

**US Army Corps
of Engineers**
Baltimore District

**DRAFT FINDING OF NO SIGNIFICANT IMPACT AND
ENVIRONMENTAL ASSESSMENT
FOR ALVIN R. BUSH DAM MASTER PLAN**

**ALVIN R. BUSH DAM AND KETTLE CREEK RESERVOIR
CLINTON COUNTY, PENNSYLVANIA**

March 2022

This Environmental Assessment follows 40 CFR Parts 1500-1508, National Environmental Policy Act Implementing Regulations dated 1978

***Prepared by:* U.S. Army Corps of Engineers, Baltimore District
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Baltimore, Maryland 21201**

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FINDING OF NO SIGNIFICANT IMPACT

Environmental Assessment for the Alvin R. Bush Dam 2022 Master Plan

Clinton County, Pennsylvania

In accordance with the National Environmental Policy Act of 1969 (NEPA), including guidelines in 33 Code of Federal Regulations (CFR), Part 230 (Procedures for Implementing NEPA), the Baltimore District of the U.S. Army Corps of Engineers (USACE), has assessed the potential impacts of the 2022 Alvin R. Bush Dam Master Plan (hereafter, "2022 Master Plan"). The Alvin R. Bush Dam Project was authorized and constructed for the primary purposes of flood risk management along the West Branch Susquehanna River. Secondary uses of the project lands and waters include recreation and environmental stewardship of natural and cultural resources. Implementation of the 2022 Master Plan and proposed land use changes must recognize and be compatible with the primary project missions of flood risk management and recreation.

The Master Plan will provide guidance for stewardship of natural resources and management for long-term public access to, and use of, the natural resources at Alvin R. Bush Dam, including the land classification of the USACE-managed lands. Land classifications are established in the Master Plan and are fundamental to project land management. Land classifications (see Table S-1) provide for development and resource management consistent with authorized purposes and other federal laws. The Master Plan provides a comprehensive description of Alvin R. Bush Dam (also, "the project"), a discussion of factors influencing resource management and development, new resource management objectives, a synopsis of public involvement and input into the planning process, descriptions of existing development, and considerations of future development activities.

Under the No Action Alternative, USACE would take no action, and continue the operation and management of the project as outlined in the 1964 Master Plan. No new resource analysis or land reclassifications would occur.

The Proposed Action includes adopting the 2022 Master Plan to reflect changes in land management classifications, land uses, USACE regulations and guidance that have occurred since the 1964 Master Plan, and coordination with the public. The 2022 Master Plan refines land classifications to meet authorized project purposes and current resource objectives. This includes a mix of natural resource and recreation management objectives that are compatible with regional goals established by stakeholders and USACE during the master planning process, recognize outdoor recreation trends, and are responsive to public comment. The purpose of the action is to update the Alvin R. Bush Dam Master Plan. The action is needed as required by Engineer Regulation (ER) 1130-2-550 and Engineering Pamphlet (EP) 1130-2-550. The 2022 Master Plan is intended to serve as a comprehensive land and recreation management plan for the next 15 to 25 years and is needed to update the

Alvin R. Bush Dam Master Plan in accordance with January 2013 updates to ER and EP 1130-2-550.

Table S-1 identifies the required land and water surface classification changes associated with the Proposed Action.

Table S-1: Proposed Changes to Land Classifications at Alvin R. Bush Dam.

Classification	1964 Master Plan (acres)	2022 Master Plan (acres)	Description*
Project Operations	194.2	173.7	Lands are associated with the dam and spillway structures that are operated and maintained for fulfilling the flood risk management mission of the project. The Project Operations land classification was updated to include a section of the dam and spillway previously classified as intensive recreation. Although the mission-support areas of the project have not changed since the 1964 Master Plan, the land fitting the new criteria totals 173.7 acres (land providing direct support to the operations of the project's primary mission). One future project associated with this land classification is the stabilization of the spillway wall between the spillway crest and operations access road bridge. The stone wall has eroded over time, and continued erosion would negatively impact the spillway and Kettle Creek Road. The contract for construction will likely be awarded in FY 2023, with construction likely to begin in FY 2024. Dates are dependent on receipt of sufficient funding. Construction could take several years.
Intensive Recreation	141	0	This land classification was included in the 1964 Master Plan; however, it is not included in the 2022 Master Plan due to changes in USACE policies. The High Density Recreation land classification (below) includes Intensive Recreation management considerations.
High Density Recreation	0	173.9	Lands are currently developed for High Density recreational activities and include boat launches, day-use areas, and campgrounds. The new criteria for this land classification includes areas developed specifically to support intensive recreational activities. This land classification has been developed to support concentrated visitation and use of the recreational facilities they host.

Classification	1964 Master Plan (acres)	2022 Master Plan (acres)	Description*
			The High Density recreation area includes areas supporting the Upper Campground (e.g., access roads), the Kettle Creek State Park Administrative Complex, and the Day Use Area. Planned improvements by Kettle Creek State Park to the Upper Campground will likely fall entirely outside USACE-owned lands, with the exception of proposed improvements to an alternate access road to convert it to the main access road.
Multiple Resource Management Land			
Low Density Recreation	0	719.6	<p>Management of this land classification calls for maintaining a healthy, ecologically adapted vegetative cover to reduce erosion and improve aesthetics, while also supporting low-impact recreational opportunities such as bank fishing, hunting, hiking, wildlife viewing, and access to the shoreline. Hunting is allowed in select areas that are a reasonable and safe distance from High Density Recreational areas, dam operations, and adjacent residential properties. The new land classification criteria include areas where vegetation and wildlife management may be a secondary use, but where recreation is considered the predominant use.</p> <p>Future plans for existing low density recreation lands include improvements to parking areas near Walters Run and the Equestrian Campground, restroom facility upgrades, wayside exhibits and interpretive signage near the Equestrian Campground, improved access to Kettle Creek for wildlife viewing and fishing access, and continued wildlife habitat improvement work intended to enhance wildlife viewing opportunities.</p>
Wildlife and Forest Management	772	0	This land classification was included in the 1964 Master Plan. Per new guidance, this has been reclassified as two separate subclassifications under the Multiple Resource Management Land classification: Wildlife Management and Vegetative Management. However, it is not included as a land classification in the 2022 Master Plan. The Multiple Resource Management Land classification allows for the designation of the predominant use, with the understanding

Classification	1964 Master Plan (acres)	2022 Master Plan (acres)	Description*
			that other compatible uses may also occur on these lands. These lands have been reclassified to the predominant use of Low Density Recreation (above), which includes wildlife management.
Water Surface			
Conservation Pool	166	0	This land classification was included in the 1964 Master Plan; however, is not included in the 2022 Master Plan due to a change in land classification designations. The Water Surface classification now contains four sub classifications: "Designated No-Wake," "Restricted," "Fish and Wildlife Sanctuary" and "Open Recreation." Only two of the sub-classifications are applicable to Kettle Creek Reservoir: The Restricted and Open Recreation Area subclassifications.
Restricted	0	0.2	Restricted water surface includes those areas where recreational boating is prohibited or restricted for project operations, safety, and security purposes. The Restricted water surface at Kettle Creek Reservoir includes a small area around the dam and intake tower. This area is normally marked with standard USCG regulatory buoys stating that boats are excluded from the area. Physical barriers may be in place on the water. This change reflects new classification criteria and no actual change in water use. This area includes the vicinity of the intake tower, spillway, and outfall.
Open Recreation Area	0	160.8	Open Recreation area includes all water surface areas available for year-round or seasonal water-based recreational use. This change reflects new classification criteria and no actual change in water use. This area includes all water surface area other than "Restricted."
Designated No-Wake	0	0	Kettle Creek Reservoir only permits electric or non-motored vessels that are not likely to produce any appreciable wake. Therefore, a "No Wake" land classification was not necessary.
Total	1,273.2*	1,228*	

*Mapping for the Master Plan update has been compiled using the best information available and is believed to be accurate. Prior land classification acres are based on original acquisition real estate deed records and mapping completed for the 1964 Master Plan. Due to improved

mapping technologies, minor discrepancies exist when comparing prior and proposed land classification acreages. Discrepancies were primarily encountered between the prior land classification of Wildlife and Forest Management and the proposed land classification of Multiple Resource Management- Low Density Recreation.

USACE selected the Proposed Action because it would meet regional goals associated with good stewardship of land and water resources, meet regional recreation goals, and allow for continued use and development of project lands without violating national policies or public laws.

USACE used the Environmental Assessment (EA) and comments received from other agencies to determine whether the Proposed Action requires the preparation of an Environmental Impact Statement (EIS). This included assessment of environmental, social, and economic factors that are relevant to the recommended alternative considered in this assessment. The EA determined negligible impacts would occur to the following resources: air quality, greenhouse gasses and climate, noise, geology, cultural resources, groundwater, utilities, socioeconomics and environmental justice, and traffic and transportation (see Section 3.6 of the EA). No impacts are anticipated on water and biological resources from the implementation of the Proposed Action. Minor impacts could occur to water resources, and minor to moderate impacts could occur to soils and biological resources, during construction of future master planning projects (See Section 3 of the EA). Efforts would be made to reduce adverse impacts by using standard construction best management practices (BMPs) to reduce disturbance, soil erosion, and sedimentation into adjacent surface waters and wetlands. Construction and operations of future master planning projects would use BMPs associated with prevention of impacts to sensitive species recommended during future separate environmental review of projects proposed in the 2022 Master Plan. These may include removal of vegetation outside of nesting seasons for bird species of conservation concern discussed in Section 3.4 (April 10 – June 31), removal of trees greater than 5 inches in diameter that could serve as roosting habitats for bat species outside of the roosting season (April 1 to November 15), and establishment of buffer areas to protect northeastern bulrush habitat as discussed in Section 3.4. Construction of future master planning projects near active bald eagle nests would also maintain a buffer of at least 660 feet (200 meters) between project activities and the nest. If activity is closer than 660 feet, all construction activities within 660 feet of the nest would occur outside of the nesting season (January 1 to July 31 in Pennsylvania).

The Master Plan revision would result in beneficial impacts to land use and recreation. The new land classifications maintain high density and low density recreational areas and identify recreation as the primary land use in these areas. The classifications allow for future high- and low- density recreational development as appropriate in these land classification areas.

Conclusion

All applicable laws, executive orders, regulations, and local government plans were considered in the evaluation of alternatives. Based on this report, the reviews by other federal, state and local agencies, Tribes, input of the public, and the review of my staff, it is my determination that the Proposed Action alternative would not cause significant adverse effects on the quality of the human environment; therefore, preparation of an Environmental Impact Statement is not required.

Date

Esther S. Pinchasin
Colonel, U.S. Army
Commander and District Engineer

TABLE OF CONTENTS

FINDING OF NO SIGNIFICANT IMPACT..... i

ACRONYMS and abbreviations x

1 Introduction 1

 1.1 Project Background 1

 1.1.1 Project Location and Setting 1

 1.1.2 Project History 2

 1.2 Purpose and Need for the Action 2

 1.3 Scope of the EA 2

 1.4 Coordination and Public Review 3

2 Proposed Action and Alternatives..... 4

 2.1 Development of Alternatives..... 4

 2.1.1 Master Planning Process 4

 2.1.2 Screening Criteria 4

 2.2 Alternative 1: No Action 4

 2.3 Alternative 2: Proposed Action (Preferred Alternative) 4

3 Environmental Setting and Consequences..... 11

 3.1 Introduction 11

 3.1.1 Description of Baseline Data and Data Sources 11

 3.1.2 Approach for Analyzing Impacts 11

 3.1.3 Level of Resource Area Analysis 12

 3.2 Water Resources..... 12

 3.2.1 Affected Environment 12

 3.2.2 No Action – Environmental Consequences 14

 3.2.3 Proposed Action – Environmental Consequences 14

 3.3. Soils 15

 3.3.1 Affected Environment 15

 3.3.2 No Action – Environmental Consequences 16

 3.3.3 Proposed Action – Environmental Consequences 16

 3.4 Biological Resources 17

 3.4.1 Affected Environment 17

3.4.2	No Action – Environmental Consequences	21
3.4.3	Proposed Action – Environmental Consequences	21
3.5	Land Use and Recreation	22
3.5.1	Affected Environment	22
3.5.2	No Action – Environmental Consequences	23
3.5.3	Proposed Action – Environmental Consequences	23
3.6	additional resources not analyzed in this ea	24
3.6.1	Air Quality.....	24
3.6.2	Greenhouse Gases and Climate.....	24
3.6.3	Geology and Topography	25
3.6.4	Groundwater.....	25
3.6.5	Noise	25
3.6.6	Cultural Resources	25
3.6.7	Utilities	25
3.6.8	Hazardous Materials and Wastes	25
3.6.9	Socioeconomics and Environmental Justice.....	26
3.6.10	Traffic and Transportation.....	26
4	Cumulative Impacts	27
4.1.	Current and Reasonably Foreseeable Projects Within the ROI.....	27
4.2	Analysis of Cumulative Impacts	28
5	Irretrievable and Irreversible Commitment of Resources	29
6	Summary	30
7	References.....	33

APPENDIX A PUBLIC AND AGENCY INVOLVEMENT

LIST OF FIGURES

Figure 2-1. Map: Proposed Land Classifications at Alvin R. Bush Dam project site.

Figure 3-1. Map: Soil types at Alvin R. Bush Dam project site.

LIST OF TABLES

Table 2-1. Proposed Changes to Land Classifications at Alvin R. Bush Dam.

Table 3-1. Project area wetlands.

Table 3-2. Potential Water Resource Impacts from Implementation of Future Master Planning Projects.

Table 3-3. Potential Soil Resource Impacts from Implementation of Future Master Planning Projects.

Table 3-4. Federally Protected Threatened and Endangered Species that could occur at Bush Dam.

Table 3-5. Potential Biological Resource Impacts from Future Master Planning Projects.

Table 3-6. Potential Land Use and Recreation Resource Impacts from Changes to Land Classifications.

Table 6-1. Summary of Potential Environmental Effects.

Table 6-2. Conservation Measures for Future Master Planning Projects.

Table 6-3. Compliance of the Proposed Action with Environmental Protection Statutes and Other Environmental Requirements.

ACRONYMS AND ABBREVIATIONS

Acronym	Definition
2022 Master Plan	2022 Alvin R. Bush Dam and Kettle Creek Reservoir Master Plan
BMPs	Best Management Practices
BOD	Biological Oxygen Demand
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
DCNR	Pennsylvania Department of Conservation and Natural Resources
EA	Environmental Assessment
EO	Executive Order
EP	Engineering Pamphlet
ER	Engineer Regulation
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
GIS	Geographical Information System
NEPA	National Environmental Policy Act
NFIP	National Flood Insurance Program
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollution Discharge Elimination System
NRCS	Natural Resources Conservation Service
PADEP	Pennsylvania Department of Environmental Protection
PCD	Project Construction Datum
PDTGS	Pennsylvania Department of Topographic and Geologic Survey
PFBC	Pennsylvania Fish and Boat Commission
PGC	Pennsylvania Game Commission
Project	Alvin R. Bush Dam and Kettle Creek Reservoir Project
ROI	Region of Influence
SME	Subject Matter Expert
USACE	United States Army Corps of Engineers
USCG	United States Coast Guard
USEPA	United States Environmental Protection Agency
USFS	United States Forest Service
USFWS	United States Fish and Wildlife Service
VUM	Visitor Use Monitoring

1 INTRODUCTION

1.1 PROJECT BACKGROUND

The Alvin R. Bush Dam and Kettle Creek Reservoir Project (hereafter "project") was authorized and constructed under the Flood Control Act of 3 September 1954 for the purpose of controlling floods on Kettle Creek and West Branch Susquehanna River. Secondary uses of the project lands and waters include recreation and environmental stewardship of natural and cultural resources. The Master Plan for the project is the strategic land use management document that guides the comprehensive management and development actions related to project recreational, natural, and cultural resources throughout the life of the project. Implementation of the Master Plan and proposed land use changes must recognize and be compatible with the primary project mission of flood risk management.

The U.S. Army Corps of Engineers (USACE) produces and uses the Master Plan to guide the responsible stewardship of USACE-administered lands and resources for the benefit of present and future generations. The Master Plan presents an inventory and analysis of land resources, resource management objectives, land classifications, resource use plans for each land classification, current and projected park facility needs, an analysis of existing and anticipated resource use, and anticipated influences on overall project operation and management. Specific to the project, the Master Plan presents an evaluation of the assets, needs, and potential uses of the project reservoir and lands and provides direction for appropriate management, use, development, enhancement, protection, and conservation of the natural and man-made resources at the project. The Master Plan is guided by Engineer Regulation (ER) 1130-2-550 "Recreation Operations and Maintenance Policies," and Engineering Pamphlet (EP) 1130-2-550 "Recreation Operations and Maintenance Guidance and Procedures." Per guidance, USACE land classifications provide for development and resource management consistent with authorized purposes and other federal Laws.

USACE is proposing adoption of a new Master Plan at Alvin R. Bush Dam and Kettle Creek Reservoir to reflect changes that have occurred to the project, in the region, in recreation trends, and in USACE policy since the 1964 Master Plan was published. This Environmental Assessment (EA) considers the potential impacts to the natural and human environment from the implementation of the 2022 Alvin R. Bush Dam and Kettle Creek Reservoir Master Plan (hereafter "2022 Master Plan").

1.1.1 Project Location and Setting

Alvin R. Bush Dam is located on Kettle Creek in Clinton County, Pennsylvania, approximately 100 miles upstream of the confluence of the West Branch Susquehanna River and the Susquehanna River at Sunbury, Pennsylvania. The nearest town is Renovo, Pennsylvania, which is located approximately 14 miles southeast and downstream of the project.

All elevations cited in this EA, unless otherwise noted, are referenced to the original Project Construction Datum (PCD). The surface area of the lake is approximately 165 acres at the maintenance elevation of 842 feet PCD. Project lands (including the lake and surrounding property) occupy approximately 1,877 acres (approximately 1,273 acres acquired in fee and 603 flowage easement acres).

The project area is very remote and is characterized by narrow, flat bottom valleys with well-wooded hills that rise 800 feet or more to gently rolling plateau spurs. The hills are heavily

forested while the valleys are mostly open land. USACE leases all project lands acquired in fee to the Pennsylvania Department of Conservation and Natural Resources (DCNR) for the purposes of recreation, except for the Reservoir and Dam Operations lands. DCNR uses the leased land, along with additional acreage owned by DCNR, for the operation of Kettle Creek State Park.

