



Public Notice

U.S. Army Corps
of Engineers
Buffalo District
CELRB-TD-R

Applicant:

THE WETLAND TRUST

Published: JANUARY 10, 2011

Expires: FEBRUARY 8, 2011

Application No: **2010-00963**
Section: NY

All written comments should reference the above Application No. and be addressed to:
Buffalo District U.S. Army Corps of Engineers
Orwell Regulatory Field Office (Attn: Mark Gronceski)
33 Grand Valley Avenue
Orwell, Ohio 44076

INTERESTED PARTIES ARE HEREBY NOTIFIED THAT A PROSPECTUS HAS BEEN RECEIVED PURSUANT TO 33 CFR 332 PROPOSING THE ESTABLISHMENT OF AN IN-LIEU FEE PROGRAM (ILFA) TO PROVIDE MITIGATION FOR IMPACTS TO WATERS OF THE UNITED STATES UNDER SECTION 404 OF THE CLEAN WATER ACT WITHIN FIVE SEPARATE 8-DIGIT HYDROLOGIC UNIT CODE (HUC) SERVICE AREAS WITHIN THE STATE OF NEW YORK. THE PURPOSE OF THIS PUBLIC NOTICE IS TO SOLICIT COMMENTS FROM THE PUBLIC REGARDING THE ESTABLISHMENT OF THE PROPOSED ILFA.

THIS IS NOT AN APPLICATION FOR WORK IN FEDERALLY REGULATED WATERS; HOWEVER, AUTHORIZATION UNDER SECTION 404 OF THE CLEAN WATER ACT MAY BE REQUIRED FOR IMPLEMENTATION OF PARTICULAR MITIGATION SITES LATER PROPOSED UNDER THE ILFA, IF APPROVED. SUCH SITES WOULD BE ADVERTIZED UNDER SEPARATE PUBLIC NOTICES. NO DECISION HAS BEEN MADE AS TO WHETHER THIS ILFA WILL BE APPROVED.

SPONSOR: The Wetland Trust, 4729 State Route 414, Burdett, New York 14818

LOCATION: The proposed ILFA would encompass five 8-digit HUC (Hydrologic Unit Code, a designation for the watershed drainage area encompassed) service areas (02050101, 02050102, 02050103, 02050104 and 02050105) encompassing that portion of the Susquehanna River basin located within the State of New York. The service areas are primarily within the regulatory boundaries of the Buffalo District, Corps of Engineers. One service area (02050101) extends into the New York District, Corps of Engineers.

DESCRIPTION OF PROPOSED ACTIVITY: Under Section 404 of the Clean Water Act (CWA), applicants for the Department of the Army permits to discharge dredge or fill material into waters of the United States, including wetlands, are often required to mitigate for permitted wetland losses by creating, restoring, enhancing, or in exceptional circumstances, preserving wetlands or streams. Authorized ILFA's provide the US Army Corps of Engineers (Corps) and the regulated public with additional options for compensatory mitigation of aquatic resource losses. The establishment and use of an ILFA must be in accordance with an ILFA instrument approved by the Interagency Review Team (IRT). The IRT is presently comprised of the Corps, the U.S. Environmental Protection Agency, the U.S. Fish and Wildlife Service, and the New York State Department of Environmental Conservation.

If the prospectus is deemed sufficient, the ILFA program will be established through the development of an ILFA instrument to be signed by the sponsor, the Corps, and other IRT members which choose to do so. The process will follow 33 CFR 332, Compensatory Mitigation for Losses of Aquatic Resources ("Mitigation Rule"). The Mitigation Rule was published in the Federal Register on April 10, 2008. The ILFA program would provide an alternative to permittee-responsible mitigation if it is deemed appropriate during the review process for proposed unavoidable impacts to waters of the US authorized under Section 404 of the Clean Water Act ("Section 404"). It may also provide an alternative compensation type for Civil Works projects needing compensation for impacts to aquatic resources as well as providing a resource for use in resolving enforcement cases under Section 404. The entire prospectus, entitled "**Susquehanna Basin Headwaters In-Lieu Fee Program**" is attached to this Public Notice.

The Corps is soliciting comments from the public; Federal, state and local agencies and officials; Indian Tribes; and other interested parties in order to consider and evaluate the impacts of this proposed activity. Any comments received will be considered by the Corps in determining whether to allow the sponsor to proceed to develop a draft ILFA instrument. Comments are also used to determine the need for a public hearing.

Comments or questions pertaining to this prospectus should reference the Application Number and be directed to the attention of Mark Gronceski, who can be contacted at the above address, by calling (440) 437-5847, or by email at Mark.E.Gronceski@usace.army.mil. A lack of response will be interpreted as meaning that there is no objection to the proposed ILFA.

This notice is promulgated in accordance with Title 33, Code of Federal Regulations, parts 320-332. Any interested party desiring to comment on the work described herein may do so by submitting their comments in writing, so they are received no later than 4:30pm on the expiration date of this notice.

Comments submitted in response to this notice will be fully considered during the review for this proposal. All written comments will be made part of the administrative record which is available to the public under the Freedom of Information Act. The Administrative Record or portions thereof may also be posted on a Corps internet website. Due to resource limitations, this office will normally not acknowledge the receipt of comments or respond to individual letters of comment. Copies of comments received will be forwarded to the sponsor and to the members of the Interagency Review Team.

SIGNED

Diane Kozlowski
Chief, Regulatory Branch

NOTICE TO POSTMASTER: It is requested that this notice be posted continuously and conspicuously for 30 days from the date of issuance.

Susquehanna Basin Headwaters In-Lieu Fee Program

Prospectus
Developed under
Part 332.8,
Federal Register Volume 73, Number 70

Submitted by:

James Curatolo
Chair, The Wetland Trust
Watershed Coordinator, The Upper Susquehanna Coalition
29 October 2010

Proposed Sponsor:

The Wetland Trust
4729 State Route 414, Burdett, NY 14818
607-546-2528



www.thewetlandtrust.org

In partnership with:

Upper Susquehanna Coalition
183 Corporate Drive, Owego, NY 13827
607-687-3553
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1. Objectives (332.8(d)(2)(i))

The primary goal of the Susquehanna Basin Headwaters In-Lieu Fee Program (ILFP) is to provide wetland restoration and protection services on a watershed scale to compensate for wetland loss. More specifically, it will:

- a. match restoration needs with opportunities and priorities in the watershed;
- b. target specific sites or subwatersheds that increase long term wetland sustainability and better watershed functionality;
- c. provide high quality wetland mitigation by using NY Natural Heritage Program analyses as a guide to ensure biological quality (Edinger et al. 2002) and an assessment protocol (i.e., a modification of Jacobs 2007) to quantify functional values and guide restoration efforts; and
- d. match mitigation requirements with specific project opportunities.

A secondary goal is to provide other aquatic resource services, namely stream restoration. More specifically, to:

- a. protect and restore headwaters streams;
- b. reconnect streams to their floodplains;
- c. reduce barriers to movement of aquatic organisms; and
- d. buffer streams to protect their functionality.

Note: As stream restoration can be a complex affair, each stream projects will be presented to the USACE DISTRICT ENGINEER as a special case to be implemented if it meets US Army Corps requirements for the ILFP.

2. How will it be Established and Operated? (332.8(d)(2)(ii))

The Wetland Trust (TWT) will be the program sponsor and primary land steward. It will establish and operate the ILFP. The Upper Susquehanna Coalition (USC) will provide technical support to develop the ILFP instrument, site selection and development of mitigation plans, and be the implementation lead.

