

GREENVILLE DAM PROJECT

LIHI APPLICATION

ATTACHMENT E

GREENVILLE THREATENED AND ENDANGERED SPECIES



A County Report of Connecticut's Endangered, Threatened and Special Concern

New London County

Amphibians

Scientific Name	Common Name	Protection Status
<i>Ambystoma laterale</i>	Blue-spotted salamander	E/SC
<i>Scaphiopus holbrookii</i>	Eastern spadefoot	E

Birds

Scientific Name	Common Name	Protection Status
<i>Ammodramus caudacutus</i>	Saltmarsh sharp-tailed sparrow	SC
<i>Ammodramus henslowii</i>	Henslow's sparrow	SC*
<i>Ammodramus maritimus</i>	Seaside sparrow	T
<i>Ammodramus savannarum</i>	Grasshopper sparrow	E
<i>Anas discors</i>	Blue-winged teal	T
<i>Ardea alba</i>	Great egret	T
<i>Asio flammeus</i>	Short-eared owl	T
<i>Bartramia longicauda</i>	Upland sandpiper	E
<i>Botaurus lentiginosus</i>	American bittern	E
<i>Caprimulgus vociferus</i>	Whip-poor-will	SC
<i>Charadrius melodus</i>	Piping plover	T
<i>Circus cyaneus</i>	Northern harrier	E
<i>Cistothorus platensis</i>	Sedge wren	E
<i>Dolichonyx oryzivorus</i>	Bobolink	SC
<i>Egretta caerulea</i>	Little blue heron	SC
<i>Egretta thula</i>	Snowy egret	T
<i>Empidonax alnorum</i>	Alder flycatcher	SC
<i>Eremophila alpestris</i>	Horned lark	E
<i>Falco peregrinus</i>	Peregrine falcon	T

New London County**Birds**

Scientific Name	Common Name	Protection Status
<i>Gallinula chloropus</i>	Common moorhen	E
<i>Gavia immer</i>	Common loon	SC
<i>Haematopus palliatus</i>	American oystercatcher	T
<i>Haliaeetus leucocephalus</i>	Bald eagle	T
<i>Icteria virens</i>	Yellow-breasted chat	E
<i>Ixobrychus exilis</i>	Least bittern	T
<i>Laterallus jamaicensis</i>	Black rail	E
<i>Melanerpes erythrocephalus</i>	Red-headed woodpecker	E
<i>Parula americana</i>	Northern parula	SC
<i>Passerculus sandwichensis</i>	Savannah sparrow	SC
<i>Passerculus sandwichensis ssp. princeps</i>	Ipswich sparrow	SC
<i>Plegadis falcinellus</i>	Glossy ibis	SC
<i>Progne subis</i>	Purple martin	T
<i>Rallus elegans</i>	King rail	E
<i>Sterna dougallii</i>	Roseate tern	E
<i>Sterna hirundo</i>	Common tern	SC
<i>Sternula antillarum</i>	Least tern	T
<i>Sturnella magna</i>	Eastern meadowlark	SC
<i>Toxostoma rufum</i>	Brown thrasher	SC
<i>Tyto alba</i>	Barn owl	E

Fish

Scientific Name	Common Name	Protection Status
<i>Acipenser brevirostrum</i>	Shortnose sturgeon	E
<i>Acipenser oxyrinchus oxyrinchus</i>	Atlantic sturgeon	T
<i>Alosa aestivalis</i>	Blueback herring	SC
<i>Enneacanthus obesus</i>	Banded sunfish	SC
<i>Notropis bifrenatus</i>	Bridle shiner	SC

New London County

Invertebrates

Scientific Name	Common Name	Protection Status
<i>Abagrotis nefascia benjamini</i>	Coastal heathland cutworm	T
<i>Alasmidonta varicosa</i>	Brook floater	E
<i>Apamea burgessi</i>	Apamea moth	SC
<i>Apamea inordinata</i>	Apamea moth	SC
<i>Apamea lintneri</i>	Apamea moth	SC
<i>Argyrostromis anilis</i>	Short-lined Chocolate	SC
<i>Bombus affinis</i>	Affable bumblebee	SC
<i>Brachinus patruelis</i>	Bombardier beetle	SC
<i>Callophrys henrici</i>	Henry's elfin	SC
<i>Callophrys hesseli</i>	Hessel's hairstreak	E
<i>Callophrys irus</i>	Frosted elfin	T
<i>Calopteryx dimidiata</i>	Sparkling jewelwing	T
<i>Catocala pretiosa pretiosa</i>	Precious underwing moth	SC*
<i>Chaetagnaea cerata</i>	Noctuid moth	SC
<i>Cicindela formosa generosa</i>	Pine barrens tiger beetle	SC
<i>Cicindela hirticollis</i>	Tiger beetle	SC
<i>Cicindela marginata</i>	Tiger beetle	SC
<i>Cicindela tranquebarica</i>	Dark bellied tiger beetle	SC
<i>Citheronia regalis</i>	Regal moth	SC*
<i>Cordulegaster erronea</i>	Tiger spiketail	T
<i>Drasteria graphica atlantica</i>	False heather underwing	T
<i>Eacles imperialis imperialis</i>	Imperial moth	SC*
<i>Enallagma doubledayi</i>	Atlantic bluet	T
<i>Enallagma minusculum</i>	Little bluet	SC
<i>Enallagma pictum</i>	Scarlet bluet	SC
<i>Epeoloides pilosula</i>	Macropis cuckoo	E
<i>Erynnis brizo</i>	Sleepy duskywing	T
<i>Erynnis horatius</i>	Horace's duskywing	SC