1.1.2 Project History

The Kettle Creek Dam and Reservoir project was authorized by the Flood Control Act of 3 September 1954 in accordance with House Document 29, 84th Congress, 1st session, as a unit of the comprehensive flood control plan for the protection of communities in the West Branch Susquehanna River basin. Public Law 87-434, approved 21 April 1962 (76 Stat. 54), changed the name of Kettle Creek Dam to Alvin R. Bush Dam. This act affected the dam only, and the reservoir continues to be known as the Kettle Creek Reservoir.

The project was designed and constructed under the direction of USACE, Baltimore District. Construction of the dam and associated works began in May 1959 and the dam was operationally complete in January 1962.

The dam is constructed of rolled earth fill approximately 1,350 feet long and 165 feet high with a concrete chute spillway in the right abutment. It has a maximum base width of 850 feet and a top width of 25 feet. The outlet works consist of an intake structure, gate structure, transition section, tunnel, outlet structure, and outlet channel. Flow through the outlet works is controlled by three hydraulically operated slide gates. At spillway crest the reservoir inundates 1,430 acres and extends 8.8 miles upstream from the dam. The drainage area controlled by the dam is 226 square miles or 92 percent of the drainage area of Kettle Creek (USACE 1964).

1.2 PURPOSE AND NEED FOR THE ACTION

The purpose of the action is to update the Alvin R. Bush Dam Master Plan. The action is needed as required by ER and EP 1130-2-550. The 2022 Master Plan is intended to serve as a comprehensive land and recreation management plan for the next 15 to 25 years, which reflects changes that have occurred in outdoor recreation trends, regional land use, population, legislative requirements, USACE management policy, and wildlife habitat at the project since the previous 1964 Master Plan was completed.

1.3 SCOPE OF THE EA

USACE prepared this EA pursuant to the National Environmental Policy Act (NEPA), Council on Environmental Quality (CEQ) regulations (40 Code of Federal Regulations [CFR] 1500-1517) dated 1978, and the USACE implementing regulations, Policy and Procedures for Implementing NEPA, ER 200-2-2 (USACE 1988) to evaluate existing conditions and potential impacts of implementing the 2022 Master Plan. NEPA requires federal agencies to review potential environmental effects of federal actions that include the adoption of formal plans, such as master plans, approved by federal agencies upon which future agency actions will be based. Since the NEPA process for this action began in June 2019, this EA follows the NEPA regulations in place at that time and does not apply the NEPA regulations that became effective on September 14, 2020. See 40 C.F.R. 1506.13.

Alternatives considered within this EA focus on the proposed land classifications as presented in the 2022 Master Plan and the types of future development projects that could occur within

the land classifications. The EA does not consider implementation of specific projects identified within the 2022 Master Plan during the master planning process as those projects are conceptual in nature, nor does it consider specific future development opportunities for leased areas, such as Kettle Creek State Park. USACE would conduct further NEPA analysis on projects on USACE owned land identified within the 2022 Master Plan once funding is available and detailed project planning and design occur.

1.4 COORDINATION AND PUBLIC REVIEW

USACE coordinated with agencies, organizations, and members of the public with a potential interest in the Proposed Action during the development of the 2022 Master Plan and in preparation of this EA. Appendix A provides a record of public involvement and agency coordination related to this EA.

A Public Notice indicating that USACE would be preparing an Environmental Assessment for the 2022 Master Plan was published on June 7, 2019, to the USACE web site and was distributed to project stakeholders, agencies, and the public. In addition, local news website "LockHaven.Com" published an article detailing the upcoming EA and Master Plan on July 12, 2019 (Appendix A). No public comments were received.

Agency coordination was conducted by USACE with the U.S. Fish and Wildlife Service (USFWS) through the Information, Planning, and Consultation (IPaC) online system to ensure compliance with Section 7 of the ESA. A follow up letter requesting coordination was sent to USFWS on February 16, 2021. Review was also performed by the Pennsylvania Game Commission (PGC), Pennsylvania Fish and Boat Commission (PFBC), DCNR, and Pennsylvania Department of Environment (PADEP), Pennsylvania Department of Topographic and Geologic Survey (PDTGS), and USFWS through the Pennsylvania Natural Diversity Index website on February 16, 2021.

{This section will be updated as additional coordination and public review occur.}

Information on the progress of the Master Plan and instructions on participating in the public comment process were published on the Project's web page:
<https://www.nab.usace.army.mil/Missions/Dams-Recreation/Alvin-R-Bush/ARB-Master-Plan-Revision/>

The 2022 Master Plan and EA were made available for public review for a period of 30 days beginning on [date] and ending on [date].

2 PROPOSED ACTION AND ALTERNATIVES

2.1 DEVELOPMENT OF ALTERNATIVES

USACE identified alternatives considered within this EA as a part of the master planning process. This Chapter describes the master planning process, screening criteria for alternative development, and the alternatives carried forth for detailed analysis within this EA.

2.1.1 Master Planning Process

USACE guidance recommends the establishment of resource goals and objectives for the purposes of development, conservation, and management of natural, cultural, and man-made resources at a project location. Goals describe the desired end state of overall management efforts, whereas objectives are concise statements describing measurable and attainable management activities that support the stated goals. Goals and objectives are hierarchical guidelines for obtaining maximum public benefits while minimizing adverse impacts on the human environment and are developed in accordance with 1) authorized project purposes, 2) applicable laws and regulations, 3) resource capabilities and suitability, 4) regional needs, 5) other governmental plans and programs, and 6) expressed public desires.

The 2022 Master Plan establishes the following management goals for Alvin R. Bush Dam and Kettle Creek Reservoir:

- **Goal A** – Provide the best management practices to respond to regional needs, resource capabilities and capacities, and expressed public interests consistent with authorized project purposes.
- **Goal B** – Protect and manage project natural and cultural resources through sustainable environmental stewardship programs.
- **Goal C** – Provide public outdoor recreation opportunities that support project purposes and public interests while sustaining project natural resources.
- **Goal D** – Recognize the unique qualities, characteristics, and potentials of the Project.
- **Goal E** – Provide consistency and compatibility with national objectives and other state and regional goals and programs.

2.1.2 Screening Criteria

For an alternative to be considered viable, it must be compatible with the primary project mission of flood risk management. In addition, the alternative must meet management goals and objectives and USACE-wide Environmental Operating Principles. Based on these criteria, this EA evaluates the No Action Alternative and the Proposed Action Alternative.

2.2 ALTERNATIVE 1: NO ACTION

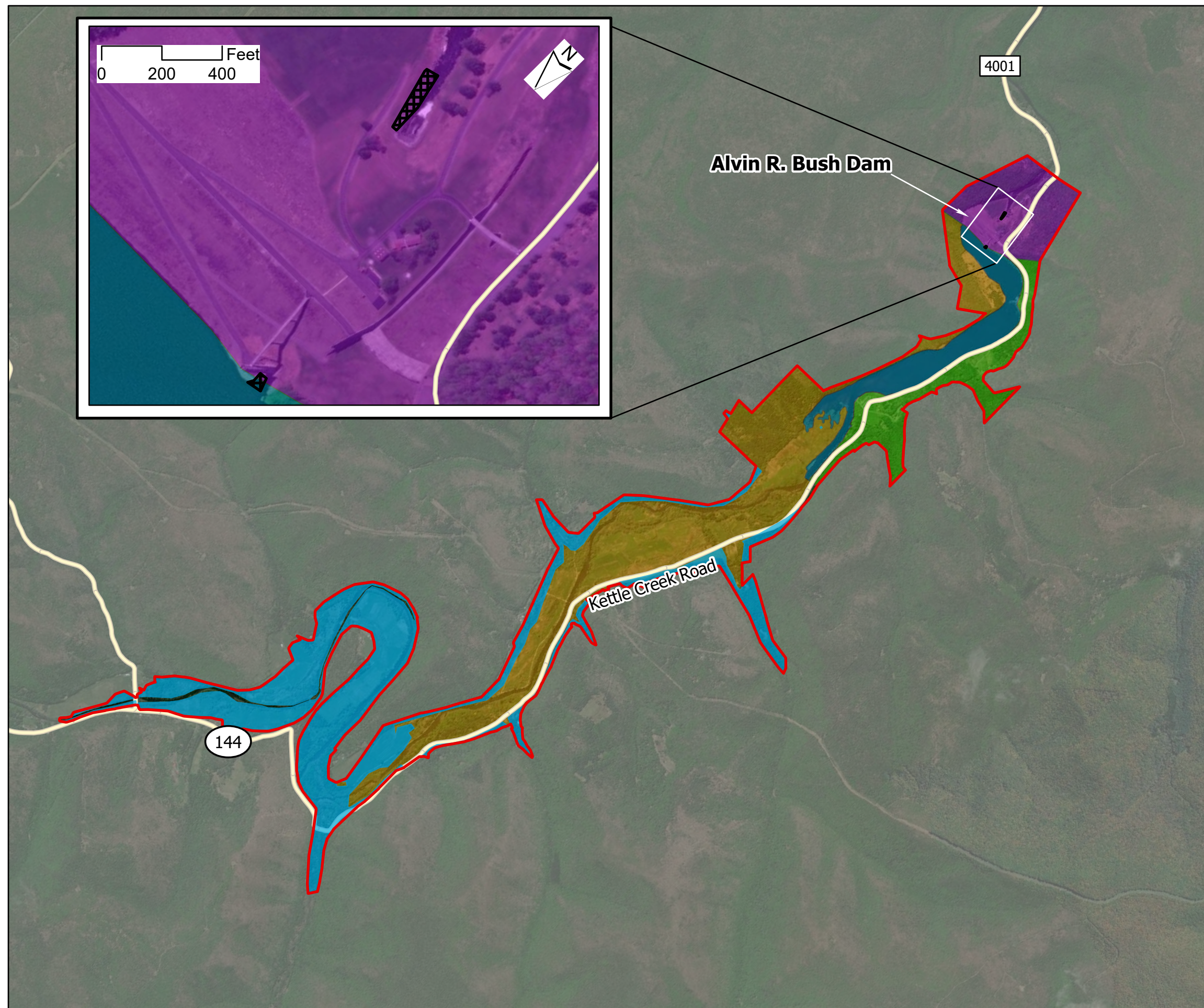
The No Action Alternative serves as a basis for comparison to the anticipated effects of the other action alternatives. Under the No Action Alternative, USACE would not adopt the 2022 Master Plan and continue the operation and management of the project as outlined in the 1964 Master Plan. No new land classifications would be designated. The No Action alternative would not meet the purpose and need for the action and would not be in compliance with current USACE regulations and guidance.

2.3 ALTERNATIVE 2: PROPOSED ACTION (PREFERRED ALTERNATIVE)

Under Alternative 2 or the Proposed Action Alternative, USACE would implement the 2022 Master Plan and associated changes in land management designations in compliance with

USACE regulations and guidance. This alternative would revise the land classifications to updated USACE standards and include resource objectives that reflect current and projected needs compatible with regional goals. Required changes associated with the Proposed Action include reclassifications of land, classification of the water surface, and adoption of new resource management and recreation objectives. Figure 2-1 depicts the proposed new land classifications within the 2022 Master Plan. Table 2-1 quantifies the proposed land and water surface reclassifications and provides a description of the land classification along with types of future projects that could occur within each land classification, as applicable. The Proposed Action would update the 2022 Master Plan to be compliant with ER and EP 1130-2-550 and would meet the goals and objectives outlined in the 2022 Master Plan. Therefore, this alternative is the Preferred Alternative and will be carried forward as the Proposed Action.

Figure 2-1 Proposed Land Classifications

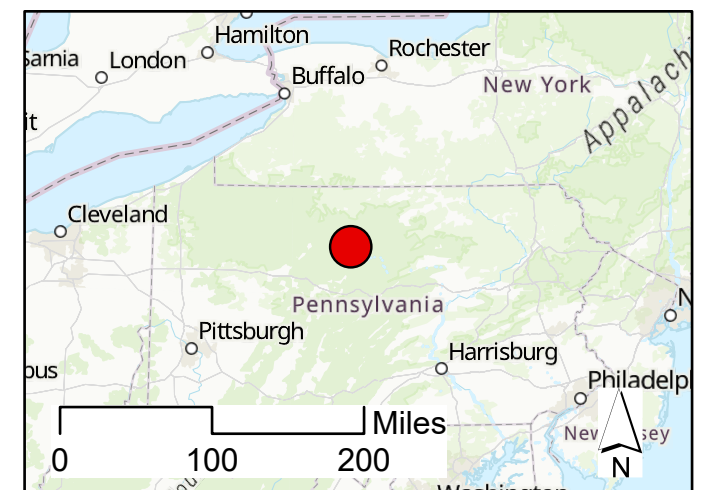


Alvin R. Bush Dam Master Plan

Proposed Land Classifications

Legend

- Bush Study Area
- Flowage Easement
- Proposed Land Classifications**
- Project Operations
- High Density Recreation
- Multiple Resource Management Lands**
- Low Density Recreation
- Water Surface**
- Open Recreation
- Restricted Area



Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community, Sources: Esri, HERE, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community

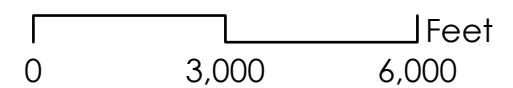


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Intensive Recreation	141	0	<p>This land classification was included in the 1964 Master Plan; however, it is not included in the 2022 Master Plan due to changes in USACE policies. The High Density Recreation land classification (below) includes Intensive Recreation management considerations.</p>
High Density Recreation	0	173.9	<p>Lands are currently developed for High Density recreational activities and include boat launches, day-use areas, and campgrounds. The new criteria for this land classification has a more conservative definition of recreation areas; those areas developed specifically to support recreation. This land classification has been developed to support concentrated visitation and use of the recreational facilities they host. The High Density recreation area includes areas supporting the Upper Campground (e.g., access roads), the Kettle Creek State</p>

Classification	1964 Master Plan (acres)	2022 Master Plan (acres)	Description*
			Park Administrative Complex, and the Day Use Area. Planned improvements by Kettle Creek State Park to the Upper Campground will likely fall entirely outside USACE-owned lands, with the exception of proposed improvements to an alternate access road to convert it to the main access road. This project would be evaluated under a separate NEPA document.
Multiple Resource Management Land			
Low Density Recreation	0	719.6	<p>Management of this land classification calls for maintaining a healthy, ecologically adapted vegetative cover to reduce erosion and improve aesthetics, while also supporting low-impact recreational opportunities such as bank fishing, hunting, hiking, wildlife viewing, and for access to the shoreline. Hunting is allowed in select areas that are a reasonable and safe distance from High Density Recreational areas, dam operations, and adjacent residential properties. The new land classification criteria include areas where vegetation and wildlife management may be secondary to the predominant use of recreation.</p> <p>Future plans for existing low density recreation lands include improvements to parking areas near Walters Run and the Equestrian Campground, restroom facility upgrades, wayside exhibits and interpretive signage near the Equestrian Campground, improved access to Kettle Creek for wildlife viewing and fishing access, and continued wildlife habitat improvement work intended to enhance wildlife viewing opportunities. These future plans/projects would be evaluated under separate NEPA documents.</p>
Wildlife and Forest Management	772	0	This land classification was included in the 1964 Master Plan. Per new guidance, this has been reclassified as two separate subclassifications under the Multiple Resource Management Land classification: Wildlife Management and Vegetative Management. However, neither of these classifications are included in the 2022 Master Plan. The Multiple Resource Management Land classification allows for the designation of the predominant use, with the understanding

Classification	1964 Master Plan (acres)	2022 Master Plan (acres)	Description*
			that other compatible uses may also occur on these lands. These lands have been reclassified to the predominant use of Low Density Recreation subclassification (above), which includes wildlife management considerations.
Water Surface			
Conservation Pool	166	0	This land classification was included in the 1964 Master Plan; however, is not included in the 2022 Master Plan due to a change in land classification designations. The Water Surface classification now contains four sub classifications: "Designated No-Wake," "Restricted," "Fish and Wildlife Sanctuary" and "Open Recreation." Only two of the sub-classifications are applicable to Kettle Creek Reservoir: The Restricted and Open Recreation Area subclassifications.
Restricted	0	0.2	Restricted water surface includes those areas where recreational boating is prohibited or restricted for project operations, safety, and security purposes. The Restricted water surface at Kettle Creek Reservoir includes a small area around the dam and intake tower. This area is normally marked with standard USCG regulatory buoys stating that boats are excluded from the area. Physical barriers may be in place on the water. This change reflects new classification criteria and no actual change in water use. This area includes the vicinity of the intake tower, spillway, and outfall.
Open Recreation Area	0	160.8	Open Recreation area includes all water surface areas available for year-round or seasonal water-based recreational use. This change reflects new classification criteria and no actual change in water use. This area includes all water surface area other than "Restricted."
Designated No-Wake	0	0	Kettle Creek Reservoir only permits electric or non-motored vessels that are not likely to produce any appreciable wake. Therefore, a "No Wake" land classification was not necessary.
Total	1,273.2**	1,228**	

** Specific projects mentioned within this land classification discussion have not been designed, funded, or approved. At such time that these projects or others move forward, additional NEPA compliance documentation will be undertaken as part of the planning process.*

***Mapping for the Master Plan update has been compiled using the best information available and is believed to be accurate. Prior land classification acres are based on original acquisition real estate deed records and mapping completed for the 1964 Master Plan. Due to improved mapping technologies, minor discrepancies exist when comparing prior and proposed land classification acreages. Discrepancies were primarily encountered between the prior land classification of Wildlife and Forest Management and the proposed land classification of Multiple Resource Management- Low Density Recreation.*

3 ENVIRONMENTAL SETTING AND CONSEQUENCES

3.1 INTRODUCTION

This chapter describes the natural and human environments that exist at the project and the potential impacts of the No Action Alternative and Proposed Action (Preferred Alternative), outlined in Chapter 2. The description of baseline data sources and an approach for analyzing impacts are discussed in Sections 3.1.1 and 3.1.2, respectively.

Several resources were determined not to be affected by the Proposed Action; therefore, a detailed analysis of these topics is not presented in this chapter. This chapter provides a discussion of resources analyzed within the EA, and justification for those resources dismissed from further analysis.

