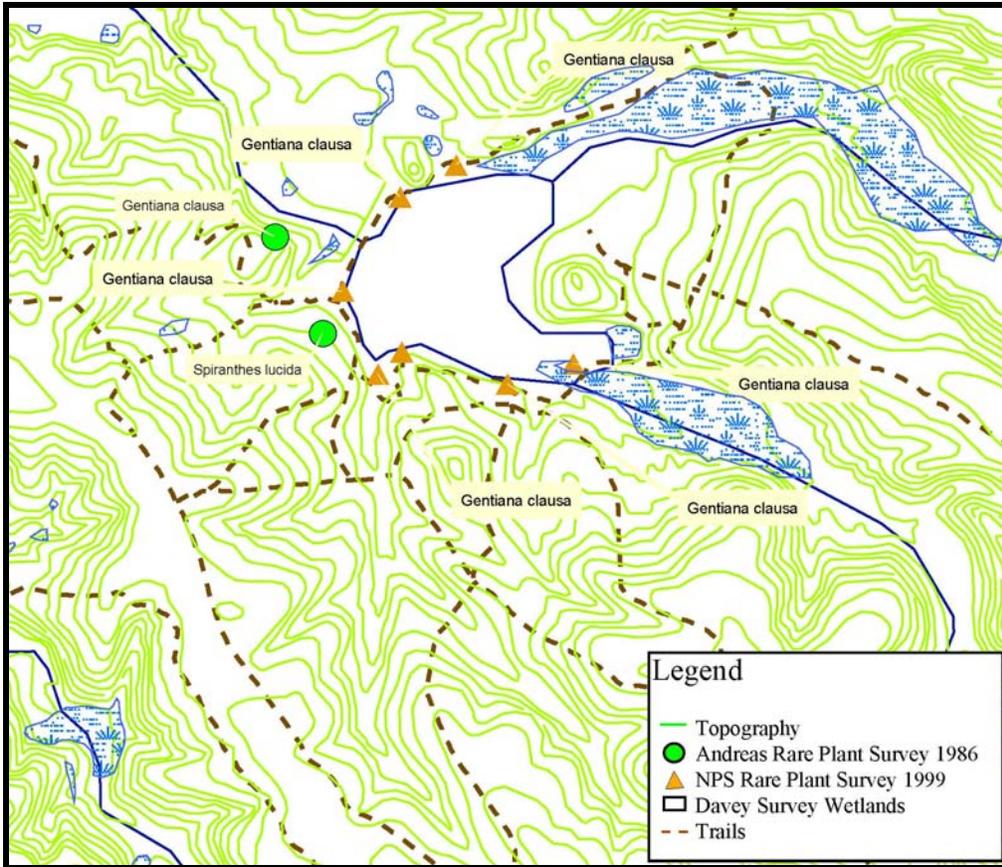
Many wetland areas exist in CVNP. A Park-wide wetland inventory indicates that more than 1,200 wetland areas encompassing approximately 1,700 acres exist in CVNP (Davey Resource Group 2001). Most CVNP wetlands are small, with only 190 greater than an acre in size and only 35 greater than 10 acres in size. Additional small wetlands may yet remain undetected.

Wetland types found in the Park include marshes, wet meadows, scrub/shrub wetlands, and forested wetlands. Small emergent wetlands occurring in isolated depressions fed by surface water are most common. Small wetlands are also often found at the head of small, intermittent drainageways, adjacent to ponds, or as hillside seeps where groundwater flows out of a hillside. Many wetlands are partially or completely forested or include a shrub component. The largest wetlands are located within the Cuyahoga River flood plain and include emergent, shrub, and forested areas. All ponds except one (Oxbow) are human-made (i.e., artificial), with many originally created to serve as small farm ponds. Long-abandoned ponds usually have reverted to a more natural state and now have wetland characteristics. Such ponds are treated as natural wetlands, assigned protective buffers, and managed for natural resource values.

Wetlands surrounding and upstream of Virginia Kendall Lake in Salt Run and the unnamed tributary on the southeast side of the lake include approximately 18.5 acres of palustrine emergent, palustrine forested, and palustrine scrub-shrub wetlands. The dominant species in these areas include silky dogwood (*Cornus amomum*), spotted touch-me-knot (*Impatiens capensis*), rice cutgrass (*Leersia oryzoides*), sensitive fern (*Onoclea sensibilis*), rough leafed goldenrod (*Solidago patula*), broad-leafed cattail (*Typha latifolia*), skunk cabbage (*Symplocarpus foetidus*), green ash (*Fraxinus pennsylvanica*), and American elm (*Ulmus americana*) (Davey Resource Group 2001). It should be noted that the Davey Resource Group did not classify the lake as a wetland (Figure 5).

The littoral zone in Virginia Kendall Lake includes a dense and diverse population of shallow growing emergents and submerged aquatic vegetation (Figure 6) that would be classified by Cowardin, et al. 1979 as System – palustrine, Class – emergent, Subclass – persistent/non-persistent. Plant species in and around the lake include: narrow leaf cattail (*Typha angustifolia*), broad leaf cattail, bulrush (*Scirpus sp.*), naiad (*Najas minor*), elodea (*Elodea canadensis*), coontail (*Ceratophyllum demersum*), spatterdock (*Nuphar lutea*), floating pondweed (*Potamogeton natans*), curleyleaf pondweed (*Potamogeton crispus*), leafy pondweed (*Potamogeton sp.*), water milfoil (*Myriophyllum sp.*) and filamentous algae (NPS 2007a).

A survey of the lake in 1979 (Jackson 1979) determined that the lake had minimal weed problems, but concluded that the lake did not include flora or fauna that were unique to prohibit dredging of the lake. Dredging was recommended to restore contours similar to when the lake constructed, so that swimming and other recreation would be safer for children and improve fish habitat. Historically, several attempts have been made to control the aquatic vegetation in the lake with chemicals such as Diquat and copper sulfate, but the shallow nature of the lake has always encouraged regrowth. Currently the lake has close to a 90-percent cover of emergent vegetation, submergents, and algae with the only open water occurring in the deepest portion near the dam. After a 2007 site visit, the COE determined the site to be classified as a vegetated shallow which is a “special aquatic site” and subject to Section 404 guidelines. Based on this classification, they determined that a 404 permit would be required for the dredging activity. A formal jurisdictional wetland determination was not required because of the site characteristics and data that had already been collected by NPS.



**Figure 5.** Wetland and rare plant surveys near Virginia Kendall Lake.



**Figure 6.** Aquatic vegetation in Virginia Kendall Lake.

Ohio EPA, Division of Surface Water (2008) also determined the site would be evaluated for lake impacts as a “special aquatic site,” and that it did not require the Ohio Rapid Assessment Method for wetlands or wetland mitigation.

#### **4.4 Threatened, Endangered, or Special Concern Species**

The Cuyahoga Valley is a refuge for a number of rare and endangered species of plants and animals. The Federally-endangered Indiana bat was found at the Brecksville Reservation in CVNP as part of the 2002/2003 bat study (NPS 2005) (Appendix B). One adult male was mist netted on the property managed by Cleveland Metroparks. The Park contains an abundance of apparently suitable habitat. Suitable breeding and roosting habitat for Indiana bats can vary widely, but typically consists of large (>8-inch-diameter) trees with peeling bark located near a permanent water source and good foraging areas. Summer foraging habitat is typically in flood plain forests and riparian areas. Southern migration to wintering limestone caves usually begins in August. Colonies will hibernate from late November until March when the colonies disperse to migrate back to northern habitat.

On June 27, 2007, the U.S. Fish and Wildlife Service (USFWS) stated that the project area lies within the known range of the Indiana bat. USFWS recommended that if suitable habitat is found within the project area, trees could only be cut between September 15 and April 15. On February 18, 2008, USFWS revised the cutting dates to September 30 through April 1 because Indiana bats had been observed arriving in their traditional summer areas earlier in the spring and staying longer in the fall.

Nesting bald eagles, which are Federally protected under the Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act, successfully fledged young in 2007 and 2008 from a nest in Cuyahoga County outside of the Park, along the Cuyahoga River.

Piping plover (*Charadrius melodus*) is a Federally-listed endangered species that occurs in Cuyahoga County, but is not found within the Park. No suitable breeding habitat for piping plovers exists within Park boundaries. The Park is also within the range of the eastern massasauga (*Sistrurus catenatus catenatus*) rattlesnake, a candidate species for listing under the ESA and listed as endangered by the State of Ohio. The species has not been detected within the Park. An assessment of potential habitat within the Park for this snake was conducted in 2003 (Lockhart) and concluded that much of the area proved unsuitable as potential habitat or having little potential for supporting viable populations of *S. c. catenatus*.

No Federally-listed plant species are known to occur in the Park. However, the USFWS has indicated that the Park is within the range of the Federally-threatened northern monkshood (*Aconitum noveboracense*). This plant is found on cool, moist talus slopes or shaded cliff faces in wooded ravines. No locations of this plant have been found in the vicinity of Virginia Kendall Lake.

There are no Federally-designated critical habitats or wilderness areas within the vicinity of the Park.

Surveys for State-listed species in CVNP in 1986 and 1996 (Andreas) located both the shining ladies' tresses (*Spiranthes lucida*) and the closed gentian (*Gentiana clausa*) in areas around Virginia Kendall Lake. Recent surveys (July 2007) for both species did not find them in either of the previously noted locations near the dam or emergency spillway (Plona pers.com. 2007).

Many State-listed plant and animal species have been recorded in CVNP (Appendix C). Forty-one State-listed rare plant species (ODNR 2006) are known to occur in CVNP. These plants occur in various habitats in the Park. At least 38 bird species observed in the Park are of conservation concern in Ohio (ODNR 2002) or at regional and national levels as determined by the international conservation consortium, Partners in Flight (Hunter et al. 1993; PIF 2002). Most of these species of concern have exhibited steep population declines throughout their range or regionally due to habitat loss and degradation. Three State-listed turtles have been recorded in or near the Park.

