# -DRAFT-SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT

Lake Hopatcong Harmful Algal Bloom Treatment Demonstration Project Sussex and Morris Counties, New Jersey NEPA ID No. EAXX-202-00-E5P-1744805066

April 2025

Prepared by

U.S. Army Corps of Engineers, Philadelphia District April 2025

-DRAFT-

#### FINDING OF NO SIGNIFICANT IMPACT

# LAKE HOPATCONG HARMFUL ALGAL BLOOM TREATMENT DEMONSTRATION PROJECT

The U.S. Army Corps of Engineers (USACE) Philadelphia District, has conducted an environmental analysis in accordance with the National Environmental Policy Act of 1969 (NEPA), as amended. This Supplemental Environmental Assessment (SEA) for the Lake Hopatcong Harmful Algal Bloom (HAB) Treatment Demonstration project addresses the effects of a lanthanum-based phosphorus binding agent and a chitosan-based flocculant to control HABs and manage phosphorus in Lake Hopatcong, New Jersey. This environmental assessment (EA) supplements the *Programmatic EA for Implementation of Section 128 of the Water Resources Development Act of 2020, Harmful Algal Bloom Demonstration Program* (October 2023), prepared by the USACE Engineer Research and Development Center (ERDC) to describe and analyze the potential impacts to the human and natural environment from implementing the HAB Demonstration Program.

For the current Proposed Action, the potential effects to the following resources were evaluated in the SEA:

Resource	Insignificant Effects	Insignificant Effects (with mitigation)	No Effects
Climate	Х		
Air Quality	Х		
Aquatic Resources	Х		
Socioeconomics			Х
Biological Resources	Х		
Cultural Resources			Х
Hazardous, Toxic or Radioactive			Х
Waste			
Land Use			Х
Noise			Х
Recreation	Х		
Soils & Geology			X
Water Quality	Х		

#### **Endangered Species Act**

Pursuant to Section 7 of the Endangered Species Act of 1973, as amended, the USACE has determined the Proposed Action analyzed in this SEA will not affect listed species, therefore further consultation with U.S. Fish and Wildlife Service is not required.

# Water Quality Compliance

Pursuant to the Clean Water Act of 1972, the contractor has applied for two (2) permits through the NJDEP Bureau of Surface Water & Pretreatment Permitting Office. Once these permits are approved, the Proposed Action will be in full compliance with this act. All conditions in the permits will be implemented to avoid or minimize adverse effects to water quality.

#### **Cultural Resources**

Pursuant to Section 106 of the National Historic Preservation Act of 1966, as amended, the USACE has determined that the Proposed Action has no potential to affect historic properties eligible for or listed on the National Register of Historic Places (NRHP).

#### National Environmental Policy Act of 1969

Pursuant to the National Environmental Policy Act of 1969 (NEPA), this SEA will be available for public comment for 30 days. Any relevant comments submitted during this 30-day comment period will be responded to in the Final SEA.

#### Recommendation

All applicable laws, executive orders and regulations were considered in evaluation of alternatives. Based on these reports, the reviews by other Federal, State, and local agencies, Tribes, input of the public, and the review by my staff, it is my determination that the recommended plan would not significantly affect the human environment; therefore, preparation of an Environmental Impact Statement is not required.

Date

Jeffrey M. Beeman Lieutenant Colonel Commander, USACE Philadelphia District

### DRAFT SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT

# Lake Hopatcong Harmful Algal Bloom Treatment Demonstration Project

# **Table of Contents**

1.0	Proje	ect Purpose and Need6
	1.1	Project Authority6
	1.2	Project Location6
	1.3	Project Background6
	1.4	Project Purpose and Need8
	1.5	Related Environmental Documents8
	1.6	Decision Framework8
	1.7	Permits, Licenses, & Entitlements9
2.0	Alter	natives9
	2.1	No Action Alternative (Alternative A)9
	2.2	Proposed Alternative (Alternative B)9
	2.3	Alternatives Eliminated from Detailed Evaluation17
3.0	Affec	ted Environment17
	3.1	Air Quality18
	3.2	Climate18
	3.3	Aquatic Resources19
	3.4	Biological Resources19
	3.5	Recreation22
	3.6	Water Quality22
	3.7	Cultural Resources23
	3.8	Land Use

	3.9	Socioeconomics	27
4.0	Envi	ronmental Effects	27
	4.1	Air Quality	29
	4.2	Climate	29
	4.3	Aquatic Resources	29
	4.4	Biological Resources	
	4.5	Recreation	30
	4.6	Water Quality	31
	4.7	Cultural Resources	32
	4.8	Land Use	32
	4.9	Socioeconomics	32
5.0	Prefe	erred Alternative	35
6.0	Envi	ronmental Regulations Addressed in SEA	
7.0	Envi	ronmental Commitments	37
8.0	Conc	clusions	37
9.0	Publi	ic Involvement	
10.0	Prep	arers	
11.0	Refe	rences	

# **List of Figures**

Figure 1.1: Project Location Map	7
Figure 2.1: Northern Cove Treatment Map	12
Figure 2.2: Landing Channel Treatment Map	13
Figure 2.3: Great Cove Treatment Map	14
Figure 2.4: Van Every Cove Treatment Map	15

# List of Tables

Table 1.1. Permitting Process	9
Table 3.1. Migratory Birds of Concern in the Project Area	20
Table 3.2. Federal and State Threatened and Endangered Species and Their Status	21
Table 4.1. Summary of Environmental Effects	33
Table 6.1. Status of Environmental Compliance	36
Table 10.1. List of Report Preparers	37

Appendix A: Safety Date Sheets for EutroSORB® G & LiquiFloc 1% Appendix B: Coordination

#### 1. Project Purpose and Need

# 1.1. Project Authority

Section 128 of the Water Resources Development Act (WRDA) 2020, directs the Secretary of the Army (Secretary) to implement a demonstration program to determine the causes of, and implement measures to effectively detect, prevent, treat, and eliminate harmful algal blooms (HAB) associated with water resources development projects. Section 128 requires the Secretary to consult with federal and state agencies, and leverage data and activities of the Secretary carried out through the U.S. Army Corps of Engineers (USACE) Engineer Research and Development Center (ERDC) pursuant to Section 1109 of the WRDA of 2018 (33 U.S.C. § 610).

# 1.2. Project Location

Lake Hopatcong is the largest lake in New Jersey, with a surface area of 2,686 acres and approximately 39 miles of shoreline (Figure 1.1). The lake is on the border of Sussex and Morris Counties, surrounded by the Boroughs of Hopatcong and Mount Arlington and the Townships of Jefferson and Roxbury. Lake Hopatcong and its associated tributaries, Lake Shawnee and its sub-watersheds, form the headwaters of the Upper Musconetcong River Watershed. The outlet of Lake Hopatcong forms the Upper Musconetcong River and enters Lake Musconetcong approximately 1.28 miles from the Lake Hopatcong dam (Princeton Hydro, 2024).

# 1.3. Project Background

The Proposed Action is necessary to implement the Harmful Algal Bloom (HAB) Demonstration Program as authorized by the WRDA 2020, Section 128. In October 2023, the U.S. Army signed a Finding of No Significant Impact (FONSI) describing the potential effects to the human environment from implementing the HAB Demonstration Program. The Programmatic Environmental Assessment (PEA) describes the methodology for implementing the demonstration program, including evaluating Statements of Interest (SOIs) for project selection, as well as the potential effects to the human environment if the demonstration program is implemented. The PEA provides for three types of demonstration projects: HAB detection, management, and prevention. This demonstration project will implement HAB management.

Lake Hopatcong is a highly valued resource for the state of New Jersey and has a substantial impact on the local economy. Although highly valued, the lake has been documented to experience impacts to water quality conditions such as cyanobacteria blooms and nuisance growth of submerged aquatic vegetation (SAV). These prominent poor water quality conditions have been attributed to elevated watershed-based pollutant loads from total phosphorus (TP) as well as an elevated internal phosphorus load from lake bottom sediments. In accordance with Clean Water Act 303d Impaired Waters and Total Maximum Daily Loads (TMDL), a Total Maximum Daily Load for TP has existed at the project since the NJDEP conducted a TMDL analysis for the Upper Musconetcong River Watershed in 2003 (Princeton Hydro, 2025).



FIGURE 1.1: PROJECT LOCATION MAP (PRINCETON HYDRO, 2025)

#### 1.4. Project Purpose and Need

The purpose of this project is to evaluate innovative HAB treatments using a combination of nonpesticidal products and early season benthic applications of algicides to control near-shore HABs. The benefits of this HAB demonstration project are expected to include reduced HABs and phosphorus levels at near-shore areas of Lake Hopatcong. Lake Hopatcong experiences negative impacts to water quality conditions due to annual cyanobacteria blooms, which impacts fish and wildlife, human health, ecosystem function, and recreation. This demonstration research project serves to help expand the approach and technologies of management of HABs in Lake Hopatcong with future application to various bodies of water in similar situations across the continental United States. Incubation studies, as well as data retrieved from pre- and post-monitoring will be used to formulate a demonstration summary that elaborates on treatment results and the cost and benefit analysis for these types of treatment approaches.

# **1.5. Related Environmental Documents**

The following related environmental documents were used and referenced in the making of this SEA:

• USACE Implementation Guidance for Section 128 of the Water Resources Development Act of 2020, Harmful Algal Bloom Demonstration Program, prepared by the Office of the Assistant Secretary of the Army for Civil Works (January 2022)

• Programmatic EA (PEA) for Implementation of Section 128 of the Water Resources Development Act of 2020 Harmful Algal Bloom Demonstration Program, prepared by the Office of the Assistant Secretary of the Army for Civil Works (October 2023)

# **1.6. Decision Framework**

Proposed HAB prevention, detection, and management technology demonstration projects were sought in accordance with the USACE Implementation Guidance. The decision to be made upon completion of this Supplemental EA is whether to implement the Proposed Action (Completing the HAB management demonstration project), or the No Action alternative (Terminate the HAB management demonstration project). If no significant environmental effects, or potentially significant effects are identified as a result of this SEA and the Proposed Action can be modified or mitigated to a level of no significant impact, a Finding of No Significant Impact (FONSI) will be signed by the decision maker. If a significant impact is discovered, and the impact cannot be reduced to less than significant, or if new information warrants the need for additional analysis of potentially significant environmental effects, the USACE may initiate a Notice of Intent (NOI) to prepare an Environmental Impact Statement (EIS).

#### 1.7. Permits, Licenses, and Entitlements

All permits, licenses, and entitlements evaluated in this document will be submitted and applied for through Princeton Hydro, LLC. See all applied permits for the proposed action below in Table 1.1.

Table 1.1. Permitting Process			
Permit	Agency	Status	
Master General Pesticide (MGP) Application, Category Pesticide General Permit, and NJPDES Permit No. NJ0178217.	The NJDEP Bureau of Surface Water & Pretreatment Permitting	Submitted and Under State Review	
Final Surface Water Master General Permit, Category Harmful Algal Bloom (HAB) Management (GP); NJPDES Permit No. NJ0356531.	The NJDEP Bureau of Surface Water & Pretreatment Permitting	Submitted and Under State Review	

#### 2. Alternatives

The Proposed Action and No Action alternatives were considered and analyzed in this supplemental EA.

#### 2.1. No Action Alternative (Alternative A)

Under the No Action Alternative (Alt. A), the HAB demonstration project will not be completed in Lake Hopatcong as described. The science to develop treatment methods to improve HAB and nutrient conditions in Lake Hopatcong as well as similar bodies of water in the U.S. would not advance.

# 2.2. Proposed Action (Alternative B)

The Proposed Action (Alt. B) is a combination of three treatment periods at 6 different coves at Lake Hopatcong (Figure 1.1) during early spring, early summer, and mid-late summer of 2025. This study will evaluate the usage of innovative treatments, using a combination of non-pesticidal products and early season benthic applications of algaecides for near-shore HABS management and control. All treatment periods will be monitored for short and long-term effects, with final results consolidated into a final report and cost-benefit analysis of each of the demonstrated treatments. Pre- and post-treatment incubation studies will take place in the spring of 2025 and spring of 2026. These incubation studies will include analysis of sediment and water samples collected from inside each treatment area and outside each treatment area (as a control) to quantify cyanobacteria that blooms from sediment. This SEA generally describes all proposed treatments and treatment areas that will occur throughout the demonstration project. The treatment methods that are being demonstrated in the spring of 2025 are widely used algicides (PAK 27 (oxidizer), Cutrine Plus Granular Algicide (chelated copper)) and have been evaluated and approved for use in the 2023 PEA and will not be further evaluated in this SEA. Early spring treatments utilizing the treatment methods above will be implemented following the receipt of approvals from the State of New Jersey (Table 1.1).

This SEA specifically addresses the treatments that will occur during the summer as the products being used are not previously discussed and evaluated in the 2023 PEA. The following sections below will discuss proposed treatments that are to take place in the summer of 2025 and are the proposed actions associated with this SEA.

# Early Summer 2025 Treatments:

The *Northern Cove* (Figure 2.1) treatment is planned to begin in early summer of 2025, utilizing a "floc and sink" treatment method. There are four (4) sampling sites within the 47-acre treatment area, and three (3) control sites just outside of the treatment area. The treatment application products include aluminum sulfate (Alum) (floc) and EutroSORB<sup>®</sup> G (sink). The application rates are 100 gallons per acre for the alum product and 500 pounds per acre for the EutroSORB<sup>®</sup> G product. The EutroSORB<sup>®</sup> G application rate at the Northern Cove is larger in amount than in the Landing Channel due to the product being used as the "sinking" agent. The products will be applied in an approximate 6-7 day phased process, with the alum taking 1-2 days, and then 4-5 days for the application of the EutroSORB<sup>®</sup> G product. These products will not be placed on the same day for any of the sampling sites.

The *Landing Channel* (Figure 2.2) treatment is also planned to begin in the early summer of 2025, utilizing a "floc and lock" treatment method. There are four (4) sampling sites within the 50-acre treatment area, and three (3) control sites just outside of the treatment area. The application products include LiquiFloc 1% (chitosan)(floc) and EutroSORB<sup>®</sup> G (lock). The application rates for this area are 50 mg/L LiquiFloc 1% (0.50 mg/L chitosan) and 250 pounds per acre for the EutroSORB<sup>®</sup> G product. The EutroSORB<sup>®</sup> G will be used as a locking agent to inactivate the sediment bound phosphorus. The products will be applied in a total phased treatment duration of approximately 4-5 days, with the LiquiFloc 1% treatment taking 1-2 days, and 2-3 days for the application of the EutroSORB<sup>®</sup> G product. These products will not be placed on the same day for any of the sampling sites.

#### Mid – Late Summer 2025 Treatments:

The *Great Cove* (Figure 2.3) treatment is planned to begin in mid- to late-summer of 2025, utilizing a "kill, floc, and sick" treatment method. There are three (3) sampling sites within the 44-acre treatment area, and three (3) control sites just outside of the treatment area. The treatment products include LiquiFloc 1% (chitosan)(floc), EutroSORB<sup>®</sup> G (sink) and GreenClean 5.0 (kill). The application rates for this area are 2.8 gallons per acre-feet for the GreenClean 5.0, 50 mg/L for the LiquiFloc 1% (0.50 mg/L chitosan) product, and 500 lbs per acre for the EutroSORB<sup>®</sup> G product. In this area, the EutroSORB<sup>®</sup> G has a higher application rate due to it acting as the "sinking" agent. Similar to the treatments taking place in early summer, the products will be applied in a total phased treatment duration of approximately 7-8 days. The treatment will start with the Green Clean 5.0 (2 days), then the LiquiFloc 1% (1-2 days), and completed with the EutroSORB<sup>®</sup> G product (4-5 days). These products will not be placed on the same day for any of the sampling sites.

The *Van Every Cove* (Figure 2.4) treatment is also planned to begin in mid- to late-summer of 2025, but will utilize a "kill and sink" treatment method. There are three (3) sampling sites within the 23-acre treatment area, and three (3) control sites just outside of the treatment area. The treatment products in this area that will be used include GreenClean 5.0 (kill) and EutroSORB<sup>®</sup> G (sink). The application rates for this area are 2.8 gallons per acre-feet for the GreenClean 5.0 and 500 lbs per acre for the EutroSORB<sup>®</sup> G product. Due to the higher application rate of the EutroSORB<sup>®</sup> G, it is used as the sinking agent. Both of these products will be applied in a total phased treatment duration of approximately 3 days. The treatment

will start with the application of the GreenClean (1 day) and complete with the application of the EutroSORB<sup>®</sup> G product (2 days). These products will not be placed on the same day for any of the sampling sites.



FIGURE 2.1: NORTHERN COVE TREATMENT MAP (PRINCETON HYDRO, 2025)



FIGURE 2.2: LANDING CHANNEL TREATMENT MAP (PRINCETON HYDRO, 2025)



FIGURE 2.3: GREAT COVE TREATMENT MAP (PRINCETON HYDRO, 2025)



FIGURE 1.4: VAN EVERY COVE TREATMENT MAP (PRINCETON HYDRO, 2025)

#### Monitoring

Pre-treatment and post-treatment water quality monitoring will be conducted at all treatment areas proposed in this action. One pre-treatment monitoring event will be conducted at each site within one week of each scheduled treatment event. One immediate post-treatment monitoring event will be conducted at each site approximately one week after each treatment event. One short-term post-treatment monitoring event will be conducted approximately one month after each treatment event. The following parameters will be sampled at each monitoring event: temperature, dissolved oxygen, pH, and conductivity. Surface and bottom water samples will be collected and analyzed for phycocyanin, phycoerythrin, and chlorophyll-a. Phytoplankton samples will be collected at the surface and at the bottom sediment/water interface at each station. Overall submerged aquatic vegetation biomass will also be assessed at each station.

The phosphorus, nitrogen, total suspended solids, dissolved organic carbon, alkalinity, hardness, total lanthanum, dissolved lanthanum, and field detection of microcystins and anatoxin-A will be collected at four stations in Great Cove and four stations in Van Every Cove. The phosphorus, nitrogen, total suspended solids, and field detection of microcystins and anatoxin-A will be collected at the stations sampled during incubation studies (5 stations in Landing Channel and 5 stations in Northern Cove). In the Northern Cove only, surface samples will be collected and analyzed for total recoverable aluminum and dissolved aluminum.