3.1.1 Description of Baseline Data and Data Sources

The EA used the following types of data to characterize the affected environment of the project:

- Geographical Information System (GIS), including waters and wetlands inventory, floodplain mapping, and vegetation;
- Aerial photography (ESRI, Google Earth);
- Regional and local reports: including Natural Resources Conservation Service (NRCS) Soil Surveys and previous studies conducted at the project;
- Agency databases including USFWS, the U.S. Environmental Protection Agency (USEPA), and Pennsylvania resource agencies;
- Information presented within the 2022 Master Plan; and
- Agency coordination

3.1.2 Approach for Analyzing Impacts

Impacts (consequence or effect) can either be beneficial or adverse and either directly related or indirectly related to the action. Direct effects are caused by the action and occur at the same time and place (40 CFR § 1508.8(a) (2019)). Indirect effects are caused by the action and are later in time or further removed in distance but are still reasonably foreseeable (40 CFR § 1508.8(b)(2019)). The alternatives may create temporary (less than 1 year), short-term (up to 3 years), long term (3 to 10 years), or permanent effects.

An impact is considered significant depending on the context in which the impact occurs and the intensity of the impact (40 CFR § 1508.27 (2019)). Context refers to the setting in which the impact occurs and may include society, the affected region, the affected interests, and the locality. Resource impacts can vary in degree or magnitude from a slightly noticeable change to a total change in the environment. This analysis classifies the intensity of impacts as beneficial, negligible, minor, moderate, or significant.

As stated in Section 1.3, Scope of the EA, the analysis focuses on the proposed land classifications as presented in the 2022 Master Plan and the types of future development projects that could occur within each land classification. Specific future projects within the 2022 Master Plan are qualitatively considered within this EA, as these projects are conceptual in nature. USACE would conduct further NEPA analysis on projects identified within the 2022 Master Plan once funding is available and detailed project plans and design are provided by DCNR and its partners.

3.1.3 Level of Resource Area Analysis

All potentially relevant resource areas were initially considered for analysis in this EA. Consistent with NEPA implementing regulations and guidance, USACE focused the analysis on topics with the greatest potential for environmental impacts. This sliding-scale approach is consistent with NEPA (40 CFR § 1502.2(b)(2019)), under which impacts, issues, and related regulatory requirements are investigated and addressed with a degree of effort commensurate with their importance. Some resource topics are limited in scope due to the lack of direct effect from the Proposed Action on the resource or because that resource is not located within the project. For example, the Kettle Creek Reservoir watershed does not have federally designated Wild or Scenic Rivers, so this resource is not included in the analysis.

In conducting this analysis, a qualified subject matter expert (SME) from USACE reviewed the potential direct and indirect effects of the No Action Alternative and the Proposed Action relative to each environmental and socioeconomic resource. The SME analyzed the existing conditions of each resource area within the Proposed Action's region of influence (ROI). Through this analysis, it was determined that, for several resource areas, negligible or no effects would occur. This included air quality, greenhouse gases and climate, noise, geology, groundwater, cultural resources, utilities, socioeconomics and environmental justice, and traffic and transportation. Therefore, these resources were eliminated from further analysis. Additional detail is provided in Section 3.6.

3.2 WATER RESOURCES

3.2.1 Affected Environment

3.2.1.1 Surface Waters and Wetlands

The Bush Dam is located on Kettle Creek approximately 8.4 miles upstream of its confluence with the West Branch Susquehanna River at Westport, PA. Bush Dam controls approximately 226 square miles, or 92 percent of the Kettle Creek Watershed. At the maintenance elevation of 842 feet PCD, Kettle Creek Reservoir has a surface area of 160 acres and contains 1,590 acre-feet of water (USACE 1964).

Kettle Creek's principal tributaries include Hammersly Fork and Little Kettle Creek. Upstream in the watershed are two small dams: one is a 4-foot high water supply dam on Elk Lick Run, and the other is the 15-foot high recreational Old Bull Dam on Kettle Creek. These have minimal storage and their effect on Bush Dam is negligible. There are no major water control structures on Kettle Creek downstream of the Bush Dam or on the West Branch Susquehanna River below the confluence with Kettle Creek. There is a 6-foot high recreation dam at Kettle Creek State Park just below the dam, but it does not affect the regulation of Bush Dam (USACE 1987).

Wetlands are common in the flat-bottom valley of the project area, mostly north of Kettle Creek Reservoir. A total of 56 freshwater emergent, freshwater forested/scrub shrub, and pond wetlands occur within the project area totaling approximately 60 acres, or 3 percent of the project's land area (Table 3-1; USFWS 2020, USACE n.d.).

Table 3-1. Project area wetlands.

Wetland Type	Acres	Percent of AOI
Freshwater Emergent Wetland	46.3	2.5%
Freshwater Forested/Shrub Wetland	11.8	0.6%
Freshwater Pond	1.8	0.1%
Total	59.9	3.2%
AOI	1872.9	

3.2.1.2 Water Quality

The watershed controlled by the Bush Dam is approximately 95 percent forested, and nearly all the forested lands are state forests, with a small amount of farming in the basin (USACE 1964). Sedimentation is, however, an issue within the lake. The watershed receives 40 inches of precipitation, and 25 to 50 inches of snow on average annually, depending on elevation. The water quality of Kettle Creek Reservoir is generally very good; however, some concerns exist. These include a buildup of submerged aquatic vegetation and heavy sedimentation, both of which create problems for boaters in the summer and phosphate concentrations consistently higher than U.S. Environmental Protection Agency water quality maximum levels.

Water quality is not a specifically authorized project purpose for Bush Dam; however, downstream water quality is influenced in two ways. First, acid mine drainage introduced to West Branch Susquehanna is diluted by water released from Bush Dam. Historically, dam releases were deliberately made for the purpose of mitigating acid slug formation, or the potential sudden release of concentrated acidic water from mines following a rain event. However, this has not been needed in recent years as the occurrence of acid slugs is less frequent. Second, flow augmentation from the Dam supports a healthy aquatic environment and fisheries downstream, especially during low flow periods (USACE 2019, DCNR 1996).

The Pennsylvania Department of Environmental Protection (PADEP) lists Kettle Creek Reservoir as “Impaired” for “Fish Consumption” and “Aquatic Life.” Fish consumption is impaired from atmospheric deposition of mercury, and aquatic life is impaired by low dissolved oxygen from natural sources. Potential sources of contaminants or nutrient enrichments include a wastewater treatment facility at Kettle Creek State Park that has been cited for violations to Biological Oxygen Demand (BOD), chlorine, fecal coliform, and total suspended solids and five active Marcellus Shale hydraulic fracturing wells within the watershed (USACE 2019).

3.2.1.3 Floodplains

Floodplains are areas of land adjacent to rivers and streams that convey overflows during flood events. The Federal Emergency Management Agency (FEMA) defines a floodplain as any land area susceptible to being inundated by water from any source (FEMA 2017). FEMA prepares Flood Insurance Rate Maps (FIRMs) that delineate flood hazard areas, such as floodplains, for communities. These maps are used to administer floodplain regulations and to reduce flood damage. Typically, these maps indicate the locations of 100-year floodplains, which are areas with a 1 percent chance of flooding occurring in any single year. Executive Order (EO) 11988, Floodplain Management, states that actions by federal agencies are to avoid to the extent possible the long- and short-term adverse impacts associated with the

occupancy and modification of floodplain development wherever there is a practicable alternative.

The National Flood Insurance Program (NFIP) requires local jurisdictions to issue permits for all development in the 100-year floodplain. Development is broadly defined to include any human-made change to land, including grading, filling, clearing, dredging, extraction, storage, subdivision of land, and construction and improvement of structures and buildings. For any development to take place, all necessary permits must be obtained, which may include federal, state, and local permits. To be properly permitted, proposed development may not increase flooding or create a dangerous situation during flooding, especially on another person's property. If a structure is involved, it must be constructed to minimize damage during flooding. The PADEP is responsible for issuing floodplain development permits in Pennsylvania.

The 100-year floodplain is primarily restricted to the immediate shores of Kettle Creek Reservoir and its tributaries. FEMA classifies this area as Zone A.

3.2.2 No Action – Environmental Consequences

Under the No Action Alternative, USACE would not implement the 2022 Master Plan and no new land classifications or future development projects within the proposed 2022 Master Plan would occur. The operation and management of Kettle Creek Reservoir and USACE lands would continue as outlined in the 1964 Master Plan. Although this alternative does not result in a 2022 Master Plan that meets current regulations and guidance, there would be no significant impacts to water resources on project lands.

3.2.3 Proposed Action – Environmental Consequences

The reclassifications required for the Proposed Action would not have impacts on water resources. Implementation of future master planning projects may result in negligible to minor adverse and beneficial water resource impacts. Table 3-2 summarizes potential effects to surface waters and wetlands from implementation of future master planning projects. These master planning projects are conceptual in nature and implementation of these would require further analysis under a separate NEPA document.

Table 3-2. Potential Water Resource Impacts from Implementation of Future Master Planning Projects

Classification	Potential for Impact
Project Operations	Minor impact. Construction and operations of future master planning projects (i.e., spillway wall construction) would use BMPs associated with prevention of erosion and control of stormwater runoff. This includes obtaining a National Pollution Discharge Elimination System (NPDES) permit for projects involving earth disturbances exceeding one acre. Surface waters and wetlands, if present, would be avoided or permitted through the Section 404 process. USACE would consider the presence of the 100-year floodplain in design and siting future master planning projects within floodplain areas.
Intensive Recreation	No impact. No impacts to water resources would occur from loss of this land classification.

Classification	Potential for Impact
High Density Recreation	<p>Minor impact. Future projects would occur within and adjacent to existing developed and intensively used areas, specifically to support recreation. Approximately 5,700 linear feet of streams exists within this land classification, and a majority of the area is classified in the FEMA Floodplain Zone A.</p> <p>Construction and operations of future master planning projects would use BMPs associated with prevention of erosion and control of stormwater runoff. This includes obtaining a National Pollution Discharge Elimination System (NPDES) permit for projects involving earth disturbances exceeding one acre. Surface waters and wetlands, if present, would be avoided or permitted through the Section 404 process. USACE would consider the presence of the 100-year floodplain in design and siting future master planning projects within floodplain areas.</p>
Low Density Recreation	<p>Minor impact. Future projects would have minor impacts on water resources, primarily resulting from construction of improved parking areas, restroom upgrades, exhibits and interpretive signing, and improvement of shoreline access trails. Designated trails and shoreline access points, however, would reduce erosion elsewhere at the project by establishing additional designated access points.</p> <p>Construction and operations of future master planning projects would use BMPs associated with prevention of erosion and control of stormwater runoff. This includes obtaining a National Pollution Discharge Elimination System (NPDES) permit for projects involving earth disturbances exceeding one acre. Surface waters and wetlands, if present, would be avoided or permitted through the Section 404 process. USACE would consider the presence of the 100-year floodplain in design and siting future master planning projects within floodplain areas.</p>
Wildlife and Forest Management	<p>No impact. No impacts to water resources would occur from loss of this land classification. Any wildlife or vegetation management currently taking place will continue to occur under the Low Density Recreation land classification.</p>
Conservation Pool	<p>No Impact. No impacts to water resources would occur from loss of this land classification.</p>
Restricted	<p>No Impact. No impacts to water resources would occur.</p>
Open Recreation Area	<p>No Impact. No change in water use is expected; therefore, no impact would occur.</p>

3.3. SOILS

3.3.1 Affected Environment

In the immediate area adjacent to Bush Dam and Kettle Creek reservoir, soils are primarily mapped as belonging to the very steep, very to extremely stony Ungers-Meckesville complex, Hazleton-Laidig complex, and Leck Kill channery silt loam (UpF, HoF, and LmD), which are well drained and have relatively low erodibility. Also present in this area are the very steep and moderately erodible and well drained, Hustontown silt loam (HuD) and the excessively drained, Rock outcrop-Rubble land complex (RaF). Areas further north on the valley floor

bordering Kettle Creek are mapped primarily as Barbour-Craigsville complex (well drained, low erodibility) and Atkins silt loam (Bb and At) (poorly drained), both of which are very gently sloping.

Additional soil types within the Bush Dam property lines include the very steeply sloped and very stony Meckesville channery loam (MhD), moderate to very steep Allegheny silt loam (AfD), slightly-sloped Ungers loam, Calvin channery silt loam, and Hustontown silt loam (UnB, CaB, and HuB) and Craigsville gravelly loam (Cr), which are well drained and low to moderately erodible (NRCS n.d.(b)).

Soils within the area of interest considered Pennsylvania Farmland of Statewide importance, including At, Bb, CaB, and Cr, total approximately 43.6 percent. Additionally, 0.5 percent of soils in the Area of Interest are categorized as Prime Farmland, including UnB and HuB (NRCS n.d.(a)).

3.3.2 No Action – Environmental Consequences

Under the No Action Alternative, USACE would not implement the 2022 Master Plan and no new land classifications or future development projects within the proposed 2022 Master Plan would occur. The operation and management of Kettle Creek Reservoir and USACE lands would continue as outlined in the 1964 Master Plan. Although this alternative does not result in a 2022 Master Plan that meets current regulations and guidance, there would be no significant impacts to soil resources on project lands.

3.3.3 Proposed Action – Environmental Consequences

The reclassifications required for the Proposed Action would result in potentially minor adverse resource impacts, primarily within the High Density Recreation land classification. Use within these areas could directly impact soils through compaction and increased erosion potential due to recreational use. Implementation of future master planning projects could result in minor, adverse impacts to soils. Table 3-3 summarizes potential effects to soil resources from the implementation of future master planning projects. These master planning projects are conceptual in nature and implementation would require further analysis under a separate NEPA document.

Table 3-3. Potential Soil Resource Impacts from Implementation of Future Master Planning Projects

Classification	Potential for Impact
Project Operations	Minor impact. Construction and operations of future master planning projects (i.e., spillway wall construction) would use BMPs associated with prevention of and control of erosion.
Intensive Recreation	No impact. No impacts to soil resources would occur from loss of this land classification.
High Density Recreation	Minor impact. Future projects would occur within and adjacent to existing developed and intensively used areas, specifically to support recreation. Activities from implementation of future development projects could result in the loss of soils. The Cr soil type found within this area is considered Pennsylvania Farmland of Statewide Importance. Potential impacts, however, would be concentrated within areas already developed intensively for

Classification	Potential for Impact
	recreation, and therefore no new losses to Farmland of Statewide importance are anticipated. Construction and operations of future master planning projects would use BMPs associated with prevention of and control of erosion. USACE would consider the potential for erosion and occurrence of Prime Farmland soils in design and siting future master planning projects.
Low Density Recreation	Minor Impact. Future projects would have minor impacts on soil resources, primarily resulting from improvements to parking areas, replacement of a restroom facility, installation of information kiosks and exhibits, and potential minor erosion due to trail use and access to shoreline areas. Designated trails and shoreline access points, however, would reduce erosion elsewhere at the project by concentrating designated access points. Likewise, improvements to parking areas is intended to concentrate parking and limit use of the roadside or other informal parking areas. Construction and operations of future master planning projects would use BMPs associated with prevention of and control of erosion. USACE would consider the potential for erosion and occurrence of Prime Farmland soils in design and siting future master planning projects
Wildlife Management	No impact. No impacts to soil resources would occur from loss of this land classification.
Conservation Pool	No Impact. No impacts to soil resources would occur from loss of this land classification.
Restricted	No Impact. No impacts to soil resources would occur.
Open Recreation Area	No Impact. No impacts to soil resources would occur.

3.4 BIOLOGICAL RESOURCES

3.4.1 Affected Environment

3.4.1.1 Vegetation

The Alvin R. Bush Dam project supports numerous types of vegetation and habitats, including wetlands, open water, grassy areas, fields, and a variety of forest types, including deciduous and evergreen forests. According to the U.S. Forest Service (USFS), North Central Pennsylvania is characterized by more forest than any other cover type. The primary forest type is deciduous forests, with significant amounts of mixed and evergreen forests. Other major cover types include pasture/hay and cultivated crops. Nearly 50 percent of the forests in North Central Pennsylvania belong to the maple/beech/birch group (50 percent of forests). The primary species within this group include red maple (*Acer rubrum*), sugar maple (*A. saccharum*), and black cherry (*Prunus serotina*). Other forest groups present in North Central Pennsylvania are oak/hickory, white pine/red pine/hemlock, and aspen/birch groups.

Between 2009 and 2014, North Central Pennsylvania gained approximately 40,000 acres of forest, but lost approximately 70,000 acres, primarily due to development and conversion to agriculture, for a net decrease in forest acres of 0.6 percent. While most Pennsylvania forests

are privately owned, North Central Pennsylvania has more federal and state-owned forests than any other Pennsylvania Region, as well as a high degree of forest connectivity. This is primarily due to the presence of the Allegheny National Forest, which covers approximately 513,000 acres of land (USFS 2017).

Three types of wetlands are present throughout the Project and include freshwater emergent, forested/shrub, and freshwater pond systems (USFWS 2020). Each wetland classification creates a unique ecosystem for specific types of wetland plants and wildlife. In addition, wetland vegetation provides several beneficial uses, which include enhancing water quality, filtering runoff, preventing localized erosion, and providing habitat and food sources for wildlife.

3.4.1.2 Wildlife and Fisheries

Kettle Creek Reservoir is remote and supports many habitat types, which attract several species of wildlife. Mammalian wildlife found on Reservoir lands include black bear (*Ursus americanus*), elk (*Cervus canadensis*), white-tailed deer (*Odocoileus virginianus*), bobcat (*Lynx rufus*), river otter (*Lontra canadensis*), fisher (*Pekania pennanti*), grey squirrel (*Sciurus carolinensis*) and groundhogs (*Marmota monax*). Common avian species include a variety of waterfowl and wading birds, woodpeckers, and songbirds, as well as common game species including wild turkey (*Meleagris gallopavo*) and ruffed grouse (*Bonasa umbellus*).