#### **4.5 Cultural Resources**

As stated in the *NPS Cultural Resource Management Guideline* (NPS 1997), cultural resources are “. . . the material evidence of past human activities. Finite and nonrenewable, these tangible resources begin to deteriorate almost from the moment of their creation. Once gone, they cannot be recovered.” Thus, it is imperative that “park management activities reflect awareness of the irreplaceable nature of these material resources.” If these resources “are degraded or lost, so is the parks’ reason for being.” The main cultural resources of the park can be categorized as archeological resources, historic structures, and cultural landscapes.

Cultural resources at CVNP have been categorized into six primary cultural themes: prehistoric and indigenous cultures, agriculture, transportation, settlement, recreation, and industry (NPS 1987). These cultural themes identify a resource by its primary historical significance. However, resources often exhibit overlapping cultural themes as their uses and associations have changed through time. Thus, the cultural resources of CVNP exhibit layers of cultural history that are interwoven.

In general, most archaeological survey work at CVNP occurs in conjunction with projects that require ground disturbance. The planning process in relation to these projects typically provides for archaeological inventory work to be completed prior to the actual ground disturbing activity. This inventory work is the initial step taken to provide data about the location of resources and the level of significance. In turn, potential impacts on archaeological resources are reduced through measures such as site avoidance, project redesign, or other site protection measures.

NPS consulted with Midwest Archeological Center archeologists throughout the planning process for the Virginia Kendall Lake project. The project area lies within a constructed landscape that was altered from the creation of the lake and dam in the 1930s. All the ground disturbance associated with the undertaking will be confined to artificially created landforms where there is no potential for the presence of archeological resources other than isolated materials associated with the construction of the dam. Modern flooding events have also

deposited thick alluvium deposits around the lake. Since there are no archeological resources known to be present in the project area, the Cultural Resources to be considered in this EA will be limited to Historic Structures.

#### 4.5.1 Historic Structures

In the *NPS Cultural Resource Management Guidelines*, a historic structure is defined as “a constructed work...consciously created to serve some human activity.” It also notes that “regardless of type, level of significance, or current function, every structure is to receive full consideration for its historical values whenever a decision is made that might affect its integrity. The preservation of historic structures involves two basic concerns: slowing the rate at which historic material is lost and maintaining historic character” (NPS 1997). Buildings, monuments, dams, canals, bridges, roads, fences, mounds, structural ruins, and outdoor sculpture are all examples of historic structures.

CVNP has hundreds of structures and buildings on the List of Classified Structures and 67 listings in the National Register of Historic Places. National Register listings include multiple property listings, historic districts, historic properties, historic structures, and archeological sites.

Virginia Kendall Lake is a property that is listed in the National Register of Historic Places as a contributing resource in the Virginia Kendall State Park Historic District (NR96001515). The associated dam was originally constructed by the Civilian Conservation Corps and is considered an important historic feature within the district.

#### 4.6 Visitor Experience

Visitors come to CVNP to use and experience the Park in many different ways, but these translate into what they come to "see" and "do." These Park resources can be divided into two main categories: scenic values and recreational activities. Annual Visitor Use Surveys conducted by the NPS provide information about the multitude of reasons why visitors come to CVNP, which include various types of recreational activities, educational programs, and relaxing and enjoying nature.

The Virginia Kendall Lake area is popular for walking, running, and hiking on the established trails around the lake along with fishing, and some limited boating is in the spring summer and fall. The area is also frequently used for cross-country skiing and hiking in the winter months. Many visitors come to observe the abundant wildlife. Wildlife species that are most often viewed by visitors are white-tailed deer, beaver, and great blue heron. Wildlife-viewing visitors also include a large number of amateur birdwatchers. The lake area is also used by many visitors attending NPS sponsored programs.

### 5.0 IMPACTS

It is a requirement of NEPA that proposed actions by a Federal agency that significantly effect the environment are identified. In implementing NEPA, CEQ regulations state that “significantly” as used in NEPA requires considerations of context and intensity (1508.27). CEQ further states that context,

*“. . . means that the significance of an action must be analyzed in several contexts such as society as a whole (human, national), the affected region, the affected interests, and the locality. Significance varies with the setting of the proposed action. For instance, in the case of a site-specific action, significance would usually depend upon the effects in the locale rather than in the world as a whole. Both short- and long-term effects are relevant.”*

The regulations state that intensity “refers to the severity of impact.” The regulations further state that:

*“The following should be considered in evaluating intensity:*

- 1. Impacts that may be both beneficial and adverse. A significant effect may exist even if the Federal agency believes that on balance the effect will be beneficial.*
- 2. The degree to which the proposed action affects public health or safety.*
- 3. Unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas.*
- 4. The degree to which the effects on the quality of the human environment are likely to be highly controversial.*
- 5. The degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks.*
- 6. The degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration.*
- 7. Whether the action is related to other actions with individually insignificant but cumulatively significant impacts. Significance exists if it is reasonable to anticipate a cumulatively significant impact on the environment. Significance cannot be avoided by terming an action temporary or by breaking it down into small component parts.*
- 8. The degree to which the action may adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historical resources.*
- 9. The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act of 1973.*

*10. Whether the action threatens a violation of Federal, State, or local law or requirements imposed for the protection of the environment.”*

For each impact topic identified in Section 2.1, a process for impact assessment was developed based on the directives of Section 4.5(g) of the Handbook for Environmental Impact Analysis (DO-12 Handbook). NPS units are directed to assess the extent of impacts on park resources as defined by the context, duration, and intensity of the effect. While measurement by quantitative means is useful, it is even more crucial for the public and decision makers to understand the implications of those impacts in the short and long term, cumulatively, and within context, based on an understanding and interpretation by resource professionals and specialists. With interpretation, one can ascertain whether a certain impact intensity to a park resource is “minor” compared to “major” and what criteria were used to base that conclusion.

To determine impacts, methodologies were identified to measure the change in Park resources that would occur with the implementation of each alternative. Thresholds were established for each impact topic to help understand the severity and magnitude of changes in resource conditions, both adverse and beneficial, of the various alternatives.

Each alternative is compared to a baseline to determine the context, duration, and intensity of resource impacts. For purposes of impact analysis, the baseline is the continuation of current management (Alternative 1, the No Action Alternative) projected over the next 10 years. In the absence of quantitative data, best professional judgment was used to determine impacts. In general, the thresholds used come from existing literature, Federal and State standards, and consultation with subject matter experts and appropriate agencies.

For the purposes of analysis, the following assumptions are used for all impact topics:

- Short-term impacts: Those impacts occurring in the immediate future (usually 1 to 6 months).
- Long-term impacts: Those impacts occurring through the next 10 years.
- Direct impacts: Those impacts occurring from the direct use or influence of the alternative
- Indirect impacts: Those impacts occurring from (activity) that indirectly alter a resource or condition.
- Study area: Each resource impact is assessed in direct relationship to those resources affected both inside and outside the Park, to the extent that the impacts can be substantially traced, linked, or connected to the alternatives. Each impact topic, therefore, has a study area relative to the resource being assessed, and it is further defined in the impact methodology.

### Cumulative Impacts

The CEQ regulations (40 CFR 1508.7) require the assessment of “cumulative impacts” which are defined as:

*“The impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions.”*

In January 1997, the CEQ published a handbook entitled Considering Cumulative Effects Under the National Environmental Policy Act (NPS 1997). The introduction to the handbook opens with, “Evidence is increasing that the most devastating environmental effects may result not from the direct effects of a particular action, but from the combination of individually minor effects of multiple actions over time.”

Cumulative impacts are considered for all alternatives, including the No-Action Alternative. They were determined by combining the impacts of the alternative being considered with other past, present, and reasonably foreseeable future actions. Therefore, it was necessary to identify other ongoing or reasonably foreseeable future projects at CVNP and, if applicable, the surrounding region.

### Impairment Analysis

The *Management Policies* (NPS 2006) require an analysis of potential effects to determine whether or not actions would impair park resources. The fundamental purpose of the NPS, as established by the Organic Act and reaffirmed by the General Authorities Act, as amended, begins with a mandate to conserve park resources and values. NPS managers must always seek ways to avoid, or to minimize to the greatest degree practicable, adversely impacting park resources and values. However, the laws do give the NPS the management discretion to allow impacts to park resources and values when necessary and appropriate to fulfill the purposes of a park, as long as the impact does not constitute impairment of the affected resources and values. Although Congress has given the NPS the management discretion to allow certain impacts within a park system unit, that discretion is limited by the statutory requirement that the agency must leave park resources and values unimpaired, unless a particular law directly and specifically provides otherwise. The prohibited impairment is an impact that, in the professional judgment of the responsible NPS manager, would harm the integrity of park resources or values.

An impact to any park resource or value may constitute an impairment, but an impact would be more likely to constitute an impairment to the extent that it has a major or severe adverse effect upon a resource or value whose conservation is:

- necessary to fulfill specific purposes identified in the establishing legislation or proclamation of the park;
- key to the natural or cultural integrity of the park; or
- identified as a goal in the park’s general management plan or other relevant NPS planning documents.

Impairment may result from NPS activities in managing the park, visitor activities, or activities undertaken by concessioners, contractors, and others operating in the park.

The following process was used to determine whether the alternatives had the potential to impair Park resources and values:

1. CVNP's enabling legislation, the *General Management Plan*, the *Strategic Plan*, and other relevant background were reviewed with regard to CVNP's purpose and significance, resource values, and resource management goals or desired future conditions.
2. Management objectives specific to resource protection goals at CVNP were identified.
3. Thresholds were established for each resource of concern to determine the context, intensity, and duration of impacts, as defined above.
4. An analysis was conducted to determine if the magnitude of impact reached the level of "impairment," as defined by *Management Policies* (NPS 2006).