# EutroSORB<sup>®</sup> G:

EutroSORB<sup>®</sup> G is a lanthanum (La) modified bentonite with a 10% La content by weight. Evidence supports that the phosphorus binding mechanism of EutroSORB<sup>®</sup> G is similar to other La based materials, including previously studied LMB materials (LMB 5%). The product is used as a phosphorus (P) management tool and is used for improving water quality in aquatic systems that are negatively affected by nutrient pollution. Approximately 90% of this product is clay based. The clay carrier material (bentonite) of EutroSORB<sup>®</sup> G has an inherently low toxicity, therefore the toxicological profile of this product focuses on the active ingredient lanthanum. Exposure pathways for humans are related to recreation, fish consumption, and irrigation. Lanthanum-carbonate (La<sub>2</sub>(CO<sub>3</sub>)<sub>3</sub>) is considered as an appropriate reference substance as both insoluble LaPO<sub>4</sub> and La-carbonate are expected to be formed in waterbodies, treated with La containing phosphorus binding materials. La-carbonate is used for medicine for the treatment of hyperphosphatemia in patients suffering from renal failure. Large amounts of toxicological and clinical studies are available on La-carbonate. The resulting research from these clinical studies demonstrates the wide margin of safety associated with the use of EutroSORB<sup>®</sup> G at predicted dose rates and environmentally relevant concentrations, therefore, the risk for humans related to the use of EutroSORB<sup>®</sup> G is rated as very low (Limno Solutions International, 2023).

Exposure pathways for terrestrial domestic and wild animals are related to swimming or by drinking water from a waterbody treated with EutroSORB<sup>®</sup> G. Based on data related to the use of La-carbonate in veterinary drugs, it can be concluded that water consumption from a lake treated with EutroSORB<sup>®</sup> G would not pose any risk to animal health. For avian species, lanthanum compounds are authorized as food additives in livestock breeding to improve animal health and production. It appears unlikely that waterbirds would suffer any toxicity caused by EutroSORB<sup>®</sup> G (Limno Solutions International, 2023).

To determine risk associated with aquatic species, two scenarios were tested. Scenario 1, a hypothetical worst-case scenario (dosage rate of 250 mg EutroSORB<sup>®</sup> G G/L) and scenario 2, a total lanthanum (TLa) dosage scenario that was used in a recent U.S case. A risk quotient (RQ) value <1 indicates no risk, and RQ>1 indicates a potential risk for adverse effects. Mysid shrimp (*Mysida spp.*), *Ceriodaphnia dubia*, fathead minnow (*Pimephales promelas*), and rainbow trout (*Oncorhynchus mykiss*) were all analyzed in this test for any adverse effects. A typical dose range (9 mg/L to 100 mg/L) shows a RQ>1 (no risk) for all these species. Notably, dosage of EutroSORB<sup>®</sup> G shows no risk in any of the above species until a dosage of 600 mg/L, with both the ceriodaphnia dubia and the rainbow trout showing potential adverse effects (Limno Solutions International, 2023). It is also expected that non-target effects of EutroSORB<sup>®</sup> G on the phytoplankton community would be only marginal and are outweighed by an improvement of the phytoplankton biodiversity.

The clay carrier material of EutroSORB<sup>®</sup> G is not subject to a chemical transformation process and will become an inert part of the sediment. With regard to the lanthanum content of EutroSORB<sup>®</sup> G, the available information for the reference material LMB 5% demonstrations low mobility of La in water and the sediment, with a negligible transfer to ground water (Limno Solutions International, 2023).

#### LiquiFloc 1% (Chitosan):

HaloKlear LiquiFloc 1% is a product that is formulated from natural flocculants. A flocculant is used in water treatment processes to improve the sedimentation rate of small particles from the water column. The product is designed and concentrated to be 100% biodegradable through enzymatic activity to prevent bioaccumulation. LiquiFloc 1% has been tested and approved to Std. 60 for drinking water and has earned a General Use Level Designation (GULD) from the State of Washington Department of Ecology (Dober, 2016). According to the Safety Data Sheet from 2012, the ecological toxicity for this product is not considered harmful to aquatic organisms or to cause long-term adverse effects in the environment (Federal Register/ Vol 77, No. 58).

#### 2.3. Alternatives Eliminated from Detailed Evaluation

The alternatives evaluated in this SEA are limited because they include only the No Action (Alt. A) and the Proposed Action (Alt. B). As previously noted, the Proposed Action alternative only includes those treatment methodologies not previously evaluated in the Programmatic EA for Implementation of Section 128 of the Water Resources Development Act of 2020, Harmful Algal Bloom Demonstration Program (October 2023), prepared by the USACE Engineer Research and Development Center (ERDC) to describe and analyze the potential impacts to the human and natural environment from implementing the HAB Demonstration Program. Any potential significant impacts identified in this SEA may result in the current project's termination.

#### 3. Affected Environment

This section describes the environment that could be affected by the alternatives under consideration. The factors of the human and natural environment that may be affected by the proposed action that are assessed in this SEA are: (1) climate; (2) air quality; (3) aquatic resources, including floodplains, hydrology, and waters of the U.S.; (4) biological resources, including threatened and endangered species; (5) recreation; (6) cultural resources; (7) water quality; (8) land Use; and (9) socioeconomics. The following subsections describe those resources that could be affected by the Proposed Action (Alt. B).

#### 3.1. Air Quality

The Clean Air Act (CAA) General Conformity Rules, Section 176(C) of the CAA, requires that federal agencies assure their activities are in conformance with federally approved CAA state implementation plans for geographical areas designated as "nonattainment" and "maintenance" areas under the CAA (42 U.S.C. § 7506). The United States Environmental Protection Agency (USEPA) published its final General Conformity Rule to Implement Section 176(c) on 30 November 1993 (58 FR 63214). The USEPA's final rule addresses how federal agencies are to demonstrate that activities in which they engage conform with federally approved CAA state implementation plans. The EPA rule contains a number of "exempted" or "presumed to conform" activities which include various USACE activities.

The USEPA AirData database contains measurements of air pollutant concentrations for the entire United States. The measurements in this database include both criteria air pollutants and hazardous air pollutants that are compared against the National Ambient Air Quality Standards (NAAQS) specified by the USEPA. USACE queried the AirData database for recent (2023) air quality data within the project area. According to the queried 2023 AirData report, air quality in the proposed project area was generally good (314 days) to moderate (43 days) out of the 363 reported Air Quality Index (AQI) days. The AQI is an approximate indicator of overall air quality due to its account of all the criteria air pollutants measured within a geographic area (ground-level ozone, particulates, carbon monoxide, nitrogen dioxide, and sulfur dioxide). The AQI summary values include both qualitative measures (days of the year having "good" air quality) and descriptive statistics (i.e., median AOI value). According to the 2023 New Jersey State Health Assessment Data, the entire state of New Jersey is designated as nonattainment for the ozone NAAQS. New Jersey's northern nonattainment area is classified as "moderate" for the 0.08 ppm and 0.07 ppm 8-hour ozone standards and "serious" for the 0.075 ppm 8-hour ozone standard. New Jersey's southern nonattainment area is classified as "moderate" for the 0.08 ppm 8-hour ozone standards, and "marginal" for the 0.075 ppm and 0.070 ppm 8-hour ozone standards (NJSHAD, 2024). The project area lies in the northern nonattainment area.

#### 3.2. Climate

Climate conditions in the New Jersey highlands are characterized by moderately cold and occasionally snowy winters and warm, humid summers. The highlands experience a considerable volume of rainfall throughout the year. Existing in the northernmost portion of the state, the northern zone of New Jersey normally exhibits a colder temperature regime than other climate regions throughout New Jersey. Temperatures in the highlands can be more than ten degrees cooler than in the coastal zone of the state. Thunderstorms that begin in Pennsylvania and New York move into northern New Jersey, causing there to be twice as many thunderstorms in the northern zone than in the coastal zone (NOAA, 2022). New Jersey has experienced a 3.5°F increase in the State's average temperature. According to the 2020 New Jersey Scientific Report on Climate Change, this warming trend is expected to continue, and by 2050, temperatures in New Jersey are expected to increase by 4.1 to 5.7°F (New Jersey, 2020). The increase in temperatures is expected to be felt more during the winter months, with resulting less intense cold waves, fewer sub-freezing days, and less snow accumulation. Also, as temperatures increase, there is a higher potential for an increase in precipitation. New Jersey currently receives an average of 46 inches of precipitation a year. By 2050, annual precipitation in New Jersey could increase by 4 to 11% (New Jersey, 2020).

#### 3.3. Aquatic Resources

Located in the Musconetcong Watershed, Lake Hopatcong is the largest inland waterbody in New Jersey, at 2,686 acres in size. The shoreline is irregularly shaped with several shallow coves positioned around the lake. Lake Hopatcong has a maximum depth of 17.7 meters, and a total outflow of 39.69 x 10<sup>6</sup> m<sup>3</sup> per year. The tributaries that flow into the lake are Beaver Brook and Weldon Brook. Outflows from Lake Hopatcong are regulated by a spillway located at Hopatcong State Park, Landing N.J. Outflows from the lake go into the Musconetcong River, which then flows into the Delaware River (Princeton Hydro, 2006).

#### **Aquatic Vegetation**

Native vegetative plant species provide valuable ecological and recreational benefits to Lake Hopatcong. The abundance of shallow, sunlit areas with nutrient dense sediments provides ideal habitat for aquatic plants (Aquatic Plant Identification Manual, 2008). The aquatic plants on the lake are vital in providing cover, forage, and breeding habitat for aquatic species. Aquatic plants also aid in shoreline stabilization (Aquatic Plant Identification Manual, 2008). Native aquatic plants that exist on Lake Hopatcong include: Tapegrass (*Vallisneria americana*), Broad-leaved pondweed (*Potamogeton amplifolius*), Coontail (*Ceratophyllum demersum*), Narrow-leaved pondweeds (*Potamogeton spp.*), Common waterweed (*Elodea canadensis*), Naiads (*Najas spp.*), Stoneworts (*Nitella flexilis*), Dark benthic mat algae (*Lyngbya spp.*), Bladderwort (*Utricularia spp.*), White water lily (*Nymphaea odorata*), Spatterdock (*Nuphar advena*), Robbins pondweed (*Potamogeton robbinsii*), and Watershield (*Brasenia schreberi*). Invasive species also inhabit Lake Hopatcong, such as Curly-leaf pondweed (*Potamogeton crispus*), Eurasian watermilfoil (*Myriophyllum spicatum*) and Water chestnut (*Trapa natans*)(Princeton Hydro, 2018).

### 3.4. Biological Resources

# Fisheries

Both Lake Hopatcong, as well as the downstream Musconetcong River are both important fishery resources. The NJ Fish & Wildlife stocks Lake Hopatcong with a wide variety of fish, which makes the resource a strong recreational fishery. Lake Hopatcong supports a large, diverse number of top-level predators, including brown trout (*Salmo trutta*), walleye (*Sander vitreus*), muskellunge (*Esox masquinongy*), hybrid striped bass (*Morone saxatilis x chrysops*), largemouth bass (*Micropterus salmoides*), and channel catfish (*Ictalurus punctatus*). As a prey species, alewife (*Alosa pseudoharengus*) plays a large role in the support of the diverse predatory fish population. Lake Hopatcong is designated as FWS Trout-Maintenance in the New Jersey Water Quality Standards (N.J.A.C. 7:9B) (Management Plan, 2024). According to this designation, water quality in the lake is good enough to support trout year-round, except for reproduction.

# Vegetation

The project area is consistent with vegetation species that are found throughout northern New Jersey and the Highlands region. The area around the lake is mostly urbanized and developed. These species include northern red oak (*Quercus rubra*), flowering dogwood (*Cornus florida*), maple trees (*Acer spp.*), loblolly (*Pinus taeda*), pitch pine (*Pinus rigida*), and white oak (*Quercus alba*). The Lake Hopatcong foundation is currently attempting to remediate the once thriving American chestnut (*Castanea dentata*) population. The effort to bring back the American chestnut started in 2016, with the foundation receiving seedlings

from the American Chestnut Foundation. Four of the five received seedlings are currently thriving, with one tree producing chestnuts (Kane, 2023).

# Wildlife

The project area is consistent with species that are found throughout northern New Jersey and the Highlands region. The species of wildlife are consistent with a highly urbanized, developed area. The shoreline of Lake Hopatcong consists of primarily residential homes, marinas, swimming beaches, and restaurants. Common wildlife species in these types of areas include white-tailed deer (*Odocoileus virginianus*), red fox (*Vulpes vulpes*), coyote (*Canis latrans*), raccoon (*Procyon lotor*), opossum (*Didelphis virginiana*), eastern cottontail rabbit (*Sylvilagus floridanus*), white-footed mouse (*Peromyscus leucopus*), beaver (*Castor canadensis*), and muskrat (*Ondatra zibethicus*) (USACE, 2012).

# Waterfowl

Lake Hopatcong is home to a diverse community of waterfowl. Notable species include the mute swan (*Cygnus olor*), Canada goose (*Branta canadensis*), ring-necked duck (*Aythya collaris*), hooded merganser (*Lophodytes cucullatus*), American coot (*Fulica americana*), American herring gull (*Larus smithsonianus*), mallard (*Anas platyrhynchos*), American wigeon (*Mareca americana*), bufflehead (*Bucephala albeola*), common merganser (*Mergus merganser*), lesser scaup (*Aythya affinis*), and the wood duck (*Aix sponsa*)(eBird, 2025).

# **Migratory Birds**

Table 3.1 lists Migratory Birds of Concern that occur or may have the potential to occur within the project area.

Name	Level of Concern <sup>1</sup>	Breeding Season
Bald Eagle (Haliaeetus leucocephalus)	Non – BBC Vulnerable	Sep. 1 to Aug. 31
Black-billed Cuckoo ( <i>Coccyzus</i> erythropthalmus)	BCC Rangewide (CON)	May 15 to Oct. 10
Black-capped Chickadee (Poecile atricapillus practicus)	BCC – BCR	April 10 to July 13
Bobolink ( <i>Dolichonyx oryzivorus</i> )	BCC Rangewide (CON)	May 20 to July 31
Canada Warbler ( <i>Cardellina</i> canadensis)	BCC Rangewide (CON)	May 20 to Aug. 10
Cerulean Warbler (Setophaga cerulea)	BCC Rangewide (CON)	April 27 to July 20
Chimney Swift (Chaetura pelagica)	BCC Rangewide (CON)	March 15 to Aug. 25
Golden Eagle (Aquila chrysaetos)	NON – BCC Vulnerable	Breeds elsewhere

#### Table 3.1. Migratory Birds of Concern in the Project Area

Golden-winged Warbler ( <i>Vermivora</i> chrysoptera)	BCC Rangewide (CON)	May 1 to July 20
Kentucky Warbler ( <i>Geothlypis</i> Formosa)	BCC Rangewide (CON)	April 20 to Aug. 20
Prairie Warbler (Setophaga discolor)	BCC Rangewide (CON)	May 1 to July 31
Red-headed Woodpecker ( <i>Melanerpes</i> erythrocephalus)	BCC Rangewide (CON)	May 10 to Sep. 10
Rusty Blackbird ( <i>Euphagus carolinus</i> )	BCC – BCR	Breeds elsewhere
Wood Thrush ( <i>Hylocichla mustelina</i> )	BCC Rangewide (CON)	May 10 to Aug 31

<sup>1</sup>BCC-BCR (Bird of Conservation Concern only in particular Bird Conservation Regions in the continental USA) BCC Rangewide (CON) (Bird of Conservation Concern throughout its range in the continental USA and Alaska) NON-BCC Vulnerable (Not a Bird of Conservation Concern in this area)

#### **Threatened and Endangered Species**

Table 3.2. lists Federally protected species that occur or may have the potential to occur within the project area.

Common Name	Scientific Name	Federal Status <sup>2</sup>
Indiana Bat	Myotis sodalis	Е
Northern Long-eared Bat	Mvotis septentrionalis	E
Tricolored Bat	Parimyotis subflavus	DE
Dec Turtle	Chartonna muhlonhonoii	T
Bog Turtle	Gipplemys muniendergi	
Monarch Butterfly	Danaus plexippus	PT
Small Whorled Pogonia	Isotria medeoloides	Т
Swamp Pink	Helonias bullata	Т
Common Name	Scientific Name	State Status <sup>3</sup>
Bald Eagle	Haliaeetus leucocephalus	SP (Nest, Foraging)
Big Brown Bat	Eptesicus fuscus	SP (Active Season Sighting)
Great Blue Heron	Ardea herodias	SP (Foraging)
Bridler Shiner	Notropis bifrenatus	SE

# Table 3.2. Federal and State Threatened and Endangered Species and Their Status

<sup>2</sup>E: Endangered, PE: Proposed Endangered, T: Threatened, PT: Proposed Threatened (Retrieved from USFWS IPaC, Accessed on 2/18/2025)

<sup>3</sup>SP: Special Concern, ST: State Endangered (Retrieved from New Jersey Landscape Project, Accessed on 2/26/2025)

#### 3.5. Recreation

Lake Hopatcong is a major recreational resource that houses an abundance of recreational opportunities for the local communities, as well as visitors of the lake. More than 500,000 people visit Lake Hopatcong a year, with 10,000 registered boats on its main body of water. Due to the lakes diverse fish population (See Section 3.3 above), fishing is a large part of on-lake recreational activities. During the springtime, the New Jersey Division of Fish and Wildlife stocks the lake with brown, rainbow and brook trout. Ice fishing is also popular during the winter season for panfish and other species. Lake Hopatcong also offers numerous boating opportunities with canoes, large motorboats, sailboats, sailboards, and jet skis. The lake supports ice boating/ice skiing in the winter. Other recreational activities include swimming, biking, hiking, picnicking, and multiple sports fields/playgrounds in adjacent areas. The health of the lake directly impacts all recreational activities that occur on the lake (NJDEP, 2025).

#### 3.6. Water Quality

The long-term sampling of water quality of Lake Hopatcong is currently being funded through the U.S. Environmental Protection Agency (USEPA) Targeted Watershed Grant, as well as three NJDEP 319 grants (Princeton Hydro, 2024).

According to Lake Hopatcong's 2024 Annual Water Quality Report, phosphorus is the primary limiting nutrient in the lake with only a slight increase in phosphorus levels resulting in a substantial increase in the amount of algal and/or aquatic plant biomass. Lake Hopatcong, as well as Lake Musconetcong are noted by the NJDEP as attaining excessive in-lake total phosphorus (TP) concentrations, originating from high phosphorus loads. High total phosphorus concentrations can lead to severe water quality impacts, including HABs, nuisance densities of aquatic vegetation, and fish kills (Princeton Hydro, June 2006). During the 2024 water quality sampling season, there were no lake-wide HABs, although, there were localized HABs during the summer months in different areas of the lake. In July, HABs were observed near the Lake Hopatcong State Park and in Byram Cove (Princeton Hydro, 2024).

Poor water quality conditions that lead to cyanobacteria blooms and nuisance SAV growth within the lake can be attributed to elevated watershed-based pollutant loads as well as elevated internal phosphorus load from the lake sediments. A Total Maximum Daily Load (TMDL) for TP has existed since 2003, when NJDEP conducted an analysis in the Upper Musconetcong River Watershed. The TMDL criteria for Lake Hopatcong are as follows: a targeted mean TP concentration of 0.03 mg/L, a targeted mean chlorophyll *a* concentration of 8  $\mu$ g/L, and a targeted maximum chlorophyll *a* concentration 14  $\mu$ g/L.