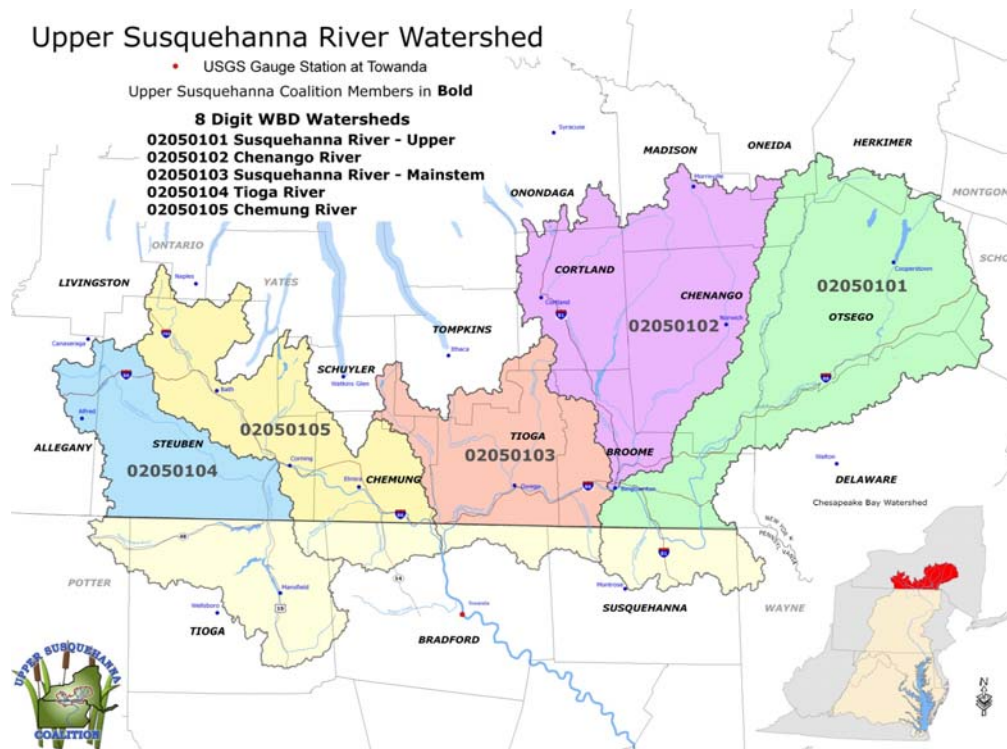
The ILFP will cover the Susquehanna River Basin in NY with five 8-digit Hydrological Unit (HU) service areas. A joint partnership of the TWT and USC will develop the instrument and restore the sites. The TWT will be the Instrument Sponsor, administering the credits, accounting and supplying the long-term stewardship support through fee simple title ownership. Endowments will be developed that adequately cover the various aspects of the instrument. The TWT and USC will

develop the restoration plans and implement construction, monitoring and maintenance using USC equipment and staff from both organizations as well as contracted support as needed.

The partnership concept also extends to the USACE and other members of the Interagency Review Team (IRT) including U.S. Fish and Wildlife Service (USFWS), N.Y.S. Department of Environmental Conservation (NYSDEC) and Environmental Protection Agency (EPA). The USC has established partnerships with these agencies and will incorporate their expertise and perspectives. This approach will broaden the ILFP to include a mixture of wetland types, specific objectives or key species and develop a more comprehensive program. For example, NYSDEC Heritage Program will provide input on wetland habitats that is considers in need of support and provide suggestions on specific projects (DJ Evans, NYSDEC Heritage Program, pers. com.). We envision the potential to match functions and values of a wetland restoration project with the habitat of a rare or species of special concern.

3. Service Areas (332.8(d)(2)(iii))

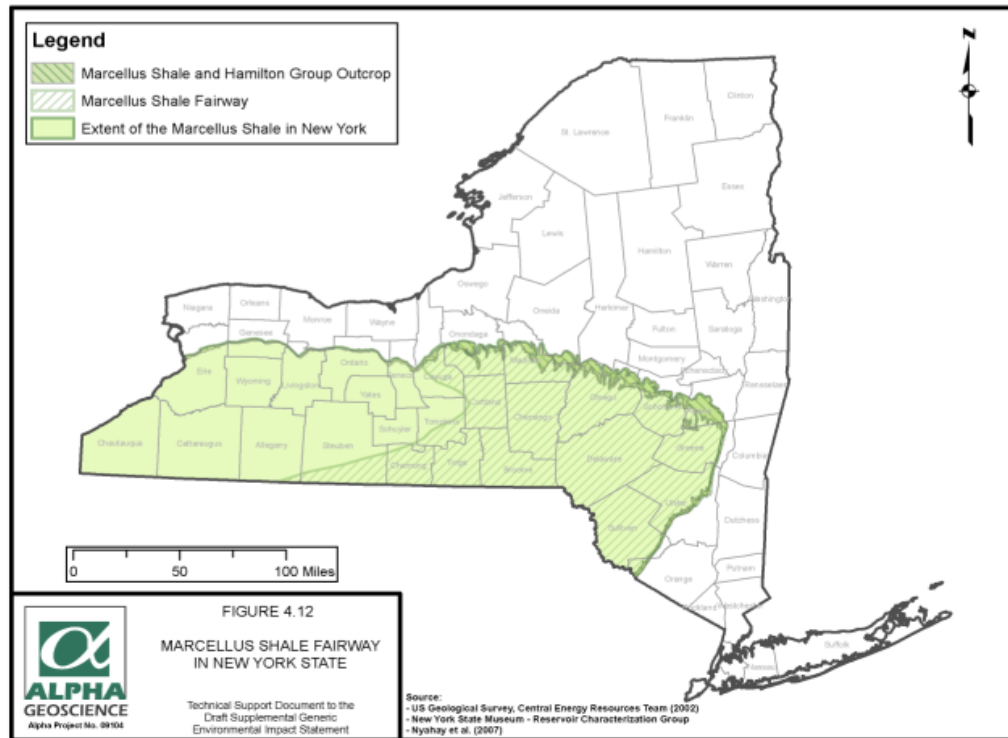
This ILFP encompasses the Susquehanna River Headwaters in NY. It covers about 4 million acres or 6,270 square miles. Five (5) distinct service areas are proposed, each service area being the 8 Digit HU depicted in the map below.



8 Digit HU	Service Area HU 8 Name	Size, Acres	NWI Acres	% Wetlands	% Forest	% Ag
02050101	Susquehanna River - Upper	1,289,051	90,302	7.5	69.1	27.2
02050102	Chenango River	1,027,924	58,071	5.6	69.2	27.2
02050103	Susquehanna River - Mainstem	577,867	25,873	4.5	71.5	23.1
02050104	Tioga River	457,513	7,296	1.6	68.5	30.0
02050105	Chemung River	659,883	32,765	5.0	67.9	27.3
Total		4,012,238	214,308	5.3	69.2	27.0

4. General Need and Technical Feasibility (332.8(d)(2)(iv))

The Susquehanna Basin Headwaters lies in the Appalachian Highlands Ecoregion. In recent times there has been little development, a decline in human population and increased forestland cover as agriculture declined. However, the area's footprint also covers some of the thickest portions of the Marcellus Shale Formation, which holds vast quantities of natural gas. Drilling in this formation began in 2009 in PA and at present over 3,000 well-drilling permits have been issued. There will be similar development in the southern tier of NY. Much of the target area in NY is covered by this proposed ILFP (see map below). When Marcellus Shale is developed, the most likely concentration of infrastructure will be located in Steuben, Chemung, Tioga, Chenango and Broome counties where the shale formation is the deepest. The map below depicts the extent of Marcellus Shale and the "Fairway" where development is expected to be concentrated at least in the near future, especially because the Millennium Pipeline is available. Each of the five proposed services areas captures a portion of these counties, which should help keep mitigation projects closer to the impacts.



The extensive network of drill pads and pipelines may significantly impact the Basin’s wetland and stream resources and these developments could occur at an extremely fast pace once permits are issued. Other linear projects such as highway and electric transmission line construction do occur, but less frequently.