The impact analysis includes any findings of impairment to Park resources and values for each of the alternatives.

## **5.1 Impacts on Wildlife and Wildlife Habitat**

### **5.1.1 Regulations and Policies**

The NPS Organic Act, which directs parks to conserve wildlife unimpaired for future generations, is interpreted by the agency to mean that native animal life should be protected and perpetuated as part of the park's natural ecosystem. Natural processes are relied on to control populations of native species to the greatest extent possible; otherwise they are protected from harvest, harassment, or harm by human activities. According to Section 4.1 of *Management Policies* (NPS 2006), the restoration of native species is a high priority. Management goals for wildlife include maintaining components and processes of naturally evolving park ecosystems, including natural abundance, diversity, and the ecological integrity of plants and animals. Section 4.1.5 of *Management Policies* (NPS, 2006) compels NPS to restore natural conditions and processes to human-disturbed lands. EO 13186 (Responsibilities of Federal Agencies to Protect Migratory Birds) directs Federal agencies to avoid taking actions that have a measurable negative effect on migratory bird populations.

### **5.1.2 Methodology**

A qualitative assessment of impacts to vegetation was conducted based on literature review, site inspection, GIS analysis, and existing natural resources data. New fish population data were collected for this portion of this EA. The following thresholds were used to describe the magnitude of effects on wildlife and wildlife habitat.

**Negligible:** There would be no observable or measurable impacts to native species, their habitats, or the natural processes sustaining them. Impacts would be of short duration and well within natural fluctuations.

**Minor:** **Adverse** – Impacts would be detectable, but they would not be expected to be outside the natural range of variability and would not be expected to have any long-term effects on native species, their habitats, or the natural processes sustaining them. Population numbers, population structure, genetic variability, and other demographic factors for species might have small, short-term changes; however long-term characteristics would remain stable and viable. Occasional responses to disturbance by some individuals could be expected, but without interference to feeding, reproduction, or other factors affecting population levels. Key ecosystem processes might suffer short-term disruptions that would be within natural variation. Sufficient habitat would remain functional, maintaining viability of all species. Impacts would be outside critical reproduction periods for sensitive, native species.

**Beneficial** – A beneficial change of similar magnitude to a Minor Adverse impact on native species, their habitats, or the natural processes sustaining them would occur.

**Moderate:** **Adverse** – Breeding animals of concern are present; animals are present during vulnerable life-stages, such as migration or juvenile stages; mortality or interference with activities necessary for survival can be expected on an occasional basis, but are not expected to threaten the continued existence of the species in the Park unit. Impacts on native species, their habitats, or the natural processes sustaining them would be detectable, and may be outside the natural range of variability for short periods of time. Population numbers, population structure, genetic variability, and other demographic factors for species might have short-term changes, but would be expected to rebound to pre-impact numbers and to remain stable and viable in the long term. Frequent responses to disturbance by some individuals could be expected, with some negative impacts to feeding, reproduction, or other factors affecting short-term population levels.

Key ecosystem processes might have short-term disruptions that would be outside natural variation, but would return to natural conditions. Sufficient habitat would remain functional, maintaining viability of all native species. Some impacts might occur during critical periods of reproduction or in key habitat of sensitive native species.

**Beneficial** – A beneficial change of similar magnitude to a Moderate Adverse impact on native species, their habitats, or the natural processes sustaining them would occur.

**Major:** **Adverse** – Impacts on native species, their habitats, or the natural processes sustaining them would be detectable, and they would be expected to be either outside the natural range of variability for long periods of time or of a permanent nature. Population numbers, population structure, genetic variability, and other demographic factors for species might have large, short-term declines, while long-term population numbers might be significantly depressed. Frequent

responses to disturbance by some individuals would be expected, with negative impacts to feeding, reproduction, or other factors, resulting in a long-term decrease in population levels. Breeding colonies of native species might relocate to other portions of the Park. Key ecosystem processes might be disrupted in the long term or permanently. Loss of habitat might affect the viability of at least some native species.

**Beneficial** – A beneficial change of similar magnitude to a Major Adverse impact on native species, their habitats, or the natural processes sustaining them would occur.

**Impairment:** Some of the major impacts described above might be an impairment of Park resources if their severity, duration, and timing resulted in the elimination of a native species or significant population declines of a native species, or if they precluded the Park's ability to meet recovery objectives for listed species. In addition, these adverse, major impacts to Park resources and values would contribute to deterioration of the Park's wildlife resources and values to the extent that the Park's purpose could not be fulfilled as established in its enabling legislation; affect resources key to the Park's natural or cultural integrity or opportunities for enjoyment; or affect the resource(s) whose conservation is identified as a goal in the Park's general management plan or other park planning documents.

### 5.1.3 Alternative 1 - No Action

Direct Impacts – This alternative would not involve any construction-related impacts or change to the existing habitat in the area, however the lake would continue to fill with sediment and reduce the amount of fish habitat, creating a long-term Minor Adverse impact.

Indirect Impacts – There is no potential for indirect impacts to wildlife or wildlife habitat under this alternative.

Cumulative Impacts – NPS is in the process of correcting Safety of Dams issues by modifying Virginia Kendall Dam in order to pass 50 percent of the probable maximum flood during a flood event. This will be accomplished by raising the dam approximately 2 feet, widening the emergency spillway to 120 feet, and modifying the existing outlet works to increase efficiency. Topsoil from the dam crest and downstream slope would be removed and stored, then the area would be excavated to expose the dam core in the crest area. Additional materials will then be added and compacted to raise the crest two feet and restore the embankments.

Tree and stump removal, topsoil removal, and excavation around the existing emergency will widen the spillway to approximately 120 feet wide and 120 feet long. At the lower end of the modified spillway, a 5-foot-deep concrete cutoff wall would be constructed. The spillway will then be overlain with articulating concrete block revetments and covered with topsoil. Woody debris would be removed from the existing natural channel below the emergency spillway in order to restore efficient drainage. Modifications to the existing outlet works would include the

construction of a concrete pipe inlet, installing a steel air vent pipe, and installation of a guardrail fence on the headwall of the discharge structure. NPS has determined that the dam modifications would have Minor or less impacts to wildlife or wildlife habitat.

Any actions that occur within CVNP will include consideration for wildlife and wildlife habitat so that impacts will be avoided.

Conclusion – The potential for direct impacts would be Minor Adverse. There would be no indirect impacts under Alternative 1 – No Action. No impairment is expected under this alternative.

#### 5.1.4 Alternative 2 – Virginia Kendall Lake Sediment Removal

Direct Impacts – Impacts associated with this alternative are primarily associated with draining Virginia Kendall Lake and the associated construction/sediment removal activities that could occur from November through March. Disturbance to the lake bottom where sediment will be removed would cover approximately 3.6 acres of the total 12.9-acre lake. This area of shallow water habitat (less than 4 feet deep) with dense submerged aquatic vegetation will be converted to deeper habitat with a maximum depth of 6 feet and initially will not be vegetated. Upon completion and return to full pool the amount of intermediate water depth, fish habitat will increase. The fish species listed in Section 4.1 are locally common species that were most likely stocked in the lake after previous draining or sediment removal operations in the 1980s. When the lake is drained, local metroparks have agreed to salvage all the fish and move them to other local lakes/ponds outside of CVNP. When all construction activities are complete and the lake is refilled, the lake will be restocked with similar species. Initially, there would be a minor adverse impact to the fish population in the lake due to draining and fish removal, however when the dredging is complete and the lake is refilled/restocked, the changes will be beneficial for fish habitat.

Amphibians listed in Section 4.1 are locally abundant and primarily utilize shallow wetlands in the spring and summer for reproduction, but will also use lake-type habitat. Shallow wetlands adjacent to Salt Run and the unnamed tributary on the southeast side of the lake provide more of the preferred habitat for these species and will not be disturbed during the dredging operations. All construction operations will occur during the late fall and winter when some species utilize moist uplands and while others use shallow wetlands as preferred habitat. The shallow wetlands along the tributaries will not be affected by lake draining and the majority of the habitat for these species around the lake will remain intact.

The freshwater mussels (paper pondshells) that were found in the lake in 1999 have not been documented in recent surveys and were not abundant when they were last found. The species is locally common in other slow moving streams and ponds, but some individuals could be removed during the dredging operation since they imbed themselves in bottom substrates.

The impacts to these species would be detectable and might be outside the normal range of variability, however the impacts will be short term and they are expected to rebound to pre-

construction levels. The potential impact to wildlife and wildlife habitat would be Minor to Moderate Adverse.

Indirect Impacts – There is no potential for indirect impacts to wildlife or wildlife habitat under this alternative.

Cumulative Impacts – NPS is in the process of correcting Safety of Dams issues by modifying Virginia Kendall Dam in order to pass 50 percent of the probable maximum flood during a flood event. This will be accomplished by raising the dam approximately 2 feet, widening the emergency spillway to 120 feet, and modifying the existing outlet works to increase efficiency. Topsoil from the dam crest and downstream slope would be removed and stored, then the area would be excavated to expose the dam core in the crest area. Additional materials will then be added and compacted to raise the crest 2 feet and restore the embankments.

Tree and stump removal, topsoil removal, and excavation around the existing emergency will widen the spillway to approximately 120 feet wide and 120 feet long. At the lower end of the modified spillway, a 5-foot-deep concrete cutoff wall would be constructed. The spillway will then be overlain with articulating concrete block revetments and covered with topsoil. Woody debris would be removed from the existing natural channel below the emergency spillway in order to restore efficient drainage. Modifications to the existing outlet works would include the construction of a concrete pipe inlet, installing a steel air vent pipe, and installation of a guardrail fence on the headwall of the discharge structure. NPS has determined that the dam modification action would satisfy the requirements of a Categorical Exclusion 3.4C (4) for maintenance of an existing structure; impacts to any resource from the action were determined to be minor or less in intensity.