New London County

Invertebrates

Scientific Name	Common Name	Protection Status
<i>Erynnis persius persius</i>	Persius duskywing	E
<i>Eubbranchipus holmanii</i>	Fairy shrimp	E
<i>Exyra fax</i>	Pitcher plant moth	SC
<i>Faronta rubripennis</i>	Pink streak	T
<i>Fossaria rustica</i>	Lymnaeid snail	SC
<i>Gomphus adelphus</i>	Mustached clubtail	T
<i>Gomphus fraternus</i>	Midland clubtail	T
<i>Gomphus ventricosus</i>	Skillet clubtail	SC
<i>Grammia phyllira</i>	Phyllira tiger moth	E
<i>Hybomitra frosti</i>	Horse fly	T
<i>Hybomitra trepida</i>	Horse fly	SC
<i>Hybomitra typhus</i>	Horse fly	SC
<i>Ladona deplanata</i>	Blue corporal dragonfly	SC
<i>Lepipolys perscripta</i>	Noctuid moth	SC
<i>Leptodea ochracea</i>	Tidewater mucket	SC
<i>Ligumia nasuta</i>	Eastern pond mussel	SC
<i>Lycaena epixanthe</i>	Bog copper	SC
<i>Macropis ciliata</i>	Fringed loosestrife oil-bee	SC
<i>Margaritifera margaritifera</i>	Eastern pearl shell	SC
<i>Merycomyia whitneyi</i>	Tabanid fly	SC
<i>Oncocnemis riparia</i>	Dune oncocnemis	SC
<i>Papaipema appassionata</i>	Pitcher plant borer	E
<i>Papaipema duovata</i>	Seaside goldenrod stem borer	SC
<i>Procambarus acutus</i>	Whiteriver crayfish	SC
<i>Progomphus obscurus</i>	Common sanddragon	T
<i>Psectraglaea carnosa</i>	Pink sallow	T
<i>Sargus fasciatus</i>	Soldier fly	SC

New London County

Invertebrates

Scientific Name	Common Name	Protection Status
<i>Schinia spinosae</i>	Noctuid moth	SC
<i>Sphodros niger</i>	Purse web spider	SC
<i>Stagnicola catascopium</i>	Lymnaeid snail	SC
<i>Tabanus fulvicallus</i>	Horse fly	SC
<i>Williamsonia lintneri</i>	Banded bog skimmer	E
<i>Zale obliqua</i>	Noctuid moth	SC

Mammals

Scientific Name	Common Name	Protection Status
<i>Lasionycteris noctivagans</i>	Silver-haired bat	SC
<i>Lasiurus borealis</i>	Red bat	SC
<i>Lasiurus cinereus</i>	Hoary bat	SC
<i>Synaptomys cooperi</i>	Southern bog lemming	SC

Plants

Scientific Name	Common Name	Protection Status
<i>Acalypha virginica</i>	Virginia copperleaf	SC
<i>Agalinis acuta</i>	Sandplain gerardia	E
<i>Ageratina aromatica</i>	Small white snakeroot	E
<i>Alopecurus aequalis</i>	Orange foxtail	T
<i>Angelica lucida</i>	Sea-coast angelica	E
<i>Aplectrum hyemale</i>	Puttyroot	SC*
<i>Arethusa bulbosa</i>	Arethusa	SC*
<i>Aristida longespica</i>	Needlegrass	SC
<i>Aristida purpurascens</i>	Arrowfeather	SC
<i>Aristolochia serpentaria</i>	Virginia snakeroot	SC
<i>Asclepias purpurascens</i>	Purple milkweed	SC
<i>Asclepias variegata</i>	White milkweed	SC*
<i>Asplenium montanum</i>	Mountain spleenwort	SC