Bald eagles (*Haliaeetus leucocephalus*) were removed from the federal endangered species list in August 2007, and from Pennsylvania's list in 2013. Although this species is not listed as an endangered or threatened species, it is protected under the Bald and Golden Eagle Protection Act, as noted by the United States Fish and Wildlife Service (USFWS) in Appendix A. According to Cornell Lab of Ornithology's Ebird.org (n.d.), both immature and adult bald eagles were sited at Kettle Creek Reservoir during the 2020 breeding season. Bald eagle nests are observed within the project area each breeding season. Construction of future master planning projects near active bald eagle nests would maintain a buffer of at least 660 feet (200 meters) between project activities and the nest. If activity is closer than 660 feet, all construction activities within 660 feet of the nest would occur outside of the nesting season (January 1 to July 31 in Pennsylvania).

The timber rattlesnake (*Crotalus horridus*), which is spotted regularly on project lands is a state protected species in Pennsylvania. Killing of timber rattlesnakes is prohibited by PFBC. Timber rattlesnakes are large snakes of the pit viper family that can be identified by their "V"-shaped dark bands on a grey, yellow, black, or brown body. In Pennsylvania, timber rattlesnakes are typically found at elevations greater than 1800 feet. They prefer southern-facing upland forested areas with talus slopes, rocky ledges and outcrops, and boulder fields, which are used for basking (thermoregulation), and dens. Threats to timber rattlesnake populations include human activities related to habitat alteration, overhunting and poaching (Urban 2014).

Kettle Creek Reservoir is a popular trout and bass fishing area, and many other species of fish including brown bullhead (*Ameiurus nebulosus*), sucker (Catostomidae), and many species of panfish can be found in the reservoir (DCNR 2018).

3.4.1.3 Threatened and Endangered Species

3.4.1.3.1 Federally Listed Species

As of 2020, 3 federally listed threatened (FT) or endangered (FE) species are known to exist within the project impact area, the Indiana bat (*Myotis sodalis*), the Northern long-eared bat (*Myotis septentrionalis*), and northeastern bulrush (*Scirpus ancistrochaetus*) (Appendix A). Table 3-4 provides information on these species.

A review of the USFWS Information for Planning and Conservation database identified one species of migratory bird of conservation concern that have the potential to occur within the project area, other than the bald eagle previously mentioned: the black-capped chickadee (*Poecile atricapillus*). The Migratory Bird Treaty Act (MBTA) (16 U.S. Code 703-712) prohibits the take (harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect), or attempt to engage in any such conduct, of any migratory bird without authorization from the USFWS. Unintentional take includes disturbance to species and nests during ground-clearing activities, such as clearing, where unobserved nests of migratory birds could be located. The breeding season for black-capped chickadee is April 10 through July 31.

3.4.1.3.2 Pennsylvania state Threatened and Endangered Species

According to the Pennsylvania Natural Heritage Program screening tool, the state threatened Allegheny woodrat (*Neotoma magister*) is known to occur in the project area (See Appendix A).

The Allegheny woodrat is listed as threatened in Pennsylvania and vulnerable nationally. They are related to packrats found in the western United States and can be distinguished from common Norway rats based on their furred tail, larger ears and eyes, heavier head, and longer whiskers. Their preferred habitat includes extensive expanses of abundant, closely spaced surface rock surrounded by unfragmented forest. While they may be found in deciduous, coniferous, or mixed forests, mast-producing trees are important as a food source. Rocky areas are important habitat for Allegheny woodrats, as they nest deep within rock outcrops, use rock crevices and protected ledges for storing food, and establish latrines on flat rock surfaces protected by an overhang. Several factors are thought to have contributed to the population's decline, including the decline of the mast producing trees, such as the American chestnut due to chestnut blight and oak trees due to gypsy moth infestations; infection by the racoon roundworm parasite (*Baylissacaris procyonis*). Other factors include predation pressure from increasing great horned owl populations; competition with growing North American porcupine (*Erethizon dorsatum*) populations for habitat; and forest fragmentation. Populations in some of the Allegheny woodrat's range, including North Central Pennsylvania, are thought to be relatively healthy (Butchkowski 2014).

3.4.1.4 Invasive and Nuisance Species

Invasive species are defined as non-native species whose introduction into an ecosystem is likely to cause environmental, human, or economic harm. Non-native, or exotic, species may not be affected by existing predators, disease, or other limiting factors in their introduced range and therefore may thrive and outcompete native species. Non-native invasive species are therefore often difficult and expensive to control. Several terrestrial invasive and/or nuisance species can be found at the Alvin R. Bush Dam, Kettle Creek Reservoir, and associated lands, some of which are actively managed by Kettle Creek State Park staff. No aquatic invasive species are documented within the Reservoir.

Table 3-4. Federally Protected Threatened and Endangered Species that could occur at Bush Dam.

Common Name	Status	Habitat	USFWS Coordination Results
Indiana Bat	FE	Hibernates during winter in caves or abandoned mines. Migrates to wooded areas in spring where it usually roosts under loose tree bark on dead or dying trees, typically greater than 5 inches at diameter breast height.	USFWS does not anticipate adverse effects to Indiana Bats.
Northern Long-Eared Bat (NLEB)	FT	Hibernates in high-humidity caves and mines. During the summer, forested areas, including riparian corridors, provide habitat (e.g., decaying trees, loose bark, tree snags and stumps) for roosting, feeding and maternity colonies.	The proposed action is consistent with the nationwide USFWS NLEB Programmatic Biological Opinion. The action may affect NLEB; however, any take that may occur as a result of the action is not prohibited under the ESA Section 4(d) rule (50 CFR 17.40(o)) because it is not located within 0.25 mile of a known northern long-eared bat hibernaculum or within 150 feet from a known, occupied maternity roost tree. Implementation of future master planning projects should reevaluate NLEB impacts.
Northeastern bulrush	FE	Typically found in ponds, wet depressions, shallow sinkholes, vernal pools, small emergent wetlands, or beaver-influenced wetlands. These wetlands are often located in forested areas and characterized by seasonally variable water levels.	The project is within the known range of the northeastern bulrush. Activities should avoid direct and indirect effects on wetland surface and groundwater recharge areas and include establishment of 300-foot wide upland buffer areas around wetlands, as well as 50-100-foot-wide buffers along waterways. Earth disturbance, spraying, and tree cutting activities should not occur in these buffers. If buffers cannot be established, potential project areas should be surveyed by a qualified botanist for species presence between June 1 and September 30, when the flowering/fruitleting culm is present.

Kettle Creek State Park staff are actively managing some species of invasive plants, including Japanese knotweed (*Polygonum cuspidatum*), reed canary grass (*Phalaris arundinacea*), autumn olive (*Elaeagnus umbellata*), and multiflora rose (*Rosa multiflora*). Other invasive plant species not actively managed include garlic mustard (*Alliaria petiolate*), and Japanese barberry (*Berberis thunbergii*). The project area has few problems with invasive insect pests. The emerald ash borer (*Agrilus planipennis Fairmarie*), for example, was destructive for many years at the project area before the host species' (ash; *Fraxinus spp.*) populations became too low to support emerald ash borer populations. Invasive insect pests found in surrounding regions and may affect the project area in the future include the hemlock wooly adelgid (*Adelges tsugae*) and the spotted lanternfly (*Lycorma delicatula*).

Kettle Creek State Park actively manages populations of native but nuisance resident Canada geese (*Branta canadensis*) populations through non-lethal control methods including harassment and egg addling. A large population of resident Canada geese at the park has led to elevated *E. coli* levels in the Reservoir, therefore they are a nuisance species in the project area.

3.4.2 No Action – Environmental Consequences

Under the No Action Alternative, USACE would not implement the 2022 Master Plan and no new land classifications or future development projects within the proposed 2022 Master Plan would occur. The operation and management of Kettle Creek Reservoir and USACE lands would continue as outlined in the 1964 Master Plan. Although this alternative does not result in a 2022 Master Plan that meets current regulations and guidance, there would be no significant impacts to vegetation resources on project lands.

3.4.3 Proposed Action – Environmental Consequences

The reclassifications required for the Proposed Action would not impact biological resources. No impacts to Threatened and Endangered species are anticipated from the Proposed Action. Minor, adverse indirect impacts to vegetation are anticipated from implementation of future master planning projects, under the High Density and Low Density Recreation land classifications. No adverse impacts to wildlife and fisheries are anticipated from the Proposed Action. Table 3-5 summarizes potential effects to biological resources from implementation of future master planning projects. These master planning projects are conceptual in nature and implementation would require further analysis under a separate NEPA document.

Table 3-5. Potential Biological Resource Impacts from Future Master Planning Projects

Classification	Potential for Impact
Project Operations	No impact. Construction and operations of future master planning projects (i.e., spillway wall construction) would use BMPs associated with prevention of impacts to sensitive species recommended during future separate environmental review of projects proposed in the 2022 Master Plan.
Intensive Recreation	No impact. No impacts to biological resources would occur from loss of this land classification.
High Density Recreation	Minor impact. Land use within these areas could directly impact vegetation and wildlife habitat from recreational development and use. Potential impacts, however, would be concentrated within

Classification	Potential for Impact
	<p>existing High Density Recreation areas. The master plan does not propose any loss of forest due to recreational development. While intensive use may increase the potential for invasive species introduction and spread, maintaining a High Density Recreation area focuses management and control of invasive species in higher-use areas which would have the greater potential for presence of invasive species.</p> <p>Construction and operations of future master planning projects would use any BMPs associated with prevention of impacts to sensitive species recommended during future separate environmental reviews of projects proposed in the 2022 Master Plan.</p>
Low Density Recreation	<p>Minor Impact. Future projects could have minor impacts on biological resources, primarily resulting from potential minor amounts of vegetation crushing or removal due to trail use, access to shoreline areas, and implementation of other proposed master planning projects in the area. Designated trails and shoreline access points, however, would reduce vegetation disturbance, habitat degradation, and spread of invasive species elsewhere at the project by establishing additional designated access points. Improvement of parking areas would concentrate parking and limit the amount of parking in non-designated areas. Construction and operations of future master planning projects would use any BMPs associated with prevention of impacts to sensitive species recommended during future separate environmental reviews of projects proposed in the 2022 Master Plan.</p>
Wildlife Management	<p>No impact. No impacts to biological resources would occur from loss of this land classification. Wildlife management will continue to occur on lands now classified as Low Density Recreation.</p>
Conservation Pool	<p>No Impact. No impacts to biological resources would occur from loss of this land classification.</p>
Restricted	<p>No Impact. No impacts to biological resources would occur.</p>
Open Recreation Area	<p>No Impact. No impacts to biological resources would occur.</p>

3.5 LAND USE AND RECREATION

3.5.1 Affected Environment

All reservoir lands held in fee are leased to the Pennsylvania DCNR, except for areas required for operation and maintenance of the dam, are designated for public use. The leased lands are utilized by DCNR for development, operation, and management as Kettle Creek State Park. DCNR, under this lease, has developed and continues to maintain and operate public recreational facilities, forest management practices, and fish and wildlife management programs (USACE 1964). Recreational opportunities provided by DCNR include non-motorized and electric motor boating, fishing, hunting, picnicking, camping, hiking, equestrian camping and hiking, winter activities (e.g., snowmobiling, cross-country skiing, sledding, ice fishing), and various special events.

According to a 2013 Visitor Use Monitoring (VUM) survey, the average distance visitors traveled to Kettle Creek State Park was 129.5 miles, and 82.4 percent of visitors traveled 50 miles or more. Visitors take part in a wide range of recreational activities. Fishing, relaxing, boating, socializing, viewing natural features, sightseeing, walking, hiking, camping, picnicking and family gatherings are among the most popular recreational activities at Kettle Creek State Park. All recreational facilities on project lands fall within and are operated and maintained by Kettle Creek State Park.

Existing recreational facilities include a Picnic/Day Use area with picnic tables, drinking water, sanitary facilities, and sports and open fields, a 60-boat mooring area, boat launch, three camping areas including one equestrian camping area, and approximately 2 miles of hiking trails.

3.5.2 No Action – Environmental Consequences

Under the No Action Alternative, USACE would not implement the 2022 Master Plan and no new land classifications or future development projects contained within the proposed 2022 Master Plan would occur. The operation and management of Kettle Creek Reservoir and USACE lands would continue as outlined in the 2022 Master Plan and there would be no short-, mid-, or long-range planning of future projects for recreational improvements and development at Kettle Creek Reservoir. Therefore, the No Action Alternative is anticipated to have minor impacts to land use and recreation.

3.5.3 Proposed Action – Environmental Consequences

The reclassifications required for the Proposed Action would result in beneficial impacts to land use and recreation. Table 3-6 summarizes potential effects to land use and recreation based on the proposed changes to land classifications.

Table 3-6. Potential Land Use and Recreation Impacts from Changes to Land Classifications

Classification	Potential for Impact
Project Operations	No Impact.
Intensive Recreation	No impact. No impacts to biological resources would occur from loss of this land classification.
High Density Recreation	Beneficial Impact. This land reclassification recognizes lands currently developed for intensive recreational activities. The reclassification maintains the existing consolidation of High Density Recreation to areas associated within and adjacent to existing developed and intensively used areas, specifically to support recreation. It optimizes the siting of future High Density Recreation master planning projects and leaves other acreage for other uses (e.g., low density recreation, etc.).
Low Density Recreation	Beneficial Impact. This land reclassification focuses on areas suitable for supporting low-impact and passive recreational opportunities such as bank fishing, hiking, wildlife viewing, and for access to the shoreline. The new land classification identifies recreation as a primary use; however, vegetation and wildlife management may also occur as important secondary uses throughout this classification.

Classification	Potential for Impact
Wildlife Management	No impact. This land classification was included in the 1964 Master Plan, however, it has been reclassified in the 2022 Master Plan. No impacts to land use or recreation would occur from loss of this land classification.
Conservation Pool	No Impact. This land classification was included in the 1964 Master Plan, however, it has been reclassified in the 2022 Master Plan. No impacts to land use and recreation resources would occur from loss of this land classification.
Restricted	Beneficial Impact. Restricted water surface includes those areas where recreational boating is prohibited or restricted for project operations, safety, and security purposes. This classification would aid in protecting recreational users on the lake.
Open Recreation Area	No Impact. Open Recreation areas include all water surface areas available for year-round or seasonal water-based recreational use. This change reflects new classification criteria and no actual change in water use; therefore, no impact would occur.

3.6 ADDITIONAL RESOURCES NOT ANALYZED IN THIS EA

Impacts on the following resources were determined to be negligible; therefore, these resources were not further analyzed in this EA.

3.6.1 Air Quality

Alvin R. Bush Dam and Kettle Creek Reservoir are in Clinton County, which meets attainment for all criteria pollutants, therefore the Clean Air Act's General Conformity Rule does not apply. See 40 C.F.R. 93.153(b) (conformity determinations required only in nonattainment or maintenance areas). Changes to land classifications under the Proposed Action would not affect air quality. Implementation of future master planning projects may generate temporary emissions from construction activities, including particulate matter and other criteria pollutants. Future development and increased recreational opportunities may also generate increased visitation and corresponding vehicle emissions. These impacts are outside the scope of this EA and will be evaluated under future EAs as funding becomes available to implement the future master planning projects. As a result, this resource is not further discussed in this EA.

3.6.2 Greenhouse Gases and Climate

The project area falls within the National Oceanic and Atmospheric Administration's (NOAA) Climate Division 36-07 (NOAA n.d.) and is characterized by a temperate climate with average annual high temperature of 61 degrees and average annual low of 39 degrees Fahrenheit (US Climate Data 2020). Changes to land classifications under the Proposed Action would not affect greenhouse gas emissions or climate. Potential greenhouse gas emissions and climate change impacts associated with the implementation of future master planning projects will be evaluated in future EAs associated with project development and are outside of the scope of this EA. As a result, this resource area is not further discussed in this EA.

3.6.3 Geology and Topography

The project falls within the Deep Valleys Section of the Appalachian Plateaus physiographic province, which is characterized by very deep, angular valleys with some broad to narrow uplands. PNDI review identified two unique geologic features of special concern. The geoheritage sites include "The Bunk," which is an elongated knob-like feature, and "Oxbow Bend," the ancient Kettle Creek meander bend surrounding The Bunk (See Appendix A). Both features are located in project flowage easements and neither will be affected by land reclassifications.

Changes to land classifications under the Proposed Action would not affect geology or topography. Construction activities associated with implementation of proposed future projects will be evaluated for impacts to geology and topography in future EAs specific to individual development projects. As a result, this resource area is not further discussed in this EA.

3.6.4 Groundwater

Changes to land classifications will not adversely affect the quality or availability of groundwater. Assessment of future master planning project's water use would be performed during detailed project-specific planning. As a result, this resource is not further discussed in this EA.

3.6.5 Noise

The project area is in a physical setting characterized as rural and very remote. In rural areas, most noise comes from transportation, and human and animal sources (Engineering Toolbox 2013). Changes to land classifications under the Proposed Action would not change the existing noise environment. Assessment of any future master planning project's impact on noise would be performed during detailed project-specific planning. As a result, this resource area is not further discussed in this EA.

3.6.6 Cultural Resources

There are no known historic structures or archaeological sites in the project boundary eligible for or listed in the National Register of Historic Places (NRHP). Structures present before the project were razed as part of dam construction. Known architectural or above-ground resources are associated with the Alvin Bush Dam such as maintenance shops and garages, offices, the intake tower, spillway, and an earthen embankment. They have not been evaluated to determine their eligibility for inclusion in the NRHP.

If specific project actions are proposed in the future, they will be subject to consultation and review under Section 106 of the NHPA. As a result, this resource area is not further discussed in this EA.

3.6.7 Utilities

Changes to land classifications under the Proposed Action would not affect utilities. An assessment of utilities associated with any future master planning projects would be performed during detailed project-specific planning. Therefore, utilities are not further discussed in this EA.

3.6.8 Hazardous Materials and Wastes

No known contaminated sites occur at the project area. Changes to land classifications under the Proposed Action would not affect hazardous materials and wastes. An assessment

of hazardous materials and wastes associated with any future master planning projects would be performed during detailed project-specific planning. As a result, this resource area is not further discussed in this EA.

3.6.9 Socioeconomics and Environmental Justice

The Proposed Action would not result in any appreciable effects to the local or regional socioeconomic environment. Changes to land classification would have no impact on socioeconomics or environmental justice. Impacts to socioeconomics and environmental justice associated with any future master planning projects would be performed during detailed project-specific planning. As a result, this resource area is not further discussed in this EA.