Any future actions that occur within CVNP will include consideration for wildlife and wildlife habitat so that impacts will be avoided.

Conclusion – The direct impacts would be Minor to Moderate Adverse with no indirect impacts. There would be no impairment of wildlife communities under Alternative 2 – Virginia Kendall Lake Sediment Removal.

## **5.2 Impacts on Vegetation**

### **5.2.1 Regulations and Policies**

*Management Policies* (NPS 2006, Section 4) direct the NPS to preserve and restore native plants, animals, and their communities and ecosystems, as well as biological processes, such as succession. This includes preserving and protecting “natural abundances, diversity, dynamics, distributions, habitat and behaviors . . .” as well as by “minimizing human impacts on” native plant and animal populations (Section 4.4.1). *Management Policies* (Section 4.1.5) also compel the NPS to restore natural conditions and processes to human-disturbed lands. *Management Policies* (NPS, 2006) also provides guidance on the removal of plants from parks. It states that when the NPS allows the removal of plants for any authorized action, the NPS will seek to "ensure that such removals will not cause unacceptable impacts on native resources, natural processes, or other park resources." Additionally, the NPS "will manage such removals to prevent them from interfering broadly with: Natural habitats, natural abundances, and natural

distributions of native species and natural processes; Rare, threatened, and endangered plant or animal species or their critical habitats; Scientific study, interpretation, environmental education, appreciation of wildlife, or other public benefits; Opportunities to restore depressed populations of native species; or Breeding or spawning grounds of native species" (NPS 2006; Section 4.4.2.1).

EO 13112 requires Federal agencies act to prevent the introduction of invasive species; provide for their control; and to minimize the economic, ecological, and human health impacts that invasive species cause.

## 5.2.2 Methodology

A qualitative assessment of impacts to vegetation was conducted based on literature review, site inspection, GIS analysis, and existing natural resources data. NPS personnel collected data on tree species that could be removed for the alternative access road construction area. The following thresholds were used to describe the magnitude of adverse effects on vegetation:

**Negligible:** There would be no observable or measurable impacts to native species, their habitats, or the natural processes sustaining them. Impacts would be of short duration and well within natural fluctuations.

**Minor:** **Adverse** – Impacts would be detectable, but they would not be expected to be outside the natural range of variability and would not be expected to have any long-term effects on native species, their habitats, or the natural processes sustaining them. Population numbers, population structure, genetic variability, and other demographic factors for species might have small, short-term changes; however long-term characteristics would remain stable and viable. Key ecosystem processes might have short-term disruptions that would fall within natural variation. Sufficient habitat would remain functional, maintaining viability of all species. Impacts would be outside critical reproduction periods for sensitive native species.

**Beneficial** – A beneficial change of similar magnitude to a Minor Adverse impact on native species, their habitats, or the natural processes sustaining them would occur.

**Moderate:** **Adverse** – Impacts on native species, their habitats, or the natural processes sustaining them would be detectable, and they may be outside the natural range of variability for short periods of time. Population numbers, population structure, genetic variability, and other demographic factors for species might have short-term changes, but would be expected to rebound to pre-impact numbers, remaining stable and viable in the long term. Key ecosystem processes might have short-term disruptions that would be outside natural variation (but would soon return to natural conditions). Sufficient habitat would remain functional, maintaining viability of all native species. Some impacts might occur in key habitat for sensitive native species.

**Beneficial** – A beneficial change of similar magnitude to a Moderate Adverse impact on native species, their habitats, or the natural processes sustaining them would occur.

Major: **Adverse** – Impacts on native species, their habitats, or the natural processes sustaining them would be detectable, and they would be expected to be either outside the natural range of variability for long periods of time or permanent in nature. Population numbers, population structure, genetic variability, and other demographic factors for species might have large, short-term declines, with significant depression of long-term population numbers. Key ecosystem processes might be disrupted in the long term or permanently. Loss of habitat might affect the viability of at least some native species.

**Beneficial** – A beneficial change of similar magnitude to a Major Adverse impact on native species, their habitats, or the natural processes sustaining them would occur.

Impairment: Some of the major impacts described above might be an impairment of Park resources if their severity, duration, and timing resulted in the elimination of a native species or significant population declines in a native species. In addition, these adverse, major impacts to Park resources and values would contribute to deterioration of the Park's plant resources and values to the extent that the Park's purpose could not be fulfilled as established in its enabling legislation; affect resources key to the Park's natural or cultural integrity or opportunities for enjoyment; or affect the resource whose conservation is identified as a goal in the Park's General Management Plan or other Park planning documents.

### 5.2.3 Alternative 1 - No Action

Direct Impacts – This alternative will not involve disturbance, construction, or change to the vegetative community; however, the aquatic vegetation would be expected to increase as the lake continues to fill with sediment and natural succession occurs. The impact intensity would be negligible.

Indirect Impacts – There would be no indirect impacts under the No Action Alternative. The impact intensity would be negligible.

Cumulative Impacts – NPS is in the process of correcting Safety of Dams issues by modifying Virginia Kendall Dam in order to pass 50 percent of the probable maximum flood during a flood event. This will be accomplished by raising the dam approximately 2 feet, widening the emergency spillway to 120 feet, and modifying the existing outlet works to increase efficiency. Topsoil from the dam crest and downstream slope would be removed and stored, then the area would be excavated to expose the dam core in the crest area. Additional materials will then be added and compacted to raise the crest 2 feet and restore the embankments.

Tree and stump removal, topsoil removal, and excavation around the existing emergency will widen the spillway to approximately 120 feet wide and 120 feet long. At the lower end of the modified spillway, a 5-foot-deep concrete cutoff wall would be constructed. The spillway will then be overlain with articulating concrete block revetments and covered with topsoil. Woody debris would be removed from the existing natural channel below the emergency spillway in order to restore efficient drainage. Modifications to the existing outlet works would include the construction of a concrete pipe inlet, installing a steel air vent pipe, and installation of a guardrail fence on the headwall of the discharge structure. Due to the small size of the disturbance at the spillway construction area, the Park has determined that the dam modifications would have no impact to vegetation or wildlife habitat.

There is no potential for direct or indirect impacts from Alternative 1 – No Action.

Conclusion – There would be no direct or indirect impacts under Alternative 1. There would also be no impairment of vegetative communities.

#### 5.2.4 Alternative 2 - Virginia Kendall Lake Sediment Removal

Direct Impacts – Impacts associated with this alternative area would amount to approximately 5400 square feet (0.12 acres) that would be converted from an existing hardwood forest to planted native grasses/forbs, if the new road is constructed. Trees that would be removed during construction of the access road include oak, ash, maple and tulip tree; the trees range in size from 4- to 15-inch diameter at breast height. After the area is revegetated in native grasses and forbs, it is expected that through natural succession, pioneer hardwoods such as tulip tree and maple would establish on the area. Because of the small area to be disturbed and the amount of naturally regenerating native species in the area, the impact to vegetation would be Minor Adverse.

Indirect Impacts – There would be no indirect impacts to vegetation under this alternative.

Cumulative Impacts – As stated in Section 5.2.3, NPS is in the process of correcting Safety of Dams issues by modifying Virginia Kendall Dam. Vegetation disturbance associated with that project is also on a small scale (0.33 acres) and will be revegetated with native species. Due to the small size of the disturbance at the spillway construction area, the Park has determined that the dam modifications would be Minor to no impact to vegetation.

Conclusion – Direct impacts to vegetation would be Minor Adverse and there would be no indirect impacts. There would also be no impairment of vegetative communities under Alternative 2 – Virginia Kendall Lake Sediment Removal.

### 5.3 Impacts on Wetlands

#### 5.3.1 Regulations and Policies

*Management Policies* (NPS 2006, Section 4.6.5) and EO 11990 “Protection of Wetlands” direct the NPS to minimize and mitigate the destruction, loss, or degradation of wetlands; preserve,

enhance, and restore the natural and beneficial values of wetlands; and avoid direct and indirect support of new construction in wetlands unless there are no practicable alternatives and the proposed action includes all practicable measures to minimize harm to wetlands. The *Wetland Protection Plan for Proposed Agricultural Lands* in CVNP outlines a protocol to explicitly prevent most direct and indirect wetland impacts from NPS activities on agricultural lands through wetland identification, delineation, quality assessment, buffer zone establishment, and monitoring (NPS 2002b). Ponds and reservoirs in CVNP are treated as ‘artificial wetlands’ under NP Procedural Manual 77-1 (NPS 2008). The CVNP Pond Management Plan (NPS 1993) provides a summary of pond resources and outlines how ponds are managed for recreational values.

### 5.3.2 Methodology

CVNP has a wetland inventory in GIS format covering the Park which includes wetland location, size, type, condition, species composition, and restoration/enhancement potential (Davey Resource Group 2001). Data collection for this enhanced inventory was performed in-field using pen unit mapping and data entry. Wetlands (18.5 acres) along Salt Run and the unnamed tributary on the southeast side of Virginia Kendall Lake are identified in this inventory, however none of the area in the lake proposed for dredging was classified as a wetland (Figure 5). These adjacent wetlands are primarily maintained by water from flows in the associated streams and should not be affected from the reservoir drawdown.

NPS conducted bathymetric surveys of the lake in 2007. Sampling of lake water depths was conducted from a small boat on 15-meter grids. At each grid location the dominant plant species were recorded to give a general distribution of the benthic vegetation community (NPS 2007).

**Negligible:** Impacts to wetlands and the aquatic vegetation community would not be detectable.

**Minor:** **Adverse** – Temporary (short-term) disturbance from construction activities on any wetland. All impacts would be minimized by the use of BMP, such as the use of mud mats, silt fence and hay bales. No long-term changes in the vegetative community would occur. Post construction, the vegetative community would be monitored to identify and remove invasive plant species.

**Beneficial** – Enhancement of any existing wetland, which could include supplying additional water to manage water levels and identification/removal of invasive plant species would occur.