New London County

Plants

Scientific Name	Common Name	Protection Status
<i>Atriplex glabriuscula</i>	Orache	SC
<i>Bidens beckii</i>	Water-marigold	T
<i>Bidens eatonii</i>	Eaton's beggars-tick	T
<i>Bolboschoenus maritimus ssp. paludosus</i>	Bayonet grass	SC
<i>Bolboschoenus novae-angliae</i>	Salt marsh bulrush	SC
<i>Calystegia spithamea</i>	Low bindweed	SC*
<i>Carex alata</i>	Broadwing sedge	E
<i>Carex bushii</i>	Sedge	SC
<i>Carex buxbaumii</i>	Brown bog sedge	E
<i>Carex crawfordii</i>	Crawford sedge	SC*
<i>Carex cumulata</i>	Clustered sedge	T
<i>Carex davisii</i>	Davis' sedge	T
<i>Carex oligosperma</i>	Few-seeded sedge	SC*
<i>Carex polymorpha</i>	Variable sedge	E
<i>Carex sterilis</i>	Dioecious sedge	SC
<i>Carex tuckermanii</i>	Tuckerman's sedge	SC
<i>Carex typhina</i>	Sedge	SC
<i>Castilleja coccinea</i>	Indian paintbrush	T
<i>Chenopodium rubrum</i>	Coast blite	SC*
<i>Cirsium horridulum</i>	Yellow thistle	E
<i>Coeloglossum viride</i>	Long-bracted green orchid	E
<i>Corallorhiza trifida</i>	Early coral root	SC
<i>Crassula aquatica</i>	Pygmyweed	E
<i>Cuphea viscosissima</i>	Blue waxweed	SC*
<i>Cuscuta coryli</i>	Hazel dodder	SC*
<i>Cypripedium parviflorum</i>	Yellow lady's-slipper	SC
<i>Deschampsia caespitosa</i>	Tufted hairgrass	SC
<i>Desmodium glabellum</i>	Dillenius' tick-trefoil	SC

New London County

Plants

Scientific Name	Common Name	Protection Status
<i>Desmodium humifusum</i>	Trailing tick-trefoil	E
<i>Desmodium sessilifolium</i>	Sessile-leaf tick-trefoil	SC*
<i>Dichanthelium ovale</i> var. <i>addisonii</i>	Panic grass	SC
<i>Dichanthelium scabriusculum</i>	Panic grass	E
<i>Draba reptans</i>	Whitlow-grass	SC
<i>Eleocharis equisetoides</i>	Horse-tail spike-rush	E
<i>Eleocharis microcarpa</i> var. <i>filiculmis</i>	Spike-rush	SC*
<i>Eleocharis quadrangulata</i> var. <i>crassior</i>	Spike-rush	E
<i>Equisetum palustre</i>	Marsh horsetail	SC*
<i>Eriocaulon parkeri</i>	Parker's pipewort	E
<i>Eupatorium album</i>	White thoroughwort	E
<i>Eurybia radula</i>	Rough aster	E
<i>Eurybia spectabilis</i>	Showy aster	T
<i>Eurybia x herveyi</i>	Hervey's aster	SC
<i>Gamochaeta purpurea</i>	Purple cudweed	SC*
<i>Gaultheria hispidula</i>	Creeping snowberry	SC
<i>Helianthemum propinquum</i>	Low frostweed	T
<i>Honckenya peploides</i>	Seabeach sandwort	SC
<i>Hottonia inflata</i>	Featherfoil	SC
<i>Houstonia longifolia</i>	Longleaf bluet	T
<i>Hudsonia ericoides</i>	Golden-heather	E
<i>Hudsonia tomentosa</i>	False beach-heather	T
<i>Hydrocotyle umbellata</i>	Water pennywort	E
<i>Hydrocotyle verticillata</i>	Whorled pennywort	E
<i>Hypericum adpressum</i>	Creeping St. John's-wort	SC*
<i>Ilex glabra</i>	Inkberry	T
<i>Isotria medeoloides</i>	Small whorled pogonia	E

