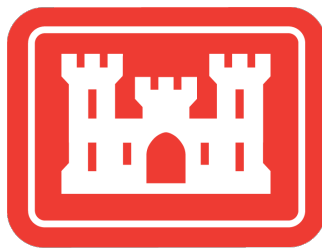


HUDSON RIVER HABITAT RESTORATION

**ECOSYSTEM RESTORATION
DRAFT INTEGRATED FEASIBILITY REPORT AND
ENVIRONMENTAL ASSESSMENT**

Appendix G6: U. S. Fish and Wildlife Service Coordination



**U.S. ARMY CORPS OF ENGINEERS
NEW YORK DISTRICT**

June 2019

The Fish and Wildlife Coordination Act Report is delayed due to the furlough in December 2018 – January 2019.



United States Department of the Interior



FISH AND WILDLIFE SERVICE
New York Ecological Services Field Office
3817 Luker Road
Cortland, NY 13045-9385

Phone: (607) 753-9334 Fax: (607) 753-9699

<http://www.fws.gov/northeast/nyfo/es/section7.htm>

In Reply Refer To:

January 31, 2019

Consultation Code: 05E1NY00-2019-SLI-0279

Event Code: 05E1NY00-2019-E-02495

Project Name: HRHR Henry Hudson Park

Subject: Updated list of threatened and endangered species that may occur in your proposed project location, and/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 (ESA) of 1973, as amended (16 U.S.C. 1531 *et seq.*). This list can also be used to determine whether listed species may be present for projects without federal agency involvement. New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list.

Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the ESA, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC site at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list. If listed, proposed, or candidate species were identified as potentially occurring in the project area, coordination with our office is encouraged. Information on the steps involved with assessing potential impacts from projects can be found at: <http://www.fws.gov/northeast/nyfo/es/section7.htm>

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (<http://www.fws.gov/windenergy/>)

[eagle_guidance.html](#)). Additionally, wind energy projects should follow the Services wind energy guidelines (<http://www.fws.gov/windenergy/>) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm>; <http://www.towerkill.com>; and <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html>.

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

Attachment(s):

- Official Species List

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 York Ecological Services Field Office

3817 Luker Road

Cortland, NY 13045-9385

(607) 753-9334

Project Summary

Consultation Code: 05E1NY00-2019-SLI-0279

Event Code: 05E1NY00-2019-E-02495

Project Name: HRHR Henry Hudson Park

Project Type: SHORELINE / BEACH PROTECTION / RENOURISHMENT

Project Description: Shoreline stabilization , wetland creation, wetland restoration with phrag removal

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/place/42.54575483637507N73.75907490822263W>



Counties: Albany, NY

Endangered Species Act Species

There is a total of 1 threatened, endangered, or candidate species on this species list.

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

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

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

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

Mammals

NAME	STATUS
Northern Long-eared Bat <i>Myotis septentrionalis</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened

Critical habitats

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



United States Department of the Interior



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<http://www.fws.gov/northeast/nyfo/es/section7.htm>

In Reply Refer To:

January 31, 2019

Consultation Code: 05E1NY00-2019-SLI-0281

Event Code: 05E1NY00-2019-E-02493

Project Name: HRHR Binnen Kill

Subject: Updated list of threatened and endangered species that may occur in your proposed project location, and/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 (ESA) of 1973, as amended (16 U.S.C. 1531 *et seq.*). This list can also be used to determine whether listed species may be present for projects without federal agency involvement. New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list.

Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the ESA, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC site at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list. If listed, proposed, or candidate species were identified as potentially occurring in the project area, coordination with our office is encouraged. Information on the steps involved with assessing potential impacts from projects can be found at: <http://www.fws.gov/northeast/nyfo/es/section7.htm>

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (<http://www.fws.gov/windenergy/>)

[eagle_guidance.html](#)). Additionally, wind energy projects should follow the Services wind energy guidelines (<http://www.fws.gov/windenergy/>) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm>; <http://www.towerkill.com>; and <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html>.