3.6.10 Traffic and Transportation

Changes to land classification would have no impact on traffic and transportation. Any temporary impacts from increased truck traffic during construction of future master planning projects would be assessed during detailed project-specific planning. As a result, this resource is not further discussed in this EA.

4 CUMULATIVE IMPACTS

As defined by CEQ, cumulative effects are those that “result from the incremental impact of the Proposed Action when added to other past, present, and reasonably foreseeable future actions, without regard to the agency (federal or non-federal) or individual who undertakes such other actions” (40 CFR 1508.7) (2019). Cumulative effects may accrue over time and/or in conjunction with other pre-existing effects from other activities in the area (40 CFR 1508.25); therefore, pre-existing impacts and multiple smaller impacts should also be considered.

NEPA regulations require the analysis of cumulative environmental effects of a Proposed Action, which may manifest only at the cumulative level. Cumulative effects can result from individually minor, but collectively significant, actions taking place over time. As noted above, cumulative effects are most likely to arise when a Proposed Action is related to other actions that could occur in the same location and at a similar time. The geographic scope or region of the cumulative effects analysis includes the county the project is located in (Clinton County) and its surrounding counties (Centre, Potter, Cameron, Tioga, and Lycoming counties). The temporal scope is 15 to 25-year timeframe.

The Proposed Action focuses solely on the implementation of the proposed land classifications presented in the 2022 Master Plan. This EA does not consider implementation of specific projects identified within the 2022 Master Plan during the master planning process, as those projects are conceptual in nature, nor does it consider specific future development opportunities for leased areas, such as Kettle Creek State Park. Projects identified during the master planning process within the 2022 Master Plan would require separate NEPA analyses prior to construction.

4.1. CURRENT AND REASONABLY FORESEEABLE PROJECTS WITHIN THE ROI

This section identifies reasonably foreseeable projects that may have cumulative, incremental impacts in conjunction with the Proposed Action. Beyond the future master planning projects identified in the 2022 Master Plan, only one project was identified at Alvin R. Bush Dam involving stabilizing the spillway wall. Many years of erosion have deteriorated the bedrock at the top of the western spillway wall between the operations access road bridge and spillway entrance. Continued erosion threatens the spillway and Kettle Creek Road. USACE is currently planning a project to stabilize the wall and Kettle Creek Road’s shoulder by constructing a concrete wall similar to the wall currently in place south of the access road bridge. The contract for construction will likely be awarded in FY 2023, with construction likely to begin in FY 2024. Dates are dependent on receipt of sufficient funding. Construction could take several years.

Other potential projects identified during the master planning process in the 2022 Master Plan, within USACE-owned lands, include construction of an alternate access road to the Upper Campground and improvements in the low density recreation lands such as upgrades to restroom facilities, parking areas, wayside exhibits and interpretive signage near the Equestrian campground, and access to wildlife viewing areas. Other potential projects in the vicinity of the study area include planned improvements by Kettle Creek State Park to the Upper Campground, which would fall entirely outside USACE-owned lands. However, these projects are conceptual in nature and implementation would require further analysis under separate NEPA documentation.

Clinton County, Pennsylvania adopted a Comprehensive Plan document in 2014. The 2014 Comprehensive Plan classifies the Alvin R. Bush Dam area as "Forested," and no changes to this land classification were proposed. The 2014 Plan did not identify development activities within the project area.

4.2 ANALYSIS OF CUMULATIVE IMPACTS

Impacts on each resource were analyzed according to how other actions and projects within the region of influence might be affected by the No Action Alternative and Proposed Action. Impacts can vary in degree or magnitude from a slightly noticeable change to a total change in the environment.

As discussed above, minimal growth and development are expected to continue near Alvin R. Bush Dam. The Proposed Action is an administrative action that seeks to update the land classifications at Alvin R. Bush Dam in compliance with ER 1130-2-550 and EP 1130-2-550. No impacts are anticipated on water or biological resources from the implementation of the Proposed Action. Therefore, no cumulative impacts from this administrative action on water, soils, or biological resources are expected when added to the impacts associated with the Proposed Action or No Action Alternatives. Minor, adverse impacts to soils are anticipated from the implementation of the Proposed Action from continued recreational use.

Moderate, beneficial impacts are anticipated on the land use and recreation resources from the implementation of the Proposed Action. Beneficial, cumulative impacts on land use and recreation resources are anticipated since the High Density Recreation and Low Density Recreation land classifications maintain land areas at the project for the purpose of recreation, which would support recreational opportunities in the region.

5 IRRETRIEVABLE AND IRREVERSIBLE COMMITMENT OF RESOURCES

NEPA requires that federal agencies identify “any irreversible and irretrievable commitments of resources which would be involved in the Proposed Action should it be implemented” (42 U.S. Code § 4332). An irreversible commitment of resources occurs when the primary or secondary impacts of an action result in the loss of future options for a resource. Usually, this is when the action affects the use of a nonrenewable resource or it affects a renewable resource that takes a long time to renew. The impacts for this project from the reclassification of land or future master planning projects centered on recreation enhancement and development would not be considered an irreversible commitment because much of the land could be converted back to prior use at a future date. An irretrievable commitment of resources is typically associated with the loss of productivity or use of a natural resource (e.g., loss of production or harvest). No irreversible or irretrievable impacts are anticipated from implementation of the Proposed Action.

6 SUMMARY

Table 6-1 presents a summary of the environmental consequences by alternative analyzed in this EA. As discussed in Chapter 4, selection of the Proposed Action Alternative would not be anticipated to cause cumulative adverse impacts. Table 6-2 presents conservation measures recommended within Chapter 3.

Table 6-1. Summary of Potential Environmental Effects

Alternative	Impact Type*			Intensity of Impact		
	<i>Beneficial</i>	<i>None/ Negligible</i>	<i>Negative</i>	<i>Minor</i>	<i>Moderate</i>	<i>Significant</i>
Water Resources						
No Action Alternative		x				
Proposed Action Alternative		x				
Soil Resources						
No Action Alternative		x				
Proposed Action Alternative			x	x		
Biological Resources						
No Action Alternative		x				
Proposed Action Alternative		x				
Land Use and Recreation						
No Action Alternative				x		
Proposed Action Alternative	x				x	

*Impacts on resource categories are based on applicable land classification changes. Section 3 describes anticipated impacts from changes to land classification under the Proposed Action alternative.

Table 6-2. Conservation Measures for Future Master Planning Projects

Measure	Resource Protected
Construction and operations of future master planning projects would use best management practices (BMPs) associated with prevention of erosion and control of stormwater runoff. This includes obtaining a National Pollution Discharge Elimination System (NPDES) permit for projects involving earth disturbances exceeding one acre.	Water and Soil Resources
Surface waters and wetlands, if present, would be avoided or permitted through the Section 404 process.	Water Resources
USACE would consider the presence of the 100-year floodplain in design and siting future master planning projects within floodplain areas.	Water Resources
USACE would consider the potential for erosion and occurrence of Prime Farmland soils in design and siting future master planning projects.	Soil Resources

Measure	Resource Protected
Construction and operations of future master planning projects would use BMPs associated with the prevention of impacts to sensitive species recommended by resource agencies during future environmental review of projects proposed in the 2022 Master Plan.	Biological Resources
Impacts to sensitive receptors (e.g., adjacent residences and campers) would be minimized as these activities would be restricted to the daytime and would be temporary in nature	Noise Environment
Per the facility's Integrated Cultural Resources Management Plan, if any human remains or cultural items are found within or adjacent to Alvin R. Bush Dam and Kettle Creek Reservoir that may be demonstrably related to one of the recognized tribal entities, then Public Law 101-601, the Native American Grave Protection and Repatriation Act, would be implemented and the affected group contacted.	Cultural Resources.

Table 6-3 summarizes the compliance of the proposed alternative with environmental protection statutes and other environmental regulations. Based on the evaluation of project impacts described in Section 3, there are no significant impacts from the proposed action, and a Finding of No Significant Impact (FONSI) has been prepared.

Table 6-3. Compliance of the Proposed Action with Environmental Protection Statutes and Other Environmental Requirements

Federal Statutes	Level of Compliance
Anadromous Fish Conservation Act	N/A
Archeological and Historic Preservation Act	N/A
Clean Air Act	N/A
Clean Water Act	N/A
Coastal Barrier Resources Act	N/A
Coastal Zone Management Act	N/A
Comprehensive Environmental Response, Compensation and Liability Act	N/A
Endangered Species Act	Full
Estuary Protection Act	N/A
Farmland Protection Policy Act	N/A
Federal Water Project Recreation Act	N/A
Fish and Wildlife Coordination Act	Full
Land and Water Conservation Fund Act	N/A
Magnuson-Stevens Act	N/A
Marine Mammal Protection Act	N/A
Marine Protection, Research and Sanctuaries Act	N/A
Migratory Bird Treaty Act	Full
National Environmental Policy Act	Full
National Historic Preservation Act	N/A
Noise Control Act	N/A
Resource Conservation and Recovery Act	N/A
Rivers and Harbors Act	N/A
Safe Drinking Water Act	N/A

Federal Statutes	Level of Compliance
Solid Waste Disposal Act	N/A
Toxic Substances Control Act	N/A
Water Resources Planning Act	N/A
Watershed Protection and Flood Prevention Act	N/A
Wetlands Conservation Act	N/A
Wild and Scenic Rivers Act	N/A
Executive Orders (EOs), Memoranda, etc.	
Protection and Enhancement of Cultural Environment (EO 11593)	N/A
Floodplain Management (EO 11988)	Full
Protection of Wetlands (EO 11990)	Full
Environmental Justice in Minority and Low-Income Populations (EO 12898)	Full
Protection of Children from Health Risks and Safety Risks (EO 13045)	N/A
Consultation and Coordination with Indian Tribal Governments (EO 13175)	N/A
Indian Sacred Sites (EO 13007)	N/A
Invasive Species (EO 13112)	Full
Migratory Bird (EO 13186)	Full
Facilitation of Cooperative Conservation (EO 13175)	N/A
Chesapeake Bay Protection and Restoration (EO 13508)	N/A
Prime and Unique Farmlands (CEQ Memorandum, 11 Aug 80)	N/A

7 REFERENCES

- Butchkoski, E. 2014. Allegheny Woodrat Species Profile. Pennsylvania Game Commission. <https://www.pgc.pa.gov/Wildlife/EndangeredandThreatened/Pages/AlleghenyWoodrat.aspx>. Accessed 22 OCT 2020.
- Cornell Lab of Ornithology. N.d. Kettle Creek SP, Clinton County, Pennsylvania. <https://ebird.org/hotspot/L913902>. Accessed 21 OCT 2020.
- Engineering ToolBox, 2003. *Outdoor Ambient Sound Levels*. https://www.engineeringtoolbox.com/outdoor-noise-d_62.html. Accessed April 9, 2021.
- National Oceanic and Atmospheric Administration (NOAA) National Centers for Environmental Information. (n.d.). U.S. Climate Divisions. <https://www.ncdc.noaa.gov/monitoring-references/maps/us-climate-divisions.php>. Accessed 21 OCT 2020.
- Pennsylvania Department of Conservation and Natural Resources (DCNR). 1996. Kettle Creek State Park Resource Management Plan.
- Pennsylvania Department of Conservation and Natural Resources (DCNR). 2018. A Pennsylvania Recreational Guide for Kettle Creek State Park. Retrieved from http://elibrary.dcnr.pa.gov/GetDocument?docId=1753188&DocName=KECR_ParkGuide.pdf. Accessed 26 OCT 2020.
- Pennsylvania Department of Conservation and Natural Resources (DCNR). 2021. Kettle Creek State Park. Website. Retrieved from <https://www.dcnr.pa.gov/StateParks/FindAPark/KettleCreekStatePark/Pages/default.aspx>. Accessed 13 JAN 2021.
- Pennsylvania Game Commission (PGC). 2020. Elk Hunt Zones Map Book 2020 – 2021. Retrieved from <https://www.pgc.pa.gov/Wildlife/WildlifeSpecies/Elk/Documents/Elk%20Hunt%20Zone%20Map%20Book.pdf>. Accessed 20 NOV 2020.
- Sevan, W.D. 2000. Physiographic Provinces of Pennsylvania, 4th ed. Scale 1:2,000,000. Commonwealth of Pennsylvania Department of Conservation and Natural Resources Bureau of Topographic and Geologic Survey. http://elibrary.dcnr.pa.gov/GetDocument?docId=1752507&DocName=Map13_PhysProvPa.pdf. Accessed 21 OCT 2020.
- United States Army Corps of Engineers, Baltimore District (USACE). 1964. Susquehanna River Basin, Alvin R. Bush Dam, Design Memorandum No. 9B – Master Plan for Kettle Creek Reservoir, Kettle Creek, Pennsylvania. PDF.
- United States Army Corps of Engineers, Baltimore District (USACE). 1987. Master Manual for Reservoir Regulation Susquehanna River Basin, Volume II: Lower Basin, Appendix A: Alvin R. Bush Dam, Pennsylvania. PDF.

- United States Army Corps of Engineers, Baltimore District (USACE). 2019. Water Quality Program Annual Report. PDF.
- United States Army Corps of Engineers, Baltimore District (USACE). n.d. Alvin R. Bush Dam website. Retrieved from <https://www.nab.usace.army.mil/Missions/Dams-Recreation/Alvin-R-Bush/>. Accessed 1 DEC 2020.
- United States Census Bureau (USCB) (2018). 2018 American Community Survey 5-Year Estimates, Clinton, Centre, Potter, Cameron, Tioga, and Lycoming Counties, Pennsylvania. Retrieved from <https://www.data.census.gov>. Accessed 22 OCT 2020.
- United States Department of Agriculture, Animal & Plant Health Inspection Service, Wildlife Services (USDA APHIS). 2011. Management of Canada Goose Nesting Fact Sheet. Retrieved from https://www.aphis.usda.gov/publications/wildlife_damage/content/printable_version/fs_goosenst_WS_2011.pdf. Accessed 23 NOV 2020.
- United States Department of Agriculture, Animal & Plan Health Inspection Service Wildlife Services (USDA APHIS). 2017. European Starlings. Wildlife Damage Management Technical Series. Retrieved from https://www.aphis.usda.gov/wildlife_damage/reports/Wildlife%20Damage%20Management%20Technical%20Series/European-Starlings-WDM-Technical-Series.pdf. Accessed 23 NOV 2020.
- United States Department of Agriculture, Natural Resources Conservation Service (NRCS) (n.d.(a)). Soil Data Access (SDA) Prime and other Important Farmlands. https://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcseprd1338623.html
Accessed 21 OCT 2020.
- United States Department of Agriculture, Natural Resources Conservation Service (NRCS) (n.d.(b)). Web Soil Survey. <https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx> Accessed 21 OCT 2020.
- United States Department of Agriculture, United States Forest Service Northern Research Station (USFS). 2017. Pennsylvania Forests 2014. Resource Bulletin NRS-111. https://www.fs.fed.us/nrs/pubs/rb/rb_nrs111.pdf. Accessed 21 OCT 2020.
- United States Fish and Wildlife Service (USFWS). N.d. ECOS Environmental Conservation Online System. <https://ecos.fws.gov/ecp/>. Accessed 21 OCT 2020
- United States Fish and Wildlife Service National Wetlands Inventory (NWI). 2020. HU8_02050203_Wetlands. Shapefile. Retrieved from <https://www.fws.gov/wetlands/Data/Mapper.html>. Accessed 1 DEC 2020.
- United States Fish and Wildlife Service Northwest Region (USFWS). 2019. Midwest Region Endangered Species -Indiana Bat (*Myotis sodalis*). <https://www.fws.gov/midwest/endangered/mammals/inba/index.html>. Accessed 21 OCT 2020.

- United States Fish and Wildlife Service (USFWS) 2020. National Wetland Inventory, GIS layer. Retrieved from NEPAassist <https://nepassisttool.epa.gov/nepassist/nepamap.aspx>. Accessed 21 OCT 2020.
- Urban, C.A. 2004. The Timber Rattlesnake: Pennsylvania's Uncanny Mountain Denizen. Pennsylvania Angler & Boater. <https://www.fishandboat.com/Resource/AmphibiansandReptiles/Documents/trattlesnake.pdf>. Accessed 22 OCT 2020.
- Urban Research and Development Corporation (URDC). 1980. Recreation Carrying Capacity Handbook: Methods and Techniques for Planning, Design, and Management. Instruction Report R-B0-1. Bethlehem, PA. <https://ntrl.ntis.gov/NTRL/dashboard/searchResults/titleDetail/ADA096446.xhtml>. Accessed 12 JAN 2021.
- U.S. Climate Data. 2020. Climate Renovo – Pennsylvania. <https://www.usclimatedata.com/climate/renovo/pennsylvania/united-states/usp1362>. Accessed 21 OCT 2020.
- Woods, A.J., J.M. Omernik, and D.D. Brown. 1999. Level III and IV Ecoregions of Delaware, Maryland, Pennsylvania, Virginia, and West Virginia. U.S. Environmental Protection Agency, National Health and Environmental Effects Research Laboratory. https://extension.umd.edu/sites/extension.umd.edu/files/docs/programs/master-gardeners/Natives/1999_Woods_Omernik_reg3_ecoregion_descriptions.pdf. Accessed 21 OCT 2020.
- Woods, A.J., J.M. Omernik, and D. D. Brown. 2003. Level III and IV Ecoregions of EPA Region 3. Scale 1:1,000,000. "Ecoregion Download Files by Region." <https://www.epa.gov/eco-research/ecoregion-download-files-region#pane-03>. Accessed 21 OCT 2020.

Appendix A: Agency Coordination



United States Department of the Interior



FISH AND WILDLIFE SERVICE
Pennsylvania Ecological Services Field Office
110 Radnor Road Suite 101
State College, PA 16801-7987
Phone: (814) 234-4090 Fax: (814) 234-0748
<http://www.fws.gov/northeast/pafo/>

In Reply Refer To:

April 08, 2021

Consultation Code: 05E2PA00-2021-SLI-0108

Event Code: 05E2PA00-2021-E-03414

Project Name: Alvin R. Bush Dam master plan

Subject: Updated list of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

<http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF>

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (<http://www.fws.gov/windenergy/>) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at:

<http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm>;

<http://www.towerkill.com>; and

[http://](http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html)

www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

Any activity proposed on National Wildlife Refuge lands must undergo a "Compatibility Determination" conducted by the Refuge. Please contact the individual Refuge to discuss any questions or concerns.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Pennsylvania Ecological Services Field Office

110 Radnor Road Suite 101
State College, PA 16801-7987
(814) 234-4090

Project Summary

Consultation Code: 05E2PA00-2021-SLI-0108

Event Code: 05E2PA00-2021-E-03414

Project Name: Alvin R. Bush Dam master plan

Project Type: LAND - MANAGEMENT PLANS

Project Description: USACE is developing a new master plan for the Alvin R. Bush Dam and associated Kettle Creek reservoir. No physical changes on the ground are expected to occur as a result of the updated master plan. Rather, land use classifications will be revised to guide future management efforts.