New London County

Plants

Scientific Name	Common Name	Protection Status
<i>Juncus debilis</i>	Weak rush	SC*
<i>Lachnanthes caroliana</i>	Carolina redroot	E
<i>Leptochloa fusca ssp. fascicularis</i>	Saltpond Grass	E
<i>Lespedeza repens</i>	Creeping bush-clover	SC
<i>Liatis scariosa var. novae-angliae</i>	Blazing-star	SC
<i>Ligusticum scoticum</i>	Scotch lovage	E
<i>Lilaeopsis chinensis</i>	Lilaeopsis	SC
<i>Limosella australis</i>	Mudwort	SC
<i>Linnaea borealis ssp. americana</i>	Twinflower	E
<i>Linum intercursum</i>	Sandplain flax	SC*
<i>Liparis liliifolia</i>	Lily-leaved twayblade	E
<i>Liquidambar styraciflua</i>	Sweet gum	SC
<i>Ludwigia sphaerocarpa</i>	Globe-fruited false-loosestrife	E
<i>Lycopus amplexans</i>	Clasping-leaved water-horehound	SC
<i>Lygodium palmatum</i>	Climbing fern	SC
<i>Malaxis unifolia</i>	Green adder's-mouth	E
<i>Moneses uniflora</i>	One-flower wintergreen	E
<i>Myriophyllum pinnatum</i>	Cutleaf water-milfoil	E
<i>Nuphar microphylla</i>	Small yellow pond lily	SC
<i>Oclemena nemoralis</i>	Bog aster	E
<i>Oclemena x blakei</i>	Blake's aster	E
<i>Ophioglossum pusillum</i>	Adder's-tongue	T
<i>Opuntia humifusa</i>	Eastern prickly pear	SC
<i>Orontium aquaticum</i>	Golden club	SC
<i>Orthilia secunda</i>	One-sided pyrola	SC*
<i>Oxalis violacea</i>	Violet wood-sorrel	SC
<i>Panax quinquefolius</i>	American ginseng	SC
<i>Panicum amarum</i>	Panic grass	T

New London County

Plants

Scientific Name	Common Name	Protection Status
<i>Panicum rigidulum</i> var. <i>elongatum</i>	Tall flat panic-grass	SC*
<i>Paspalum laeve</i>	Field paspalum	E
<i>Paspalum setaceum</i>	Bead grass	SC*
<i>Pedicularis lanceolata</i>	Swamp lousewort	T
<i>Phaseolus polystachios</i> var. <i>polystachios</i>	Wild kidney bean	SC*
<i>Piptatherum pungens</i>	Slender mountain ricegrass	E
<i>Pityopsis falcata</i>	Sickle-leaved golden aster	E
<i>Plantago virginica</i>	Hoary plantain	SC
<i>Platanthera ciliaris</i>	Yellow-fringed orchid	T
<i>Platanthera flava</i> var. <i>herbiola</i>	Pale green orchid	SC
<i>Platanthera hookeri</i>	Hooker's orchid	SC*
<i>Platanthera orbiculata</i>	Large round-leaf orchid	SC*
<i>Podostemum ceratophyllum</i>	Threadfoot	SC
<i>Polygala cruciata</i>	Field milkwort	E
<i>Polygala nuttallii</i>	Nuttall's milkwort	E
<i>Populus heterophylla</i>	Swamp cottonwood	T
<i>Potamogeton confervoides</i>	Pondweed	E
<i>Potamogeton pusillus</i> ssp. <i>gemmae</i>	Capillary pondweed	T
<i>Potamogeton vaseyi</i>	Vasey's pondweed	T
<i>Prunus alleghaniensis</i>	Alleghany plum	SC*
<i>Puccinellia tenella</i> ssp. <i>alaskana</i>	Goose grass	SC*
<i>Ranunculus ambigens</i>	Water-plantain spearwort	E
<i>Ranunculus cymbalaria</i>	Seaside crowfoot	E
<i>Ranunculus pensylvanicus</i>	Bristly buttercup	SC*
<i>Rhynchospora macrostachya</i>	Beaked rush	T
<i>Rotala ramosior</i>	Toothcup	T
<i>Rubus cuneifolius</i>	Sand bramble	SC