Having an ILFP will provide a means for addressing mitigation needs for these landscape impacts. Many times the bottleneck for quality mitigation is having quality sites available and ILFP would reduce this problem by having an assemblage of sites available beforehand.

Providing mitigation services for other development projects, albeit much less frequent and no likely smaller, is another consideration. Should the gas development become a reality, ancillary developments such as increased infrastructure, housing, retail stores and other tangential developments most likely will result in more mitigation needs. And indeed, these hard-to-plan-for projects are much better served by having an ongoing program available where potential sites are already owned, planned or “in the queue” for restoration as we believe that availability of promising restoration sites is a pinch point in mitigation planning.

The USC and TWT also bring a unique perspective to the mitigation approach. Both organizations exist to restore and protect wetlands. Regardless of how few mitigation projects might occur, the planning and site selection approach is something that is already underway and an ILFP instrument would be an additional implementation tool to restore wetlands when needed. The ILFP would not be the sole source of funds for these organization's wetland programs, but rather a supplement to them. With this very conservative approach the ILFP is technically feasible, even with few projects because the entire wetland restoration and protection structure is already in place and functioning using other resources.

5. Ownership Arrangement and Long Term Management Strategy (332.8(d)(2)(v))

Several **Ownership Arrangements** are proposed:

1. Most sites within each service area will be owned as fee simple TWT properties. Due to the extensive potential gas development in this Basin mineral rights will almost never convey with the property. Should a property be found that has ecologic merit, but whose mineral rights do not convey, a special analysis will be performed and submitted as part of the ILF process. It will address and answer the following questions:
 - a. If the subsurface mineral rights are not conveyed could offsite extraction affect the integrity of the mitigation project planned for the site?
 - b. If surface rights are not conveyed with the parcel, could a "protection envelope" be developed (that is, map out an area needed for the mitigation where surface rights would convey) that provided adequate protection to the planned mitigation project and in a manner that would minimize any secondary effects from the remainder of the site?
 - c. As part of the approval process by the USACE District Engineer, each site would have a Property Assessment and Warranty that would specifically disclose if any title issues exist; the USACE District Engineer would need to approve any inconsistencies as being consistent with the ILFP. Tools such as a Subordination Agreement may be used to ensure consistency with the ILFP.
 - d. To further assure long-term protection the ILFP will include language to ensure future land rights are not compromised. Language such as the follows will be used: "Sponsor shall not grant any additional easements, rights of way or other interests in the ILFP Property (other than a security interest that is expressly subordinated to the

ILFP Conservation Easement), nor shall Sponsor grant, transfer, abandon or relinquish (each a “Transfer”) any mineral, air, or water right or any water associated with the ILFP Property, without first obtaining the written consent of the USACE District Engineer. Such consent may be withheld if the USACE District Engineer determines that the proposed interest or Transfer is inconsistent with the purposes of this Conservation Easement or will impair or interfere with the Conservation Values of the ILFP Property. Sponsor shall provide a copy of any recorded or unrecorded grant or Transfer document to the appropriate USACE District Engineer.”

2. The NYS Department of Transportation (NYS DOT) and Federal Highway Administration (FHWA) are interested in developing a venue for mitigation projects on state-owned lands, which ensures permanent protection and streamlines the mitigation process. An arrangement through this Instrument would accommodate DOT mitigation needs. An inventory of opportunities on state lands would provide a waiting list of potential sites that could be restored by TWT/USC to meet NYSDOT and FHWA needs for their highway projects. Because state lands are already protected and state agencies have a mission to manage these lands, we will propose a higher ratio for these projects under the ILFP; this option will be presented to the USACE District Engineer for review and possible approval if indeed it arises.
3. A land trust, such as the Finger Lake Land Trust (FLLT), with a long history of fee simple ownership may own a property in need of restoration; its “Emerald Necklace” Program covers the Susquehanna Basin. In this case the TWT/USC would construct the wetlands while the FLLT would keep its landowner stewardship responsibilities with the technical support (i.e., restoration and monitoring) remaining with the ILFP Sponsor. A financial arrangement similar to the TWT endowment would be developed for long-term stewardship. This option will be presented to the USACE District Engineer for review and approval if indeed it arises.
4. Should an exemplary project site be found with a reliable land steward willing to hold the easement then at that time a conservation easement approach will be developed and presented to the USACE District Engineer for review and possible approval if indeed it arises.

Long Term Management Strategy

1. A site will first be developed following an approved Mitigation Plan. After the site has successfully completed the mitigation monitoring and review period, it will then follow a Long-term Management Strategy. The Strategy will describe the specific needs for optimal conservation of the individual site and also provide a general discussion of positive and negative attributes of the surrounding watershed that should be taken into account for long-term site protection. The Strategy will describe the specific needs for optimal conservation specific to the site and a general discussion of the surrounding watershed for long term planning. The Strategy would advocate a sustainable approach, minimizing active management activities and opting for natural wetland processes to prevail. As the Strategy is implemented the site would become a “protection property” for long-term stewardship.
2. If a project is proposed where a fee simple ownership or easement is to be held by a third party, as described in 3 and 4 in the section above, then either the TWT will implement the Management Strategy or the third party. Should it be the third party, a Stewardship Management Agreement may be presented to the USACE District Engineer that describes how the third party would implement the Strategy. In that case the Strategy will still be developed by the TWT with input from the third party, and then be submitted to the USACE District Engineer for approval. In either case the Strategy implementer (TWT or third party) will receive the endowment funding tied to the mitigation credits to support such work. The Third Party will be required to show proof of financial ability and the entire project would be submitted to the USACE District Engineer for approval. These agreements will reflect the requirements in the Mitigation Plan developed for the specific project site.
3. Each site will require a deposit to a stewardship endowment that will be permanently held by the TWT (or in a rare instance a Third Party) for maintaining the ILFP sites. Each credit sold will have a Stewardship Management endowment allocation which will go toward single endowment that will service all sites under the agreement.

6. Qualifications of Sponsor to Complete (332.8(d)(2)(vi)

The Wetland Trust Organization

The Wetland Trust is a nonprofit Corporation established in New York in 2008 and meeting all requirements of Section 501C(3) under IRS rules, received its IRS letter of determination in September 2009. The TWT will be the project sponsor and land steward, using fee simple

ownership as the preferred method of protection and an endowment approach to provide long-term support of its properties. The TWT presently owns two properties and is in the process of purchasing several more. Each is supported by an endowment. The TWT has a close relationship with the USC, housing a special USC Wetland Endowment whose funds are 100% dedicated to restoring wetlands within the USC boundaries. The ILFP would be administered through the TWT under separate accounts described elsewhere in this prospectus. The TWT provides a compliment to the USC, which provides implementation support, but does not provide stewardship services.

The Wetland Trust Mission

The Wetland Trust's mission is to restore, conserve and protect wetlands through:

- Development of funds from sustainable endowments, grant proposals, partnerships, donations, wetland banking projects and in lieu fees.
- Restoration activities that increase wetland acres.
- Acquiring properties that are of high quality or can be restored to such, with an emphasis on wetland complexes having sufficient size and complexity to function under a variety of climatic conditions.
- Partnering with academia to study
 - (1) the requirements for sustainable protection/conservation strategies and
 - (2) restoration/construction techniques to ensure high quality functional wetlands.
- Establishment of a Wetland Center on a major TWT wetland property to house and promote outreach, education and research that will increase the quantity and quality of wetland restoration and protection efforts. Funding for the Center will not come from any sources meant for restoration activities.
- Education and Outreach to develop a public wetland ethic.