The mechanical weed harvesting, conducted by the Lake Hopatcong Commission, for the removal of aquatic vegetation helps account for a percentage of the lakes TMDL. In 2022, 1,178 cubic yards of plant biomass was removed, which effectively removed approximately 86 kilograms (kg) of TP. The removal of 86 kg of TP accounts for 2.6% of the targeted removal under the lakes TMDL. In 2024, approximately 705 cubic yards of plant biomass was removed (51 kgs of TP). In 2024, TP concentrations in the surface waters of the lake were variable, ranging between 0.02 mg/L and 0.06 mg/L, with elevated concentrations observed closer to the shallow, near shore areas. Deep water TP concentrations were elevated from July through September of 2024, as anoxic (less than 1 mg/L dissolved oxygen) conditions persisted. Extended periods of anoxia results in internal loading of phosphorus released from the sediments (Princeton Hydro, 2024).

#### 3.7. Cultural Resources

Identification of cultural resources on USACE Civil Works projects is an important part of the overall Federal responsibility. Numerous laws pertaining to identification, evaluation, and protection of cultural resources, Indigenous rights, curation and collections management, and the protection of resources from looting and vandalism establish the importance of cultural resources to our Nation's heritage. With the passage of these laws, the historical intent of Congress has been to ensure that the Federal government protects cultural resources. Guidance is derived from several cultural resources laws and regulations, including but not limited to Sections 106 and 110 of the National Historic Preservation Act (NHPA) of 1966 (as amended); Archaeological Resources Protection Act (ARPA) of 1979; Native American Graves Protection and Repatriation Act (NAGPRA); and 36 CFR Part 79, Curation of Federally Owned and Administered Archeological Collections. Implementing regulations for Section 106 of the NHPA and NAGPRA are 36 CFR Part 800 and 43 CFR Part 10, respectively. All cultural resources laws and regulations should be addressed under the requirements of the National Environmental Policy Act (NEPA) of 1969, as amended. USACE summarizes the guidance provided in these laws in ER 1130-2-540.

#### Area of Potential Effect

For the purposes of this EA, the Areas of Potential Effect (APE) includes the waters of Lake Hopatcong; however more specifically the individual coves selected for implementation of the HAB program (Figure 1.1):

- Northern Cove
- Ashley Cove
- Great Cove
- Van Every Cove
- Crescent Cove
- Landing Channel

#### Historic Context

The following historic narrative was courtesy of Lake Hopatcong Historical Museum. To learn more about the history of Lake Hopatcong visit <u>www.hopatcong.org/museum</u>:

From the time the Lenape first discovered the waters of Lake Hopatcong some 12,000 years ago, it was a special place. A deep spring-fed lake formed by glaciers; it was the perfect setting for a Native American community. Its forested shores supported ample game while the water furnished abundant fish.

The body of water the Lenape knew was twelve feet below the level of the Lake we know today. In ensuing years, dams and dredging have increased the Lake to its current size. Even at its original size, Lake Hopatcong would be the largest lake in the State of New Jersey.

Following the War of 1812, the United States entered a great era of canal building. It can perhaps be considered America's first attempt at interstate highways. It was in this era that the idea of the Morris Canal was conceived. Like any canal, the Morris Canal required massive amounts of water. Lake Hopatcong was ultimately raised to its current level and was the Canal's single largest source of water.

Along the way, other sources of water were linked - such as the Musconetcong and Passaic Rivers and Greenwood Lake. When more water was eventually needed, the Stanhope Reservoir (now known as Lake Musconetcong) was created.

While never realizing the economic success its founders had hoped, the Morris Canal had a tremendous effect on Lake Hopatcong, and it set in motion the events which would lead to the Lake's rise as a great resort. It spurred the building of a railroad to connect several mines in the area to the Lake so that they would have access to the Canal. The ten-mile-long railroad ran from Ogdensburg to the Nolan's Point section of Lake Hopatcong and was completed in 1866.

As railroads emerged as the modern transportation alternative, it became clear that a railroad supporting a canal contained an unnecessary step - the canal. In 1882, the Central Railroad of New Jersey completed a connection from its main tracks to the Ogden Mine Railroad terminus at Nolan's Point. It did not take long for the Central Railroad of New Jersey management to realize that there was great passenger potential for this newly formed line. Here was a direct rail link to a large lake just over one hour from numerous large cities, as well as New York City itself. In September 1882, the first passenger excursion train arrived at Nolan's Point and the tourist boom at Lake Hopatcong had begun. The Lackawanna Railroad, whose tracks passed by the southern end of Lake Hopatcong, quickly added a station to share in the business and two major rail lines were now serving the new resort.

Arriving passengers needed activities to busy themselves. This led to the building of pavilions at Nolan's Point to entertain the tourists. One day excursions soon led to a desire for longer stays at this pleasant location, causing quite a construction boom. Prior to the Central Railroad reaching the Lake, only four small hotels existed on the Lake. By 1900, over 40 hotels and rooming houses were operating at the Lake, mainly concentrated around the railroad at Nolan's Point, but building soon spread to other areas of the Lake. Since early roads at the Lake were poor or nonexistent, the main source of transportation was water. As soon as tourism developed so did boat service. Competing steamboat companies met arriving passengers and took them to all parts of the Lake. Most goods and services were also delivered by boat. The single most important factor in Lake Hopatcong's growth as a resort was the construction of the Hotel Breslin completed in 1887. This hotel's construction by a group of wealthy and influential individuals (including Garrett Hobart, who later served as Vice President of the United States under President McKinley) gave Lake Hopatcong instant credibility as a resort. As Gustave Kobbe noted in his New Jersey guidebook of 1890, "The Hotel Breslin gave to Hopatcong its first decided 'boom,' for it brought to the Lake the element of wealth and fashion, in the wake of which everything else follows."

While the Lake was becoming a large hotel resort, other developments were also occurring. Many early visitors camped at the Lake or built crude cottages. Wealthy individuals also learned of the Lake and building Victorian "cottages," including an entire millionaire's community around the Hotel Breslin in Mount Arlington.

As with any popular resort, Lake Hopatcong was a magnet for many of the "rich and famous" of the day. The most famous female actress of her era, Lotta Crabtree, had a home built here in the 1880's. Hudson Maxim, noted scientist and inventor, came here at the turn of the century and built a large estate in the Borough of Hopatcong. During the heyday of Vaudeville and Burlesque, the Lake became a favorite rest stop for performers during the summer when most theaters closed. Bud Abbot, Bert Lahr, and Milton Berle were among the many show businesspeople to spend considerable time at the Lake. The center for much of this activity was Joe Cook's Sleepless Hollow in Hopatcong's Davis Cove. Cook was a popular Vaudevillian, comedian and musical theater star who lived at the Lake from 1924 to 1941. Among other

amenities, his home boasted a nine-hole golf course, two bars, and tennis courts at which celebrities could often be found.

Lake Hopatcong's run as a major northeast hotel resort lasted from the 1880's through the Depression. Ultimately, the dreadful economy of the 1930's, the development of the automobile, which led people to seek more "exotic" destinations, and the onset of World War II led most of the Lake's hotels to close. The few that survived slowly closed in the ensuing decades, with the final operating hotel burning to the ground in 1972.

As with any resort, recreation played an important role in the Lake's development. Numerous clubs and organizations have operated on the Lake since the 1880's. The Lake Hopatcong Yacht Club opened its clubhouse, which still stands, on Bertrand Island in 1910. The Maxim Park Yacht Club is long gone but its club house still stands as a private home on Cow Tongue Point. The Garden State Yacht Club started in an old lakeside mansion and one-time hotel. Unfortunately, fire stole that building, but the club was rebuilt and occupies the same site on Point Pleasant.

The trolley also came through Lake Hopatcong and linked the Lake with many communities to the east. As with many trolley companies, the Morris County Traction Company sought to develop an attraction at the end of its line to encourage business on weekends. For that reason, it extended its line to a beach at Lake Hopatcong in 1910. This led to amusements being opened and Bertrand Island Park was born. In 1924 Bertrand Island Park constructed the first roller coaster in the area and evolved into a full-scale amusement park. It soon had competition from an amusement park at Nolan's Point which also built a roller coaster. Ultimately, Bertrand Island won out and was a much-loved institution at the Lake for the next six decades.

In the years following World War II, the Lake continued to be a popular summer spot, as it evolved into a middle-class bungalow and second home community. Featuring such popular night spots as The Mad House, Sheppies, and the bar lounge at the Bon Air Lodge, the Lake remained a popular summer jaunt. With the 1960's and the gradual completion of a major interstate from New York City, the Lake's evolution accelerated. By the mid 1970's, almost all vestiges of its days as a summer resort had disappeared, as more and more homes became year-round residences. When Bertrand Island Amusement Park closed in 1983, the evolution was complete, and for all intent and purpose the Lake had become a residential community. Today the Lake consists predominantly of year-round residents living in four towns and two counties. While much has changed since that day in 1882 when the first excursion train pulled into Nolan's Point, Lake Hopatcong remains today a unique and special recreational and environmental resource.

#### **Existing Conditions**

The USACE has conducted archival and database research in the study area as well as within the APE. Previous investigations and the LUCY database were utilized for this evaluation.

#### Northern Cove

Although the uplands surrounding this cove are not within the archaeology sensitivity grid, it is of high to moderate potential for indigenous sites. There are no recorded above ground resources in the uplands surrounding Northern Cove.

#### Ashley Cove

Although the uplands surrounding this cove are not within the archaeology sensitivity grid, it is of high to moderate potential for indigenous sites. There are no recorded above ground resources in the uplands surrounding Ashley Cove.

#### Great Cove

Although the uplands surrounding this cove are not within the archaeology sensitivity grid, it is of high to moderate potential for indigenous sites. There are no recorded above ground resources in the uplands surrounding Great Cove.

#### Van Every Cove

Although the uplands surrounding this cove are not within the archaeology sensitivity grid, it is of high to moderate potential for indigenous sites. The Mount Arlington North Park Historic District, with 23 listed, eligible and contributing structures surrounding the southern shore of Van Every Cove.

#### Crescent Cove

Although the uplands surrounding this cove are not within the archaeology sensitivity grid, it is of high to moderate potential for indigenous sites. St. Jude Roman Catholic Church, which is eligible for listing on the National Register of Historic Places (NRHP) is in the uplands on the norther point of Crescent Cove. The West Side Church, located at the Southern entrance to Crescent Cove, is eligible for listing in the NRHP.

#### Landing Channel

Although the uplands surrounding this cove are not within the archaeology sensitivity grid, it is of high to moderate potential for indigenous sites. There are no recorded sites within the APE; however, the Old Main Delaware Lackawanna and Western Railroad Historic District, the Morris Canal Historic District are in the vicinity.

#### 3.8. Land Use

The Borough of Hopatcong, Sussex County, lies within the New Jersey Highlands Region. The highlands region represents a vital source of drinking water for over half of New Jersey's residents. In August 2004, State Legislature enacted the Highlands Water Protection and Planning Act (P.L. 2004, c. 120). The Highlands Act was enacted to promote environmental protection, as well as economic viability for the communities of the Highlands Region (Borough of Hopatcong, 2011). In accordance with the act, The Highlands Council was charged with creating a Master Plan to determine the type of development and activity sustainable within the Highlands Region.

#### **Preserved Land**

The Hopatcong State Park (89 acres in size) is operated by the NJDEP. At Lake Hopatcong, next to Gessler Cove, there are 4 acres of preserved land at the McCarthy Preserve. The Borough of Hopatcong has 201 acres of land that are categorized as preserved municipal open space. As of 2011, the borough

also invested in 112 acres as part of the Hopatcong Trails Greenway. The borough has 269 acres of land that are classified as a Natural Area Preserve (Borough of Hopatcong, 2011).

# **Public and Private Lands**

In the Borough of Hopatcong, out of the 7,953 total acres, 2,804 acres are categorizing as open space. This open space category consists of farm access property (1,678 acres), commercial and farm property (409 acres), NJDOT property (47 acres), and vacant land (2,804 acres). Out of the 7,953 total acres, 1,610 acres are categorized as developed land. The developed land consists of residential properties (324 acres), commercial & industrial properties (815 acres), public property (252 acres), and schools, churches & other charitable property (219 acres)(Borough of Hopatcong, 2011).

# 3.9. Socioeconomics

Morris County, New Jersey, as of 2025, has a population of 13,100 people. Lake Hopatcong is currently growing at a population rate of 7.14% annually. The last census that was recorded was in 2020, where the population was 10,301, providing an increase of 27.17% in the last 5 years. The average household income in Lake Hopatcong is \$137,568 with a poverty rate of 3.56%. The average per capita income is \$76,727. The average age in Lake Hopatcong is 48.7 years for males, and 43.9 years for females.

# 4. Environmental Effects

As per NEPA guidelines, agencies should consider the characteristics of the geographic area, such as proximity to unique or sensitive resources. Depending on the scope of the action, agencies should consider the potential global, national, regional, and local contexts as well as the duration, including short-and long-term effects.

For the analysis of this SEA, the following types of effects were considered:

- Direct effect caused by the agency action and occurs at the same place and time as the action.
- Indirect effect caused by the action that are later in time or farther removed in distance but are still reasonably foreseeable. Indirect effects may include growth-inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural resources.

The degree and intensity of the effects were rated as follows:

- No effect no discernable effect to the resource or the discipline
- Beneficial positive effects that improve or enhance resource conditions
- Adverse negative or harmful results
- Negligible effects likely to occur but at levels not readily observable by evaluation
- Minor observable, measurable, tangible effects qualify as below one or more significance threshold(s)
- Moderate tangible effects that are readily apparent, qualified as below one more significance threshold(s)
- Significant obvious, observable, verifiable effects qualified as above one or more significance threshold(s); not mitigable to below significance.

The duration of the effects in this analysis are defined as follows:

- Short term when effects last less than one year or are temporary in nature
- Long term when effects last longer than one year or are permanent in nature

#### 4.1. Air Quality

#### **No Action Alternative**

Under the No Action Alternative, there are expected to be no direct or indirect impacts to air quality.

#### **Proposed Action**

The Proposed Action would have insignificant effects on air quality due to the type of the proposed action only being a temporary demonstration. Vehicle and boat usage associated with the implementation of the demonstration project would result in minor and insignificant air quality effects relative to the regular recreational and personal usage of vehicles and boats on and around the lake.

#### 4.2. Climate

#### **No Action Alternative**

Under the No Action Alternative, there are expected to be no direct or indirect impacts to climate. There is expected to be an increase in temperature throughout the state of New Jersey, which could cause an increase in warmer in-lake temperatures (New Jersey, 2020). With warmer waters, an increase in the intensity and frequency of HAB events in the lake would be expected to increase. With an increase in precipitation caused, in part, by an annual rise in temperature, an increase in nutrient runoff from the watershed into the lake would be expected resulting in an increase in the presence of HABs. Under the No Action Alternative, the HAB maintenance technologies will not advance, and the project area will continue to be impacted by climate change and research findings could not be applied to other water resources projects.

#### **Proposed Action**

The Proposed Action would have insignificant effects on climate due to the type of the proposed action and the proposed action only being a temporary demonstration.

# 4.3. Aquatic Resources

#### **No Action Alternative**

Under the No Action Alternative, the aquatic environment would continue to be affected by the HABs. The existing conditions of the lake would be expected to remain the same under the No Action Alternative. Implementation of the No Action Alternative would have no direct or indirect impacts on aquatic resources. Under the No Action Alternative, the HAB maintenance technologies will not advance, and the project area will continue to be impacted by HAB events and research findings could not be applied to other water resources projects.

# **Proposed Action**

The Proposed Action is expected to provide temporary benefits to the aquatic resources of Lake Hopatcong by temporarily reducing HABs at the near shore demonstration areas. Implementation of this HAB demonstration would allow for gathering of HAB maintenance information as well as a cost-benefit analysis that has the potential to guide further HAB maintenance projects to benefit the water bodies of the U.S.A. The products used in this demonstration must be permitted by the NJDEP Bureau of Surface Water & Pretreatment Permitting (See Section 1.8) before treatment is allowed. Based on the Safety Data Sheets and other toxicological reports conducted on EutroSORB® G and LiquiFloc 1% (Appendix B), it is not expected that these products cause any adverse effects to aquatic resources. The Proposed Action would have insignificant adverse effects on aquatic resources due to the temporary nature of the action. A boat will be needed on the lake to perform the treatments, as well as monitoring efforts in both the short and long term. Boats are currently allowed in the area; therefore, aquatic resources are not expected to have more than insignificant effects.

#### 4.4. Biological Resources

#### **No Action Alternative**

Under the No Action Alternative, HABs will continue to occur within the lake, and the fish and wildlife resources will continue to be affected or worsen. Implementation of the No Action Alternative would have no direct or indirect impacts on biological resources.

#### **Proposed Action**

The Proposed Action would have insignificant effects on biological resources, including threatened and endangered species, due to the temporary nature of the action. Early summer treatments of HABs using EutroSORB<sup>®</sup> G and LiquiFloc 1%, will take approximately 6-7 days. Mid- to late-summer treatments using EutroSORB<sup>®</sup> G and LiquiFloc 1% will take approximately 7-8 days. Both the EutroSORB<sup>®</sup> G, and the Liquifloc 1% will both be permitted and approved by NJDEP before usage. With approval from NJDEP, these products are not expected to cause adverse effects to biological resources. A toxicologic environmental assessment that was conducted by Limno Solutions International shown that with a dosage rate of less than 600 mg/L, there is very low risk associated with the usage of the EutroSORB<sup>®</sup> G product on species that live in or around the lake, including the phytoplankton community (Limno Solutions, 2023). If a chemical spill were to occur, the treatment vessel will have a chemical spill kit onboard during all treatments. Refer to Section 2.2 for a description of both products. A vehicle will be needed to access the site, and a treatment vessel will be needed to perform the treatment, as well as water quality testing before and after the treatment phases. Vehicles and boats are currently permitted in the area.

#### 4.5. Recreation

#### **No Action Alternative**

Under the No Action Alternative, current HAB detection, management, and prevention would occur consistent with state and local guidance, but the Proposed Action and advancement of treatment and management technologies would not occur. Recreation would continue to be affected by the presence of HAB's in the lake.

#### **Proposed Action**

The Proposed Action would have insignificant effects on recreation due to the action being minor and temporary in nature. Furthering the science of managing and preventing HAB would have beneficial impacts to the recreation of the lake. All treatment demonstration areas will be isolated into coves, away from the state park beach where the majority of human contact recreation is expected. Docks and

residential properties that reside near the coves may experience minor, temporary impacts in the form of increase boat traffic and activity. during the treatments. As stated in section 2.2, risk to human health associated with the treatment products is very low. A vehicle will be needed for transportation to and from Lake Hopatcong, as well as a boat that will be needed to implement the demonstration and then water quality sampling after the demonstration is completed. Due to the regular recreational usage of vehicles and boats on and around the lake, the impacts to recreation would be less than insignificant in nature.

# 4.6. Water Quality

# **No Action Alternative**

Under the No Action Alternative, current HAB detection, management, and prevention would continue to occur consistent with state and local guidance, but the Proposed Action would not occur. Under the No Action alternative, HABS and their associated toxins and ecological affects would continue to cause adverse effects to water quality and have direct and indirect impacts on water quality.