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@41.39641323887889,-77.92279949325166,14z>



Counties: Clinton County, Pennsylvania

Endangered Species Act Species

There is a total of 3 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries¹, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

-
1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Indiana Bat <i>Myotis sodalis</i> There is final critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/5949	Endangered
Northern Long-eared Bat <i>Myotis septentrionalis</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened

Flowering Plants

NAME	STATUS
Northeastern Bulrush <i>Scirpus ancistrochaetus</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6715	Endangered

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

USFWS National Wildlife Refuge Lands And Fish Hatcheries

Any activity proposed on lands managed by the [National Wildlife Refuge](#) system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.



DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, BALTIMORE DISTRICT
2 HOPKINS PLAZA
BALTIMORE, MD 21201

Planning Division

February 10, 2021

Robert Anderson
Supervisory Fish & Wildlife Biologist
U.S. Fish and Wildlife Service
Pennsylvania Ecological Services Field Office
110 Radnor Road Suite 101
State College, PA 16801-7987

Dear Mr. Anderson;

The U.S. Army Corps of Engineers (USACE) Baltimore District is proposing to update the Master Plan for Alvin R. Bush Dam and Kettle Creek Reservoir, Clinton County, Pennsylvania and associated land management classifications in compliance with USACE regulations and guidance. Project lands (including the lake and surrounding property) occupy 1,872 acres (see enclosure). In conjunction with the Master Plan, USACE is preparing an environmental assessment (EA) in accordance with the National Environmental Policy Act (NEPA) of 1969, as amended, to evaluate the potential effects of proposed Master Plan Revisions.

The purpose of this letter is to initiate consultation with the U.S. Fish and Wildlife Service's Pennsylvania Ecological Services Field Office regarding information on any federally-listed species or critical habitat within the vicinity of the proposed project. USACE is requesting information on protected species at the project for consideration in the Master Plan and any conservation measures USFWS recommends for the protection of species at the project.

Initial search of USFWS records indicate the potential for three federally-protected species: Indiana Bat (*Myotis sodalis*), Northern Long-eared Bat (*Myotis septentrionalis*), and Northeastern Bulrush (*Scirpus ancistrochaetus*). The following Information for Planning and Consultation (IPaC) reports was generated for your reference under the project name "Alvin R. Bush Dam master plan":

- Consultation Code: 05E2PA00-2021-SLI-0108; Event Code: 05E2PA00-E-00244

The Master Plan is intended to serve as a comprehensive land and recreation management plan for the next 15 to 25 years, which reflects changes in outdoor recreation trends, regional land use, population, legislative requirements, USACE management policy, and wildlife habitat that have occurred since the 1964 Master Plan at Alvin R. Bush Dam and Kettle Creek Reservoir. Proposed land use classifications include:

- Project operations: To reflect lands associated with the dam and spillway structures that are operated and maintained for fulfilling the flood risk management mission of Alvin R. Bush Dam;

- High-Density Recreation: To reflect lands that are currently developed for intensive recreational activities and include boat launches, day-use areas, and campgrounds;
- Environmentally Sensitive Areas: To include areas where scientific, ecological, cultural, or aesthetic features have been identified. Typically, limited or no development of public use is allowed on these lands.
- Multiple Resource Management Lands: To designate a predominate use described below, with the understanding that other compatible uses described below may also occur on these lands:
 - Low-Density Recreation: To support low-impact recreational opportunities such as bank fishing, hiking, wildlife viewing, and for access to the shoreline;
 - Vegetative Management: To include an ecosystem-based management approach and is designated for stewardship of forest, prairie, and other native vegetative cover;
 - Future Recreation Area: To include areas that either have site characteristics compatible with potential future development or are currently closed recreation areas;
- Water Surface:
 - Restricted: To include water areas restricted for project operations, safety, and security purposes;
 - Designated No-Wake: To protect environmentally sensitive shoreline areas and recreational water access areas from disturbance, and for public safety; and
 - Open Recreation: To include those waters available for year round or seasonal water-based recreational use.

Alternatives considered within the EA focus on the proposed land use classifications as presented in the Master Plan and the types of future development projects that could occur within the land use classifications. The EA does not consider implementation of specific projects identified within the Master Plan during the master planning process as these projects are conceptual in nature. The USACE would conduct further analysis on projects identified within the master Plan and resources affected once funding is available and detailed project planning and design occur.

We respectfully ask that you provide any information or comments within 30 days to enable us to complete this phase of the project within the scheduled timeframe.

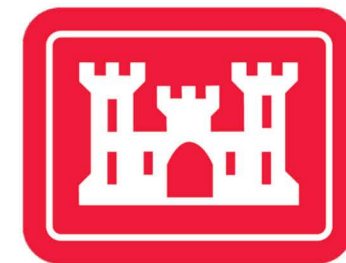
Comments and additional information may be directed to Megan Spindler at megan.l.spindler@usace.army.mil or by phone at (410) 207-9987.

Sincerely,



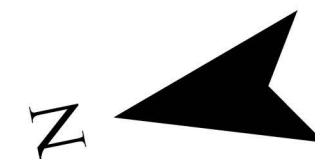
Daniel M. Bierly, P.E.
Chief, Civil Project Development Branch

Enclosure

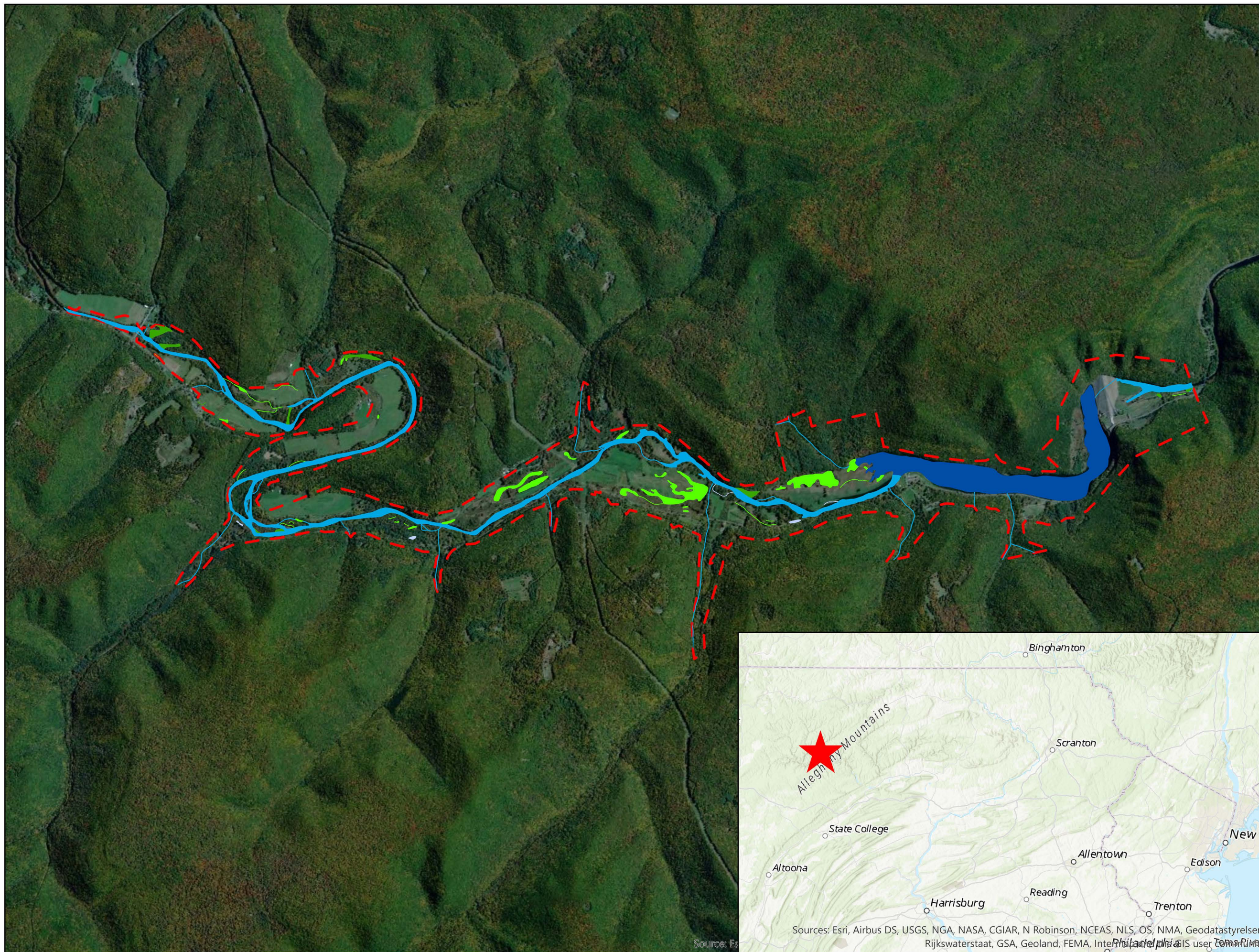


U.S. Army Corps
of Engineers
Baltimore District

Alvin R. Bush Dam Master Plan Update



- - - Alvin R. Bush Dam Boundary
- Wetland Type
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Riverine



Source: Esri

Sources: Esri, Airbus DS, USGS, NGA, NASA, CGIAR, N Robinson, NCEAS, NLS, OS, NMA, Geodatastyrelsen, Rijkswaterstaat, GSA, Geoland, FEMA, Intermap, Inc., and GIS user Community



United States Department of the Interior



FISH AND WILDLIFE SERVICE
Pennsylvania Field Office
110 Radnor Road, Suite 101
State College, Pennsylvania 16801-4850

April 7, 2021

Daniel Bierly
Department of the Army
Corps of Engineers, Baltimore District
2 Hopkins Plaza
Baltimore, MD 21201

RE: USFWS Project #2021-0108

Dear Mr. Bierly:

This responds to your correspondence of February 16, 2021, requesting information about federally listed and proposed endangered and threatened species within the area affected by the proposed Alvin R. Bush Dam and Kettle Creek Reservoir Master Plan Update project located in Leidy Township, Clinton County, Pennsylvania. Your project is within the range of the federally endangered northeastern bulrush (*Scirpus ancistrochaetus*) and Indiana bat (*Myotis sodalis*), and the northern long-eared bat (*Myotis septentrionalis*), federally listed as threatened. The following comments are provided pursuant to the Endangered Species Act of 1973 (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*) to ensure the protection of endangered and threatened species, and the Bald and Golden Eagle Protection Act (54 Stat. 250, as amended; 16 U.S.C. 668-668d).

Northern long-eared bat

The northern long-eared bat hibernates in caves and abandoned mines during the winter months (November through March), uses a variety of upland, wetland and riparian habitats during the spring, summer and fall, and usually roosts in dead or living trees with exfoliating bark, crevices or cavities.

Service promulgated a Final 4(d) Rule in 2016 establishing measures that were determined to be necessary and advisable for the conservation of the northern long-eared bat. We reviewed your project, and determined it is not located within 0.25 mile of a known northern long-eared bat hibernaculum or within 150 feet from a known, occupied maternity roost tree; therefore, any incidental take that may occur is in accordance with the Final 4(d) Rule and is not in violation of the Act. Because this project is authorized, funded, and/or permitted by a Federal agency, consultation under section 7 of the Endangered Species Act is required. The Service completed a nationwide biological opinion that fulfills this requirement, provided the conditions of the Final

4(d) Rule are implemented. The Service created a framework to streamline section 7 consultations when Federal or designated non-Federal representative actions may affect the northern long-eared bat, but do not cause prohibited take. The Corps of Engineers should complete section 7 consultation under the streamlined consultation process by using the Determination Key that is available through our Information for Planning and Consultation (IPaC) website. More information about the framework and instructions for use of the online Determination Key are available here:

<https://www.fws.gov/midwest/endangered/mammals/nleb/s7.html>

Indiana bat

Based on the project description, and the location of the project area, the Service does not anticipate adverse effects to Indiana bats.

Northeastern bulrush

Your project is within the known range of northeastern bulrush. Northeastern bulrush is typically found in ponds, wet depressions, shallow sinkholes, vernal pools, small emergent wetlands, or beaver-influenced wetlands. These wetlands are often located in forested areas and characterized by seasonally variable water levels. Therefore, to conserve northeastern bulrush, project-related activities should avoid direct and indirect effects on wetland surface and groundwater recharge areas. This would include establishment of 300-foot wide upland buffer areas around wetlands, as well as 50-100 foot wide buffers along waterways (perennial and intermittent rivers, streams, creeks and tributaries). When adequately vegetated, these buffers act to filter pollutants and stabilize streambanks. Earth disturbance, spraying or tree-cutting activities (tree felling, skid trails, etc.), should not occur in these wetlands and their buffers.

If you are unable to adopt the buffer restrictions detailed above, we recommend that a qualified botanist with field experience in the identification of this species conduct a thorough survey of all potentially suitable wetland habitat within the proposed project area to determine the presence of the northeastern bulrush before any permits are approved or earth-moving activities begin. Surveys for this species should be conducted between June 1 and September 30, when the flowering/fruitle culm is present. A survey report should be submitted to the Service for review and comment. A list of botanists skilled in the location and identification of the northeastern bulrush can be found at the following site:

<https://www.fws.gov/northeast/pafo/endangered/surveys.html>

Bald Eagles

Bald eagles (*Haliaeetus leucocephalus*) are known to nest in the vicinity of the project area, with one nest being located within the project area. Consequently, we recommend that you evaluate the project type, size, location and layout in light of the *National Bald Eagle Management Guidelines* to determine whether or not bald eagles might be disturbed as a direct or indirect result of this project. If it appears that disturbance may occur, we recommend that you consider

modifying your project consistent with the *Guidelines*. These guidelines, as well as additional eagle information, are available at <http://www.fws.gov/northeast/EcologicalServices/eagle.html>. To assist you in making a decision regarding impacts to bald eagles, a screening form can be found at https://www.fws.gov/northeast/pafo/bald_eagle_map.html.

If you have additional questions regarding eagle permits, please contact Thomas Wittig, Northeast Regional Bald and Golden Eagle Coordinator at 413-253-8577 or Thomas_Wittig@fws.gov.

This response is based on the information submitted to this office and our knowledge of federally listed species and bald eagle distribution and habitat needs. No field inspection of the project area has been conducted by this office. This correspondence does not authorize take under the Endangered Species Act or any other Authorities.

To avoid potential delays in reviewing your project, please use the above-referenced USFWS project tracking number in any future correspondence regarding this project.

If you have any questions regarding this matter, please contact Nicole Ranalli of my staff at 814-206-7455

Sincerely,



Sonja Jahrsdoerfer
Project Leader

cc:
Megan Spindler, Corps of Engineers

megan.l.spindler@usace.army.mil



United States Department of the Interior



FISH AND WILDLIFE SERVICE
Pennsylvania Ecological Services Field Office
110 Radnor Road Suite 101
State College, PA 16801-7987
Phone: (814) 234-4090 Fax: (814) 234-0748
<http://www.fws.gov/northeast/pafo/>

In Reply Refer To:

April 08, 2021

Consultation code: 05E2PA00-2021-TA-0108

Event Code: 05E2PA00-2021-E-03415

Project Name: Alvin R. Bush Dam master plan

Subject: Verification letter for the 'Alvin R. Bush Dam master plan' project under the January 5, 2016, Programmatic Biological Opinion on Final 4(d) Rule for the Northern Long-eared Bat and Activities Excepted from Take Prohibitions.

Dear Megan Spindler:

The U.S. Fish and Wildlife Service (Service) received on April 08, 2021 your effects determination for the 'Alvin R. Bush Dam master plan' (the Action) using the northern long-eared bat (*Myotis septentrionalis*) key within the Information for Planning and Consultation (IPaC) system. This IPaC key assists users in determining whether a Federal action is consistent with the activities analyzed in the Service's January 5, 2016, Programmatic Biological Opinion (PBO). The PBO addresses activities excepted from "take"^[1] prohibitions applicable to the northern long-eared bat under the Endangered Species Act of 1973 (ESA) (87 Stat.884, as amended; 16 U.S.C. 1531 et seq.).

Based upon your IPaC submission, the Action is consistent with activities analyzed in the PBO. The Action may affect the northern long-eared bat; however, any take that may occur as a result of the Action is not prohibited under the ESA Section 4(d) rule adopted for this species at 50 CFR §17.40(o). Unless the Service advises you within 30 days of the date of this letter that your IPaC-assisted determination was incorrect, this letter verifies that the PBO satisfies and concludes your responsibilities for this Action under ESA Section 7(a)(2) with respect to the northern long-eared bat.

Please report to our office any changes to the information about the Action that you submitted in IPaC, the results of any bat surveys conducted in the Action area, and any dead, injured, or sick northern long-eared bats that are found during Action implementation. If the Action is not completed within one year of the date of this letter, you must update and resubmit the information required in the IPaC key.

This IPaC-assisted determination allows you to rely on the PBO for compliance with ESA Section 7(a)(2) only for the northern long-eared bat. It **does not** apply to the following ESA-protected species that also may occur in the Action area:

- Indiana Bat *Myotis sodalis* Endangered
- Northeastern Bulrush *Scirpus ancistrochaetus* Endangered

If the Action may affect other federally listed species besides the northern long-eared bat, a proposed species, and/or designated critical habitat, additional consultation between you and this Service office is required. If the Action may disturb bald or golden eagles, additional coordination with the Service under the Bald and Golden Eagle Protection Act is recommended.

[1]Take means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct [ESA Section 3(19)].

Action Description

You provided to IPaC the following name and description for the subject Action.