The Upper Susquehanna Coalition Organization

The Upper Susquehanna Coalition (USC), established in 1992, is a network of 19 Soil and Water Conservation Districts in NY and PA covering the headwaters of the Susquehanna River that work under a Memorandum of Understanding (MOU) signed by each District and both State Conservation Committees. The MOU was developed under NY Soil and Water Conservation Districts Law "(As Amended Through the Laws of 2005- as of September 26, 2006), An ACT

establishing the State Soil and Water Conservation Committee, and creating Soil and Water Conservation Districts, constituting chapter nine-b of the consolidated laws: § 10. Cooperation between districts - The directors of any two or more districts organized under the provisions of this chapter may cooperate with one another in the exercise of any or all powers conferred in this chapter”. Nineteen Conservation Districts signed the MOU after a review by their county attorneys as well as the Conservation Commissions of NY and PA.

The USC uses a “multiple barrier approach” for planning and implementing restoration projects on a watershed basis. It addresses issues at the source, across the landscape, and in the stream corridor, as well as programmatically. This Prospectus describes the USC Wetland Program, a key component of the multiple barrier approach.

The Upper Susquehanna Coalition Wetland Program Goals

- Attenuate flooding by restoring wetlands, especially in headwaters areas, to increase water-holding capabilities, desynchronize rainfall runoff, and reduce flood peaks and downstream erosion.
- Enhance water quality by retaining sediment and nutrients, especially on agricultural lands.
- Increase species diversity and wetland habitats acreage and connectivity.

The Upper Susquehanna Coalition Wetland Program Attributes

The USC Wetland Program is “vertically and horizontally integrated,” meaning that it locates, designs, builds and secures funds for wetland projects. Having its own staff and using a mix of owned, rented and contracted equipment for construction accelerates implementation, reduces costs and provides landowners with “one stop shopping.” Since 2003 USC’s Wetland Program has created or restored over 500 wetland acres of all types from small ephemeral vernal pools to 50-acre emergent marshes. USC Wetland Staff include a Watershed Coordinator, Wetland Coordinator, and Wetland Biologist with over 50 years of combined natural resources experience and seven field technicians/equipment operators.

Funding is critical to ensure program sustainability. The USC has successfully competed in state and federal requests for proposals, contracts for industry and agency wetland mitigation projects

and at times, Congressional support. The Wetland Program relies completely on soft money for its existence.

Training and research on wetland restoration techniques is important. The USC has conducted hands-on vernal pool and wetland construction workshops and are helping develop a textbook on restoration techniques with Tom Biebighauser, Forest Service and Northeast Wetland Restoration Institute. The USC recently constructed 72 vernal pools for the State University of NY College of Environmental Science and Forestry (ESF), Syracuse, for a long-term research project.

The USC believes collaborating with a host of partners on wetland planning, design and construction to be a key approach to build capacity. These partners include the USCACE, U.S. EPA Region 2, USFWS, U.S. Department of Agriculture Natural Resources Conservation Service, Chesapeake Bay Program, FHWA, NYSDEC, NYSDOT, Binghamton University (BU), the State University of New York Otsego Lake Biological Field Station, ESF, Cornell University, Chesapeake Bay Foundation, Finger Lakes Land Trust, Northeast Wetland Restoration Institute, Ducks Unlimited and local watershed organizations. USC staff work closely with willing landowners, which provide the majority of potential restoration sites. This synergy, coupled with expertise from state and federal partners and outreach through newspaper articles, informational meetings and media events, has resulted in a continuing list of potential wetland restoration sites.

The USC has been designated by NYSDEC to be the official NY wetland data manager for the Chesapeake Bay Program. The USC also wrote and is responsible for the wetland goals for NY in its Chesapeake Bay Tributary Strategy. And as a true wetland proponent, it was named by the Chesapeake Bay Programs as the “Wetland Champion” to promote accelerated wetland restoration in that Basin.

7. Compensation Planning Framework (332.8(d)(2)(viii)(A))

1. Geographic service area – see III (332.8(c)(2)(i))

This ILF Instrument will include 5 geographic service areas, each covering that portion of an 8 digit HUA in New York State as depicted on page 2.

2. Threats and how ILFP will offset (332.8(c)(2)(ii)) – The general threat in habitat loss will most likely be from linear developments such as pipeline and highway construction, and to a lesser degree development of infrastructure, shopping malls, housing and other similar projects. Past impacts may not be a good predictor of future issues; for example, in 2005 only 2.08 wetland acres required mitigation (USACE data). In September 2010 information gleaned from the PA Department of Environmental Protection provides some insight into the extent of the potential. In the Bradford County area, relatively the same size as the “Fairway” area in NY (see map on page 4) there have been 973 general permits issued for drill pads/road/pipeline projects. These projects resulted in 247 stream/wetland permits of which about 80 percent or 200 were for wetland impacts. Over the next two years four times as many rigs are expected to move into the area, which could result in four times as many permit applications. Thus 1,000 PA stream/wetland permits may be issued over the next several years. Considering the linear nature of the development, any one permit probably addresses a small impact. We estimate from these numbers that 100 to 400 acres of impacts spread out over the first five years of development in NY is a reasonable assumption considering permitting probably will go slower in NY and 0.1 or 0.4 acres per permit is a reasonable assumption.

Other threats to wetlands in the ILFP service areas result from relatively steep topography in smaller watersheds. Infrastructure and development are typically concentrated along narrow stream corridors, and flashy runoff events lead to flooding, and streambank and road ditch erosion issues that impact it. Anthropogenic responses to these issues focus on removing the water from the land as quickly as possible and actions that directly impact wetlands. Beavers are commonly found throughout the watershed and although great wetland builders, they often come in conflict with human habitation by plugging road culverts. The removal of these beaver results in the loss of their wetlands. Logging is ubiquitous throughout the watershed and it increases runoff and erosion due to logging road development. Logging can easily disrupt the forest hydrology and combined with past clearing and subsequent agricultural plowing, forest micro topography and wetlands are significantly altered (e.g. flattened and dewatered).

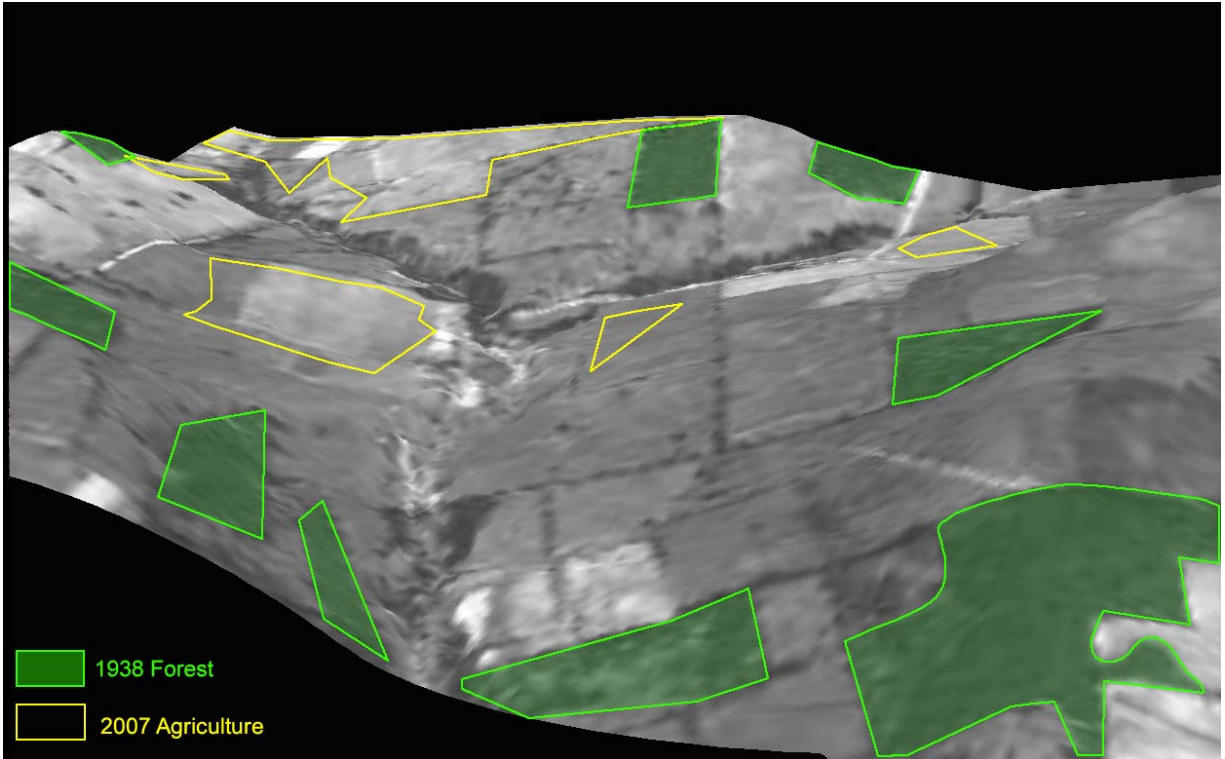
The ILFP funds within each service area will target creation, restoration, enhancement and protection based on the watershed analyses and strategies described in this Prospectus. Within each service area properties will be located that provide appropriate restoration opportunities in