# **Proposed Action**

The Proposed Action would allow for advancement of HAB maintenance technologies. This HAB demonstration project would provide benefits to the lake, as minimizing the amount of total phosphorus in the near-shore areas of the lake would improve water quality. The contractor, Princeton Hydro LLC, has applied for both the Master General Pesticide Application, and the Final Surface Water Master General Permit, through the NJDEP Bureau of Surface Water & Pretreatment Permitting. All products in this demonstration will not be utilized until the NJDEP has granted both permits. See Section 2.2 for a description of both the EutroSORB® G and the LiquiFloc 1% products. Potential short-term temporary effects contributed from turbidity are expected during and shortly after the usage of products. EutroSORB® G is a clay-based product, therefore increased turbidity can be expected. Soft water lakes (hardness <40-50 mg/L CaCO3) incur longer turbidity impacts than hard water lakes. Pelagic organisms and water quality guideline levels (5-25 mg/L) for short-term exposure (typically 24 hours) to suspended solids concentrations might be temporary exceeded (Limno Solutions International, 2023). Implementation of the Proposed Action would have short term, minor and temporary direct and indirect impacts water quality. Lessons learned from this demonstration will provide useful benefits for future water quality concerns.

The Proposed Action would have insignificant effects on water quality due to the temporary nature of the action and implementation of the following best management practices:

- The Proposed Action will comply with all product label requirements.
- Site specific treatment dosages will control the short-term impacts of turbidity on water quality and pelagic organisms.
- The Proposed Action will have a safety plan completed which will also explain any spill containment procedures necessary.

#### 4.7. Cultural Resources

#### **No Action Alternative**

Under the No Action Alternative, the HAB Program would not be conducted, and there would be No Effect on historic properties eligible for or listed on the NRHP.

#### **Proposed Action**

For any of the APE's identified in Section 3.7, the Proposed Action would have No Effect on historic properties eligible for or listed on the NRHP. Implementation of the HAB program would have No Effect on historic properties at any of the demonstration treatment areas listed on the NRHP.

#### 4.8. Land Use

#### **No Action Alternative**

Under the No Action Alternative, the land use around the project site would continue to be maintained by the Highlands Act of 2004. The No Action Alternative would not result in any significant direct or indirect negative impacts on land use resources.

#### **Proposed Action**

The implementation of the Proposed Action will further the advancement of HAB maintenance technologies. The Proposed Action would not result in any significant direct or indirect negative impacts on land use resources. The Proposed Action provides benefits to the land around Lake Hopatcong, as it will provide technologies in preventing HABs.

#### 4.9. Socioeconomics

#### **No Action Alternative**

Under the No Action Alternative, the communities that live on and around Lake Hopatcong will continue to be affected by the presence of HABs. Lake recreational shutdowns could occur in the future under the No Action Alternative due to HABs.

#### **Proposed Action**

The implementation of the Proposed Action would have No Effect on socioeconomics of Lake Hopatcong. Further advancement of HAB maintenance technologies could benefit the regional economy by preventing lake closures due to HABs.

Table 4.1. Summary of Environmental Effects			
Resource	No Action Alternative	<b>Proposed Action</b>	
Climate	Under the No Action Alternative, there is expected to be an increase in temperature throughout the state of New Jersey, which could cause an increase in warmer in-lake temperatures. With warmer water, HABs have an easier time moving up and down the water column. With an increase in precipitation caused by an annual rise in temperature, an increase in nutrient runoff would go into the lake and increase the presence of HABs. More extreme and more frequent droughts will cause water bodies to retain nutrients that elevates the chance of HABs to occur. Under the No Action Alternative, the HAB maintenance technologies will not advance, and the project area will continue to be impacted by changes in climactic conditions.	The Proposed Action would have insignificant effects on climactic conditions due to the action only being a temporary demonstration.	
Air Quality	Under the No Action Alternative, there are expected to be no direct or indirect impacts to air quality.	The Proposed Action would have insignificant effects on air quality due to the action only being a temporary demonstration. A vehicle will be needed for transportation to and from Lake Hopatcong, as well as a boat that will be needed to implement the demonstration and then water quality sampling after the demonstration is completed. Due to the regular recreational usage of vehicles and boats on and around the lake, the impacts to air quality are expected to be less than significant in nature.	
Aquatic Resources	Aquatic resources in the project area are not expected to change under the No Action Alternative. Aquatic resources would continue to be affected by the HABs.	The Proposed Action would have insignificant adverse effects on aquatic resources due to the temporary nature of the action. Treatment products must be permitted by NJDEP before usage and are expected to not have any adverse effects on aquatic resources. A boat will be needed on the lake to perform the treatments, as well as monitoring efforts in both the short and long term. Boats are currently allowed in the area; therefore, aquatic resources are not expected to have more than insignificant effects.	
Biological Resources, including Threatened and Endangered Species	Biological resources in the project area are not expected to change under the No Action Alternative. Lake Hopatcong wildlife and vegetation would continue to be negatively impacted by the presence of HABS.	The Proposed Action would have insignificant effects on biological resources, including threatened and endangered species, due to the temporary nature of the action. Early summer treatments of HABs using EutroSORB <sup>®</sup> G and LiquiFloc 1%,	

		will take approximately 6-7 days. Both the EutroSORB <sup>®</sup> G, and the Liquifloc 1% will both be permitted and approved by NJDEP before usage. With approval from NJDEP these products are not expected to cause adverse effects to biological resources. A toxicologic environmental assessment that was conducted by Limno Solutions International shown that with a dosage rate of less than 600 mg/L, there is very low risk associated with the usage of the EutroSORB® G product on species that live in or around the lake, including the phytoplankton community. If a chemical spill were to occur, the treatment vessel will have a chemical spill kit onboard during all treatments. Refer to Section 2.2 for a description of both products. A vehicle will be needed to access the site, and a treatment vessel will be needed to perform the treatment, as well as water quality testing after the demonstration is complete. Vehicles and boats are currently allowed in the area; therefore,
Recreation	With the No Action Alternative, recreation would continue to be impacted by the presence of HABs.	these resources are not expected to have more than insignificant effects. The Proposed Action would have insignificant effects on recreation due to the action being temporary. Furthering the science of maintaining and preventing HAB would have beneficial impacts to the recreation of the lake. All treatment demonstration areas will be isolated into coves, away from the state park beach where human contact recreation is expected. Docks and residential properties that reside near the coves may experience minor, temporary impacts during the treatments. A vehicle will be needed for transportation to and from Lake Hopatcong, as well as a boat that will be needed to implement the demonstration and then water quality sampling after the demonstration is completed. Due to the regular recreational usage of vehicles and boats on and around the lake, the impacts to recreation would be less than insignificant in nature.

Water Quality	Under the No Action Alternative, HABs and their associated toxins would continue to cause adverse effects to water quality.	The Proposed Action would have insignificant effects on water quality due to the temporary nature of the action Potential short-term temporary effects contributed from turbidity are expected during and shortly after the usage of products. EutroSORB® G is a clay-based product, therefore increased turbidity can be expected. Lessons learned from this demonstration will provide useful benefits for future water quality concerns.
Cultural Resources	Under the No Action Alternative, the HAB Program would not be conducted, and there would be No Effect on historic properties eligible for or listed on the NRHP.	The Proposed Action would have No Effect on historic properties eligible for or listed on the NRHP.
Land Use	Under the No Action Alternative, the land use around the project site would continue to be maintained by the Highlands Act of 2004. The No Action Alternative would not result in any significant direct or indirect negative impacts on land use resources.	The implementation of the Proposed Action will further the advancement of HAB maintenance technologies. The Proposed Action would not result in any significant direct or indirect negative impacts on land use resources. The Proposed Action provides benefits to the land around Lake Hopatcong, as it will provide technologies in preventing HABs.
Socioeconomics	Under the No Action Alternative, the communities that live on and around Lake Hopatcong will continue to be affected by the presence of HABs. Lake recreational shutdowns could occur in the future under the No Action Alternative due to HABs.	The implementation of the Proposed Action would have No Effect on socioeconomics of Lake Hopatcong. Further advancement of HAB maintenance technologies would benefit the regional economy by preventing lake closures due to HABs.

# 5. Preferred Alternative

The benefits of conducting this HAB demonstration project (the Preferred Alternative) are expected to include temporarily reduced HABs and phosphorus levels at near shore areas on Lake Hopatcong. Reducing the phosphorus levels and the HABS will improve water quality, which is followed by benefits to fish and wildlife, human health, ecosystem function, and recreation. This HAB demonstration project will also benefit water bodies in the U.S. that are affected by HABS, by advancing the science of in-situ HAB management technologies.

Based upon the impact analysis conducted within this SEA, the Proposed Action (Alternative B) is expected to meet the project purpose and need identified in Section 1. As described in Section 4, effects of proposed alternative on environmental resources within the project are anticipated to be negligible to minor. Therefore, Alternative B is the Preferred Alternative.
## 6. Environmental Regulations Addressed in SEA

Law, Policy and Regulations	Status
National Environmental Policy Act of 1969	This action will be compliant upon the finalization of this NEPA documentation. This Supplemental EA has been prepared and coordinated for public, state, and Federal agency review.
Endangered Species Act of 1973	Pursuant to Section 7 of the Endangered Species Act of 1973, as amended, the USACE has determined that the Preferred Action analyzed in this document will not affect listed species. Therefore, formal consultation with the USFWS is not required. Communication with the NJ USFWS field office will take place with review of this document. This action is in compliance with the Endangered Species Act.
Fish and Wildlife Coordination Act of 1958, as amended	The Fish and Wildlife Service will have the opportunity to coordinate through commenting on this Supplemental EA. No further coordination is required under the Fish and Wildlife Coordination Act. This action is in compliance with the Fish and Wildlife Coordination Act.
National Historic Preservation Act of 1966	Pursuant to Section 106 of the National Historic Preservation Act of 1966, as amended, the USACE has determined that the Preferred Action will have No Effect on historic properties. Therefore, this action is in compliance with the National Historic Preservation Act.
Clean Water Act of 1972	The contractor applied for both the Master General Pesticide Permit, as well as the Final Surface Water Master Plan Permit (Category Harmful Algal Bloom Management). This action is in compliance with the Clean Water Act.
Clean Air Act of 1972	The action is in compliance with Section 176 of the Clean Air Act, known as the General Conformity Rule. The preferred action will not cause or contribute to violations of the National Ambient Air Quality Standards.
Wild and Scenic River Act of 1968	No designated Wild and Scenic River reaches would be affected by the action. This action is in full compliance.
Safe Drinking Water Act of 1974, as amended	This action would not affect drinking water and is in compliance with the Safe Drinking Water Act.
Migratory Bird Treaty Act and Migratory Bird Conservation Act and E.O. 13186, Responsibilities of Federal Agencies to Protect Migratory Birds	Migratory and residential bird species have been observed within the demonstration area, and are likely to use available habitat for foraging, nesting, and breeding. Due to the temporary nature of the action, there is no expected harmful effects to migratory birds. The action is in compliance with the Act.

## Table 6.1. Status of Environmental Compliance

E.O. 11990, Protection of Wetlands	The action will not impact wetlands. The action is in
	full compliance with this Executive Order.
E.O. 13112, Invasive Species	The action is expected to have no impact on the
	introduction of invasive species. The action is in full
	compliance with the goals of this Executive Order.

## 7. Environmental Commitments

There are no environmental commitments included as part of the Proposed Action.

## 8. Conclusions

This SEA evaluated the environmental effects of innovative HAB treatments using a combination of nonpesticidal products and early season benthic applications of algicides to control near-shore HABs and further HAB maintenance technologies.

Based on the information presented and continuing coordination with State and Federal resource agencies, no significant adverse environmental effects are expected to occur as a result of the proposed action. Since the potential effects identified have been determined to be minor, localized and temporary, the preparation of an Environmental Impact Statement is not warranted and a Finding of No Significant Impact (FONSI) for the proposed action is appropriate.

## 9. Public Involvement

This Draft Supplemental Environmental Assessment and Finding of No Significant Impact will be made available for public review and comments for 30 days.

## 10. Preparers

Name	Organization	Discipline/Experience	Role in Document Preparation
Conner Frey	USACE Philadelphia District	Biologist/NEPA	Author
Nicole Minnichbach	USACE Philadelphia District	Cultural Resources/NEPA	Author
Steve Allen	USACE Philadelphia District	Biologist/NEPA	Review
Gregory Wacik	USACE Philadelphia District	Biologist/NEPA	Author/Review
Mandy Michalsen	USACE Environmental Research & Development Center	HABs Program	Review

#### Table 10.1. List of Report Preparers

## 11. References

- Borough of Hopatcong. 2011. Open Space and Recreation Plan Update. 2011. Available online: https://safe.menlosecurity.com/doc/docview/viewer/docN6C7724D7DA4D3f72f20a6dc4aace463f d88ff27d4c667177a41b80dd5fab5ba3c07f24e4f451. Accessed on March 19, 2025.
- eBird. 2025. Lake Hopatcong Bird List. 2025. Available online: https://ebird.org/hotspot/L1659634/bird-list?yr=cur. Accesses on April 3, 2025.
- Dober. 2012. HaloKlear LiquiFloc 1% Safety Data Sheet. Federal Register Volume 77, Number 58. Available online: https://safe.menlosecurity.com/doc/docview/viewer/docN9B3EC387BB93bb03aa77daa8a9cfc1f3 630cd05b793ba65a471121adc3278dac4abd793bf534. Accessed on March 4, 2025.
- Dober. 2016. HaloKlear LiquiFloc 1% Natural Flocculant Product Facts. Available online: https://safe.menlosecurity.com/doc/docview/viewer/docN49770D864059cd0625247a38ba8cb286 f1dc4c3e52c95985e93c725ebcb9cb22486ecbada2ae. Accessed on March 4, 2025.
- Kane. 2023. A Second Chance for the American Chestnut at Lake Hopatcong. Available online: https://www.lakehopatcongfoundation.org/news/american-chestnut-update. Accessed on February 26, 2025.
- Limno Solutions International. 2023. Assessment of the Nutrient Mitigation Technology EutroSORB G, Toxicological Evaluation and Environmental Impact Report. September 2023.
- New Jersey Department of Environmental Protection (NJDEP). 2020. New Jersey Scientific Report on Climate Change. Available online:

extension://efaidnbmnnnibpcajpcglclefindmkaj/https://dep.nj.gov/wpcontent/uploads/climatechange/docs/nj-scientific-report-2020.pdf. Accessed on February 19, 2025.

- New Jersey Department of Environmental Protection. 2024. Lake Hopatcong Water Level Management Plan. Available online at: extension://efaidnbmnnnibpcajpcglclefindmkaj/https://www.nj.gov/dep/parksandforests/docs/lake hopatcong-waterlevelmanagementplan-2024.pdf. Accessed on February 25, 2025.
- New Jersey Department of Environmental Protection (NJDEP). 2025. New Jersey State Park Service, Hopatcong State Park Overview. Available online at: https://nj.gov/dep/parksandforests/parks/hopatcongstatepark.html. Accessed on February 25, 2025.
- New Jersey Department of Health (NJDOH). 2024. New Jersey State Health Assessment Data (NJSHAD). Available online at: https://www-doh.nj.gov/doh-shad/indicator/summary/EPHTOZONE.html#:~:text=The%20entire%20state%20of%20New%20 Jersey%20is%20designated,%27serious%27%20for%20the%200.075%20ppm%208-hour%20ozone%20standard. Accessed on February 19, 2025.
- National Oceanic and Atmospheric Administration (NOAA). 2022. State Climate Summaries 2022. Available online at:

extension://efaidnbmnnnibpcajpcglclefindmkaj/https://climate.rutgers.edu/stateclim/NewJersey-StateClimateSummary.pdf. Accessed on April 2, 2025.

- Princeton Hydro, LLC. 2006. Lake Hopatcong Watershed Wetland and Riparian Areas Protection Project. Available online: https://safe.menlosecurity.com/doc/docview/viewer/docNF2CA8B5DB58E2a910779639706e553 192d9d2085c3ab53983ac1c8dcfeb72460b5a6967aa405. Accessed on March 4, 2025.
- Princeton Hydro, LLC. 2006. Refined Phosphorus TMDL and Restoration Plans for Lake Hopatcong and Lake Musconetcong, Upper Musconetcong River Watershed, Morris and Sussex Counties, New Jersey. Available online: extension://efaidnbmnnnibpcajpcglclefindmkaj/https://www.nj.gov/njhighlands/njhighlands/morri s\_county/mount\_arlington/1426\_SM02\_101228.pdf. Accessed on March 11, 2025.
- Princeton Hydro, LLC. 2008. Identification Manual of Aquatic Plants in Lake Hopatcong and Potential Future Invasive Species. Available online: https://safe.menlosecurity.com/doc/docview/viewer/docN97CC86B9C6B0d448533c023ce3db8dd 047076f97650d5500143f7743a672ea385031f074d69c. Accessed on March 4, 2025.
- Princeton Hydro, LLC. 2018. Lake Hopatcong Submerged Aquatic Vegetation Analysis. Available online: https://safe.menlosecurity.com/doc/docview/viewer/docN4945A3885393840264a0d7d4cfad84e6 d2cf20c8023a2417d37b58c61870fd14ea609e5fa64b. Accessed on March 4, 2025.

Princeton Hydro, LLC. 2025. Lake Hopatcong 2024 Water Quality Report. January 2025.

- Princeton Hydro, LLC. 2025. Work Plan for Lake Hopatcong HAB Treatment Demonstration Project. Version 2. February 2025.
- SePRO. 2023. EutroSORB® G Safety Data Sheet. February 2023.
- U.S. Army Corps of Engineers (USACE). 2012. Environmental Assessment for the Removal of Bloomsbury Dam on the Musconetcong River. June 2012.