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

Attachment(s):

- Official Species List
-

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 York Ecological Services Field Office
3817 Luker Road
Cortland, NY 13045-9385
(607) 753-9334

Project Summary

Consultation Code: 05E1NY00-2019-SLI-0281

Event Code: 05E1NY00-2019-E-02493

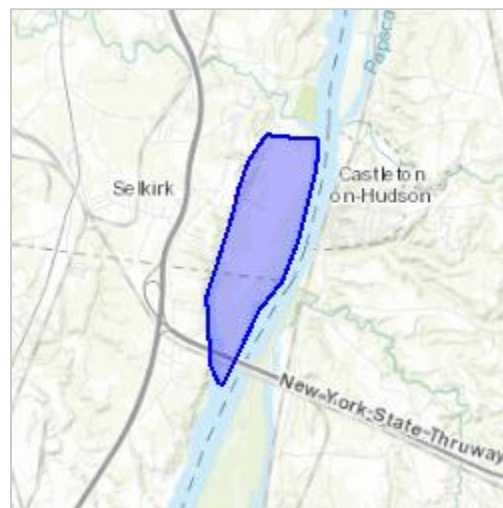
Project Name: HRHR Binnen Kill

Project Type: LAND - RESTORATION / ENHANCEMENT

Project Description: Shoreline restoration, wetland creation, wetland restoration, side channel waterway creation, phrag removal, culvert enlargement, small bridge repair

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/place/42.52394214168008N73.77111452565556W>



Counties: Albany, NY

Endangered Species Act Species

There is a total of 1 threatened, endangered, or candidate species on this species list.

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

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

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

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

Mammals

NAME	STATUS
Northern Long-eared Bat <i>Myotis septentrionalis</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened

Critical habitats

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



United States Department of the Interior



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<http://www.fws.gov/northeast/nyfo/es/section7.htm>

In Reply Refer To:

January 31, 2019

Consultation Code: 05E1NY00-2019-SLI-0282

Event Code: 05E1NY00-2019-E-02479

Project Name: HRHR Schodack

Subject: Updated list of threatened and endangered species that may occur in your proposed project location, and/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 (ESA) of 1973, as amended (16 U.S.C. 1531 *et seq.*). This list can also be used to determine whether listed species may be present for projects without federal agency involvement. New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list.

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Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (<http://www.fws.gov/windenergy/>)

[eagle_guidance.html](#)). Additionally, wind energy projects should follow the Services wind energy guidelines (<http://www.fws.gov/windenergy/>) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm>; <http://www.towerkill.com>; and <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html>.

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

Attachment(s):

- Official Species List

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 York Ecological Services Field Office

3817 Luker Road

Cortland, NY 13045-9385

(607) 753-9334

Project Summary

Consultation Code: 05E1NY00-2019-SLI-0282

Event Code: 05E1NY00-2019-E-02479

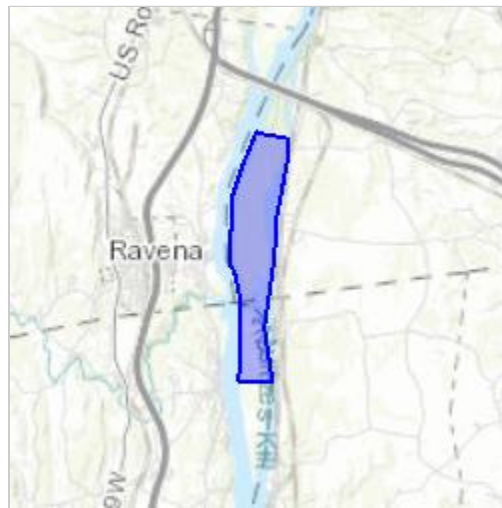
Project Name: HRHR Schodack

Project Type: LAND - RESTORATION / ENHANCEMENT

Project Description: Wetland restoration, creation, channel creation, shoreline restoration, phrag removal, and shoreline stablization

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/place/42.47375967252633N73.77864426933964W>



Counties: Columbia, NY | Greene, NY | Rensselaer, NY

Endangered Species Act Species

There is a total of 2 threatened, endangered, or candidate species on this species list.