priority locations. To the degree possible, high quality sites will be purchased in each service area before they are needed so that the site will be secured and design/construction can be initiated quickly. Other sites will be put on a confidential waiting list with landowner agreement that the site is available if certain conditions are met at the time of purchase. To provide quality control for protection and implementation sites the ILFP will use Ecological Communities of NY (Edinger, et al. 2002) and a standardized assessment method (Jacobs 2007) to ensure quality sites are selected and restored.

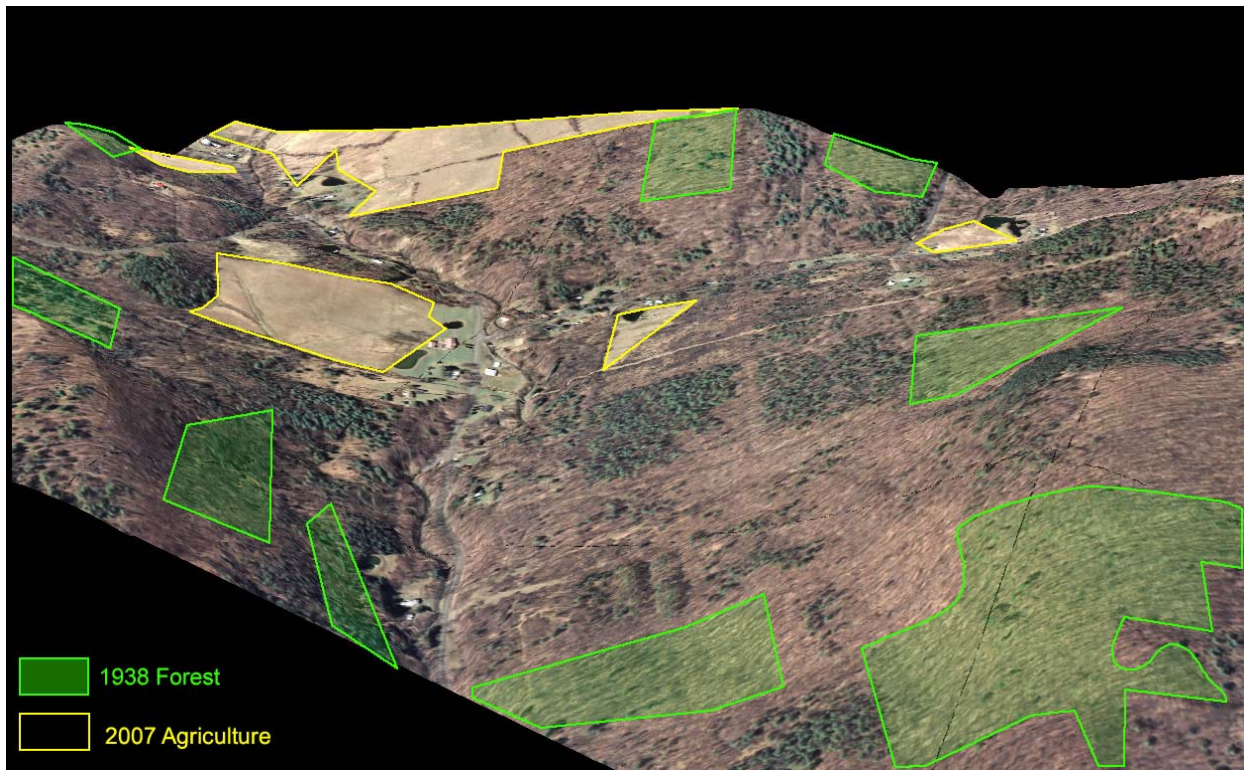
Sites with a potential for connecting to larger wetland or other natural resource areas, sites that have adequate hydrological resources and that can be protected in the long term are priorities. Headwater areas are another priority as they have great potential not only for wetlands, but for small intermittent streams. Although the Basin has a high percent forest it was greatly impacted in the past (see # 3, below) and efforts will be made to restore forested wetlands by enhancing what is there to reestablish the pit and mound micro topography that was eliminated when the forest were removed and farmed. The reestablishment of ephemeral wetlands within the forest communities will provide additional diversity.

3. Historic resource loss (332.8(c)(2)(iii))–

The Susquehanna Basin lies in the Appalachian Highlands Ecoregion. NYSDEC has estimated that half of New York State’s historic wetlands have been lost (Huffman and Associates 2000). In the Susquehanna Basin the historical loss largely appears to be a result of clear-cutting forests and conversion to agriculture. NY is also the home of the drain tile, which was first used in the US in 1835. Drain tiles efficiently eliminated wetland areas and their hydric soils and these tiles often function after the site has reverted to forest (Biebighauser 2007). More recently, total wetland acres increased by an estimated 3,000 acres between the 1980s and 1990s, but these were “open water” wetlands (DEC Bureau of Habitat), while palustrine scrub shrub (PSS) swamps declined by about 5,000 acres and palustrine emergent marsh (PEM) declined by 16,000 acres during that same period (Comprehensive Wildlife Conservation Strategy for New York- Susquehanna Basin pages 467-501, <http://www.dec.ny.gov/animals/30483.html>). The two photographs below from the Seeley Creek watershed depict the land use changes that are ubiquitous throughout the Basin. archetypal



1938 Aerial Photo, agriculture in 1938 is almost all lands not delineated as forest



2007 Aerial Photo, forest in 2007 is almost all lands not delineated as agriculture

4. Current aquatic resources (332.8(c)(2)(iv))

HU	Name	NWI Acres	Wetlands %	PEM %	PFO %	PSS %	River %	ponds %	lake %
101	Susq River - Upper	90,302	7.5	20	27	16	20	6	10
102	Chenango River	58,071	5.6	14	30	17	24	5	9
103	Susq River - Mainstem	25,873	4.5	9	15	11	54	9	2
104	Tioga River	7,296	1.6	15	22	7	26	15	4
105	Chemung River	32,765	5.0	11	17	12	47	6	7
		214,308	5.3	16	25	15	30	7	8