## **APPENDIX** A

Safety Data Sheets for EutroSORB® G & LiquiFloc 1%

## SAFETY DATA SHEET



## EutroSORB<sup>®</sup> G

SECTION 1. IDENTIFICATION			
Product Name :	EutroSORB <sup>®</sup> G		
Product Use :	Phosphorus Locking Technology		
Recommended use of the chem	ical and restrictions on use		
Relevant identified uses :	Used to remove prescribed oxyanions in a variety of natural environments such as lakes, rivers, estuaries, dams, ornamental ponds and natural wetlands. Also in artificial environments including waste effluents such as sewage and industrial effluents and as a barrier within containment cells for leachable wastes.		
Supplier's details :	SePRO Corporation 11550 North Meridian Street, Suite 600 Carmel, IN 46032 Tel: 317-580-8282; Toll free 1-800-419-7779 Fax: 317-580-8290 Monday – Friday, 8am to 5pm EST www.sepro.com		
Emergency telephone Number	INFOTRAC– 24-hour service 1-800-535-5053		

## **SECTION 2. HAZARDS IDENTIFICATION**

## Classification of the substance or mixture

CHEMWATCH HAZARD RATINGS			
Flammability	0		
Toxicity	1		0 = Minimum
Body Contact	0		1 = Low
Reactivity	0		2 = Moderate
Chronic	0		3 = High
			4 = Extreme



Note: The hazard category numbers found in GHS classification in section 2 of this SDSs are NOT to be used to fill in the NFPA 704 diamond. Blue = Health Red = Fire Yellow = Reactivity White = Special (Oxidizer or water reactive substances)

GHS Classification:	Not Applicable
GHS Label Elements:	Not Applicable
Signal Word:	Not Applicable
Hazard statement(s):	Not Applicable
Precautionary Statement(s) Prevention	If medical advice is needed, have product container or label at hand. Keep out of reach of children. Read label before use.
Response:	Not Applicable
Storage:	Not Applicable
Disposal:	Not Applicable

## SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

#### Substances

See section below of composition of Mixtures

Name	CAS Number	% [weight]
Lanthanum-modified bentonite	302346-65-2	75-95%
Water	7732-18-5	5-25%

## **SECTION 4. FIRST AID MEASURES**

Inhalation	Move person to a dust free area. If person is not breathing, call 911 or an ambulance immediately. Call poison control center or doctor for further treatment advice.
If on Skin or Clothing	Flush skin and hair with running water (and soap if available). Seek medical attention in event of
Clothing	
Eye Contact	Wash out immediately with fresh running water. Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Seek medical attention without delay; if pain persists or recurs seek medical attention.
Ingestion	If swallowed do NOT induce vomiting, If vomiting occurs, lean patient forward or place on left side (head down position, if possible) to maintain open airway and prevent aspiration. Observe patient carefully. Never give liquid to a person showing signs of being sleepy or reduced awareness; i.e. becoming unconscious. Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink. Seek medical advice.

## **SECTION 5. FIRE-FIGHTING MEASURES**

**Extinguishing media** There is no restriction on the type of extinguisher which may be used. Use extinguishing media suitable for surrounding area.

## Special hazards arising from the substrate or mixture

Fire Incompatibility: Not known.

Special protective equipment and precautions for fire-fighters



- **Fire Fighting:** Alert Fire Brigade and tell them location and nature of hazard. Wear breathing apparatus plus protective gloves in the event of a fire. Prevent, by any means available, spillage from entering drains or water courses. Use firefighting procedures suitable for surrounding area. DO NOT approach containers suspected to be hot. Cool fire exposed containers with water spray from a protected location. If safe to do so, remove containers from path of fire. Equipment should be thoroughly decontaminated after use.
- **Fire/Explosion Hazard:** Non-combustible. Not considered a significant fire risk, however containers may burn. May emit poisonous fumes. May emit corrosive fumes.

## SECTION 6. ACCIDENTAL RELEASE MEASURES

#### Personal precautions, protective equipment and emergency procedures

Minor Spills:Remove all ignition sources. Clean up all spills immediately. Avoid contact with skin and eyes.<br/>Control personal contact with substance, by using protective equipment. Use dry clean up<br/>procedures and avoid generating dust. Place in a suitable, labelled container for waste disposal.

Major Spills:

Moderate Hazard.

**CAUTION:** Advise personnel in area. Alert Emergency Services and tell them location and nature of hazard. Control personal contact by wearing protective clothing. Prevent, by any means available, spillage from entering drains or water courses. Recover product wherever possible.

**IF DRY:** Use dry clean up procedures and avoid generating dust. Collect residues and place in sealed plastic bags or other containers for disposal.

IF WET: Vacuum/shovel up and place in labelled containers for disposal.

**ALWAYS:** Wash area down with large amounts of water and prevent runoff into drains. If contamination of drains or waterways occurs, advise Emergency Service.

## **SECTION 7. HANDLING AND STORAGE**

Precautions for safe handling	<ul> <li>Avoid all personal contact, including inhalation. Wear protective clothing when risk of exposure occurs. Use in a well-ventilated area. Prevent concentration in hollows and sumps. DO NOT enter confined spaces until atmosphere has been checked.</li> <li>DO NOT allow material to contact humans, exposed food or food utensils. Avoid contact with incompatible materials. When handling, DO NOT eat, drink or smoke. Keep containers securely sealed when not in use. Avoid physical damage to containers. Always wash hands with soap and water after handling. Work clothes should be laundered separately. Launder contaminated clothing before re-use. Use good occupational work practice.</li> <li>Observe manufacturer's storage and handling recommendations contained within this SDS. Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions are maintained.</li> </ul>
Other Information:	Store in original containers. Keep containers securely sealed. Store in a cool, dry area protected from environmental extremes. Store away from incompatible materials and foodstuff containers. Protect containers against physical damage and check regularly for leaks. Observe manufacturer's storage and handling recommendations contained within this SDS.
For major quantities:	Consider storage in bunded areas - ensure storage areas are isolated from sources of community water (including stormwater, ground water, lakes and streams). Ensure that accidental discharge to air or water is the subject of a contingency disaster management plan; this may require consultation with local authorities.

#### Conditions for safe storage, including any incompatibilities



**Suitable container:** Polyethylene or polypropylene container. Check all containers are clearly labelled and free from leaks.

**Storage Incompatibility:** Avoid reaction with oxidizing agents. Protect from light.

## SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

## **Control parameters**

## Occupational Exposure Limits (OEL)

## Ingredient Data: Not Available

Emergency Limits				
Ingredient	Material Name	TEEL-1	TEEL-2	TEEL-3
Lanthanum-modified Bentonite	EutroSORB <sup>®</sup> G	Not Available	Not Available	Not Available

Ingredient	Original IDLH	Revised IDLH
Ingredients determined not to be hazardous	Not Available	Not Available

#### Exposure Controls

Appropriate engineering controls:	Engine the haz and wil	eering controls are used to remove a hazard or place zard. Well-designed engineering controls can be higl Il typically be independent of worker interactions to pr	a barrier between the worker and hly effective in protecting workers ovide this high level of protection.
The basic types of engineering controls are:	Proces risk. E away f enviror design in use.	es controls which involve changing the way a job activ inclosure and/or isolation of emission source which k from the worker and ventilation that strategically "ac nment. Ventilation can remove or dilute an air cont of a ventilation system must match the particular pro	vity or process is done to reduce the eeps a selected hazard "physically" dds" and "removes" air in the work taminant if designed properly. The ocess and chemical or contaminant
Employers may need to use mu	ıltiple typ	pes of controls to prevent employee overexposure.	
	Local e when p If in sj respira	exhaust ventilation is required where solids are han particulates are relatively large, a certain proportion w pite of local exhaust an adverse concentration of tory protection should be considered.	ndled as powders or crystals; even vill be powdered by mutual friction. the substance in air could occur,
Such protection might consist of:	(a) (b) (c)	particle dust respirators, if necessary, combined win filter respirators with absorption cartridge or caniste fresh-air hoods or masks.	th an absorption cartridge; er of the right type;
	Air con determ contan	taminants generated in the workplace possess varyin ine the "capture velocities" of fresh circulating air ninant. See "Respiratory Protection" section below fo	ng "escape" velocities which, in turn, required to effectively remove the or additional information.
Type of Contaminant: Direct spray, spray painting in dusts, gas discharge (active ge	ı shallov eneratio	v booths, drum filling, conveyer loading, crusher n into zone or rapid air motion).	Air Speed: 1-2.5 m/s (200-500 f/min.)
Grinding, abrasive blasting, tu high initial velocity into zone of	ımbling, f very hig	high speed wheel generated dusts (released at gh rapid air motion).	2.5-10 m/s (500-2000 f/min)

Page 4 of 11



Within each range the appropriate value depends on:

Lower end of the range

- 1: Room air currents minimal or favorable to capture.
- 2: Contaminants of low toxicity or of nuisance value only.
- 3: Intermittent, low production.
- 4: Large hood or large air mass in motion.

Upper end of the range

- 1: Disturbing room air currents
- 2: Contaminants of high toxicity
- 3: High production, heavy use
- 4: Small hood-local control only

Simple theory shows that air velocity falls rapidly with distance away from the opening of a simple extraction pipe. Velocity generally decreases with the square of distance from the extraction point (in simple cases). Therefore the air speed at the extraction point should be adjusted, accordingly, after reference to distance from the contaminating source. The air velocity at the extraction fan, for example, should be a minimum of 4-10 m/s (800-2000 f/min) for extraction of crusher dusts generated 2 meters distant from the extraction point. Other mechanical considerations, producing performance deficits within the extraction apparatus, make it essential that theoretical air velocities are multiplied by factors of 10 or more when extraction systems are installed or used.

#### Personal protection:



#### Eye and face protection:

- Safety glasses with side shields; or, as required.
- chemical goggles.
- Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.

Skin protection:

See Hand protection below.

Hands/feet protection:

The selection of suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to manufacturer. Where the chemical is a preparation of several substances, the resistance of the glove material cannot be calculated in advance and has therefore to be checked prior to the application. The exact break through time for substances has to be obtained from the manufacturer of the protective gloves and has to be observed when making a final choice.

Suitability and durability of glove type is dependent on usage. Important factors in the selection of gloves include: frequency and duration of contact, chemical resistance of glove material, glove thickness and dexterity

Some glove polymer types are less affected by movement and this should be taken into account when considering gloves for long-term use. Contaminated gloves should be replaced.

Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturiser is recommended. Experience indicates that the following polymers are suitable as glove materials for protection against undissolved, dry solids, where abrasive particles are not present: polychloroprene; nitrile rubber; butyl rubber; fluorocaoutchouc; polyvinyl chloride.

Seprø	SDS	EutroSORB <sup>®</sup> G
	Gloves should be examined for wear and/ or degradation con-	stantly.
Body protection:	See other protection below.	
Other protection:	Overalls. P.V.C. apron. Barrier cream. Skin cleansing cream. Eye wash unit.	
Thermal hazards:	Not available.	
Respiratory protection	Particulate.	
	Try to avoid creating dust conditions.	
	Where protection from nuisance levels of dusts are desired, use type N95 (US) dust masks. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US).	
	Respirators may be necessary when engineering and administ prevent exposures.	trative controls do not adequately
	The decision to use respiratory protection should be based on professional judgment that takes into account toxicity information, exposure measurement data, and frequency and likelihood of the worker's exposure – ensure users are not subject to high thermal loads which may result in heat stress or distress due to personal protective equipment (powered, positive flow, full face apparatus may be an option).	
	Published occupational exposure limits, where they exist, will assist in determining the adequacy of the selected respiratory protection. These may be government mandated or vendor recommended. Certified respirators will be useful for protecting workers from inhalation of particulates when properly selected and fit tested as part of a complete respiratory protection program.	
	Use approved positive flow mask if significant quantities of du	ist becomes airborne.
Quartz CAS 14808-60-7	0.025 mg/m <sup>3</sup> TWA (respirable fraction) Not	t established
Titanium dioxide	10 mg/m <sup>3</sup> TWA 15	mg/m <sup>3</sup> TWA (total dust)

Key to abbreviations

Titanium dioxide CAS 13463-67-7

> ACGIH = American Conference of Governmental Industrial Hygiene OSHA = Occupational Safety and Health Administration TWA = Time Weighted Averages are based on 8h/day, 40h/week exposures

## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance Physical state Odor Odor threshold pH (as supplied) Melting point / freezing point (°C) Light brown granules; insoluble in water Divided solid Not available Not available Not applicable >1000



Initial boiling point and boiling range (°C)	Not applicable
Flash point (°C)	Not applicable
Evaporation rate	Not applicable
Flammability	Not applicable
Relative density (Water = 1)	1.1
Partition coefficient n-octanol / water	Not available
Auto-ignition temperature (°C)	Not applicable
Decomposition temperature	Not available
Viscosity (cSt)	Not available
Molecular weight (g/mol)	Not applicable
Taste	Not available
Explosive properties	Not available
Oxidising properties	Not available
Upper Explosive Limit (%)	Not applicable
Lower Explosive Limit (%)	Not applicable
Vapour pressure (kPa)	Not applicable
Solubility in water (g/l)	Immiscible
Vapour density (Air = 1)	Not available
Surface Tension (dyn/cm or mN/m)	Not applicable
Volatile Component (% vol)	Not applicable
Gas group	Not available
pH as a solution (1%)	7 – 7.5 (2%)
VOC g/L	Not available

## SECTION 10. STABILITY AND REACTIVITY

#### Reactivity

See section 7

• Unstable in the presence of incompatible materials.

ccur
oour.

## SECTION 11. TOXICOLOGICAL INFORMATION

## Information on toxicological effects:

Inhaled	<ul> <li>Persons with impaired respiratory function, airway diseases and conditions such as emphysema or chronic bronchitis, may incur further disability if excessive concentrations of particulate are inhaled.</li> <li>If prior damage to the circulatory or nervous systems has occurred or if kidney damage has been sustained, proper screenings should be conducted on individuals who may be exposed to further risk if handling and use of the material result in excessive exposures.</li> </ul>
Ingestion	<ul> <li>Accidental ingestion of the material may be damaging to the health of the individual.</li> <li>Ingestion may result in nausea, abdominal irritation, pain and vomiting.</li> </ul>
Skin Contact	• The material is not thought to produce adverse health effects or skin irritation following contact (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable gloves be used in an occupational setting.

• Open cuts, abraded or irritated skin should not be exposed to this material.

Sepro	SDS	EutroSORB <sup>®</sup> G
Eye	<ul> <li>Entry into the blood-stream through, for example, cuts, lesions, may produce systemic injury with harmful effect use of the material and ensure that any external damage</li> <li>Although the material is not thought to be an irritant (a direct contact with the eye may cause transient discom conjunctival redness (as with windburn).</li> </ul>	abrasions, puncture wounds or ts. Examine the skin prior to the e is suitably protected. as classified by EC Directives), fort characterized by tearing or
	<ul> <li>Slight abrasive damage may also result. The material m irritation in certain individuals.</li> </ul>	ay produce foreign body
Chronic	<ul> <li>Limited evidence suggests that repeated or long-term produce cumulative health effects involving organs or bi</li> <li>Long term exposure to high dust concentrations may of (i.e. pneumoconiosis) caused by particles less that</li> </ul>	m occupational exposure may ochemical systems. cause changes in lung function n 0.5 micron penetrating and

## EutroSORB<sup>®</sup> G

Toxicity	Irritation	
Dermal (Rabbit) LD50: None	Not available	
PDII/4hr <sup>[2]</sup>		
Inhalation (Rat) LC50: >5000		
mg/L/4h <sup>[2]</sup>		
I a second of Malers all fairs all factors F		

remaining in the lung.

**Legend:** 1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2.\* Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances

Acute Toxicity	Data available but does not fill the criteria for classification
Skin Irritation/Corrosion	Data not available to make classification
Serious Eye Damage/Irritation	Data not available to make classification
Respiratory or Skin Sensitization	Data not available to make classification
Mutagenicity	Data not available to make classification
Carcinogenicity	Data not available to make classification
Reproductivity	Data not available to make classification
STOT – Single Exposure	Data not available to make classification
STOT – Repeated Exposure	Data not available to make classification
Aspiration Hazard	Data not available to make classification

## SECTION 12. ECOLOGICAL INFORMATION

#### Toxicity

Ingredient	Endpoint	Test Duration (hr)	Species	Value	Source
Not Available	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
Legend	Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances – Ecotoxicological				
-	Information – Aquatic Toxicity 3. EPIWIN Suite V3.12 – Aquatic Toxicity Data (Estimated) 4. US EPA,				
	Ecotox database – Aquatic Toxicity Data 5. ECETOC Aquatic Hazard Assessment Data 6. NITE				
	(Japan) – Bioconcei	ntration Data 7. METI	(Japan) – Bioconcei	ntration Data 8. Vend	dor Data

**DO NOT** discharge into sewer or waterways. **Persistance and degradability** 

Ingredient	Persistence: Water/Soil	Persistence: Air
Lanthanum-modified Bentonite	No data available for all ingredients	No data available for all ingredients

#### **Bioaccumulative potential**

Ingredient	Bioaccumulation
Lanthanum-modified Bentonite	No data available for all ingredients



## Mobility in soil

Ingredient	Mobility
Lanthanum-modified Bentonite	No data available for all ingredients

## SECTION 13. DISPOSAL CONSIDERATIONS

Product / Packaging Disposal Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked.

A Hierarchy of Controls seems to be common - the user should investigate:

- Reduction
- Reuse
- Recycling
- Disposal (if all else fails)

This material may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use. Shelf-life considerations should also be applied in making decisions of this type. Note that properties of a material may change in use, and recycling or reuse may not always be appropriate. In most instances the supplier of the material should be consulted.

- DO NOT allow wash water from cleaning or process equipment to enter drains.
- It may be necessary to collect all wash water for treatment before disposal.
- In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first.
- Where in doubt contact the responsible authority.
- Recycle wherever possible or consult manufacturer for recycling options.
- Consult State Land Waste Management Authority for disposal.
- Bury residue in an authorized landfill.
- Recycle containers if possible, or dispose of in an authorized landfill.

## **SECTION 14. TRANSPORT INFORMATION**

#### Labels Required

Sea transport (IMDG-Code / GGVSee):	NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS
Air transport (ICAO-IATA / DGR):	NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS
Land transport (DOT):	NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS
Marine Pollutant:	No

## SECTION 15. REGULATORY INFORMATION

Safety, health and environmental regulations / legislation specific for the substance or mixture

## Federal Regulations

Superfund Amendments and Reauthorization Act of 1986 (SARA)



## SECTION 311/312 HAZARD CATEGORIES

Immediate (acute) health hazard	NO
Delayed (chronic) health hazard	NO
Fire Hazard	NO
Pressure Hazard	NO
Reactivity hazard	NO

US. EPA CERCLA HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES (40 CFR 302.4): None Reported

Status
Y
Y
Y
Y
Y
Y
Y
Y
Y
Y

Legend: Y = All ingredients are on the inventory

N = Not determined or one or more ingredients are not on the inventory and are not exempt from listing (see specific ingredients in brackets)

## **SECTION 16. OTHER INFORMATION**

The (M)SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

## **Definitions and abbreviations**

PC-TWA: Permissible Concentration-Time Weighted Average PC-STEL: Permissible Concentration-Short Term Exposure Limit IARC: International Agency for Research on Cancer ACGIH: American Conference of Governmental Industrial Hygienists STEL: Short Term Exposure Limit TEEL: Temporary Emergency Exposure Limit<sub>o</sub> IDLH: Immediately Dangerous to Life or Health Concentrations OSF: Odor Safety Factor NOAEL: No Observed Adverse Effect Level LOAEL: Lowest Observed Adverse Effect Level TLV: Threshold Limit Value LOD: Limit Of Detection OTV: Odor Threshold Value BCF: BioConcentration Factors BEI: Biological Exposure Index

Prepared by:SePRO CorporationWritten Date:02/28/2023

## Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user.

All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

<sup>®</sup>EutroSORB is a registered trademark of SePRO Corporation.