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

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

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

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

Mammals

NAME	STATUS
Indiana Bat <i>Myotis sodalis</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/5949	Endangered
Northern Long-eared Bat <i>Myotis septentrionalis</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened

Critical habitats

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



United States Department of the Interior



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<http://www.fws.gov/northeast/nyfo/es/section7.htm>

In Reply Refer To:

January 31, 2019

Consultation Code: 05E1NY00-2019-SLI-0277

Event Code: 05E1NY00-2019-E-02499

Project Name: HRHR Rondout Creek

Subject: Updated list of threatened and endangered species that may occur in your proposed project location, and/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 (ESA) of 1973, as amended (16 U.S.C. 1531 *et seq.*). This list can also be used to determine whether listed species may be present for projects without federal agency involvement. New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list.

Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the ESA, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC site at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list. If listed, proposed, or candidate species were identified as potentially occurring in the project area, coordination with our office is encouraged. Information on the steps involved with assessing potential impacts from projects can be found at: <http://www.fws.gov/northeast/nyfo/es/section7.htm>

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (<http://www.fws.gov/windenergy/>)

[eagle_guidance.html](#)). Additionally, wind energy projects should follow the Services wind energy guidelines (<http://www.fws.gov/windenergy/>) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm>; <http://www.towerkill.com>; and <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html>.

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

Attachment(s):

- Official Species List

Official Species List

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This species list is provided by:

New York Ecological Services Field Office

3817 Luker Road

Cortland, NY 13045-9385

(607) 753-9334

Project Summary

Consultation Code: 05E1NY00-2019-SLI-0277

Event Code: 05E1NY00-2019-E-02499

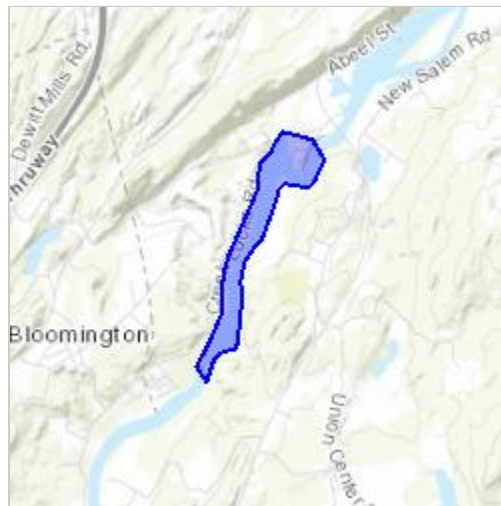
Project Name: HRHR Rondout Creek

Project Type: DAM

Project Description: Removal of Eddyville Dam along the Rondout Creek or the installation of a fish ladder

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/place/41.88580376959449N74.02886709688667W>



Counties: Ulster, NY

Endangered Species Act Species

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

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

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

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

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

Mammals

NAME	STATUS
Indiana Bat <i>Myotis sodalis</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/5949	Endangered
Northern Long-eared Bat <i>Myotis septentrionalis</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened

Reptiles

NAME	STATUS
Bog Turtle <i>Clemmys muhlenbergii</i> Population: Wherever found, except GA, NC, SC, TN, VA No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6962 Species survey guidelines: https://ecos.fws.gov/ipac/guideline/survey/population/182/office/52410.pdf Habitat assessment guidelines: https://ecos.fws.gov/ipac/guideline/assessment/population/182/office/52410.pdf	Threatened

Critical habitats

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



United States Department of the Interior



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<http://www.fws.gov/northeast/nyfo/es/section7.htm>

In Reply Refer To:

January 31, 2019

Consultation Code: 05E1NY00-2019-SLI-0274

Event Code: 05E1NY00-2019-E-02501

Project Name: HRHR Moodna

Subject: Updated list of threatened and endangered species that may occur in your proposed project location, and/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 (ESA) of 1973, as amended (16 U.S.C. 1531 *et seq.*). This list can also be used to determine whether listed species may be present for projects without federal agency involvement. New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list.