**Moderate:** **Adverse** – Long-term impacts would occur from wetland disturbance that would cause a change in the vegetative community and reduce the overall health of the wetland system that would disturb less than 0.1 acres of wetland. The threshold of 0.1 acres was selected because this is the amount of adverse impact allowed where compensation may be waived if the loss of wetland functions is considered to be minor (Wetland Protection Procedural Manual 77-1, 2008).

**Beneficial** – Actions would cause the development of additional new wetland areas converting upland areas into productive wetland communities (>0.1 acres of new wetland).

Major: **Adverse** – Long-term impact would occur to high quality wetlands on the construction site and would affect more than 0.1 acres of wetland. The majority of the wetlands in and adjacent to the construction site would be impacted with potential impacts downstream to other wetlands.

**Beneficial** – Wetlands both on and offsite would be enhanced/expanded with the creation of new wetland areas that had previously been uplands.

Impairment: This classification is for long-term adverse impacts to unique, high quality wetland areas that are highly productive and have the potential to have high educational value (>0.1 acres of new wetland).

### 5.3.3 Alternative 1 - No Action

Direct Impacts – Under the No Action Alternative, none of the identified wetlands would be impacted. The impact intensity to the wetlands on the site would be Negligible.

Indirect Impacts – There is no known potential for indirect impacts to wetlands in the area from this alternative.

Cumulative Impacts – The Riparian Buffer Plan for Proposed Agricultural Lands (NPS 2002a) and the Wetland Protection Plan for Proposed Agricultural Lands (NPS 2002b) are documentation that there are no reasonably foreseeable future plans for impacts to the wetland resources of CVNP. Outside the boundaries of CVNP the COE and Ohio EPA regulate impacts to wetlands, though increased development in the Salt Run watershed outside the Park has the potential to adversely affect the watersheds (through increases in flow, sedimentation rates, nutrient loads and pollutants).

Conclusion – It has been concluded that the impacts to wetlands would be Negligible for direct and Negligible for indirect impacts under Alternative 1. There are no potential effects that would impair wetland resources at CVNP.

### 5.3.4 Alternative 2 –Virginia Kendall Lake Sediment Removal

Direct Impacts – Under Alternative 2, there would be approximately 3.6 acres of lake bottom that would be dredged to remove accumulated sediment. Under the NPS definition of wetlands in Procedural Manual 77-1 (NPS 2008), the area would be classified as a large intentional artificial wetland because it meets the criterion set forth by Cowardin et al. 1979 (the area supports both aquatic vegetation and is continuously flooded) and the lake is a constructed feature. The COE has classified the area as a “vegetated shallow,” and the Ohio EPA considered it for lake impacts, not wetlands. The total vegetated shallow acreage that could be disturbed is 3.59 acres with 0.16 acres of emergent wetlands and 0.02 acres of pond lily (Nuphar spp.) dominated vegetated shallows. The cattail (Typha spp.) dominated areas total approximately 0.12 acres and will not be

disturbed. The lake contains a total of approximately 12 acres of similar aquatic vegetation on a fairly continuously shallow bottom. When the 3.77 acres of lake bottom are disturbed, approximately 3 to 4 feet of sediment will be removed along with the associated emergent and submerged vegetation. Post construction, when the lake is refilled, the entire disturbed area is expected to revegetate with similar species from the extensive local seed source. There will be no

long-term changes to the vegetative community, and the loss of vegetative structure on the dredged portion of the lake will be short term and temporary.

Because no wetlands will be disturbed upstream of the lake along Salt Run or on the unnamed tributary, there will be no long-term changes in the vegetative community. There is extensive similar vegetation on the lake bottom adjacent to the disturbed area and a small portion of the emergent wetland (0.16 acres) will be lost in the short term; therefore impacts to wetlands are considered to be Minor Adverse.

All wetlands affected by this alternative are considered intentional artificial wetlands because the reservoir is a constructed feature. Actions being taken are considered to be regular maintenance of this constructed feature. The anticipated loss or degradation of wetland function and value is considered to be short term and minimal (minor adverse effects and loss of 0.16 acres), these impacts are therefore considered exempt from the Statement of Findings and compensation requirements of Procedural Manual DO 77-1 (NPS 2008).

There will be no long-term impacts to the vegetative community, and the area is expected to revegetate to a similar pre-construction condition.

NPS has applied to the COE for an individual permit under Section 404 of the CWA and a Section 401 Water Quality Certification with the Ohio EPA/Division of Surface Water.

Indirect Impacts – There is no known potential for indirect impacts to wetlands to occur under this alternative.

Cumulative Impacts – The Riparian Buffer Plan for Proposed Agricultural Lands (NPS 2002a) and the Wetland Protection Plan for Proposed Agricultural Lands (NPS 2002b) are documentation that there are no reasonably foreseeable future plans for impacts to the wetland resources of CVNP. Outside the boundaries of CVNP, the COE and Ohio EPA regulate impacts to wetlands, though increased development in the Salt Run watershed outside the Park has the potential to adversely affect the watersheds (through increases in flow, sedimentation rates, nutrient loads, and pollutants).

Conclusion – It has been concluded that the impacts to wetlands would be Minor Adverse for direct and Negligible for indirect impacts under Alternative 2 – Virginia Kendall Lake Sediment Removal. There are no potential effects that would impair wetland resources at CVNP.

## 5.4 Impacts on Threatened, Endangered or Special Concern Species

### 5.4.1 Regulations and Policies

The ESA directs Federal agencies to assess the effects of their proposed actions on threatened and endangered species and critical habitat, and requires consultation with the USFWS if an effect is anticipated. *Management Policies* (NPS 2006) state that potential effects of agency actions will also be considered on State or locally listed species. The NPS is required to control access to critical habitat of such species, and to perpetuate the natural distribution and abundance of these species and the ecosystems upon which they depend.

### 5.4.2 Methodology

Primary steps in assessing impacts on listed species were taken to determine the following:

1. Which species are found in areas likely to be affected by actions described in the alternatives;
2. Habitat loss or alteration caused by the actions described in the alternatives;
3. Displacement and disturbance potential of the actions and the species' potential to be affected by the activities. The information in this analysis was obtained through best professional judgment of Park staff and experts in the field, and by conducting a literature review. The ESA defines the terminology used to assess adverse impacts to listed species. This is incorporated in the following impact thresholds used in this EA:

**Negligible:** When a proposed action would not affect a listed species or designated critical habitat.

**Minor:** **Adverse** – Effects on special status species are discountable (i.e., extremely unlikely to occur and not able to be meaningfully measured, detected, or evaluated).

**Beneficial** – Effects on special status species are potentially beneficial to a similar magnitude as a Minor Adverse impact.

**Moderate:** **Adverse** – When an adverse effect to a listed species may occur as a direct or indirect result of proposed actions, and the effect is not discountable.

**Beneficial** – Effects on special status species are potentially beneficial to a similar magnitude as a Moderate Adverse impact.

**Major:** **Adverse** – The appropriate conclusion when the NPS or the USFWS identifies situations in which the proposal could jeopardize the continued existence of a proposed species or adversely modify critical habitat to a species within or outside Park boundaries. This would be considered “impairment.”

**Beneficial** – Effects on special status species are potentially beneficial to a similar magnitude as a Major Adverse impact.

#### 5.4.3 Alternative 1 – No Action

Direct Impacts – This alternative should not involve any land disturbance, construction, or change in habitat. The impact intensity would therefore be Negligible.

Indirect Impacts – There is no known potential for indirect impacts to threatened, endangered, or special status species under this alternative.

Cumulative Impacts – As described in Section 5.4.4, CVNP is in the process of correcting Safety of Dams issues at Virginia Kendall Dam. The Park has committed to the same recommendations from USFWS limiting tree cutting with the project to avoid impacts to the Indiana bat. The USFWS concurred with the NPS determination that the Safety of Dams project was not likely to adversely affect the Indiana bat. Any actions within CVNP will include consideration for threatened, endangered, or special concern species so impacts from CVNP actions should be avoided, minimized, and/or mitigated. Actions of others beyond CVNP that may impact threatened, endangered, or special concern species may not reasonably be assessed in this EA.

Conclusion – There would be no direct impacts under Alternative 1 – No Action. The potential for indirect impacts is Negligible. No impairment is expected under this alternative.

#### 5.4.4 Alternative 2 – Virginia Kendall Lake Sediment Removal

Direct Impacts – Impacts to listed species would occur primarily through removal of existing ground cover due to construction. Trees suitable as roost sites for Indiana bats could be removed under this alternative at the site of the proposed alternate access road to the lake. NPS has incorporated the USFWS seasonal tree clearing dates (no cutting April 1 through September 30) into the contract specifications for the project. Based on previous surveys when no Indiana bats were found and the limitations on tree cutting, USFWS concurred with the NPS determination that the project was not likely to adversely affect the Indiana bat. Impacts to Indiana bat habitat are likely to be small, localized, and permanent, resulting in Minor Adverse impacts.

There should be no impacts to the bald eagle. Construction should not involve the removal of large trees, which would be suitable for bald eagle nesting or perching, and there are no historical records of bald eagles nesting in this area of the Park.

Previous surveys for State-listed species located the shining ladies' tresses in areas around Virginia Kendall Lake. Recent surveys did not find them in either of the previously noted locations near the dam or emergency spillway (Plona pers.com. 2007). Impacts to these species are very unlikely to occur and would result in Minor Adverse impacts.

Potential impacts to other species mentioned specifically in Section 4.5 are considered to be Negligible because they are extremely rare in CVNP, with only one or two known historic sightings on record.

Indirect Impacts – There is no known potential for indirect impacts to threatened, endangered, or species of concern under this alternative.