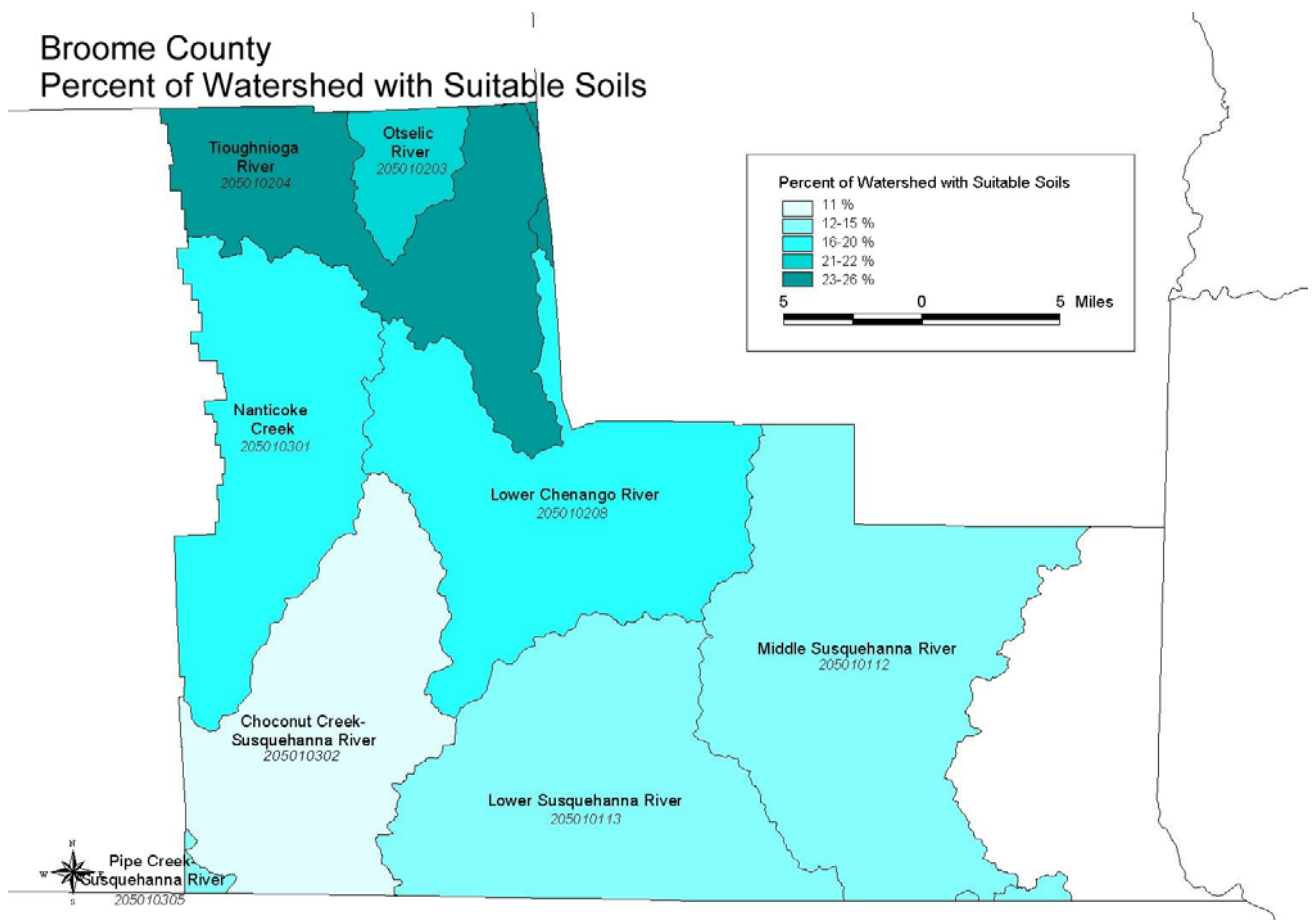
Of the approximately 4 million acres in the NY Basin the landscape is about 69 percent forest, 27 percent agriculture and 3 percent urban/suburban/developed. The distribution of NWI wetland types is depicted in the above table. About 5 percent is wetlands and open water, some of which overlaps in the other land uses described previously.

USC staff are reviewing documents that describe wetland restoration needs in the Basin. These include the NY State Susquehanna Comprehensive Wildlife Conservation Strategy Plan, the Susquehanna Regional Ecosystem Framework being developed by the USC for the US FHWA, the NY Open Space Plan and reports such as NYSDEC's wetlands status and trend analysis studies (Huffman 1999).

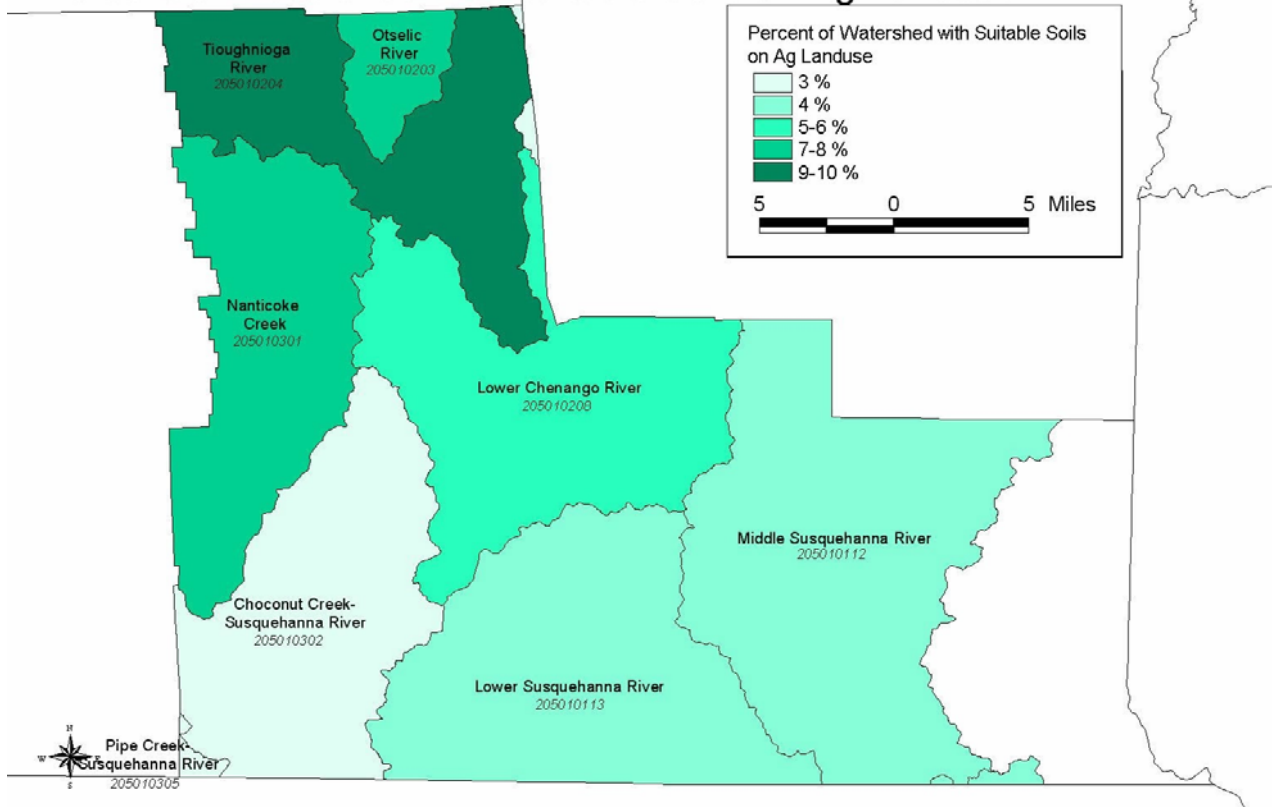
Further, the USC is developing a "Wetland Briefing Paper" under an EPA Grant using graduate students from SUNY ESF and Binghamton University to evaluate, through field reconnaissance, the quality and, to the degree possible, the specific sub-types of wetland communities based on Edinger et al. 2002. These community type descriptions are very detailed and provide a good source document for vegetation species to be used for restoration to maximize diversity and help ensure wetland type functionality. The communities are also rated for rarity by NYSDEC Natural Heritage Program, which could help in the selection process for restoration and protection. The better understanding of these community locations, extent, rarity and occurrence would help with developing designs for mitigation sites.