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Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (<http://www.fws.gov/windenergy/>)

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

Attachment(s):

- Official Species List

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 York Ecological Services Field Office

3817 Luker Road

Cortland, NY 13045-9385

(607) 753-9334

Project Summary

Consultation Code: 05E1NY00-2019-SLI-0274

Event Code: 05E1NY00-2019-E-02501

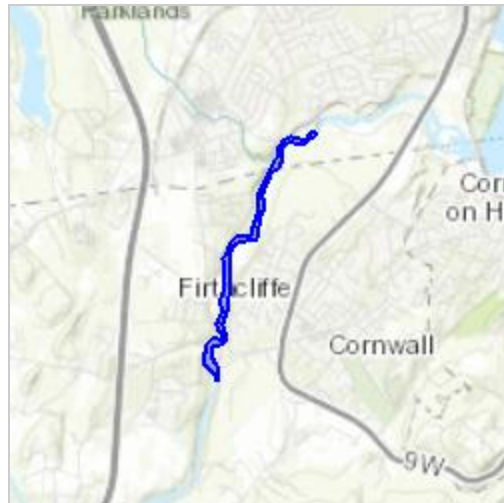
Project Name: HRHR Moodna

Project Type: DAM

Project Description: Dam removal or fish ladder installation along the Moodna Creek. All work is within the water. Work will occur at three barriers; 1) upstream of the Forge Hill Road (Route 74) crossing, a concrete encased sewer line crosses Moodna Creek, 2) The Firth Cliff Dam, and 3) The Orr's Mill Dam.

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/place/41.44240648688866N74.05261817082194W>



Counties: Orange, NY

Endangered Species Act Species

There is a total of 4 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.

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

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

Mammals

NAME	STATUS
Indiana Bat <i>Myotis sodalis</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/5949	Endangered
Northern Long-eared Bat <i>Myotis septentrionalis</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened

Clams

NAME	STATUS
Dwarf Wedgemussel <i>Alasmidonta heterodon</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/784 Species survey guidelines: https://ecos.fws.gov/ipac/guideline/survey/population/363/office/52410.pdf	Endangered

Flowering Plants

NAME	STATUS
<p>Small Whorled Pogonia <i>Isotria medeoloides</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/1890 Species survey guidelines: https://ecos.fws.gov/ipac/guideline/survey/population/742/office/52410.pdf</p>	Threatened

Critical habitats

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

Endangered Species Act (ESA) determination and assessment for Northern Long-Eared Bat (*Myotis septentrionalis*), Indiana Bat (*Myotis sodalis*), Dwarf Wedgemussel (*Alasmidonta heterodon*), Small Whorled Pogonia (*Isotria medeoloides*), and Bog Turtle (*Clemmys muhlenbergii*)

Northern Long-Eared Bat (*Myotis septentrionalis*)

Species Information

The Northern long-eared bat is a medium-sized bat with a body length of 3 to 3.7 inches but a wingspan of 9 to 10 inches. Their fur color can be medium to dark brown on the back and tawny to pale-brown on the underside. This bat is distinguished by its long ears, particularly as compared to other bats in its genus.

Northern long-eared bats spend winter hibernating in caves and mines, called hibernacula. They use areas in various sized caves or mines with constant temperatures, high humidity, and no air currents. Within hibernacula, they are found hibernating most often in small crevices or cracks, often with only the nose and ears visible. During the summer, northern long-eared bats roost singly or in colonies underneath bark, in cavities or in crevices of both live trees and snags (dead trees) if trees are greater than 3 inches in diameter.

Northern long-eared bats emerge at dusk to feed. They primarily fly through the understory of forested areas feeding on moths, flies, leafhoppers, caddisflies, and beetles, which they catch while in flight using echolocation or by gleaning motionless insects from vegetation.

The northern long-eared bat's range includes much of the eastern and north central United States, and all Canadian provinces from the Atlantic Ocean west to the southern Yukon Territory and eastern British Columbia. The species' range includes 37 States (including New York) and the District of Columbia.

Species Observations within Hudson River Habitat Restoration Project Area

The Service did not report any northern long-eared bats within the project area. A literature search yielded no reports of northern long-eared bats within the project area.