Cumulative Impacts – As described in Section 5.4.4, CVNP is in the process of correcting Safety of Dams issues at Virginia Kendall Dam. The Park has committed to the same recommendations from USFWS limiting tree cutting with the project to avoid impacts to the Indiana bat. The USFWS concurred with the NPS determination that the project was not likely to adversely affect the Indiana bat. Any future actions within CVNP will include consideration for threatened, endangered, or special concern species so that impacts from CVNP actions should be avoided, minimized, and/or mitigated. Actions of others beyond CVNP that may impact threatened, endangered, or special concern species may not reasonably be assessed in this EA.

Conclusion – There is a potential for Minor Adverse impacts to Indiana bat habitat and shining ladies' tresses. No impairment is expected under Alternative 2 – Virginia Kendall Lake Sediment Removal. To prevent potential impacts to Indiana bats, no tree cutting will be permitted between April 1 and September 15.

## **5.5 Impacts on Cultural Resources**

### **5.5.1 Regulations and Policies**

Laws, regulations, and policies have general application for cultural resource management throughout the NPS. These include the Antiquities Act, the Historic Sites Act, the NEPA, the Archeological and Historic Preservation Act, the Archeological Resources Protection Act, and the Native American Graves Protection and Repatriation Act (see Appendix A). Protection of cultural resources is also in accordance with EO 11593, *Protection and Enhancement of the Cultural Environment*, 1971 (see Appendix A).

Cultural resource management procedures are detailed in the *Management Policies* (NPS 2006) and the *NPS Cultural Resource Management Guideline* (NPS 1997). Specific standards and guidelines for the treatment of cultural resources are provided in The Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation.

### **5.5.2 Methodology**

In this environmental assessment, impacts to cultural resources are described in terms of type, context, duration, and intensity, which is consistent with the CEQ regulations. These impact analyses are intended to comply with the requirements of the NEPA. Compliance with Section 106 of the NHPA is being accomplished concurrently for the preferred alternative.

Impacts to cultural resources were identified and evaluated by (1) determining the Area of Potential Effect (APE); (2) identifying cultural resources present in the APE; (3) applying how the action affects the cultural resource; and (4) considering ways to avoid, minimize, or mitigate adverse effects. CEQ regulations and DO-12 also call for a discussion of the appropriateness of mitigation, as well as an analysis of how effective the mitigation would be in reducing the

intensity of a potential impact (e.g., reducing the intensity of an impact from major to moderate or minor).

### 5.5.3 Historic Structures

The preservation of historic structures involves the two basic concerns of slowing the rate at which historic material is lost and maintaining historic character. An adverse impact would increase the rate at which a historic structure is lost and/or influence the loss of historic character of the structure. For purposes of analyzing potential impacts to historic structures, the thresholds of change for the intensity of an impact are defined as follows:

**Negligible:** Impact(s) is at the lowest levels of detection—barely perceptible and not measurable.

**Minor:** **Adverse** – Impact would not increase the rate at which the historic structure is lost and/or influence the loss of historic character of the structure.

**Beneficial** – The action would decrease the rate at which the historic structure is lost and/or influence the loss of historic character of the structure.

**Moderate:** **Adverse** – Impact would moderately increase the rate at which the historic structure is lost and/or influence the loss of historic character of the structure.

**Beneficial** – The action would moderately decrease the rate at which the historic structure is lost and/or influence the loss of historic character of the structure.

**Major:** **Adverse** – The historic structure would be lost, or the historic character of the structure would be lost.

**Beneficial** – Restoration of a structure in accordance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties*.

### 5.5.4 Alternative 1 – No Action

Direct Impacts – There are no direct impacts anticipated for this alternative.

Indirect Impacts – There are no indirect impacts anticipated for this alternative.

Cumulative Impacts – There are no cumulative impacts anticipated with this alternative.

Conclusion – There are no direct, indirect or cumulative impacts anticipated to historic structures anticipated with this alternative. No impairment to historic structures is expected under Alternative 1 – No Action.

### 5.5.5 Alternative 2 – Virginia Kendall Lake Sediment Removal

Direct Impacts – Kendall Lake and Dam are identified as contributing features as part of Virginia Kendall State Park which is now recognized as Historic District (NR96001515) on the National Register of Historic Places. The Park has determined (NPS 2007) that the removal of the accumulated lake bottom sediments will help keep the lake from filling and retain the desired look of the constructed landscape built in the 1930s. On December 12, 2007, the Ohio Historic Preservation Office concurred with the findings of NPS that the proposed project will have no adverse effect on historic properties. Because all sediments will be disposed offsite and the maintenance roads and hiking trails will be returned to their pre-construction condition and appearance, the removal of the sediment would be a Minor Beneficial impact.

Indirect Impacts – There are no indirect impacts anticipated for this alternative therefore, the impacts would be Negligible.

Cumulative Impacts – There are no cumulative impacts anticipated with this alternative therefore, the impacts would be Negligible.

Conclusion – There are no anticipated indirect or cumulative impacts, however, the removal of sediments would be considered Minor Adverse Beneficial to historic structures. No impairment to historic structures is expected under Alternative 2 –Virginia Kendall Lake Sediment Removal.

## **5.6 Impacts on Visitor Experience**

### **5.6.1 Regulations and Policies**

*Management Policies* (NPS 2006) state that the enjoyment of park resources and values by the people of the United States is part of the fundamental purpose of all parks, and that the NPS is committed to providing appropriate, high-quality opportunities for visitors to enjoy the parks. The *Management Policies* (NPS 2006) provides the basic service-wide policies on visitor use and recreation activities, visitor safety, and interpretation and educational activities.

### **5.6.2 Methodology**

The purpose of this impact analysis is to determine if the alternatives are compatible or in conflict with the purpose of the Park, its visitor use/experience goals, and the direction provided by *Management Policies* (NPS 2006). These policies and goals were integrated into the impact thresholds.

The potential for change in visitor use/experience was evaluated by identifying projected changes in use of Virginia Kendall Lake. For each alternative, a judgment was made as to the potential for impact. This potential impact was then characterized by type (beneficial or adverse), context (site-specific, local or regional), duration (short term or long term) and intensity.

Impact to visitor use/experience at Virginia Kendall Lake would result from construction activities. Such activities could cause the temporary closing of the facilities for the safety of visitors. The construction activities could also involve temporary noise, barricades, and other activities common to construction sites, which are not compatible with the natural setting of CVNP. The activities could therefore produce adverse impacts.

The following thresholds for evaluating impacts on visitor use/experience were defined:

**Negligible:** Visitors would not likely be aware of the effects associated with changes resulting from the alternative.

**Minor:** **Adverse** – Visitors would likely be aware of the adverse effects associated with changes resulting from the alternative; however the decrease in visitor use and experience would be slight and likely short term. Other areas in the Park would remain available for similar visitor use/experience and use without impairment of Park resources and values.

**Beneficial** – Visitors would likely be aware of the beneficial effects associated with changes resulting from the alternative; however the increase in visitor use and experience would be slight and likely short term.

**Moderate:** **Adverse** – Visitors would be aware of the adverse effects associated with changes resulting from the alternative. Decrease in visitor use and experience would be readily apparent and likely long term. Other areas in the Park would remain available for similar visitor use/experience and use without impairment of Park resources and values, but visitor dissatisfaction might be measurably affected. Some visitors who desire to continue their use and enjoyment of the activity/visitor experience would be required to pursue their choice in other available local or regional areas.

**Beneficial** – Visitors would be aware of the beneficial effects associated with changes resulting from the alternative. Increase in visitor use and experience would be readily apparent and likely long term.

**Major:** **Adverse** – Visitors would be highly aware of the adverse effects associated with changes resulting from the alternative. Decreases in visitor use and experience would be readily apparent and long term. The decrease in visitor use and experience proposed in the alternative would preclude future generations of some visitors from enjoying Park resources and values. Some visitors who desire to continue their use and enjoyment of the activity/visitor experience would be required to pursue their choice in other available local or regional areas.

**Beneficial** – Visitors would be highly aware of the beneficial effects associated with changes resulting from the alternative. Increases in visitor use and experience would be readily apparent and long term.

### 5.6.3 Alternative 1 - No Action

**Direct Impacts** – Portions of the lake have continued to develop and maintain large amounts of submerged aquatic vegetation that have contributed to visitor dissatisfaction by eliminating the possibilities of fishing and boating from most of the lake. Restoring these recreational

capabilities has been a major initiative in developing the proposed project. The impact for this alternative would range from Minor Adverse to Moderate Adverse.

Indirect Impacts – There are no indirect impacts anticipated with this alternative.

Cumulative Impacts – As described in Section 5.4.4, CVNP is in the process of correcting Safety of Dams issues at Virginia Kendall Dam. During project construction, portions of the Lake Trails and Salt Run Trails across the dam and spillway will be closed to public use. All other trails originating at that Virginia Kendall Lake parking area will be open, including alternate trails to access areas that would normally be accessed by crossing the dam. Due to the limited amount of restricted access associated with this project the Park had previously determined that the dam modifications would have no impact to visitor experience.

Conclusion – Alternative 1 would have Minor to Moderate Adverse direct impacts on visitor experience, with no indirect or cumulative impacts.

#### 5.6.4 Alternative 2 –Virginia Kendall Lake Sediment Removal

Direct Impacts – Project construction associated with the sediment removal operations would occur during the fall/winter months when visitor use is lower than other times of the year. Draining the lake and closing the hiking trails across the dam would limit visitor use for the short term (up to 4 months), causing a Minor Adverse impact. After construction operations are completed, the lake will be refilled and restocked with similar species that were present prior to draining and the trails will be reopened. The restoration of recreational opportunities (fishing and boating) by removing sediment and accumulated aquatic vegetation would likely improve visitor satisfaction for long term causing a Moderate Beneficial impact.

Indirect Impacts – There is a potential for an increase in the recreational use of Virginia Kendall Lake post construction. With the increased visitor satisfaction other areas adjacent to the lake could have increased use causing a Minor to Moderate beneficial impact.

Cumulative Impacts – There are no cumulative impacts anticipated with this alternative.