1. Name

Alvin R. Bush Dam master plan

2. Description

The following description was provided for the project 'Alvin R. Bush Dam master plan':

USACE is developing a new master plan for the Alvin R. Bush Dam and associated Kettle Creek reservoir. No physical changes on the ground are expected to occur as a result of the updated master plan. Rather, land use classifications will be revised to guide future management efforts.

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@41.39641323887889,-77.92279949325166,14z>



Determination Key Result

This Federal Action may affect the northern long-eared bat in a manner consistent with the description of activities addressed by the Service's PBO dated January 5, 2016. Any taking that may occur incidental to this Action is not prohibited under the final 4(d) rule at 50 CFR §17.40(o). Therefore, the PBO satisfies your responsibilities for this Action under ESA Section 7(a)(2) relative to the northern long-eared bat.

Determination Key Description: Northern Long-eared Bat 4(d) Rule

This key was last updated in IPaC on May 15, 2017. Keys are subject to periodic revision.

This key is intended for actions that may affect the threatened northern long-eared bat.

The purpose of the key for Federal actions is to assist determinations as to whether proposed actions are consistent with those analyzed in the Service's PBO dated January 5, 2016.

Federal actions that may cause prohibited take of northern long-eared bats, affect ESA-listed species other than the northern long-eared bat, or affect any designated critical habitat, require ESA Section 7(a)(2) consultation in addition to the use of this key. Federal actions that may affect species proposed for listing or critical habitat proposed for designation may require a conference under ESA Section 7(a)(4).

Determination Key Result

This project may affect the threatened Northern long-eared bat; therefore, consultation with the Service pursuant to Section 7(a)(2) of the Endangered Species Act of 1973 (87 Stat.884, as amended; 16 U.S.C. 1531 et seq.) is required. However, based on the information you provided, this project may rely on the Service's January 5, 2016, *Programmatic Biological Opinion on Final 4(d) Rule for the Northern Long-Eared Bat and Activities Excepted from Take Prohibitions* to fulfill its Section 7(a)(2) consultation obligation.

Qualification Interview

1. Is the action authorized, funded, or being carried out by a Federal agency?
Yes
2. Have you determined that the proposed action will have "no effect" on the northern long-eared bat? (If you are unsure select "No")
No
3. Will your activity purposefully **Take** northern long-eared bats?
No
4. [Semantic] Is the project action area located wholly outside the White-nose Syndrome Zone?
Automatically answered
No
5. Have you contacted the appropriate agency to determine if your project is near a known hibernaculum or maternity roost tree?

Location information for northern long-eared bat hibernacula is generally kept in state Natural Heritage Inventory databases – the availability of this data varies state-by-state. Many states provide online access to their data, either directly by providing maps or by providing the opportunity to make a data request. In some cases, to protect those resources, access to the information may be limited. A web page with links to state Natural Heritage Inventory databases and other sources of information on the locations of northern long-eared bat roost trees and hibernacula is available at www.fws.gov/midwest/endangered/mammals/nleb/nhisites.html.

Yes

6. Will the action affect a cave or mine where northern long-eared bats are known to hibernate (i.e., hibernaculum) or could it alter the entrance or the environment (physical or other alteration) of a hibernaculum?
No
 7. Will the action involve Tree Removal?
No
-

Project Questionnaire

If the project includes forest conversion, report the appropriate acreages below. Otherwise, type '0' in questions 1-3.

1. Estimated total acres of forest conversion:

0

2. If known, estimated acres of forest conversion from April 1 to October 31

0

3. If known, estimated acres of forest conversion from June 1 to July 31

0

If the project includes timber harvest, report the appropriate acreages below. Otherwise, type '0' in questions 4-6.

4. Estimated total acres of timber harvest

0

5. If known, estimated acres of timber harvest from April 1 to October 31

0

6. If known, estimated acres of timber harvest from June 1 to July 31

0

If the project includes prescribed fire, report the appropriate acreages below. Otherwise, type '0' in questions 7-9.

7. Estimated total acres of prescribed fire

0

8. If known, estimated acres of prescribed fire from April 1 to October 31

0

9. If known, estimated acres of prescribed fire from June 1 to July 31

0

If the project includes new wind turbines, report the megawatts of wind capacity below. Otherwise, type '0' in question 10.

10. What is the estimated wind capacity (in megawatts) of the new turbine(s)?

0

1. PROJECT INFORMATION

Project Name: **Alvin R. Bush Dam Master Plan Update**

Date of Review: **2/16/2021 04:44:13 PM**

Project Category: **Recreation, Pond/lake maintenance (drawdown, plant control, dredging, dam repair)**

Project Area: **1,872.91 acres**

County(s): **Clinton**

Township/Municipality(s): **LEIDY TOWNSHIP**

ZIP Code:

Quadrangle Name(s): **HAMMERSLEY FORK; KEATING**

Watersheds HUC 8: **Middle West Branch Susquehanna**

Watersheds HUC 12: **Lower Kettle Creek; Middle Kettle Creek**

Decimal Degrees: **41.395274, -77.922016**

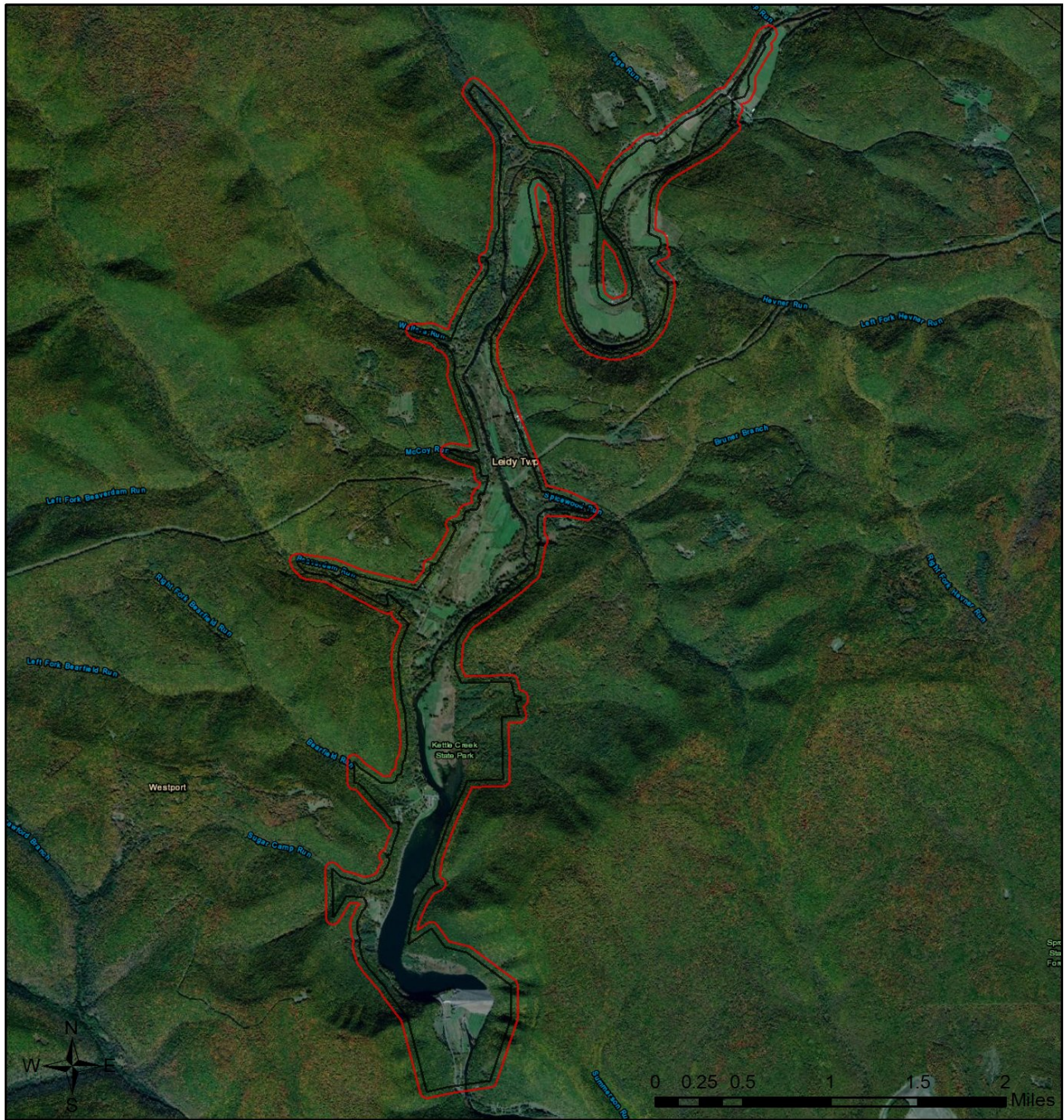
Degrees Minutes Seconds: **41° 23' 42.9850" N, 77° 55' 19.2568" W**

2. SEARCH RESULTS

Agency	Results	Response
PA Game Commission	Potential Impact	FURTHER REVIEW IS REQUIRED, See Agency Response
PA Department of Conservation and Natural Resources	Conservation Measure	No Further Review Required, See Agency Comments
PA Fish and Boat Commission	Conservation Measure	No Further Review Required, See Agency Comments
U.S. Fish and Wildlife Service	Potential Impact	MORE INFORMATION REQUIRED, See Agency Response

As summarized above, Pennsylvania Natural Diversity Inventory (PNDI) records indicate there may be potential impacts to threatened and endangered and/or special concern species and resources within the project area. If the response above indicates "No Further Review Required" no additional communication with the respective agency is required. If the response is "Further Review Required" or "See Agency Response," refer to the appropriate agency comments below. Please see the DEP Information Section of this receipt if a PA Department of Environmental Protection Permit is required.

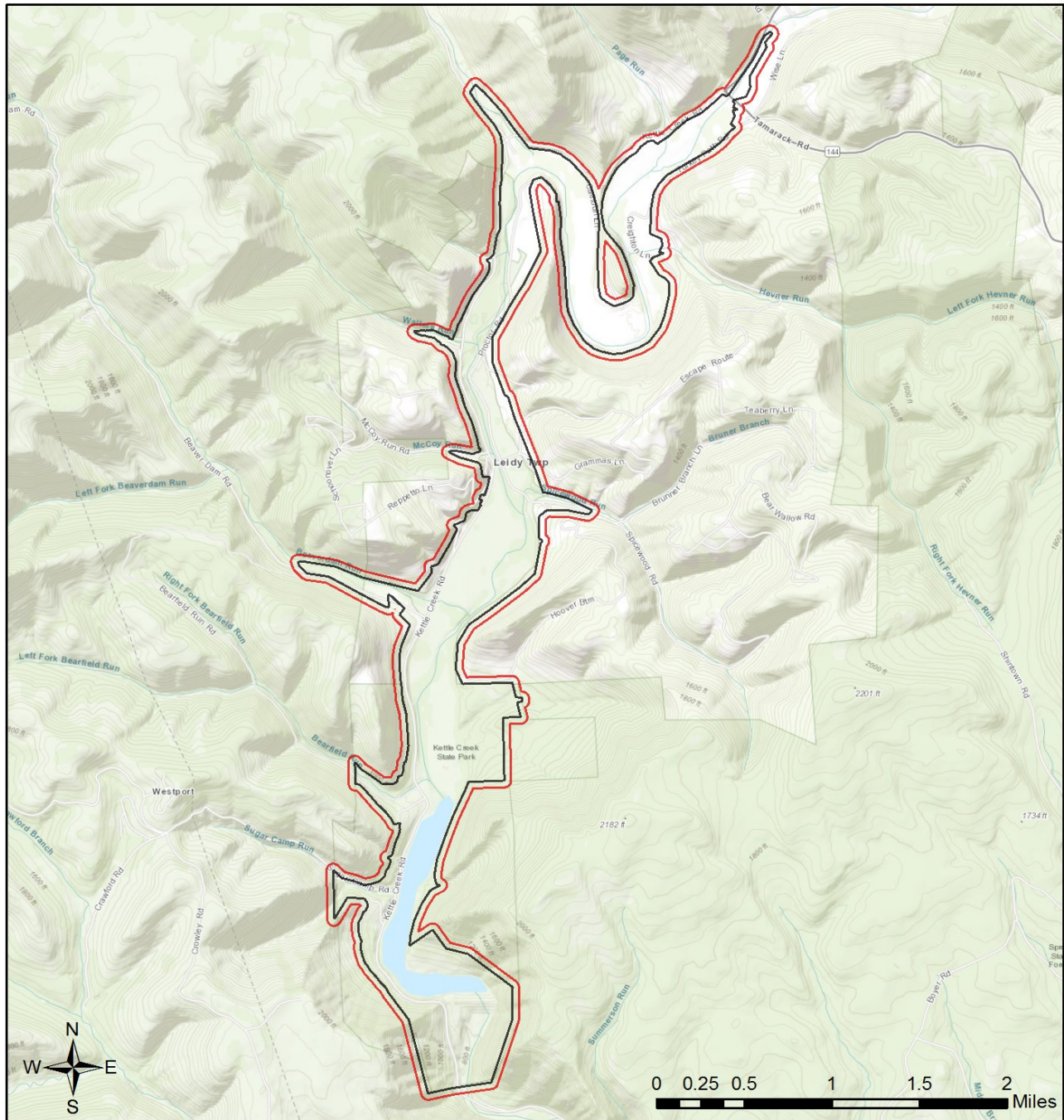
Alvin R. Bush Dam Master Plan Update



- Project Boundary
- Buffered Project Boundary

Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community

Alvin R. Bush Dam Master Plan Update



- Project Boundary
- Buffered Project Boundary

Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

RESPONSE TO QUESTION(S) ASKED

Q1: Which of the following accurately describes the habitats on and within 650 feet of the project area? "Project area" includes all features of the project (including buildings, roads, utility lines, outfall and intake structures, wells, stormwater retention/detention basins, parking lots, driveways, lawns, etc.), as well as all associated impacts (e.g., temporary staging areas, work areas, temporary road crossings, areas subject to grading or clearing, etc.). Include all areas that will be permanently or temporarily affected -- either directly or indirectly -- by any type of disturbance (e.g., land clearing, grading, tree removal, flooding, etc.).

Your answer is: The project area has not been field investigated to identify and delineate large rocks or boulders, talus or scree, rock outcrops, boulder fields, quarries, caves and associated passages, cliffs, abandoned highwalls from previous surface mining, and abandoned deep mines - OR - it is currently unknown if the project will affect any of these habitats.

3. AGENCY COMMENTS

Regardless of whether a DEP permit is necessary for this proposed project, any potential impacts to threatened and endangered species and/or special concern species and resources must be resolved with the appropriate jurisdictional agency. In some cases, a permit or authorization from the jurisdictional agency may be needed if adverse impacts to these species and habitats cannot be avoided.

These agency determinations and responses are **valid for two years** (from the date of the review), and are based on the project information that was provided, including the exact project location; the project type, description, and features; and any responses to questions that were generated during this search. If any of the following change: 1) project location, 2) project size or configuration, 3) project type, or 4) responses to the questions that were asked during the online review, the results of this review are not valid, and the review must be searched again via the PNDI Environmental Review Tool and resubmitted to the jurisdictional agencies. The PNDI tool is a primary screening tool, and a desktop review may reveal more or fewer impacts than what is listed on this PNDI receipt. The jurisdictional agencies **strongly advise against** conducting surveys for the species listed on the receipt prior to consultation with the agencies.

PA Game Commission

RESPONSE:

Further review of this project is necessary to resolve the potential impact(s). Please send project information to this agency for review (see WHAT TO SEND).

PGC Species: (Note: The Pennsylvania Conservation Explorer tool is a primary screening tool, and a desktop review may reveal more or fewer species than what is listed below.)

Scientific Name	Common Name	Current Status
Neotoma magister	Allegheny Woodrat	Threatened

PA Department of Conservation and Natural Resources

RESPONSE:

Conservation Measure: One or more geologic features of special concern is known on or near your site. There are voluntary options to augment, restore or reduce the impact to these resources. We encourage you to contact the PA Bureau of Topographic and Geologic Survey (jshaulis@pa.gov or 717-702-2037) for more information on the feature and specific recommendations.

DCNR Species: (Note: The Pennsylvania Conservation Explorer tool is a primary screening tool, and a desktop review may reveal more or fewer species than what is listed below. After desktop review, if a botanical survey is required by DCNR, we recommend the DCNR Botanical Survey Protocols, available here:

<https://conservationexplorer.dcnr.pa.gov/content/survey-protocols>)

Scientific Name	Common Name	Current Status	Proposed Status	Survey Window
Meandering channels	Meandering Channels	Special Concern Resource*	Special Concern Resource*	

PA Fish and Boat Commission

RESPONSE:

Conservation Measure: Based on records maintained in the Pennsylvania Natural Diversity Inventory (PNDI) database and Pennsylvania Fish & Boat Commission (PFBC) files, the timber rattlesnake (*Crotalus horridus*) is known from the vicinity of the proposed project site. Timber rattlesnakes occur in the forested, mountainous regions of the Commonwealth. They prefer forested areas to forage for small mammals (e.g., mice and chipmunks) and southerly-facing slopes for hibernating and other thermoregulatory activities. The timber rattlesnake is threatened by habitat loss/alteration, wanton killing, and poaching. Workers responsible for implementing this project should be advised that timber rattlesnakes may be encountered and that avoidance is the best means of minimizing risks to personal safety. It is suggested that safety protocols be implemented for timber rattlesnake encounters and workers should be advised that the timber rattlesnake is a state protected species and is not to be harmed. Killing of timber rattlesnakes is prohibited by the Commission pursuant to 58 Pa. Code Section 79.6.

U.S. Fish and Wildlife Service

RESPONSE:

Information Request: Due to the proximity of this project to a bald eagle nest, it is possible that project activities may disturb bald eagles, which is a form of "take" under the Bald and Golden Eagle Protection Act and may require a permit. The Service has prepared a project screening form to help you determine which specific measures may be necessary to avoid disturbing bald eagles and their nests, based on the type and scope of your proposed project or activity, and its distance from a bald eagle nest. Complete the "Bald Eagle Project Screening Form" (see https://www.fws.gov/northeast/ecologicalservices/pdf/eagle/NE_Bald-Eagle_Project-Screening-Form_rev20200416.pdf) and implement the measures identified on that form. Submit a copy of the completed Screening Form to the appropriate federal or state permitting agencies (e.g., PA DEP).