Hudson River Habitat Restoration, Binnen Kill, Henry Hudson Park, Moodna Creek, Rondout Creek, Schodack Island State Park, New York Project

There are no known caves or mines within the project area. The District does not expect to remove trees greater than 3 inches in diameter.

After a full evaluation of the northern long-eared bat life history, habitats in the project area, and proposed project activities, a "no affect" determination was made by the District on populations of northern long-eared bat as a result of implementation these proposed activities.

Indiana Bat (*Myotis sodalis*)

Species Information

The Indiana bat is a medium-sized bat, that closely resembles the little brown bat (*Myotis lucifugus*) but differing in coloration. Its fur is a dull grayish chestnut rather than bronze, with the basal portion of the hairs on the back a dull-lead color. The northern long-eared bat's underparts are pinkish to cinnamon, and its hind feet are smaller and more delicate than in the little brown bat. The historic range included New York and New Jersey south to Georgia and west to Oklahoma.

The Indiana bat typically hibernates in caves and mines in the winter, and roosts under bark or in tree crevices in the spring, summer, and fall. Trees (dead, dying, or alive) with exfoliating or defoliating bark, or containing cracks or crevices that could potentially be used by Indiana bats as a roost characterize summer roosting habitat for the Indiana bat.

The most significant threat to the Indiana bat is white-nose syndrome, a fungal disease that has infected many bat species.

Species Observations within Hudson River Habitat Restoration Project Area

The Service did not report any Indiana bats within the project area. A literature search yielded no reports of Indiana bats within the project area.

Hudson River Habitat Restoration, Moodna Creek, Rondout Creek, and Schodack Island State Park, New York Project (iPAC only identified these three site as potential habitat)

There are no known caves or mines within the project area. The District does not expect to remove trees greater than 3 inches in diameter.

After a full evaluation of the Indiana bat life history, habitats in the project area, and proposed project activities, a "no affect" determination was made by the District on populations of Indiana bat as a result of implementation these proposed activities.

Dwarf Wedgemussel (*Alasmidonta heterodon*)

Species Information

The dwarf wedgemussel is a small, freshwater mussel that rarely exceeds 1.5 inches in length. The dwarf Wedgemussel is the only freshwater bivalve mussel in North America that has two lateral teeth on the right valve, but only one tooth on the left. The outer shell is dark brown or yellowish brown and often exhibits greenish rays in young mussels. The inner shell is bluish or silvery white. Dwarf wedgemussels feed by filtering small particles from the water.

The dwarf wedgemussel occurs on muddy sand, sand, and gravel bottoms in creeks and rivers of various sizes. In parts of the range, dwarf wedgemussels also occur in clay banks and small riffle areas. This species requires areas with a slow to moderate current, little silt deposition, and well-oxygenated, unpolluted water. Regionally, the

dwarf wedgemussel is found in the Neversink River in the New York, New Jersey, and Pennsylvania border.

Threats to the dwarf wedgemussel include direct habitat destruction from damming and channelizing of rivers, and indirect degradation of habitat due to pollution, sedimentation, invasion by exotic species, and fluctuations in water level or temperature. Freshwater mussels, including the dwarf wedgemussel, are sensitive to potassium, zinc, copper, cadmium, and other elements associated with industrial pollution. Industrial, agricultural, and domestic pollution are largely responsible for the disappearance of the dwarf wedgemussel from much of the species' historic range.

Species Observations within Hudson River Habitat Restoration Project Area

The Service did not report any dwarf wedgemussels within the project area. A literature search yielded no reports of dwarf wedgemussels within the project area.

Hudson River Habitat Restoration, Moodna Creek, New York Project (iPAC only identified this site as potential habitat)

After a full evaluation of the dwarf wedgemussels life history, habitats in the project area, and proposed project activities, a "no affect" determination was made by the District on populations of dwarf wedgemussels as a result of implementation these proposed activities.