Conclusion – Alternative 2 –Virginia Kendall Lake Sediment Removal would have a Minor to Moderate Beneficial impact on the quality of visitor experience at Virginia Kendall Lake. No impairment is expected under this alternative.

## 6.0 CONSULTATION AND COORDINATION

### 6.1 Public Involvement

External scoping was conducted with Federal, State, and local agencies, along with solicitation for public comment in the region surrounding CVNP. A request for public comment and project description was posted on the CVNP Planning, Environment and Public Comment website at <http://parkplanning.nps.gov> from 5/22/07 until 6/30/07. A notice was also published in the Akron Beacon Journal in June of 2007 requesting comments on the scope of the project and impact

topics. A radio interview was conducted between WAKR (AM 1590, Akron, Ohio) and Robert W. Bobel, Park Engineer on June 1, 2007. The interview included a description of the project and encouraged comments from the public on the scope of the project.

There were no comments or new issues identified during the comment period that would require further consideration in this EA.

## 6.2 Agencies and Organizations Consulted

A list of agencies and organizations that were consulted are presented in Appendix D of this document.

## 6.3 Prepares and Contributors

Name	Title/Responsibility	Education	Experience
<b>NATIONAL PARK SERVICE, Cuyahoga Valley National Park</b>			
Robert Bobel, P.E.	Park Engineer	B.S. Civil Engineering	20 years NPS
Meg Plona	Biologist	B.S. Biology	27 years NPS
Kevin Skerl	Ecologist/NEPA Coordinator	B.S. Wildlife Biology, M.S. Conservation Biology	10 years NPS, 3 years non-profit conservation
<b>BUREAU OF RECLAMATION, Technical Service Center, Denver, Colorado</b>			
Gregory Reed	Natural Resources Specialist	B.S. Wildlife Biology	29 years DOI
John Ellingson	Project Engineer	B.S. Civil Engineering	29 years Reclamation

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**Appendix A**  
**Laws (Statutes), Executive Orders, Regulations, Policies and Guidelines**

Following are descriptions for some of the laws, executive orders, regulations, and policies that are referenced in the Environmental Assessment.

Antiquities Act of 1906 provided for protection of historic, prehistoric, and scientific features on Federal lands, with penalties for unauthorized destruction or appropriation of antiquities; authorized the President to proclaim nation monuments; authorized scientific investigation of antiquities on Federal lands subject to permit and regulations.

Archaeological and Historic Preservation Act of 1974 (P.L. 93-291; 88 Stat. 174) amended the 1960 Reservoir Salvage Act; provided for the preservation of significant scientific, prehistoric, historic and archaeological materials and data that might be lost or destroyed as a result of Federally-sponsored projects; provided that up to one percent of project costs could be applied to survey, data recovery, analysis, and publication.

Archaeological Resources Protection Act (ARPA) of 1979 (P.L. 96-95; 93 Stat. 712) defined archaeological resources as any material remains of past human life or activities that are of archaeological interest and at least 100 years old; required Federal permits for their excavation or removal and set penalties for violators; provided for preservation and custody of excavated materials, records, and data; provided for confidentiality of archaeological site locations; encouraged cooperation with other parties to improve protection of archaeological resources. ARPA was amended in 1988 to require development of plans for surveying public lands for archaeological resources and systems for reporting incidents of suspected violations.

The Endangered Species Act of 1973, as amended, prohibits Federal actions from jeopardizing the existence of Federally-listed threatened or endangered species or adversely affecting designated critical habitat. Federal agencies must consult with the USFWS to determine the potential for adverse effects. Federal agencies are also responsible for improving the status of listed species.

Historic Sites Act of 1935, declared it a national policy to preserve historic sites, buildings, and objects for public use and authorized the NPS to “restore, reconstruct, rehabilitate, preserve, and maintain historic and prehistoric sites, buildings, objects, and properties of national historical or archaeological significance.”

The National Environmental Policy Act of 1969 (NEPA), as amended, requires detailed and documented environmental analysis of proposed Federal actions that may affect the quality of the human environment.

The National Historic Preservation Act (NHPA) of 1966, as amended, declared historic preservation as a national policy and authorized the Secretary of the Interior to expand and maintain a National Register of Historic Places that would include properties of national, State, and local historic significance. The Act recommends that Federal agencies proposing action consult with the State Historic Preservation Officer regarding the existence and significance of cultural and historical resource sites.

#### National Park Service Organic Act of 1916

#### National Park System General Authorities Act

The Native American Graves Protection and Repatriation Act (NAGPRA) of 1990. These regulations address the rights of lineal descendants, Indian tribes, and native Hawaiian organizations to Native American human remains, funerary objects, sacred objects, and objects of cultural patrimony. They require Federal agencies and institutions that receive Federal funds to provide information about Native American human remains, funerary objects, sacred objects, and objects of cultural patrimony to lineal descendants, Indian tribes, and native Hawaiian organizations and, upon presentation of a valid request, dispose of or repatriate these objects to them.

Public Law 93-555 is enabling legislation that established the Cuyahoga Valley National Recreation Area

EO 11593 (Protection and Enhancement of the Cultural Environment) instructs all Federal agencies to support the preservation of cultural properties and directs them to identify and nominate to the National Register cultural properties under their jurisdiction and to “exercise caution...to assure that any Federally-owned property that might qualify for nomination is not inadvertently transferred, sold, demolished, or substantially altered.”

EO 11988 directs Federal agencies to protect, preserve, and restore the natural resources and functions of flood plains; avoid the long- and short-term environmental effects associated with the occupancy and modification of flood plains; and avoid direct and indirect support of flood plain development and actions that could adversely affect the natural resources and functions of flood plains or increase flood risks.

EO 11990 (Protection of Wetlands) directs Federal agencies to minimize impacts and mitigate the destruction, loss, or degradation of wetlands; preserve, enhance and restore the natural and beneficial values of wetlands; and avoid direct and indirect support of new construction in wetlands unless there are no practicable alternatives and the proposed action includes all practicable measures to minimize harm to wetlands. NPS policies for implementing EO 11990 are found in Director’s Order 77-1 “Wetland Protection” and the associated Procedural Manual (NPS 2008). This order requires that parks assess all direct or indirect impacts, including whether each alternative "supports, encourages, or otherwise facilitates additional wetland development."

EO 13112 requires that Federal agencies act to prevent the introduction of invasive species and provide for their control and to minimize the economic, ecological, and human health impacts that invasive species cause.

EO 13186 (Responsibilities of Federal Agencies to Protect Migratory Birds) directs Federal agencies to avoid taking actions that have a measurable negative effect on migratory bird populations. If such actions are taken, the EO directs agencies “to develop and implement within two years a Memorandum of Understanding with the U.S. Fish and Wildlife Service that shall promote the conservation of migratory bird populations.” This EO also defines migratory bird “species of concern” as “those species listed in the periodic report Migratory Nongame Birds of Management Concern in the United States, priority migratory bird species as documented by established plans [such as Bird Conservation Regions in the North American Bird Conservation Initiative or Partners in Flight physiographic areas], and those species listed in 50 CFR 17.11 [Endangered Species Act]”.

Part 36 of the Code of Federal Regulations (CFR) provides for the proper use, management, government, and protection of persons, property, and natural and cultural resources within areas under the jurisdiction of the NPS.

- 36 CFR 18 (NHPA of 1966), “Leases and Exchanges of Historic Property,” govern the historic property leasing and exchange provisions of this law.
- 36 CFR 60 (NHPA and EO 11593), “National Register of Historic Places,” addresses concurrent State and Federal nominations, nominations by Federal agencies, and removal of properties from the National Register.
- 36 CFR 63 (NHPA and EO 11593), “Determinations of Eligibility for inclusion in the National Register of Historic Places,” establishes process for Federal agencies to obtain determinations of eligibility on properties.
- 36 CFR 65 (Historic Sites Act of 1935), “National Historic Landmarks Program,” establishes criteria and procedures for identifying properties of national significance, designating them as national historic landmarks, revising landmark boundaries, and removing landmark designations.
- 36 CFR 67 (Historic Preservation Certification Pursuant to the Tax Reform Act of 1976, the Revenue Act of 1978, the Tax Treatment Extension Act of 1980, and the Economic Recovery Tax Act of 1981), establishes procedures whereby owners or holders of long-term leases for old and/or historic buildings may obtain certification to gain Federal tax credits for rehabilitation.
- 36 CFR 68 (NHPA) contains the Secretary of the Interior’s standards for historic preservation projects, including acquisition, protection, stabilization, restoration, and reconstruction.

- 36 CFR 79 (NHPA and ARPA), “Curation of Federally-owned and Administered Archeological Collections,” provides standards, procedures and guidelines to be followed by Federal agencies in preserving and providing adequate long-term curatorial services for archeological collections of prehistoric and historic artifacts and associated records that are recovered under Section 110 of the NHPA, the Reservoir Salvage Act, ARPA and the Antiquities Act.
- 36 CFR 800 (NHPA and EO 11593), “Protection of Historic and Cultural Properties,” includes regulations of the Advisory Council on Historic Preservation to implement Section 106 of the NHPA as amended, and presidential directives issued pursuant thereto.

40 CFR 1500-1508 (Council on Environmental Quality NEPA regulations of 1978) - provides Regulations for Implementing the Procedural Provisions of NEPA.

43 CFR 3 (Antiquities Act) establishes procedures to be followed for permitting the excavation or collection of prehistoric and historic objects on Federal lands.

43 CFR 7, Subparts A and B (ARPA, as amended), "Protection of Archaeological Resources, Uniform Regulations" and "Department of the Interior Supplemental Regulations," provides definitions, standards, and procedures for Federal land managers to protect archaeological resources and provides further guidance for Interior bureaus on definitions, permitting procedures, and civil penalty hearings.

The Management Policies (NPS 2006) provide general guidance for managing natural resources.