We have begun to analyze soils for wetland potential. By analyzing the soil types where existing NWI mapped wetlands occur in substantial quantities and then identifying the remainder of those

soil types without existing mapped wetlands, we hypothesize that under the right conditions, with either hydrologic or mechanical manipulation these soils may provide suitable wetland restoration opportunities. These soils are considered “suitable soils” and include both hydric soils without mapped NWI wetlands, and other soil types identified as described above. Below is map of Broome County identifying suitable soils for wetland restoration or creation in each 10 digit HU. We have further teased out agricultural lands with suitable soils to determine areas with the most opportunity for restoration work. While watersheds are ranked in the following maps by percent cover of these targeted restoration areas, the GIS database containing this data is in a polygon format. Each potential area can be ranked by soil type, size of contiguous area, location in the watershed, or any other factor we deem important. We will review “buffers” around existing wetlands to find adjacent potential restoration sites, which may be important as we can augment existing wetland complexes.



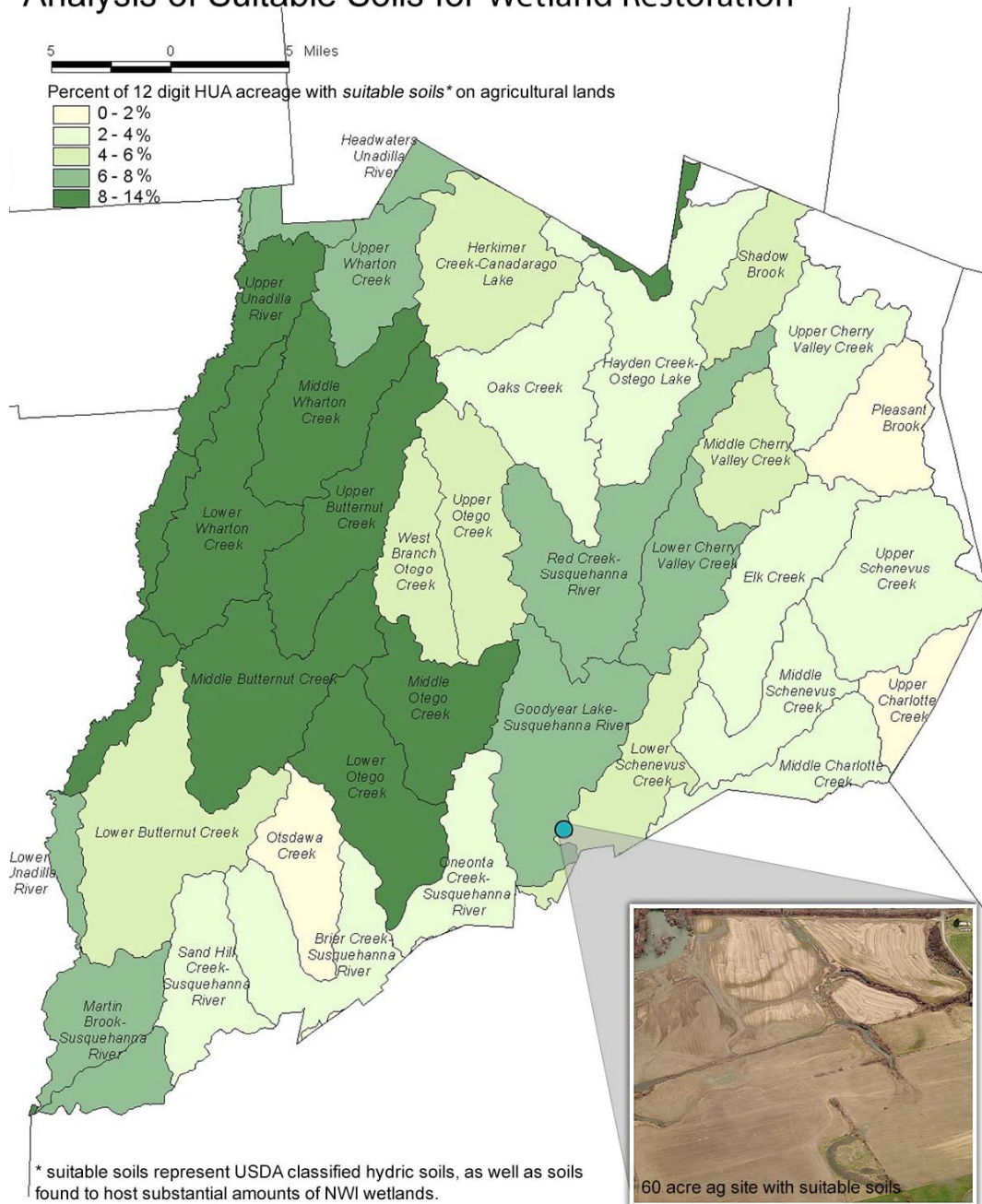
Broome County Percent of Watershed with Suitable Soils on Ag Landuse



10 Digit Watershed HU	Watershed Name	10 Digit Watershed Acreage	Suitable Soils (hydric or hosting wetlands)	% of Watershed With Suitable Soils	Acres of Suitable Soils on Ag Land	% of Watershed with Suitable Soils on Ag Land
0205010112	Middle Susquehanna River	89,386.00	12,152	13.59%	3,783	4.23%
0205010113	Lower Susquehanna River	71,826.00	9,807	13.65%	2,745	3.82%
0205010203	Otselic River	10,504.00	2,297	21.87%	881	8.38%
0205010204	Tioughnioga River	51,650.00	12,929	25.03%	5,253	10.17%
0205010207	Genegantslet Creek	902.00	236	26.16%	26	2.93%
0205010208	Lower Chenango River	68,571.00	13,974	20.38%	4,079	5.95%
0205010301	Nanticoke Creek	53,527.00	10,333	19.30%	3,847	7.19%
0205010302	Choconut Creek-Susquehanna River	58,780.00	6,305	10.73%	1,806	3.07%
0205010305	Pipe Creek-Susquehanna River	1,139.00	173	15.19%	38	3.32%
	Total	406,285.00	68,206	16.79%	22,458	5.53%

A further analysis at the 12 digit HU level was done in Otsego County as an example. Using the “suitable soil” approach we located 60 acres in agricultural that would show great potential for restoration as well buffering a stream. This approach will provide the starting point for locating good potential sites. By adding additional criteria or having a need for a certain subwatershed location we can quickly obtain a short list of possibilities. For example we can buffer the Otselic River looking for sites within the floodplain for potential woodcock habitat restoration sites.