* Special Concern Species or Resource - Plant or animal species classified as rare, tentatively undetermined or candidate as well as other taxa of conservation concern, significant natural communities, special concern populations (plants or animals) and unique geologic features.

** Sensitive Species - Species identified by the jurisdictional agency as collectible, having economic value, or being susceptible to decline as a result of visitation.

WHAT TO SEND TO JURISDICTIONAL AGENCIES

If project information was requested by one or more of the agencies above, upload* or email* the following information to the agency(s). Instructions for uploading project materials can be found [here](#). This option provides the applicant with the convenience of sending project materials to a single location accessible to all three state agencies. Alternatively, applicants may email or mail their project materials (see AGENCY CONTACT INFORMATION). For projects showing "Potential Impacts" with USFWS, please send project information to that agency by email IR1_ESPenn@fws.gov (preferred) or regular mail.

Check-list of Minimum Materials to be submitted:

___ Project narrative with a description of the overall project, the work to be performed, current physical characteristics of the site and acreage to be impacted.

___ A map with the project boundary and/or a basic site plan (particularly showing the relationship of the project to the physical features such as wetlands, streams, ponds, rock outcrops, etc.)

In addition to the materials listed above, USFWS REQUIRES the following

___ **SIGNED** copy of a Final Project Environmental Review Receipt

The inclusion of the following information may expedite the review process.

___ Color photos keyed to the basic site plan (i.e. showing on the site plan where and in what direction each photo was taken and the date of the photos)

___ Information about the presence and location of wetlands in the project area, and how this was determined (e.g., by a qualified wetlands biologist), if wetlands are present in the project area, provide project plans showing the location of all project features, as well as wetlands and streams.

4. DEP INFORMATION

The Pa Department of Environmental Protection (DEP) requires that a signed copy of this receipt, along with any required documentation from jurisdictional agencies concerning resolution of potential impacts, be submitted with applications for permits requiring PNDI review. Two review options are available to permit applicants for handling PNDI coordination in conjunction with DEP's permit review process involving either T&E Species or species of special concern. Under sequential review, the permit applicant performs a PNDI screening and completes all coordination with the appropriate jurisdictional agencies prior to submitting the permit application. The applicant will include with its application, both a PNDI receipt and/or a clearance letter from the jurisdictional agency if the PNDI Receipt shows a Potential Impact to a species or the applicant chooses to obtain letters directly from the jurisdictional agencies. Under concurrent review, DEP, where feasible, will allow technical review of the permit to occur concurrently with the T&E species consultation with the jurisdictional agency. The applicant must still supply a copy of the PNDI Receipt with its permit application. The PNDI Receipt should also be submitted to the appropriate agency according to directions on the PNDI Receipt. The applicant and the jurisdictional agency will work together to resolve the potential impact(s). See the DEP PNDI policy at <https://conservationexplorer.dcnr.pa.gov/content/resources>.

5. ADDITIONAL INFORMATION

The PNDI environmental review website is a preliminary screening tool. There are often delays in updating species status classifications. Because the proposed status represents the best available information regarding the conservation status of the species, state jurisdictional agency staff give the proposed statuses at least the same consideration as the current legal status. If surveys or further information reveal that a threatened and endangered and/or special concern species and resources exist in your project area, contact the appropriate jurisdictional agency/agencies immediately to identify and resolve any impacts.

For a list of species known to occur in the county where your project is located, please see the species lists by county found on the PA Natural Heritage Program (PNHP) home page (www.naturalheritage.state.pa.us). Also note that the PNDI Environmental Review Tool only contains information about species occurrences that have actually been reported to the PNHP.

6. AGENCY CONTACT INFORMATION

PA Department of Conservation and Natural Resources

Bureau of Forestry, Ecological Services Section
400 Market Street, PO Box 8552
Harrisburg, PA 17105-8552
Email: RA-HeritageReview@pa.gov

PA Fish and Boat Commission

Division of Environmental Services
595 E. Rolling Ridge Dr., Bellefonte, PA 16823
Email: RA-FBPACENOTIFY@pa.gov

U.S. Fish and Wildlife Service

Pennsylvania Field Office
Endangered Species Section
110 Radnor Rd; Suite 101
State College, PA 16801
Email: IR1_ESPenn@fws.gov
NO Faxes Please

PA Game Commission

Bureau of Wildlife Habitat Management
Division of Environmental Planning and Habitat Protection
2001 Elmerton Avenue, Harrisburg, PA 17110-9797
Email: RA-PGC_PNDI@pa.gov
NO Faxes Please

7. PROJECT CONTACT INFORMATION

Name: _____
Company/Business Name: _____
Address: _____
City, State, Zip: _____
Phone: (_____) _____ Fax: (_____) _____
Email: _____

8. CERTIFICATION

I certify that ALL of the project information contained in this receipt (including project location, project size/configuration, project type, answers to questions) is true, accurate and complete. In addition, if the project type, location, size or configuration changes, or if the answers to any questions that were asked during this online review change, I agree to re-do the online environmental review.

applicant/project proponent signature

date

Spindler, Megan L CIV USARMY CENAB (US)

From: Shaulis, James <jshaulis@pa.gov>
Sent: Monday, March 22, 2021 4:59 PM
To: Spindler, Megan L CIV USARMY CENAB (US)
Cc: Reese, Stuart; Hand, Kristen; Schmid, Katherine; Ebersole, Craig
Subject: [Non-DoD Source] RE: [External] Alvin R. Bush Dam Master Plan Update
Attachments: BUSH PNDI_Submission.pdf; The Bunk_1A .docx

Megan,

The geologic features of special concern you were alerted to through the PNDI are geoheritage sites known as “**The Bunk**” which is an elongated knob like feature and the ancient Kettle Creek meander bend or “**Oxbow Bend**” that surrounds it (see attached word doc). It appears to be that these features are in the flood control area of the Bush Dam. As long as there are no plans to excavate this area there shouldn’t be any reason to be concerned about impacting them.

Thank you for the opportunity to allow us to comment on this matter.

Sincerely,
Jim Shaulis

From: Spindler, Megan L CIV USARMY CENAB (US) [mailto:Megan.L.Spindler@usace.army.mil]
Sent: Friday, March 19, 2021 3:20 PM
To: Shaulis, James <jshaulis@pa.gov>
Subject: [External] Alvin R. Bush Dam Master Plan Update

ATTENTION: This email message is from an external sender. Do not open links or attachments from unknown sources. To report suspicious email, forward the message as an attachment to CWOPA_SPAM@pa.gov.

Good afternoon –

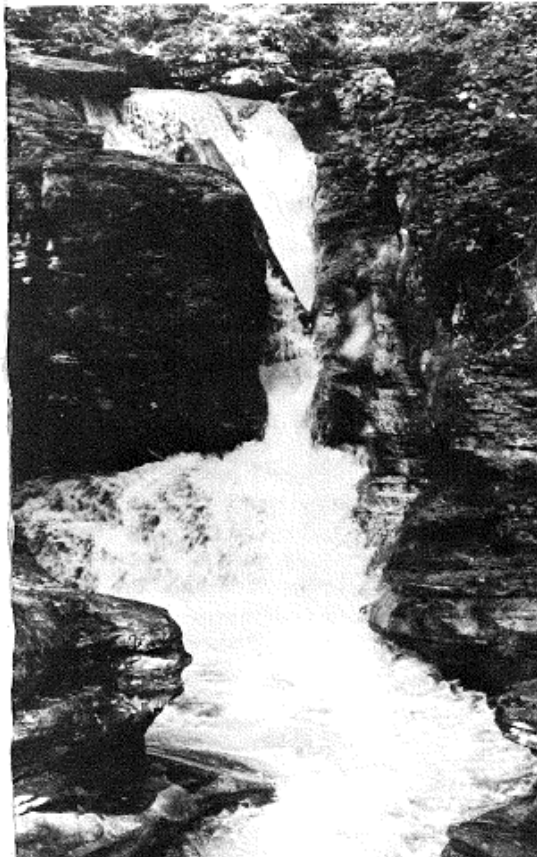
The U.S. Army Corps of Engineers is in the process of creating a revised Master Plan for the Alvin R. Bush Dam and Kettle Creek Reservoir and an Environmental Assessment for the Master Plan. The project was submitted for review through the Pennsylvania Natural Diversity Inventory (PNDI) website. The project receipt indicates that there may be one or more geologic features of special concern on or near the site, and to contact your office for more information. I have attached the information submitted through PNDI for your reference. Please note, the primary purpose of the master plan update is to update terminology associated with land use classifications, and there will be no construction activities completed at this time. We mention future planned activities in the Master Plan, but any future activities will require their own review.

If you have any comments or conservation measures to recommend, please let me know, and if you have any questions don’t hesitate to reach out.

Thank you!
Megan Spindler

Environmental Geology Report 7
1979

OUTSTANDING SCENIC GEOLOGICAL FEATURES OF PENNSYLVANIA



Alan R. Geyer

Pennsylvania Department of Environmental Resources
Bureau of Topographic and Geologic Survey

William H. Bolles

Pennsylvania Department of Education
Bureau of Curriculum Services

Library
Topographic and Geologic Survey
Harrisburg, Pa.

ark, Luzerne County

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL RESOURCES
BUREAU OF
TOPOGRAPHIC AND GEOLOGIC SURVEY
Arthur A. Socolow, State Geologist

106. THE BUNK

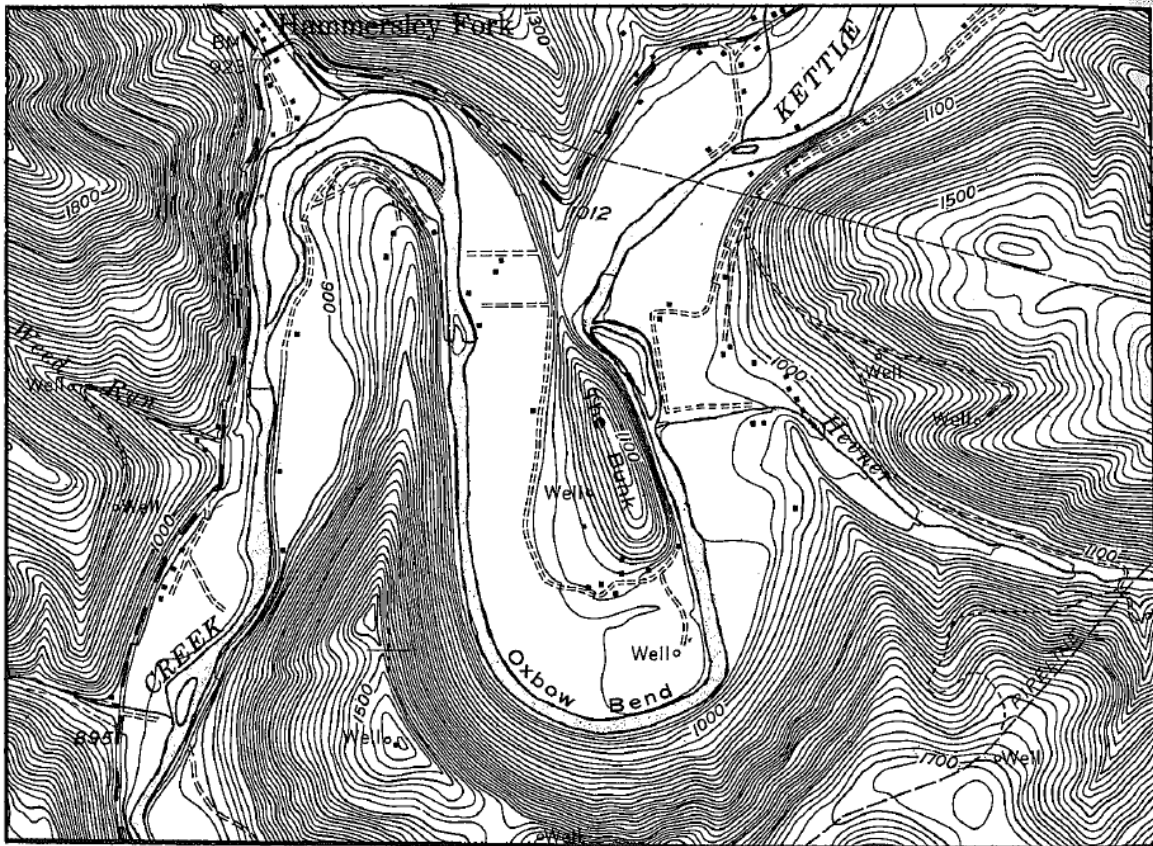
COUNTY: Clinton

TOWNSHIP: Leidy

QUADRANGLE: Hammersley Fork

LOCATION: Along Kettle Creek, 1 mile south of the village of Hammersley Fork and Pa. Route 144.

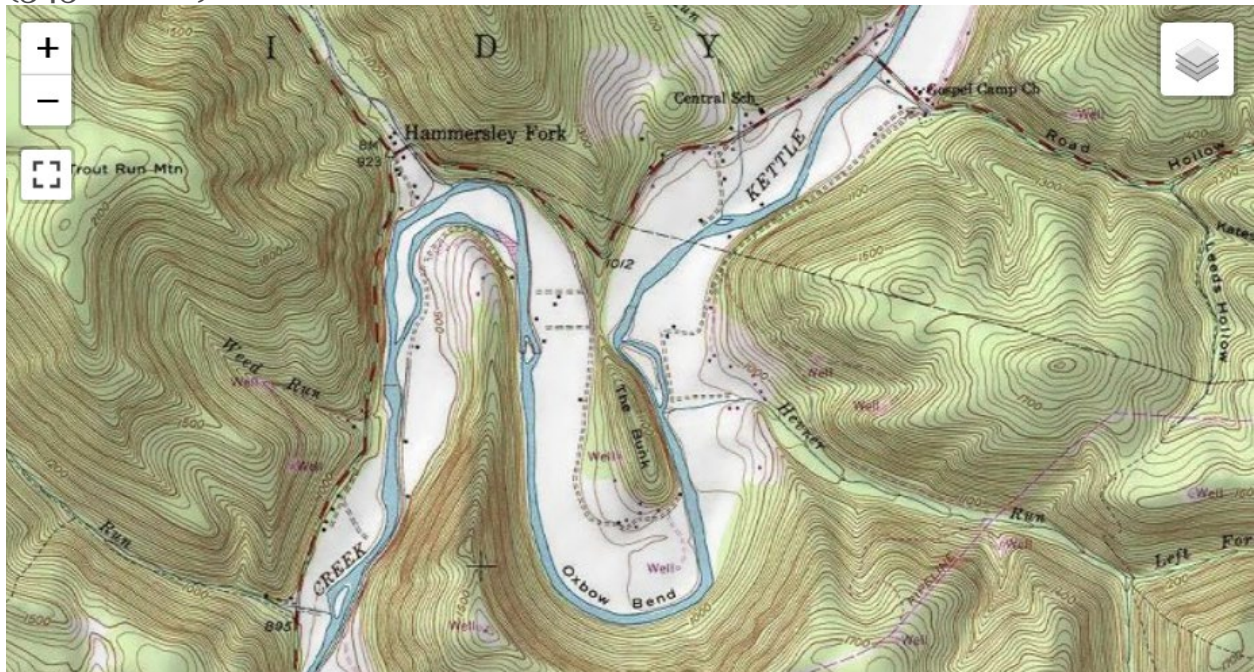
REMARKS: An ancient meander of Kettle Creek eroded the land within the meander into the shape of a built-in bed or bunk. The bend area of the meander resembles an oxbow and is known as **Oxbow Bend** (107).



1. The Bunk in Clinton County PA (Hammersley Fork Area)

Map and location information for **The Bunk** in **Pennsylvania**: **The Bunk** is one of the Summits in **Clinton County, PA** and can be found on the Hammersley Fork USGS topographic quad map. The GPS coordinates are 41.4220095 (latitude), -77.9088843 (longitude) and the approximate elevation is 1,132 feet (345 meters) above sea level

Map and location information for The Bunk in Pennsylvania: The Bunk is one of the Summits in Clinton County, PA and can be found on the Hammersley Fork USGS topographic quad map. The GPS coordinates are 41.4220095 (latitude), -77.9088843 (longitude) and the approximate elevation is 1,132 feet (345 meters) above sea level.







June 14, 2021

Ms. Megan Spindler
USACOE
2 Hopkins Plaza
Baltimore, MD 21201

Project Search ID: PNDI-720283
PNDI Receipt: *project_receipt_alvin_r_bush_dam_master_p_720283_FINAL_1.pdf*
Re: Alvin R. Bush Dam Master Plan Update
Leidy Township, Clinton County, PA

Dear Ms. Spindler,

Thank you for submitting the Pennsylvania Natural Diversity Inventory (PNDI) Environmental Review Receipt *project_receipt_alvin_r_bush_dam_master_p_720283_FINAL_1.pdf* for review. The Pennsylvania Game Commission (PGC) screened this project for potential impacts to species and resources of concern under PGC responsibility, which includes birds and mammals only.

No Impact Anticipated

PNDI records indicate species or resources of concern are located in the vicinity of the project. However, based on the information you submitted concerning the nature of the project, the immediate location, and our detailed resource information, the PGC has determined that no impact is likely. Therefore, no further coordination with the PGC will be necessary for this project at this time.

This response represents the most up-to-date summary of the PNDI data files and is valid for two (2) years from the date of this letter. An absence of recorded information does not necessarily imply actual conditions on site. Should project plans change or additional information on listed or proposed species become available, this determination may be reconsidered.

Should the proposed work continue beyond the period covered by this letter, please resubmit the project to this agency as an "Update" (including an updated PNDI receipt, project narrative and accurate map). If the proposed work has not changed and no additional information concerning listed species is found, the project will be cleared for PNDI requirements under this agency for two additional years.

This finding applies to impacts to birds and mammals only. To complete your review of state and federally-listed threatened and endangered species and species of special concern, please be sure

that the U.S. Fish and Wildlife Service, the PA Department of Conservation and Natural Resources, and/or the PA Fish and Boat Commission have been contacted regarding this project as directed by the online PNDI ER Tool found at www.naturalheritage.state.pa.us.

Sincerely,



Tracey Librandi Mumma
Division of Environmental Planning & Habitat Protection
Bureau of Wildlife Habitat Management
Phone: 717-787-4250, Extension 73614
Fax: 717-787-6957
E-mail: tlibrandi@pa.gov

A PNHP Partner



TLM/tlm