#### r LiquiElea 10/ \_

HaloKlear.	HaloKlear Li Safety Data Shee	quiFloc 1%		
	Date of issue: 03/04/2016	Revision date: 07/08/2020	26, 2012 / Rules and Regulations Supersedes: 01/02/2018	Version: 1.3
SECTION 1: Identification of	the substance/mixtur	e and of the company	/undertaking	
1.1. Product identifier				
Product form	: Mixtures			
Product name	: HaloKlear Liqu	liFloc 1%		
Product code	: 007014			
1.2. Relevant identified uses of	the substance or mixture	and uses advised against		
1.2 Details of the supplier of the		occulant		
Dober Chemical Corp. 543 Forest Road Hazle Township, PA 18202 - USA T 630-410-7300 - F 630-410-7444 regulatory@dober.com - www.dober.co				
1.4. Emergency telephone num	iber			
Emergency number	: 1-800-255-392 ChemTel	24 / 1-813-248-0585		
<b>SECTION 2: Hazards identifie</b>	ation			
2.1. Classification of the subst	ance or mixture			
GHS US classification				
Not classified				
2.2. Label elements				
GHS US labeling				
No labeling applicable				
2.3. Other hazards				
No additional information available				
2.4. Unknown acute toxicity (G	HS US)			
Not applicable.				
<b>SECTION 3: Composition/Inf</b>	ormation on ingredie	nts		
3.1. Substances				
Not applicable				
3.2. Mixtures				
Full text of H-phrases: see section 16				
SECTION 4: First aid measur	es			
4.1. Description of first aid mea	asures			
First-aid measures after inhalation	: Remove perso	on to fresh air and keep comfo	rtable for breathing.	
First-aid measures after skin contact	: vvasn skin witr	n plenty of water.		
First-aid measures after ingestion	: Call a poison o	enter/doctor/physician if you f	feel unwell.	
4.2 Most important symptoms	and effects both acute an	d delaved		
No additional information available	and enects, both acute an	u uelayeu		
4.3. Indication of any immediat	e medical attention and sn	ecial treatment needed		
Treat symptomatically.				
SECTION 5: Firefighting mea	sures			
5.1. Extinguishing media				

Suitable extinguishing media

: Water spray. Dry powder. Foam. Carbon dioxide.

## HaloKlear LiquiFloc 1%

Safety Data Sheet according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

5.2.	Special hazards arisi	ng from the substance or mixture	
Reactivity	/	: The product is non-reactive under normal conditions of use, storage and tra	isport.
5.3.	Advice for firefighter	S	
Protectio	n during firefighting	: Do not attempt to take action without suitable protective equipment. Self-cor apparatus. Complete protective clothing.	itained breathing
SECTIO	ON 6: Accidental r	elease measures	
6.1.	Personal precautions	s, protective equipment and emergency procedures	
6.1.1.	For non-emergency r	personnel	
Emeraen	cv procedures	: Ventilate spillage area.	
	_		
6.1.2.	For emergency respo	onders	or information
FIOLECLIV	e equipment	refer to section 8: "Exposure controls/personal protection".	
6.2	Environmental press	utions	
Avoid rel	ease to the environmen	t None known	
0.3.	wethoos and materia	i for containment and cleaning up	
Other inf	for cleaning up	Take up liquid spill into absorbent material.     Dispesse of materials or solid residues at an authorized site.	
Other Into	ornation		
6.4.	Reference to other se	ections	
For furthe	er information refer to se	ection 13.	
SECTIO	ON 7: Handling an	id storage	
7.1.	Precautions for safe	handling	
Precautio	ons for safe handling	: Ensure good ventilation of the work station. Wear personal protective equipr	nent.
Hygiene	measures	: Do not eat, drink or smoke when using this product. Always wash hands after product.	r handling the
7.2.	Conditions for safe s	torage, including any incompatibilities	
Storage of	conditions	: Store in a well-ventilated place. Keep cool.	
Storage t	emperature	: 10 - 50 °C Will freeze at 3C	
7.3.	Specific end use(s)		
No additi	onal information availab	le	
SECTIO	ON 8: Exposure co	ontrols/personal protection	
8.1.	Control parameters		
HaloKi	ear LiquiFloc 1%		
ACGIH		Not applicable	
OSHA		Not applicable	
8.2.	Exposure controls	. For we read we that is a file were station	
Appropria	ate engineering controls	Ensure good ventilation of the work station.	
Personal	protective equipment	. Avoid all unnecessary exposure.	
Hand protection Protective gloves			
Fixe protection		: Safety glasses.	
Skin and body protection		: Wear suitable protective clothing.	
Respiratory protection :		: Use a properly fitted, particulate filter respirator complying with an approved assessment indicates this is necessary. Respirator selection must be based anticipated exposure levels, the hazards of the product and the safe working selected respirator.	standard if a risk on known or J limits of the
SECTION 9: Physical and chemical properties			
9.1.	Information on basic	physical and chemical properties	
Physical	state	: Liquid	

Physical state

: Colorless to Pale Yellow

Color

## HaloKlear LiquiFloc 1% Safety Data Sheet

Odor	: vinegar
Odor threshold	: No data available
рН	: 3.8 - 5.2
Relative evaporation rate (butyl acetate=1)	: No data available
Melting point	: Not applicable
Freezing point	: 0 °C
Boiling point	: No data available
Flash point	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Flammability (solid, gas)	: No data available
Vapor pressure	: No data available
Relative vapor density at 20 °C	: No data available
Relative density	: No data available
Specific gravity / density	: 1 - 1.1 g/ml
Solubility	: Soluble.
Log Pow	: No data available
Log Kow	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive properties	: No data available
Oxidizing properties	: No data available
Explosion limits	: No data available
9.2. Other information	
No additional information available	
<b>SECTION 10: Stability and reactivit</b>	y .
10.1. Reactivity	
The product is non-reactive under normal cond	itions of use, storage and transport.
10.2. Chemical stability	
Stable under normal conditions.	
10.3. Possibility of hazardous reactions	
Stable under normal conditions of use.	
10.4 Conditions to avoid	
None under recommended storage and handlin	na conditions (see section 7)
40.5 Incompatible metericle	
10.5. Incompatible materials	
10.6. Hazardous decomposition product	is
Under normal conditions of storage and use, ha	azardous decomposition products should not be produced.
SECTION 11: Toxicological information	tion
11.1. Information on toxicological effect	S
Acute toxicity	: Not classified
Skin corrosion/irritation	· Not classified
oran concernmentation	nH: 38 - 5 2
Serious eve damage/irritation	· Not classified
Serious eye damage/irritation	: Not classified pH: 3.8 - 5.2

# HaloKlear LiquiFloc 1% Safety Data Sheet according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

STOT single experies	· Not classified
STOT reported exposure	
Aspiration nazaro	. Not classified
SECTION 12: Ecological information	
12.1. Toxicity Ecology - general	• The product is not considered harmful to aquatic organisms or to cause long-term adverse
	effects in the environment.
HaloKlear LiquiFloc 1%	
LC50 fish 1	173 mg/l Rainbow Trout
12.2.         Persistence and degradability           No additional information available	
12.3. Bioaccumulative potential	
No additional information available	
12.4. Mobility in soil	
12.5. Other adverse effects	
Effect on global warming	: No known effects from this product.
Other information	: No other effects known.
SECTION 13: Disposal consideration	S
13.1. Waste treatment methods	
Waste treatment methods	: Dispose of contents/container in accordance with licensed collector's sorting instructions.
Ecology - waste materials	: None known.
SECTION 14: Transport information	
SECTION 14: Transport information UN-No.(DOT)	: Non Regulated
SECTION 14: Transport information UN-No.(DOT) UN-No. (IMDG)	: Non Regulated : Non Regulated
SECTION 14: Transport information UN-No.(DOT) UN-No. (IMDG) UN-No. (IATA)	<ul> <li>Non Regulated</li> <li>Non Regulated</li> <li>Non Regulated</li> </ul>
SECTION 14: Transport information UN-No.(DOT) UN-No. (IMDG) UN-No. (IATA) 14.2. UN proper shipping name	<ul> <li>Non Regulated</li> <li>Non Regulated</li> <li>Non Regulated</li> </ul>
SECTION 14: Transport information UN-No.(DOT) UN-No. (IMDG) UN-No. (IATA) 14.2. UN proper shipping name Proper Shipping Name (DOT)	<ul> <li>Non Regulated</li> <li>Non Regulated</li> <li>Non Regulated</li> </ul>
SECTION 14: Transport information UN-No.(DOT) UN-No. (IMDG) UN-No. (IATA) 14.2. UN proper shipping name Proper Shipping Name (DOT)	<ul> <li>Non Regulated</li> <li>Non Regulated</li> <li>Non Regulated</li> <li>Non Regulated</li> </ul>
SECTION 14: Transport information UN-No.(DOT) UN-No. (IMDG) UN-No. (IATA) 14.2. UN proper shipping name Proper Shipping Name (DOT) Proper Shipping Name (IMDG)	<ul> <li>Non Regulated</li> <li>Non Regulated</li> <li>Non Regulated</li> <li>Non Regulated</li> <li>Non Regulated</li> </ul>
SECTION 14: Transport information UN-No.(DOT) UN-No. (IMDG) UN-No. (IATA) 14.2. UN proper shipping name Proper Shipping Name (DOT) Proper Shipping Name (IMDG) Proper Shipping Name (IATA)	<ul> <li>Non Regulated</li> <li>Non Regulated</li> <li>Non Regulated</li> <li>Non Regulated</li> <li>Non Regulated</li> <li>Non Regulated</li> </ul>
SECTION 14: Transport information UN-No.(DOT) UN-No. (IMDG) UN-No. (IATA) 14.2. UN proper shipping name Proper Shipping Name (DOT) Proper Shipping Name (IMDG) Proper Shipping Name (IATA)	<ul> <li>Non Regulated</li> </ul>
SECTION 14: Transport information UN-No. (DOT) UN-No. (IMDG) UN-No. (IATA) 14.2. UN proper shipping name Proper Shipping Name (DOT) Proper Shipping Name (IMDG) Proper Shipping Name (IATA) 14.3. Transport hazard class(es)	<ul> <li>Non Regulated</li> </ul>
SECTION 14: Transport information UN-No.(DOT) UN-No. (IMDG) UN-No. (IATA) 14.2. UN proper shipping name Proper Shipping Name (DOT) Proper Shipping Name (IMDG) Proper Shipping Name (IATA) 14.3. Transport hazard class(es) Class (DOT)	<ul> <li>Non Regulated</li> </ul>
SECTION 14: Transport information UN-No.(DOT) UN-No. (IMDG) UN-No. (IATA) 14.2. UN proper shipping name Proper Shipping Name (DOT) Proper Shipping Name (IMDG) Proper Shipping Name (IATA) 14.3. Transport hazard class(es) Class (DOT)	<ul> <li>Non Regulated</li> </ul>
SECTION 14: Transport information UN-No. (DOT) UN-No. (IMDG) UN-No. (IATA) 14.2. UN proper shipping name Proper Shipping Name (DOT) Proper Shipping Name (IMDG) Proper Shipping Name (IATA) 14.3. Transport hazard class(es) Class (DOT) Transport hazard class(es) (IMDG)	<ul> <li>Non Regulated</li> <li>Not applicable.</li> <li>Not applicable.</li> </ul>
SECTION 14: Transport information UN-No. (DOT) UN-No. (IMDG) UN-No. (IATA) 14.2. UN proper shipping name Proper Shipping Name (DOT) Proper Shipping Name (IMDG) Proper Shipping Name (IATA) 14.3. Transport hazard class(es) Class (DOT) Transport hazard class(es) (IMDG)	<ul> <li>Non Regulated</li> <li>Not applicable.</li> <li>Not applicable.</li> <li>Not applicable.</li> </ul>
SECTION 14: Transport information UN-No. (DOT) UN-No. (IMDG) UN-No. (IATA) 14.2. UN proper shipping name Proper Shipping Name (DOT) Proper Shipping Name (IMDG) Proper Shipping Name (IATA) 14.3. Transport hazard class(es) Class (DOT) Transport hazard class(es) (IMDG) Transport hazard class(es) (IATA)	<ul> <li>Non Regulated</li> <li>Not applicable.</li> <li>Not applicable.</li> <li>Not applicable.</li> </ul>
SECTION 14: Transport information UN-No. (DOT) UN-No. (IMDG) UN-No. (IATA) 14.2. UN proper shipping name Proper Shipping Name (DOT) Proper Shipping Name (IMDG) Proper Shipping Name (IATA) 14.3. Transport hazard class(es) Class (DOT) Transport hazard class(es) (IMDG) Transport hazard class(es) (IATA)	<ul> <li>Non Regulated</li> <li>Not applicable.</li> <li>Not applicable.</li> <li>Not applicable.</li> </ul>
SECTION 14: Transport information UN-No. (DOT) UN-No. (IMDG) UN-No. (IATA) 14.2. UN proper shipping name Proper Shipping Name (DOT) Proper Shipping Name (IMDG) Proper Shipping Name (IATA) 14.3. Transport hazard class(es) Class (DOT) Transport hazard class(es) (IMDG) Transport hazard class(es) (IMDG) Transport hazard class(es) (IATA) 14.4. Packing group Packing group (DOT)	<ul> <li>Non Regulated</li> <li>Not applicable.</li> <li>Not applicable.</li> <li>Not applicable.</li> <li>Not applicable.</li> </ul>
SECTION 14: Transport information UN-No. (DOT) UN-No. (IMDG) UN-No. (IATA) 14.2. UN proper shipping name Proper Shipping Name (DOT) Proper Shipping Name (IMDG) Proper Shipping Name (IATA) 14.3. Transport hazard class(es) Class (DOT) Transport hazard class(es) (IMDG) Transport hazard class(es) (IATA) 14.4. Packing group Packing group (DOT) Packing group (IMDG)	<ul> <li>Non Regulated</li> <li>Not applicable.</li> <li>Not applicable.</li> <li>Not applicable.</li> <li>Not applicable.</li> <li>Not applicable.</li> </ul>
SECTION 14: Transport information UN-No. (DOT) UN-No. (IMDG) UN-No. (IATA) 14.2. UN proper shipping name Proper Shipping Name (DOT) Proper Shipping Name (IMDG) Proper Shipping Name (IATA) 14.3. Transport hazard class(es) Class (DOT) Transport hazard class(es) (IMDG) Transport hazard class(es) (IMDG) Transport hazard class(es) (IATA) 14.4. Packing group Packing group (DOT) Packing group (IMDG)	<ul> <li>Non Regulated</li> <li>Not applicable.</li> <li>Not applicable.</li> <li>Not applicable.</li> <li>Not applicable.</li> </ul>

## HaloKlear LiquiFloc 1%

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Packing group (IATA)	: Not applicable.
14.5. Environmental hazards	
Marine pollutant(IMDG)	: No
Marine pollutant(IATA)	: No

## SECTION 15: Regulatory information

#### 15.1. US Federal regulations

All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory

This product or mixture is not known to contain a toxic chemical or chemicals in excess of the applicable de minimis concentration as specified in 40 CFR §372.38(a) subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

#### 15.2. International regulations

#### CANADA

No additional information available

#### 15.3. US State regulations

California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer, developmental and/or reproductive harm

SECTION 16: Other information	on line in the second
Indication of changes	: Physical and chemical properties.
Revision date	: 07/08/2020
Abbreviations and acronyms	<ul> <li>Acute Toxicity Estimate. Bioconcentration factor. Median effective concentration. International Air Transport Association. International Maritime Dangerous Goods. Median lethal concentration. Median lethal dose.</li> </ul>
NFPA health hazard	: 0 - Materials that, under emergency conditions, would offer no hazard beyond that of ordinary combustible materials.
NFPA fire hazard	: 0 - Materials that will not burn under typical fire conditions, including intrinsically noncombustible materials such as concrete, stone, and sand.
NFPA reactivity	: 0 - Material that in themselves are normally stable, even under fire conditions.
Hazard Rating	
Health	: 0 Minimal Hazard - No significant risk to health
Flammability	: 0 Minimal Hazard
Physical	: 0 Minimal Hazard
Personal protection	: B

Dober SDS US

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

# **APPENDIX B**

Coordination



## United States Department of the Interior

FISH AND WILDLIFE SERVICE New Jersey Ecological Services Field Office 4 E. Jimmie Leeds Road, Suite 4 Galloway, NJ 08205 Phone: (609) 646-9310



In Reply Refer To: 02/18/2025 20:44:05 UTC Project Code: 2025-0057969 Project Name: Lake Hopatcong Harmful Algal Bloom Demonstration Project

## Subject: 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.*).

If the enclosed list indicates that any listed species may be present in your action area, please visit the New Jersey Field Office consultation web page as the next step in evaluating potential project impacts: <u>http://www.fws.gov/northeast/njfieldoffice/Endangered/consultation.html</u>

On the New Jersey Field Office consultation web page you will find:

- habitat descriptions, survey protocols, and recommended best management practices for listed species;
- recommended procedures for submitting information to this office; and
- links to other Federal and State agencies, the Section 7 Consultation Handbook, the Service's wind energy guidelines, communication tower recommendations, the National Bald Eagle Management Guidelines, and other resources and recommendations for protecting wildlife resources.

The enclosed list may change as new information about listed species becomes available. As per Federal regulations at 50 CFR 402.12(e), the enclosed list is only valid for 90 days. Please return to the IPaC website at regular intervals during project planning and implementation to obtain an updated species list. When using IPaC, be careful about drawing the boundary of your Project Location. Remember that your action area under the ESA is not limited to just the footprint of the project. The action area also includes all areas that may be indirectly affected through impacts such as noise, visual disturbance, erosion, sedimentation, hydrologic change, chemical exposure,

reduced availability or access to food resources, barriers to movement, increased human intrusions or access, and all areas affected by reasonably foreseeable future that would not occur without ("but for") the project that is currently being proposed.

Additionally, please note that on March 23, 2022, the Service published a proposal to reclassify the northern long-eared bat (NLEB) as endangered under the Endangered Species Act. The U.S. District Court for the District of Columbia has ordered the Service to complete a new final listing determination for the NLEB by November 2022 (Case 1:15-cv-00477, March 1, 2021). The bat, currently listed as threatened, faces extinction due to the range-wide impacts of white-nose syndrome (WNS), a deadly fungal disease affecting cave-dwelling bats across the continent. The proposed reclassification, if finalized, would remove the current 4(d) rule for the NLEB, as these rules may be applied only to threatened species. Depending on the type of effects a project has on NLEB, the change in the species' status may trigger the need to re-initiate consultation for any actions that are not completed and for which the Federal action agency retains discretion once the new listing determination becomes effective (anticipated to occur by December 30, 2022). If your project may result in incidental take of NLEB after the new listing goes into effect this will first need to addressed in an updated consultation that includes an Incidental Take Statement. If your project may require re-initiation of consultation, please contact our office for additional guidance.

We appreciate your concern for threatened and endangered species. The Service encourages Federal and non-Federal project proponents to consider listed, proposed, and candidate species early in the planning process. Feel free to contact this office if you would like more information or assistance evaluating potential project impacts to federally listed species or other wildlife resources. Please include the Consultation Tracking Number in the header of this letter with any correspondence about your project.