Small Whorled Pogonia (*Isotria medeoloides*)

Species Information

The small whorled pogonia is a member of the orchid family. It usually has a single grayish-green stem that grows about 10 inches tall when in flower and about 14 inches when bearing fruit. The plant is named for the whorl of five or six leaves near the top of the stem and beneath the flower. The leaves are grayish-green, oblong, and 1 to 3.5 inches long. The single or paired greenish-yellow flowers are about 0.5 to 1 inch long and appear in May or June. The fruit, an upright ellipsoid capsule, appears later in the year (USFWS 2016).

Although widely distributed, the small whorled pogonia is rare. It is found in 18 eastern states and Ontario, Canada. Populations are typically small with less than 20 plants (USFWS 2016).

The small whorled pogonia grows in older hardwood stands of beech, birch, maple, oak, and hickory that have an open understory. Sometimes it grows in stands of softwoods such as hemlock. It prefers acidic soils with a thick layer of dead leaves, often on slopes near small streams (USFWS 2016).

Species Observations within Hudson River Habitat Restoration Project Area

The Service did not report any small whorled pogonia within the project area. A literature search yielded no reports of small whorled pogonia within the project area. The project will be removing dams and not working in small whorled pogonia habitat

Hudson River Habitat Restoration, Moodna Creek, New York Project (iPAC only identified this site as potential habitat)

After a full evaluation of the small whorled pogonia life history, habitats in the project area, and proposed project activities, a “no affect” determination was made by the District on populations of small whorled pogonia as a result of implementation these proposed activities.

Bog Turtle (*Clemmys muhlenbergii*)

Species Information

One of the smallest turtles in the world, the bog turtle adult carapace length is 3.1 to 4.5 inches. The dark brown or black carapace may be marked with radiating light lines or a light blotch on the vertebral and pleural scutes. The head, neck, and limbs are typically dark brown with variable reddish to yellow spots and streaks. A large reddish-orange to yellow blotch is visible behind and above each tympanum, sometimes merging into a continuous band on the neck. The plastron is also brown or black, but often with lighter yellow blotches towards the medial and anterior scute edges.

Bog Turtles usually occur in small, discrete populations, generally occupying open-canopy, herbaceous sedge meadows, and fens bordered by wooded areas. These wetlands are a mosaic of microhabitats that include dry pockets, saturated areas, and areas that are periodically flooded. Bog Turtles depend upon this diversity of microhabitats for foraging, nesting, basking, hibernating, and sheltering. Unfragmented riparian systems that are sufficiently dynamic to allow the natural creation of open habitat are needed to compensate for ecological succession.

Bog Turtles inhabit open, unpolluted emergent and scrub/shrub wetlands such as shallow spring-fed fens, sphagnum bogs, swamps, marshy meadows, and wet pastures. These habitats are characterized by soft muddy bottoms, interspersed wet and dry pockets, vegetation dominated by low grasses and sedges, and a low volume of standing or slow-moving water, which often forms a network of shallow pools and rivulets. Bog Turtles prefer areas with ample sunlight, high evaporation rates, high humidity in the near-ground microclimate, and perennial saturation of portions of the ground. Eggs are often laid in elevated areas, such as the tops of tussocks. Bog Turtles generally retreat into more densely vegetated areas to hibernate from mid-September through mid-April.

The greatest threats to the Bog Turtle are the loss, degradation, and fragmentation of its habitat from wetland alteration, development, pollution, invasive species, and natural vegetational succession. The species is also threatened by collection for illegal wildlife trade.

Bog turtles historical range included Connecticut, Delaware, Georgia, Maryland, Massachusetts, New Jersey, New York, North Carolina, Pennsylvania, South Carolina, Tennessee, Virginia.

Species Observations within Hudson River Habitat Restoration Project Area

The Service did not report any bog turtle within the project area. A literature search yielded no reports of bog turtle within the project area. The project will be removing dams and not working in bog turtle habitat

Hudson River Habitat Restoration, Moodna Creek, New York Project (iPAC only identified this site as potential habitat)

After a full evaluation of the bog turtle life history, habitats in the project area, and proposed project activities, a “no affect” determination was made by the District on populations of bog turtle as a result of implementation these proposed activities.