New London County

Plants

Scientific Name	Common Name	Protection Status
<i>Rumex maritimus</i>	Sea-side dock	SC*
<i>Sabatia stellaris</i>	Marsh pink	E
<i>Sagittaria subulata</i>	Arrowleaf	SC
<i>Salix exigua</i>	Sandbar willow	T
<i>Salix petiolaris</i>	Slender willow	SC
<i>Saururus cernuus</i>	Lizard's tail	E
<i>Scheuchzeria palustris ssp. americana</i>	Pod grass	E
<i>Schoenoplectus torreyi</i>	Torrey bulrush	T
<i>Schwalbea americana</i>	Chaffseed	SC*
<i>Scleria pauciflora var. caroliniana</i>	Few-flowered nutrush	E
<i>Scleria triglomerata</i>	Nutrush	E
<i>Scutellaria integrifolia</i>	Hyssop skullcap	E
<i>Senna hebecarpa</i>	Wild senna	SC
<i>Silene stellata</i>	Starry champion	T
<i>Solidago latissimifolia</i>	Elliott's goldenrod	SC
<i>Solidago rugosa var. sphagnophila</i>	Early wrinkle-leaved goldenrod	SC*
<i>Spergularia canadensis</i>	Canada sand-spurry	T
<i>Sporobolus clandestinus</i>	Rough dropseed	E
<i>Sporobolus neglectus</i>	Small dropseed	E
<i>Stachys hyssopifolia</i>	Hyssop-leaf hedge-nettle	E
<i>Stachys tenuifolia</i>	Smooth hedge-nettle	SC
<i>Symphyotrichum prenanthoides</i>	Crooked-stem aster	SC*
<i>Triphora trianthophora</i>	Nodding pogonia	E
<i>Utricularia resupinata</i>	Bladderwort	E
<i>Uvularia grandiflora</i>	Large-flowered bellwort	E
<i>Valerianella radiata</i>	Beaked corn-salad	SC*
<i>Verbena simplex</i>	Narrow-leaved vervain	SC*
<i>Viburnum nudum</i>	Possum haw	SC*

New London County

Plants

Scientific Name	Common Name	Protection Status
<i>Vitis x novae-angliae</i>	New England grape	SC
<i>Xyris montana</i>	Northern yellow-eyed grass	T
<i>Xyris smalliana</i>	Small's yellow-eyed	E
<i>Zizia aptera</i>	Golden Alexanders	E

Reptiles

Scientific Name	Common Name	Protection Status
<i>Caretta caretta</i>	Loggerhead	T
<i>Chelonia mydas</i>	Atlantic green turtle	T
<i>Crotalus horridus</i>	Timber rattlesnake	E
<i>Dermochelys coriacea</i>	Leatherback	E
<i>Glyptemys insculpta</i>	Wood turtle	SC
<i>Heterodon platirhinos</i>	Eastern hognose snake	SC
<i>Lepidochelys kempii</i>	Atlantic ridley	E
<i>Liochlorophis vernalis</i>	Smooth green snake	SC
<i>Terrapene carolina carolina</i>	Eastern box turtle	SC
<i>Thamnophis sauritus</i>	Eastern ribbon snake	SC

E = Endangered, T = Threatened, SC = Special Concern, * Believed Extirpated

*State of Connecticut
Department of Energy and Environmental Protection
Bureau of Natural Resources, Wildlife Division
79 Elm St., Hartford, CT 06106*

ENVIRONMENTAL ASSESSMENT

FEDERAL ENERGY REGULATORY COMMISSION OFFICE OF HYDROPOWER LICENSING DIVISION OF PROJECT REVIEW

Greenville Dam Project
FERC No. 2441-009-Connecticut
and
Tenth Street Hydro Station Project
FERC No. 2508-002-Connecticut

I. APPLICATIONS

On December 23, 1991, the City of Norwich, Department of Public Utilities, Connecticut (Norwich), filed (1) an application for subsequent minor license for the Greenville Dam Project (Greenville) and (2) an application for subsequent minor license for the Tenth Street Hydro Station Project (Tenth Street). The projects are located on the Shetucket River in the City of Norwich, New London County, Connecticut (figure 1).

Tenth Street is located in the bypass reach of Greenville and receives water diverted from the Greenville dam. The operations of these two projects is currently coordinated and proposed to continue to be coordinated. Based on these factors, we consider these two projects to comprise a unit of development as defined in Section 3(11) of the Federal Power Act. Hence, in this document, Greenville and Tenth Street will be referred to as "developments" and the combination of the two as "project." Furthermore, although Norwich has proposed to continue operating as two separate licenses, we propose to combine any license issued for these two developments for the reasons stated above.

II. PURPOSE AND NEED FOR ACTION

A. Purpose of Action

Greenville and Tenth Street are existing, operating, licensed developments with total installed capacities of 800 kilowatts (kW) and 1,400 kW, respectively. Historically, Greenville has produced annually about 3.85 gigawatthours (GWh) and Tenth Street has produced about 5.35 GWh, for a total of 9.2 GWh. With Norwich's recommended 250 cubic feet per second (cfs) minimum flow release to the bypass reach, Greenville would generate annually 3.06 GWh and Tenth Street would generate 4.56 GWh, for a total of 7.61 GWh. Norwich would continue to use the renewable energy from the project to meet its system load requirements.

In this Environmental Assessment (EA) we analyze the impacts associated with the issuance of one new license for the two developments, make recommendations to the Commission on whether to issue a new license and on the term of the license, and