Cuyahoga Valley National Park’s General Management Plan (NPS, 1977) provides the overall concept for management and resource preservation for compatible recreational use.

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**Appendix B**  
**U.S. Fish and Wildlife Service Concurrence Email**

Thank you for consulting with us on this project. As you described below, the project lies within the range of the Indiana bat (*Myotis sodalis*), a Federal endangered species. Cuyahoga Valley National Park is known to support male Indiana bats, however the project area was surveyed for Indiana bats in 2005 and none were found. Additionally, the project will only impact a small wooded area (1/3 acre) with no potential maternity roost trees. In order to avoid and minimize adverse effects, you propose to cut trees only between September 15 and April 15, when bats would not be in the area. Based on these factors, you have determined that the project is not likely to adversely affect the Indiana bat. The Service concurs with your determination. This concludes consultation on this action as required by section 7(a)(2) of the Endangered Species Act. Should, during the term of this action, additional information on listed or proposed species or their critical habitat become available, or if new information reveals effects of the action that were not previously considered, consultation with the Service should be reinitiated to assess whether the determinations are still valid.

If you have questions or if we may be of additional assistance, please contact me.

Sincerely,  
Megan Seymour  
Wildlife Biologist  
U.S. Fish and Wildlife Service  
Ecological Services Field Office  
6950 Americana Pkwy.  
Suite H  
Reynoldsburg, OH 43068-4127  
(614) 469-6923 ext. 16  
(614) 469-6919 fax  
[www.fws.gov/midwest/Reynoldsburg/](http://www.fws.gov/midwest/Reynoldsburg/)

August 31, 2007



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**Appendix C**  
**Threatened, Endangered, and Special Concern Species with Recorded Occurrences in Cuyahoga Valley National Park (2008)**

**WILDLIFE** (*State list May 2008-ODNR*)

Order	Common Name	Scientific Name	Status
<b>Mammals</b>	Indiana bat	<i>Myotis sodalists</i>	Fed & State Endangered
	Star-nosed mole	<i>Condylura cristata</i>	Species of concern
<b>Birds</b>	American bittern	<i>Botaurus lentiginosus</i>	State Endangered
	Northern harrier	<i>Circus cyaneus</i>	State Endangered
	King Rail	<i>Rallus elegans</i>	State Endangered
	Black tern	<i>Chlidonias niger</i>	State Endangered
	Yellow-bellied sapsucker	<i>Sphyrapicus varius</i>	State Endangered
	Golden-winged warbler	<i>Vermivora chrysoptera</i>	State Endangered
	Upland sandpiper	<i>Bartramia longicauda</i>	State Threatened
	Black-crowned night heron	<i>Nycticorax nycticorax</i>	State Threatened
	Dark-eyed junco	<i>Junco hyemalis</i>	State Threatened
	Hermit thrush	<i>Catharus guttatus</i>	State Threatened
	Least bittern	<i>Ixobrychus exilis</i>	State Threatened
	Bald Eagle	<i>Haliaeetus leucocephalus</i>	State Threatened
	Osprey	<i>Pandion haliaetus</i>	State Threatened
	Peregrin falcon	<i>Falco peregrinus</i>	State Threatened
	Least flycatcher	<i>Empidonax minimus</i>	State Threatened
	Sharp-shinned hawk	<i>Accipter striatus</i>	Species of concern
	Sedge wren	<i>Cistothorus platensis</i>	Species of concern
	Marsh wren	<i>Cistothorus palustris</i>	Species of concern
	Henslow's sparrow	<i>Ammodramus henslowii</i>	Species of concern
	Cerulean warbler	<i>Dendroica cerulea</i>	Species of concern
	Prothonotary warbler	<i>Protonotaria citrea</i>	Species of concern
	Bobolink	<i>Dolichonyx oryzivorus</i>	Species of concern
	Northern Bobwhite	<i>Colinus virginianus</i>	Species of concern
Common moorhen	<i>Gallinula chloropus</i>	Species of concern	
Great egret	<i>Casmerodius albus</i>	Species of concern	
Sora rail	<i>Porzana Carolina</i>	Species of concern	
Virginia rail	<i>Rallus limicola</i>	Species of concern	
Canada warbler	<i>Wilsonia canadensis</i>	Special interest	
Magnolia warbler	<i>Dendorica magnolia</i>	Special interest	

	Northern waterthrush	<i>Seiurus noveboracensis</i>	Special interest
	Winter wren	<i>Troglodytes troglodytes</i>	Special interest
	Black-throated blue warbler	<i>Dendroica caerulescens</i>	Special interest
	Northern saw whet owl	<i>Aegolius acadicus</i>	Special interest
	Pine siskin	<i>Carduelis pinus</i>	Special interest
	Purple finch	<i>Carpodacus purpureus</i>	Special interest
	Red-breasted nuthatch	<i>Sitta canadensis</i>	Special interest
	Blackburnian warbler	<i>Dendroica fusca</i>	Special interest
	Northern pintail	<i>Anas acuta</i>	Special interest
	Redhead duck	<i>Aythya americana</i>	Special interest
<b>Reptiles</b>	Spotted Turtle	<i>Clemmys guttata</i>	State threatened
	Eastern box turtle	<i>Terrapene Carolina</i>	Species of concern
	Blanding's turtle	<i>Emydoidea blandingii</i>	Species of concern
<b>Amphibians</b>	none		
<b>Fishes</b>	none		
<b>Crayfishes</b>	none		
<b>Mollusks</b>	none		
<b>Dragonflies</b>	none		
<b>Damselflies</b>	none		
<b>Caddisflies</b>	none		
<b>Mayflies</b>	none		
<b>Midges</b>	none		
<b>Butterflies</b>	none		
<b>Moths</b>	none		
<b>Beetles</b>	none		

*PLANTS (2008-2009 State list per ODNR)*

<b>Common Name</b>	<b>Scientific Name</b>	<b>Status</b>
Bristly sarsaparilla	<i>Aralia hispida</i>	State Endangered
Drooping wood sedge	<i>Carex arctata</i>	State Endangered
Hairy tick-trefoil	<i>Desmodium glabellum</i>	State Endangered
Variiegated scouring-rush	<i>Equisetum variegatum</i>	State Endangered
Ground juniper	<i>Juniperus communis</i>	State Endangered
Large-leaved Mountain-rice	<i>Oryzopsis asperifolia</i>	State Endangered
Philadelphia panic grass	<i>Panicum philadelphicum</i>	State Endangered
Pasture blue grass	<i>Poa saltuensis</i>	State Endangered
Olney's three-square	<i>Scirpus americanus</i>	State Endangered
Compass-plant	<i>Silphium laciniatum</i>	State Endangered
Thin-leaved sedge	<i>Carex cephaloidea</i>	State Threatened
Pipsissewa	<i>Chimaphila umbellata</i>	State Threatened
Golden-knees	<i>Chrysogonum virginianum</i>	State Threatened
Bearded wheat grass	<i>Elymus trachycaulus</i>	State Threatened
Greene's rush	<i>Juncus greenii</i>	State Threatened

Gray beard-tongue	<i>Penstemon canescens</i>	State Threatened
Great Rhododendron	<i>Rhododendron maximum</i>	State Threatened
Leafy goldenrod	<i>Solidago squarrosa</i>	State Threatened
Seaside arrow-grass	<i>Triglochin maritimum</i>	State Threatened
American sweet-flag	<i>Acorus americanus</i>	Potentially Threatened
Broad-winged sedge	<i>Carex alata</i>	Potentially Threatened
Silvery sedge	<i>Carex argyrantha</i>	Potentially Threatened
Golden-fruited sedge	<i>Carex aurea</i>	Potentially Threatened
Bebb's sedge	<i>Carex bebbii</i>	Potentially Threatened
American chestnut (fruiting)	<i>Castanea dentate</i>	Potentially Threatened
Spotted coral-root	<i>Corallorhiza maculate</i>	Potentially Threatened
Round-leaved dogwood	<i>Cornus rugosa</i>	Potentially Threatened
Rock harlequin	<i>Corydalis sempervirens</i>	Potentially Threatened
Fringed gentian	<i>Gentianopsis crinita</i>	Potentially Threatened
Round-fruited pinweed	<i>Lechea intermedia</i>	Potentially Threatened
Weak spear grass	<i>Poa languida</i>	Potentially Threatened
Floating pondweed	<i>Potamogeton natans</i>	Potentially Threatened
Deer's-tongue arrowhead	<i>Sagittaria rigida</i>	Potentially Threatened
Canada buffalo-berry	<i>Shepherdia canadensis</i>	Potentially Threatened
Swamp oats	<i>Sphenopholis pennsylvanica</i>	Potentially Threatened
Shining Ladies'-tresses	<i>Spiranthes lucida</i>	Potentially Threatened
Great Plains Ladies' tresses	<i>Spiranthes magnicamporum</i>	Potentially Threatened
Lesser Ladies' tresses	<i>Spiranthes ovalis</i>	Potentially Threatened
Arbor vitae	<i>Thuja occidentalis</i>	Potentially Threatened

There are NO Federally-listed plant species that occur in CVNP.

Sources: Occurrences - National Park Service. Status - Ohio Department of Natural Resources:

<http://www.dnr.state.oh.us/dnap>

<http://www.dnr.state.oh.us/wildlife>



CUYAHOGA VALLEY NATIONAL PARK  
Environmental Assessment for  
Virginia Kendall Lake Sediment Removal

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**Appendix D**  
**Agencies and Organizations Consulted**

U.S. Fish and Wildlife Service  
Ecological Services Field Office  
6950 Americana Pkwy.  
Suite H  
Reynoldsburg, OH 43068-4127

U.S. Army Corps of Engineers  
Buffalo District  
1776 Niagara Street  
Buffalo, NY 14207

Ohio EPA/DSW  
P.O. Box 1049  
Columbus, OH 43216-1049

Ohio Historic Preservation Office  
567 E. Hudson St.  
Columbus, Ohio 43211