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries
- Bald & Golden Eagles
- Migratory Birds
- Wetlands

## **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:

## New Jersey Ecological Services Field Office

4 E. Jimmie Leeds Road, Suite 4 Galloway, NJ 08205 (609) 646-9310

## **PROJECT SUMMARY**

Project Code:	2025-0057969
Project Name:	Lake Hopatcong Harmful Algal Bloom Demonstration Project
Project Type:	Biological Control
Project Description:	Princeton Hydro, LLC., is proposing to use new HAB maintenance
	technology in an effort to advance the science of preventing and
	maintaining HABs in Lake Hopatcong, New Jersey.

Project Location:

The approximate location of the project can be viewed in Google Maps: <u>https://www.google.com/maps/@40.94230485,-74.63907215375626,14z</u>



Counties: Morris and Sussex counties, New Jersey

## **ENDANGERED SPECIES ACT SPECIES**

There is a total of 7 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 Fisheries<sup>1</sup>, 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. <u>NOAA Fisheries</u>, 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 <b>final</b> critical habitat for this species. Your location does not overlap the critical habitat. Species profile: <u>https://ecos.fws.gov/ecp/species/5949</u>	Endangered
Northern Long-eared Bat <i>Myotis septentrionalis</i> No critical habitat has been designated for this species. Species profile: <u>https://ecos.fws.gov/ecp/species/9045</u>	Endangered
Tricolored Bat <i>Perimyotis subflavus</i> No critical habitat has been designated for this species. Species profile: <u>https://ecos.fws.gov/ecp/species/10515</u>	Proposed Endangered
REPTILES NAME	STATUS
Bog Turtle <i>Glyptemys muhlenbergii</i>	Threatened

Bog Turtle Glyptemys muhlenbergii	
Population: Wherever found, except GA, NC, SC, TN, VA	
No critical habitat has been designated for this species.	
Species profile: <u>https://ecos.fws.gov/ecp/species/6962</u>	

## INSECTS

NAME	STATUS
Monarch Butterfly Danaus plexippus	Proposed
There is <b>proposed</b> critical habitat for this species. Your location does not overlap the critical	Threatened
habitat.	
Species profile: <u>https://ecos.fws.gov/ecp/species/9743</u>	

## FLOWERING PLANTS

NAME	STATUS
Small Whorled Pogonia Isotria medeoloides	Threatened
No critical habitat has been designated for this species. Species profile: <u>https://ecos.fws.gov/ecp/species/1890</u>	
Swamp Pink Helonias bullata Population: No critical habitat has been designated for this species. Species profile: <u>https://ecos.fws.gov/ecp/species/4333</u>	Threatened

## **CRITICAL HABITATS**

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

YOU ARE STILL REQUIRED TO DETERMINE IF YOUR PROJECT(S) MAY HAVE EFFECTS ON ALL ABOVE LISTED SPECIES.

## USFWS NATIONAL WILDLIFE REFUGE LANDS AND FISH HATCHERIES

Any activity proposed on lands managed by the <u>National Wildlife Refuge</u> 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.

## **BALD & GOLDEN EAGLES**

Bald and Golden Eagles are protected under the Bald and Golden Eagle Protection Act <sup>2</sup> and the Migratory Bird Treaty Act (MBTA) <sup>1</sup>. Any person or organization who plans or conducts activities that may result in impacts to Bald or Golden Eagles, or their habitats, should follow appropriate regulations and consider implementing appropriate avoidance and minimization measures, as described in the various links on this page.

- 1. The <u>Bald and Golden Eagle Protection Act</u> of 1940.
- 2. The <u>Migratory Birds Treaty Act</u> of 1918.
- 3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

There are Bald Eagles and/or Golden Eagles in your **<u>project</u>** area.

## **Measures for Proactively Minimizing Eagle Impacts**

For information on how to best avoid and minimize disturbance to nesting bald eagles, please review the <u>National Bald Eagle Management Guidelines</u>. You may employ the timing and activity-specific distance recommendations in this document when designing your project/ activity to avoid and minimize eagle impacts. For bald eagle information specific to Alaska, please refer to <u>Bald Eagle Nesting and Sensitivity to Human Activity</u>.

The FWS does not currently have guidelines for avoiding and minimizing disturbance to nesting Golden Eagles. For site-specific recommendations regarding nesting Golden Eagles, please consult with the appropriate Regional <u>Migratory Bird Office</u> or <u>Ecological Services Field Office</u>.

If disturbance or take of eagles cannot be avoided, an <u>incidental take permit</u> may be available to authorize any take that results from, but is not the purpose of, an otherwise lawful activity. For assistance making this determination for Bald Eagles, visit the <u>Do I Need A Permit Tool</u>. For assistance making this determination for golden eagles, please consult with the appropriate Regional <u>Migratory Bird Office</u> or <u>Ecological Services Field Office</u>.

## **Ensure Your Eagle List is Accurate and Complete**

If your project area is in a poorly surveyed area in IPaC, your list may not be complete and you may need to rely on other resources to determine what species may be present (e.g. your local FWS field office, state surveys, your own surveys). Please review the <u>Supplemental Information</u> on <u>Migratory Birds and Eagles</u>, to help you properly interpret the report for your specified location, including determining if there is sufficient data to ensure your list is accurate.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to bald or golden eagles on your list, see the "Probability of Presence Summary" below to see when these bald or golden eagles are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Bald Eagle Haliaeetus leucocephalus This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. <u>https://ecos.fws.gov/ecp/species/1626</u>	Breeds Sep 1 to Aug 31
Golden Eagle <i>Aquila chrysaetos</i> This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1680	Breeds elsewhere

## **PROBABILITY OF PRESENCE SUMMARY**

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read <u>"Supplemental Information on Migratory Birds and Eagles"</u>, specifically the FAQ section titled "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

## **Probability of Presence** (

Green bars; the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during that week of the year.

## Breeding Season (=)

Yellow bars; liberal estimate of the timeframe inside which the bird breeds across its entire range.

## Survey Effort ()

Vertical black lines; the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps.

## No Data (–)

A week is marked as having no data if there were no survey events for that week.

				probability of presence						survey e	effort -	— no data	
SPECIES	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	
Bald Eagle Non-BCC Vulnerable	11+1				<b> </b> +11		1]]]		1]]1				
Golden Eagle Non-BCC Vulnerable	++++	++++	++++	++++	++++	++++	++++	++++	++++	++++	┼╪┼	┼┼卿┼	

Additional information can be found using the following links:

- Eagle Management <u>https://www.fws.gov/program/eagle-management</u>
- Measures for avoiding and minimizing impacts to birds <u>https://www.fws.gov/library/</u> <u>collections/avoiding-and-minimizing-incidental-take-migratory-birds</u>
- Nationwide avoidance and minimization measures for birds <u>https://www.fws.gov/sites/</u> <u>default/files/documents/nationwide-standard-conservation-measures.pdf</u>
- Supplemental Information for Migratory Birds and Eagles in IPaC <u>https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action</u>

## **MIGRATORY BIRDS**

The Migratory Bird Treaty Act (MBTA) <sup>1</sup> prohibits the take (including killing, capturing, selling, trading, and transport) of protected migratory bird species without prior authorization by the Department of Interior U.S. Fish and Wildlife Service (Service). The incidental take of migratory birds is the injury or death of birds that results from, but is not the purpose, of an activity. The Service interprets the MBTA to prohibit incidental take.

- 1. The <u>Migratory Birds Treaty Act</u> of 1918.
- 2. The <u>Bald and Golden Eagle Protection Act</u> of 1940.
- 3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, see the "Probability of Presence Summary" below to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Bald Eagle Haliaeetus leucocephalus This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Sep 1 to Aug 31
Black-billed Cuckoo Coccyzus erythropthalmus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9399	Breeds May 15 to Oct 10
Black-capped Chickadee <i>Poecile atricapillus practicus</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA <u>https://ecos.fws.gov/ecp/species/10645</u>	Breeds Apr 10 to Jul 31
Bobolink Dolichonyx oryzivorus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. <u>https://ecos.fws.gov/ecp/species/9454</u>	Breeds May 20 to Jul 31
Canada Warbler <i>Cardellina canadensis</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. <u>https://ecos.fws.gov/ecp/species/9643</u>	Breeds May 20 to Aug 10
Cerulean Warbler Setophaga cerulea This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. <u>https://ecos.fws.gov/ecp/species/2974</u>	Breeds Apr 27 to Jul 20
Chimney Swift Chaetura pelagica This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. <u>https://ecos.fws.gov/ecp/species/9406</u>	Breeds Mar 15 to Aug 25
Golden Eagle Aquila chrysaetos This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1680	Breeds elsewhere
Golden-winged Warbler Vermivora chrysoptera This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. <u>https://ecos.fws.gov/ecp/species/8745</u>	Breeds May 1 to Jul 20
Kentucky Warbler <i>Geothlypis formosa</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. <u>https://ecos.fws.gov/ecp/species/9443</u>	Breeds Apr 20 to Aug 20

NAME	BREEDING SEASON
Prairie Warbler <i>Setophaga discolor</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. <u>https://ecos.fws.gov/ecp/species/9513</u>	Breeds May 1 to Jul 31
Red-headed Woodpecker <i>Melanerpes erythrocephalus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. <u>https://ecos.fws.gov/ecp/species/9398</u>	Breeds May 10 to Sep 10
Rusty Blackbird <i>Euphagus carolinus</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA <u>https://ecos.fws.gov/ecp/species/9478</u>	Breeds elsewhere
Wood Thrush Hylocichla mustelina This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. <u>https://ecos.fws.gov/ecp/species/9431</u>	Breeds May 10 to Aug 31

## **PROBABILITY OF PRESENCE SUMMARY**

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read <u>"Supplemental Information on Migratory Birds and Eagles"</u>, specifically the FAQ section titled "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

## **Probability of Presence** (

Green bars; the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during that week of the year.

## Breeding Season (=)

Yellow bars; liberal estimate of the timeframe inside which the bird breeds across its entire range.

## Survey Effort ()

Vertical black lines; the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps.

## No Data (-)

A week is marked as having no data if there were no survey events for that week.

probability of presence breeding season survey effort — no data

SPECIES Bald Eagle Non-BCC Vulnerable	JAN	FEB	MAR	APR	MAY	JUN		AUG	SEP	OCT	NOV	DEC
Black-billed Cuckoo BCC Rangewide (CON)	++++	++++	++++	<b>┼┼┼</b>	┼╂╇╇	<b> </b>	┼┼┼╋	++++	++++	<mark>┼</mark> ╂┼┼	++++	++++
Black-capped Chickadee BCC - BCR				1				111				
Bobolink BCC Rangewide (CON)	++++	++++	++++	++++	++ <mark>+</mark> +	++++	++-+	++++	+ +++	++++	++++	++++
Canada Warbler BCC Rangewide (CON)	++++	++++	++++	++++	┿╪ <mark>┼</mark> ┼	<b>●</b> ┼┼┼	++++	<mark>┼┼</mark> ┿┿	<b>**</b> *+	++++	++++	++++
Cerulean Warbler BCC Rangewide (CON)	++++	++++	++++	+++ <mark>+</mark>	¢∎++	I <u>I</u> I+	++++	++++	++++	++++	++++	++++
Chimney Swift BCC Rangewide (CON)	++++	++++	+ <mark>+</mark> ++	<u></u> 	•111 <mark>1</mark>	I <u>I</u> ‡I			▓₩┼┼	++++	++++	++++
Golden Eagle Non-BCC Vulnerable	++++	++++	++++	++++	++++	++++	++++	++++	++++	++++	++++	++#+
Golden-winged Warbler BCC Rangewide (CON)	++++	++++	++++	++++	<u></u>       	┼╪┼┼	┼┼┼	┼┼卿┼	++++	++++	++++	++++
Kentucky Warbler BCC Rangewide (CON)	++++	++++	++++	┼┼ <mark>┼</mark> ┼	<u></u>   + +   ∎	+++	++++	++++	++++	++++	++++	++++
Prairie Warbler BCC Rangewide (CON)	++++	++++	++++	++++	¢∎∎+	[t]]	+∎++	∎++∔	┼빠┼┼	++++	++++	++++
Red-headed Woodpecker BCC Rangewide (CON)	++++	++++	<b>┼┼</b> ╇┼	++++	¢¶∳∔¦	++++	∎┼┼┼	┼┼┼╋	∎ <del>1</del> ++	┼┼┼	┼┼┼ᄈ	++++
SPECIES	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Rusty Blackbird BCC - BCR	┼┼┼║	<b>#</b> +++	++++	┼╪╪┼	<b>●</b> +++	++++	++++	++++	+++#	H¢¢¢	<b>₩</b> ₩++	++++
Wood Thrush BCC Rangewide (CON)	++++	++++	++++	┼┼┼뼦			]]]]	1111	▋₽┼₽	++++	++++	++++

Additional information can be found using the following links:

- Eagle Management https://www.fws.gov/program/eagle-management
- Measures for avoiding and minimizing impacts to birds <u>https://www.fws.gov/library/</u> <u>collections/avoiding-and-minimizing-incidental-take-migratory-birds</u>
- Nationwide avoidance and minimization measures for birds
- Supplemental Information for Migratory Birds and Eagles in IPaC <u>https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action</u>

## WETLANDS

Impacts to <u>NWI wetlands</u> and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local <u>U.S. Army Corps of</u> <u>Engineers District</u>.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

FRESHWATER FORESTED/SHRUB WETLAND

- PFO1/EM1D
- PFO1E
- PFO1F
- PFO1Dd
- PFO1/4E
- PFO1Ch
- PFO1/4D
- PFO1/SS1Dd
- PSS1E
- PFO1C
- PSS1/EM1D
- PSS1/FO5F
- PFO1D
- PFO1/SS1E
- PSS1Cd

FRESHWATER POND

- PUBHh
- PUBHx

PUBH

## FRESHWATER EMERGENT WETLAND

- PEM1D
- PEM1Eh
- PEM1A
- PEM1E

## RIVERINE

- R2UBHx
- R4SBC
- R2UBH
- R5UBH

LAKE

• L1UBHh
## **IPAC USER CONTACT INFORMATION**

- Agency: Army Corps of Engineers
- Name: Conner Frey
- Address: 1650 Arch Street
- City: Philadelphia
- State: PA
- Zip: 19103
- Email conner.m.frey@usace.army.mil
- Phone: 2156563205



## United States Department of the Interior

FISH AND WILDLIFE SERVICE New Jersey Ecological Services Field Office 4 E. Jimmie Leeds Road, Suite 4 Galloway, NJ 08205 Phone: (609) 646-9310



In Reply Refer To:04/15/2025 16:42:44 UTCProject code: 2025-0057969Project Name: Lake Hopatcong Harmful Algal Bloom Demonstration Project

Federal Nexus: yes Federal Action Agency (if applicable): Army Corps of Engineers

Subject: Technical assistance for 'Lake Hopatcong Harmful Algal Bloom Demonstration Project'

Dear Conner Frey:

This letter records your determination using the Information for Planning and Consultation (IPaC) system provided to the U.S. Fish and Wildlife Service (Service) on April 15, 2025, for "Lake Hopatcong Harmful Algal Bloom Demonstration Project" (here forward, Project). This project has been assigned Project Code 2025-0057969 and all future correspondence should clearly reference this number.

The Service developed the IPaC system and associated species' determination keys in accordance with the Endangered Species Act of 1973 (ESA; 87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.) and based on a standing analysis. All information submitted by the Project proponent into the IPaC must accurately represent the full scope and details of the Project. Failure to accurately represent or implement the Project as detailed in IPaC or the Northeast Determination Key (Dkey), invalidates this letter. <u>Answers to certain questions in the DKey commit the project proponent to implementation of conservation measures that must be followed for the ESA determination to remain valid.</u>

To make a no effect determination, the full scope of the proposed project implementation (action) should not have any effects (either positive or negative effect(s)), to a federally listed species or designated critical habitat. Effects of the action are all consequences to listed species or critical habitat that are caused by the proposed action, including the consequences of other activities that are caused by the proposed action. A consequence is caused by the proposed action if it would not occur but for the proposed action and it is reasonably certain to occur. Effects of the action may occur later in time and may include consequences occurring outside the immediate area involved in the action. (See § 402.17). Under Section 7 of the ESA, if a federal action agency makes a no effect determination, no further consultation with, or concurrence from, the Service is

required (ESA §7). If a proposed Federal action may affect a listed species or designated critical habitat, formal consultation is required (except when the Service concurs, in writing, that a proposed action "is not likely to adversely affect (NLAA)" listed species or designated critical habitat [50 CFR §402.02, 50 CFR§402.13]).

The IPaC results indicated the following species is (are) potentially present in your project area and, based on your responses to the Service's Northeast DKey, you determined the proposed Project will have the following effect determinations:

Species	Listing Status	Determination
Bog Turtle (Glyptemys muhlenbergii)	Threatened	May affect
Indiana Bat (Myotis sodalis)	Endangered	No effect
Small Whorled Pogonia (Isotria medeoloides)	Threatened	No effect
Swamp Pink (Helonias bullata)	Threatened	No effect

<u>Consultation with the Service is not complete.</u>Further consultation or coordination with the Service is necessary for those species or designated critical habitats with a determination of "May Affect". Please contact our New Jersey Ecological Services Field Office to discuss methods to avoid or minimize potential adverse effects to those species or designated critical habitats.

In addition to the species listed above, the following species and/or critical habitats may also occur in your project area and are not covered by this conclusion:

- Monarch Butterfly *Danaus plexippus* Proposed Threatened
- Northern Long-eared Bat *Myotis septentrionalis* Endangered
- Tricolored Bat *Perimyotis subflavus* Proposed Endangered

Please Note: If the Action may impact bald or golden eagles, additional coordination with the Service under the Bald and Golden Eagle Protection Act (BGEPA) (54 Stat. 250, as amended, 16 U.S.C. 668a-d) by the prospective permittee may be required. Please contact the Migratory Birds Permit Office, (413) 253-8643, or PermitsR5MB@fws.gov, with any questions regarding potential impacts to Eagles.

If you have any questions regarding this letter or need further assistance, please contact the New Jersey Ecological Services Field Office and reference the Project Code associated with this Project.

#### Action Description

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

#### 1. Name

Lake Hopatcong Harmful Algal Bloom Demonstration Project

#### 2. Description

The following description was provided for the project 'Lake Hopatcong Harmful Algal Bloom Demonstration Project':

Princeton Hydro, LLC., is proposing to use new HAB maintenance technology in an effort to advance the science of preventing and maintaining HABs in Lake Hopatcong, New Jersey.

The approximate location of the project can be viewed in Google Maps: <u>https://www.google.com/maps/@40.94230485,-74.63907215375626,14z</u>



## **QUALIFICATION INTERVIEW**

- 1. As a representative of this project, do you agree that all items submitted represent the complete scope of the project details and you will answer questions truthfully? *Yes*
- 2. Does the proposed project include, or is it reasonably certain to cause, intentional take of listed species?

**Note:** This question could refer to research, direct species management, surveys, and/or studies that include intentional handling/encountering, harassment, collection, or capturing of any individual of a federally listed threatened, endangered, or proposed species.

No

3. Is the action authorized, permitted, licensed, funded, or being carried out by a Federal agency in whole or in part?

Yes

4. Is the Federal Highway Administration (FHWA), Federal Railroad Administration (FRA), or Federal Transit Administration (FTA) the lead agency for this project?

No

5. Are you including in this analysis all impacts to federally listed species that may result from the entirety of the project (not just the activities under federal jurisdiction)?

**Note:** If there are project activities that will impact listed species that are considered to be outside of the jurisdiction of the federal action agency submitting this key, contact your local Ecological Services Field Office to determine whether it is appropriate to use this key. If your Ecological Services Field Office agrees that impacts to listed species that are outside the federal action agency's jurisdiction will be addressed through a separate process, you can answer yes to this question and continue through the key.

Yes

6. Are you the lead federal action agency or designated non-federal representative requesting concurrence on behalf of the lead Federal Action Agency?

Yes

7. Is the lead federal action agency the Environmental Protection Agency (EPA) or Federal Communications Commission (FCC)?

- 8. Is the lead federal action agency the Federal Energy Regulatory Commission (FERC)? *No*
- 9. Is the lead federal action agency the Natural Resources Conservation Service? *No*
- 10. Will the proposed project involve the use of herbicide where listed species are present? *No*

11. Are there any caves or anthropogenic features suitable for hibernating or roosting bats within the area expected to be impacted by the project?

No

12. Does any component of the project associated with this action include activities or structures that may pose a collision risk to **birds** (e.g., plane-based surveys, land-based or offshore wind turbines, communication towers, high voltage transmission lines, any type of towers with or without guy wires)?

**Note:** For federal actions, answer 'yes' if the construction or operation of wind power facilities is either (1) part of the federal action or (2) would not occur but for a federal agency action (federal permit, funding, etc.). *No* 

13. Does any component of the project associated with this action include activities or structures that may pose a collision risk to **bats** (e.g., plane-based surveys, land-based or offshore wind turbines)?

**Note:** For federal actions, answer 'yes' if the construction or operation of wind power facilities is either (1) part of the federal action or (2) would not occur but for a federal agency action (federal permit, funding, etc.).

No

14. Will the proposed project result in permanent changes to water quantity in a stream or temporary changes that would be sufficient to result in impacts to listed species?

For example, will the proposed project include any activities that would alter stream flow, such as water withdrawal, hydropower energy production, impoundments, intake structures, diversion structures, and/or turbines? Projects that include temporary and limited water reductions that will not displace listed species or appreciably change water availability for listed species (e.g. listed species will experience no changes to feeding, breeding or sheltering) can answer "No". Note: This question refers only to the amount of water present in a stream, other water quality factors, including sedimentation and turbidity, will be addressed in following questions.

No

15. Will the proposed project affect wetlands where listed species are present?

This includes, for example, project activities within wetlands, project activities within 300 feet of wetlands that may have impacts on wetlands, water withdrawals and/or discharge of contaminants (even with a NPDES).

Yes

16. Will the proposed project activities (including upland project activities) occur within 0.125 miles of the water's edge of a stream or tributary of a stream where listed species may be present?

Yes

- 17. Will the proposed project directly affect a streambed (below ordinary high water mark (OHWM)) of the stream or tributary where listed species may be present?*No*
- 18. Will the proposed project bore underneath (directional bore or horizontal directional drill) a stream where listed species may be present?

No

19. Will the proposed project involve a new point source discharge into a stream or change an existing point source discharge (e.g., outfalls; leachate ponds) where listed species may be present?

No

20. Will the proposed project involve the removal of excess sediment or debris, dredging or instream gravel mining where listed species may be present?

No

21. Will the proposed project involve the creation of a new water-borne contaminant source where listed species may be present?

**Note** New water-borne contaminant sources occur through improper storage, usage, or creation of chemicals. For example: leachate ponds and pits containing chemicals that are not NSF/ANSI 60 compliant have contaminated waterways. Sedimentation will be addressed in a separate question.

Yes

22. Will the proposed project involve perennial stream loss, in a stream of tributary of a stream where listed species may be present, that would require an individual permit under 404 of the Clean Water Act?

No

- 23. Will the proposed project involve blasting where listed species may be present? *No*
- 24. Will the proposed project include activities that could negatively affect fish movement temporarily or permanently (including fish stocking, harvesting, or creation of barriers to fish passage).

No

25. Will the proposed project involve earth moving that could cause erosion and sedimentation, and/or contamination along a stream or tributary of a stream where listed species may be present?

**Note:** Answer "Yes" to this question if erosion and sediment control measures will be used to protect the stream. *No* 

26. Will the proposed project impact streams or tributaries of streams where listed species may be present through activities such as, but not limited to, valley fills, large-scale vegetation removal, and/or change in site topography?

27. Will the proposed project involve vegetation removal within 200 feet of a perennial stream bank where aquatic listed species may be present?

No

28. Will erosion and sedimentation control Best Management Practices (BMPs) associated with applicable state and/or Federal permits, be applied to the project? If BMPs have been provided by and/or coordinated with and approved by the appropriate Ecological Services Field Office, answer "Yes" to this question.

No

29. Is the project being funded, lead, or managed in whole or in part by U.S Fish and Wildlife Restoration and Recovery Program (e.g., Partners, Coastal, Fisheries, Wildlife and Sport Fish Restoration, Refuges)?

No

- 30. [Semantic] Does the project intersect the Virginia big-eared bat critical habitat? Automatically answered No
- 31. [Semantic] Does the project intersect the Indiana bat AOI? Automatically answered *Yes*
- 32. Are trees present within the action area?

**Note:** If there are trees within the action area that are of a sufficient size to be potential roosts for bats (i.e., live trees and/or snags  $\geq$ 5 inches dbh (12.7 centimeter), answer "Yes". If you are unsure, answer "Yes." Or refer to Appendix A of the Range-wide Indiana Bat and Northern Long-Eared Bat Survey Guidelines for definitions and an assessment form that will assist you in determining if suitable habitat is present within your project's action area. Suitable summer habitat for Indiana bat consists of a wide variety of forested/wooded habitats where they roost, forage, and travel and may also include some adjacent and interspersed non-forested habitats such as emergent wetlands and adjacent edges of agricultural fields, old fields and pastures. This includes forests and woodlots containing potential roosts (i.e., live trees and/or snags  $\geq$ 5 inches dbh (12.7 centimeter) that have exfoliating bark, cracks, crevices, and/or hollows), as well as linear features such as fencerows, riparian forests, and other wooded corridors. These wooded areas may be dense or loose aggregates of trees with variable amounts of canopy closure. Individual trees may be considered suitable habitat when they exhibit the characteristics of a potential roost tree and are located within 1,000 feet (305 meters) of other forested/wooded habitat

No

33. [Semantic] Does the project intersect the Indiana bat critical habitat? Automatically answered

No

34. Will all activities occur within an area that is currently paved, graveled, routinely maintained, and/or inside a structure?

- 35. Will the proposed project involve temporary or permanent modification to hydrology, including groundwater recharge, that could result in changes to water quality, water quantity, or timing of water availability in proximity to listed plants? *No*
- 36. Will the proposed project involve herbaceous native vegetation removal (including prescribed fire that would result in the burning of plants) or mowing? *No*
- 37. Will the proposed project involve ground disturbance? *No*
- 38. [Hidden Semantic] Does the project intersect the swamp pink AOI? Automatically answered Yes
- 39. Is the project located within suitable habitat for swamp pink?

**Note:** Swamp pink habitat includes swampy forested wetlands bordering meandering streams; headwater wetlands; sphagnous, hummocky, dense Atlantic white cedar swamps; Blue Ridge swamps; meadows; bogs; and spring seepage areas.

No

40. [Hidden Semantic] Does the project intersect the small whorled pogonia AOI?

Automatically answered Yes

- 41. Does the project occur within closed canopy mixed-deciduous or mixed-deciduous/ coniferous forests that are generally in second- or third-growth successional stages? *No*
- 42. [Semantic] Does the project intersect the candy darter critical habitat? Automatically answered No
- 43. [Semantic] Does the project intersect the diamond darter critical habitat?Automatically answeredNo
- 44. [Semantic] Does the project intersect the Big Sandy crayfish critical habitat?Automatically answeredNo
- 45. [Hidden Semantic] Does the project intersect the Guyandotte River crayfish critical habitat?

Automatically answered No

46. [Hidden Semantic] Does the project intersect the Bog Turtle AOI?

Automatically answered Yes 47. Are bog turtles known to occur within the action area?

If unsure, data can be requested from the appropriate state Natural Heritage program. *Yes* 

48. Do you have any other documents that you want to include with this submission? *No* 

## **PROJECT QUESTIONNAIRE**

- 1. Approximately how many acres of trees would the proposed project remove? 0
- 2. Approximately how many total acres of disturbance are within the disturbance/ construction limits of the proposed project?
- 3. Briefly describe the habitat within the construction/disturbance limits of the project site.

## **IPAC USER CONTACT INFORMATION**

- Agency: Army Corps of Engineers
- Name: Conner Frey
- Address: 1650 Arch Street
- City: Philadelphia
- State: PA
- Zip: 19103
- Email conner.m.frey@usace.army.mil
- Phone: 2156563205



## United States Department of the Interior

FISH AND WILDLIFE SERVICE New Jersey Ecological Services Field Office 4 E. Jimmie Leeds Road, Suite 4 Galloway, NJ 08205 Phone: (609) 646-9310



In Reply Refer To: 04/15/2 Project code: 2025-0057969 Project Name: Lake Hopatcong Harmful Algal Bloom Demonstration Project

Federal Nexus: yes Federal Action Agency (if applicable): Army Corps of Engineers

# Subject: Record of project representative's no effect determination for 'Lake Hopatcong Harmful Algal Bloom Demonstration Project'

Dear Conner Frey:

This letter records your determination using the Information for Planning and Consultation (IPaC) system provided to the U.S. Fish and Wildlife Service (Service) on April 15, 2025, for 'Lake Hopatcong Harmful Algal Bloom Demonstration Project' (here forward, Project). This project has been assigned Project Code 2025-0057969 and all future correspondence should clearly reference this number. **Please carefully review this letter.** 

#### **Ensuring Accurate Determinations When Using IPaC**

The Service developed the IPaC system and associated species' determination keys in accordance with the Endangered Species Act of 1973 (ESA; 87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.) and based on a standing analysis. All information submitted by the Project proponent into IPaC must accurately represent the full scope and details of the Project.

Failure to accurately represent or implement the Project as detailed in IPaC or the **Northern Long-eared Bat and Tricolored Bat Range-wide Determination Key (Dkey)**, invalidates this letter. *Answers to certain questions in the DKey commit the project proponent to implementation of conservation measures that must be followed for the ESA determination to remain valid.* 

#### Determination for the Northern Long-Eared Bat and/or Tricolored Bat

Based upon your IPaC submission and a standing analysis, your project has reached the following effect determinations:

Species	Listing Status	Determination
Northern Long-eared Bat (Myotis septentrionalis)	Endangered	No effect

04/15/2025 16:45:33 UTC

Tricolored Bat (Perimyotis subflavus)

Proposed Endangered

No effect

Federal agencies must consult with U.S. Fish and Wildlife Service under section 7(a)(2) of the Endangered Species Act (ESA) when an action *may affect* a listed species. Tricolored bat is proposed for listing as endangered under the ESA, but not yet listed. For actions that may affect a proposed species, agencies cannot consult, but they can *confer* under the authority of section 7(a) (4) of the ESA. Such conferences can follow the procedures for a consultation and be adopted as such if and when the proposed species is listed. Should the tricolored bat be listed, agencies must review projects that are not yet complete, or projects with ongoing effects within the tricolored bat range that previously received a NE or NLAA determination from the key to confirm that the determination is still accurate.

To make a no effect determination, the full scope of the proposed project implementation (action) should not have any effects (either positive or negative), to a federally listed species or designated critical habitat. Effects of the action are all consequences to listed species or critical habitat that are caused by the proposed action, including the consequences of other activities that are caused by the proposed action. A consequence is caused by the proposed action if it would not occur but for the proposed action and it is reasonably certain to occur. Effects of the action may occur later in time and may include consequences occurring outside the immediate area involved in the action. (See § 402.17).

Under Section 7 of the ESA, if a federal action agency makes a no effect determination, no consultation with the Service is required (ESA §7). If a proposed Federal action may affect a listed species or designated critical habitat, formal consultation is required except when the Service concurs, in writing, that a proposed action "is not likely to adversely affect" listed species or designated critical habitat [50 CFR §402.02, 50 CFR§402.13].

#### Other Species and Critical Habitat that May be Present in the Action Area

The IPaC-assisted determination key for the northern long-eared bat and tricolored bat does not apply to the following ESA-protected species and/or critical habitat that also may occur in your Action area:

- Bog Turtle *Glyptemys muhlenbergii* Threatened
- Indiana Bat Myotis sodalis Endangered
- Monarch Butterfly *Danaus plexippus* Proposed Threatened
- Small Whorled Pogonia Isotria medeoloides Threatened
- Swamp Pink Helonias bullata Threatened

You may coordinate with our Office to determine whether the Action may affect the animal species listed above and, if so, how they may be affected.

#### **Next Steps**

If there are no updates on listed species, no further consultation/coordination for this project is required with respect to the species covered by this key. However, the Service recommends that project proponents re-evaluate the Project in IPaC if: 1) the scope, timing, duration, or location of the Project changes (includes any project changes or amendments); 2) new information reveals the Project may impact (positively or negatively) federally listed species or designated critical habitat; or 3) a new species is listed, or critical habitat designated. If any of the above conditions occurs, additional coordination with the Service should take place to ensure compliance with the Act.

If you have any questions regarding this letter or need further assistance, please contact the New Jersey Ecological Services Field Office and reference Project Code 2025-0057969 associated with this Project.

#### **Action Description**

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

#### 1. Name

Lake Hopatcong Harmful Algal Bloom Demonstration Project

#### 2. Description

The following description was provided for the project 'Lake Hopatcong Harmful Algal Bloom Demonstration Project':

Princeton Hydro, LLC., is proposing to use new HAB maintenance technology in an effort to advance the science of preventing and maintaining HABs in Lake Hopatcong, New Jersey.

The approximate location of the project can be viewed in Google Maps: <u>https://www.google.com/maps/@40.94230485,-74.63907215375626,14z</u>



## **DETERMINATION KEY RESULT**

Based on the information you provided, you have determined that the Proposed Action will have no effect on the species covered by this determination key. Therefore, no consultation with the U.S. Fish and Wildlife 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 for those species.

### **QUALIFICATION INTERVIEW**

1. Does the proposed project include, or is it reasonably certain to cause, intentional take of listed bats or any other listed species?

**Note:** Intentional take is defined as take that is the intended result of a project. Intentional take could refer to research, direct species management, surveys, and/or studies that include intentional handling/encountering, harassment, collection, or capturing of any individual of a federally listed threatened, endangered or proposed species?

No

2. Is the action area wholly within Zone 2 of the year-round active area for northern longeared bat and/or tricolored bat?

Automatically answered No

3. Does the action area intersect Zone 1 of the year-round active area for northern long-eared bat and/or tricolored bat?

Automatically answered No

4. Does any component of the action involve leasing, construction or operation of wind turbines? Answer 'yes' if the activities considered are conducted with the intention of gathering survey information to inform the leasing, construction, or operation of wind turbines.

**Note:** For federal actions, answer 'yes' if the construction or operation of wind power facilities is either (1) part of the federal action or (2) would not occur but for a federal agency action (federal permit, funding, etc.).

No

5. Is the proposed action authorized, permitted, licensed, funded, or being carried out by a Federal agency in whole or in part?

Yes

6. Is the Federal Highway Administration (FHWA), Federal Railroad Administration (FRA), or Federal Transit Administration (FTA) funding or authorizing the proposed action, in whole or in part?

7. Are you an employee of the federal action agency or have you been officially designated in writing by the agency as its designated non-federal representative for the purposes of Endangered Species Act Section 7 informal consultation per 50 CFR § 402.08?

**Note:** This key may be used for federal actions and for non-federal actions to facilitate section 7 consultation and to help determine whether an incidental take permit may be needed, respectively. This question is for information purposes only.

Yes

8. Is the lead federal action agency the Environmental Protection Agency (EPA) or Federal Communications Commission (FCC)? Is the Environmental Protection Agency (EPA) or Federal Communications Commission (FCC) funding or authorizing the proposed action, in whole or in part?

No

- 9. Is the lead federal action agency the Federal Energy Regulatory Commission (FERC)? *No*
- 10. [Semantic] Is the action area located within 0.5 miles of a known bat hibernaculum?

**Note:** The map queried for this question contains proprietary information and cannot be displayed. If you need additional information, please contact your State wildlife agency.

#### Automatically answered

No

11. Does the action area contain any winter roosts or caves (or associated sinkholes, fissures, or other karst features), mines, rocky outcroppings, or tunnels that could provide habitat for hibernating bats?

No

12. Will the action cause effects to a bridge?

**Note:** Covered bridges should be considered as bridges in this question. *No* 

- 13. Will the action result in effects to a culvert or tunnel at any time of year? *No*
- 14. Are trees present within 1000 feet of the action area?

**Note:** If there are trees within the action area that are of a sufficient size to be potential roosts for bats answer "Yes". If unsure, additional information defining suitable summer habitat for the northern long-eared bat and tricolored bat can be found in Appendix A of the USFWS' Range-wide Indiana Bat and Northern long-eared bat Survey Guidelines at: <u>https://www.fws.gov/media/range-wide-indiana-bat-and-northern-long-eared-bat-survey-guidelines.</u>

- Does the action area intersect the northern long-eared bat species list area? Automatically answered Yes
- 16. [Semantic] Is the action area located within 0.25 miles of a culvert that is known to be occupied by northern long-eared or tricolored bats?

Automatically answered No

17. [Semantic] Is the action area located within 150 feet of a documented northern long-eared bat roost site?

**Note:** The map queried for this question contains proprietary information and cannot be displayed. If you need additional information, please contact your State wildlife agency.

```
Automatically answered No
```

18. Does the action area intersect the tricolored bat species list area?

Automatically answered *Yes* 

19. [Semantic] Is the action area located within 0.25 miles of a culvert that is known to be occupied by northern long-eared or tricolored bats?

**Note:** The map queried for this question contains proprietary information and cannot be displayed. If you need additional information, please contact your State wildlife agency.

Automatically answered No

20. Do you have any documents that you want to include with this submission?

## **PROJECT QUESTIONNAIRE**

## **IPAC USER CONTACT INFORMATION**

- Agency: Army Corps of Engineers
- Conner Frey Name:
- Address: 1650 Arch Street
- City: Philadelphia
- State: PA
- Zip: 19103
- Email conner.m.frey@usace.army.mil
- Phone: 2156563205