Otsego County Watersheds- Analysis of Suitable Soils for Wetland Restoration



Watershed Name	12 Digit HU	Suitable Soils Acres (hydric or hosting wetlands)	Watershed Acres	% of Watershed
Brier Creek-Susquehanna River	020501011102	654	19,145	3.41%
Cripple Creek	020501010601	207	2,183	9.48%
Elk Creek	020501010302	714	21,134	3.38%
Goodyear Lake-Susquehanna River	020501010605	1,953	27,257	7.17%
Hayden Creek-Ostego Lake	020501010603	657	26,710	2.46%
Headwaters Unadilla River	020501010903	440	6,946	6.33%
Herkimer Creek-Canadarago Lake	020501010102	1,350	23,040	5.86%
Lower Butternut Creek	020501010803	1,725	33,380	5.17%
Lower Charlotte Creek	020501010406	61	1,048	5.84%
Lower Cherry Valley Creek	020501010204	1,031	14,705	7.01%
Lower Otego Creek	020501010504	1,964	20,937	9.38%
Lower Ouleout Creek	020501011005	1	179	0.77%
Lower Schenevus Creek	020501010304	635	14,383	4.41%
Lower Unadilla River	020501010910	1,281	17,119	7.48%
Lower Wharton Creek	020501010703	2,869	24,493	11.71%
Martin Brook-Susquehanna River	020501011105	486	6,709	7.24%
Middle Butternut Creek	020501010802	2,561	28,222	9.07%
Middle Charlotte Creek	020501010405	237	11,834	2.01%
Middle Cherry Valley Creek	020501010203	527	13,101	4.02%
Middle Otego Creek	020501010503	1,440	17,291	8.33%
Middle Schenevus Creek	020501010303	498	15,210	3.27%
Middle Unadilla River	020501010908	1,263	10,475	12.06%
Middle Wharton Creek	020501010702	2,154	21,378	10.07%
Oaks Creek	020501010103	949	24,846	3.82%
Ocquionis Creek	020501010101	56	1,568	3.55%
Oneonta Creek-Susquehanna River	020501010606	436	13,790	3.16%
Otsdawa Creek	020501011101	131	13,046	1.01%
Pleasant Brook	020501010201	237	14,474	1.64%
Red Creek-Susquehanna River	020501010604	2,012	30,281	6.65%
Sand Hill Creek-Susquehanna River	020501011103	348	14,508	2.40%
Shadow Brook	020501010602	525	11,569	4.53%
Upper Butternut Creek	020501010801	1,840	21,709	8.48%
Upper Charlotte Creek	020501010403	107	7,833	1.37%
Upper Cherry Valley Creek	020501010202	530	16,378	3.24%
Upper Otego Creek	020501010502	996	19,017	5.24%
Upper Schenevus Creek	020501010301	568	25,168	2.26%
Upper Unadilla River	020501010905	1,297	12,576	10.31%
Upper Wharton Creek	020501010701	802	13,325	6.02%
West Branch Otego Creek	020501010501	506	12,593	4.02%
West Branch Unadilla River	020501010902	32	508	6.34%
Yaleville Brook-Susquehanna River	020501011203	8	62	12.24%

5. Aquatic goals, including general amounts and types and locations (332.8(c)(2)(v))

The goals in this instrument will address the community types, functions and species preferences that the ILFP will target to maximize biodiversity and functions in the Basin. These goals include:

- Increase micro-topography (pit and mound type landscape) to replenish habitat structure that was affected by historic land clearing activities, especially in forested wetlands.
- Eliminate effects of drain tiles and redevelop hydric conditions.
- Enhance/reestablish diversity in existing wetlands that have degraded due to encroachment by invasive plants, such as reed canary grass.
- Sites with a high quality upland component to maximize the overall functionality of the site.
- Distribute sites within the 8-digit HUA basin to increase diversity and local connectivity/restoration. Sites in the 10 to 100 acres that are adjacent to already protected lands and especially wetlands would add additional value. Larger sites are better for long-term protection efforts. They do not have to be all wetlands as an upland component is essential for full functionality.
- Based on the Comprehensive Wildlife Conservation Strategy for the Susquehanna Basin and NYS Heritage information on rare communities (i.e., cedar swamps, hemlock/hardwood peat swamps, fens and bogs), locate potential sites adjacent to or near rare communities, especially those not adequately protected, as potential restoration sites using the community types and attributes as guides for restoration.
- Search for sites with historically intact forests (based on the 1930's aerial photos) for restoration to potentially support rare species still populating these refugia.
- Use available information to identify rare communities in need of protection through fee simple ownership.
- Target functions that were lost from the impacted wetland, but if possible, also add functionality in that wetland type to replace historical losses and to address watershed/service area priorities.
- Establish wetlands that support habitats or species that may be historically reduced or decreasing such as freshwater marsh nesting birds (i.e., American bittern, pied-billed grebe), ephemeral wetlands especially in headwaters to aid amphibians, wetlands along ridge tops for migratory bats, and scrub shrub wetlands for songbirds and woodcock.

- Attempt to address climate change as it will likely become increasingly important in the future. Most suggestions are that rainfall will become more event-based, thus accentuating both droughts and floods. Adding a design component to potentially “buffer” weather extremes should be considered, such as adding a deep pool to combat excessive drought or selecting some native species that may tolerate warmer temperatures.

General Amounts and Locations

- The restoration acreages will depend on future development. General infrastructure work has been historically very infrequent. Should Marcellus Shale be developed for natural gas the impact from those operations and related increases could result in a continual and substantial need for mitigation services, in the 10’s of acres of restoration needs per year at least the first decade of development.
- The locations for work will be in those areas where long term sustainability is most likely, where high quality sites, important soil types or hydrology could be accessed to maximize the limited resources. Some general areas have already been located as high quality potential due to the amount of potential restoration available or the high quality habitat in the area that may be augmented.

6. Prioritization strategy - (332.8(c)(2)(vi)

The USC will develop a list of areas with high quality restoration potential as well as a list of specific sites available for restoration. The USC Wetland Program Staff will facilitate the site review and provide a short list to be reviewed through a compensation-planning framework for site selection. The approach will be as follows:

- a. A GIS analysis of hydric soils and soils underlying wetlands will provide a “suitable soils” map for the general areas to search for specific project sites. This analysis will result in both areas of interest and within them sites of interest.
- b. We will further refine potential site selection and restoration planning based on high quality wetland types using information from Ecological Communities of New York State, analysis of NWI wetlands in the basin by Binghamton University and a standardized assessment method.
- c. We will also review the pertinent portions of the NY State Susquehanna Comprehensive Wildlife Conservation Strategy Plan to target species that could be helped through

mitigation projects and use a Susquehanna Regional Ecosystem Framework being developed by the USC for the US FHA, where natural resources experts will be queried for areas of sites in need of protection.

d. Prioritization factors:

- Drainage features including ditching and drain tiles present and hydric soils redeveloped
- Conducive to micro-topography (pit and mound type landscape), especially in forested wetlands.
- High quality upland component to maximize wetland functionality.
- Distribute sites to increase diversity and local connectivity/restoration.
- Sites in the 10 to 100 acres in size that are adjacent to already protected lands.
- Larger sites for long-term protection efforts.
- Based on the Comprehensive Wildlife Conservation Strategy for the Susquehanna Basin and NYS Heritage information on rare communities (i.e., cedar swamps, hemlock/hardwood peat swamps, fens and bogs),
- Sites adjacent to or near rare communities, especially those not adequately protected,
- Sites with historically intact forests that potentially or are known to support rarer species
- Rare communities in need of protection through fee simple ownership.
- Functions that were lost from the impacted wetland and add additional functions
- Wetlands that support habitats or species that may be historically reduced or decreasing,
- Attempt to address climate change

We will work with our short list of potential sites that may meet in-lieu fee needs and develop preliminary designs to help determine priorities for in-lieu funds. These sites will most likely be or become fee-simple sites owned by TWT.

With enough potential or owned sites in the “pipeline” we will match aquatic resource impacts with an ILFP site that most closely meets its mitigation needs and adds value to the area’s wetland

landscape. When a wetland is being impacted we will develop a short list of project types that fit candidates on the list of potential sites at that time. For the TWT-owned sites, conceptual plans, with several alternatives for one site will be developed where possible. Thus the prioritization will be built into the potential “site list” that was developed based on an analysis of the watershed through the watershed briefing paper. The restoration of scrub shrub and emergent marsh community types and the enhancement of degraded forest wetlands will be priority targets. This differentiation is to take into account the large expanse of forest already on the landscape that is missing micro-topography and species diversity and to take advantage of an established forest cover to jump start the enhancement process to develop high quality forested sites. The open emergent and scrub shrub sites will be targeted to the existing open areas, which are in much shorter supply due to the extent of forest cover. To help ensure that the functions and values of the wetland mitigation project exceed those lost at the impact site we will recommend that our standardized assessment method be used to evaluate functions and values at the impact site. We will provide directions for our assessment methods on the TWT web site. This approach will be especially important for bigger sites. For the smaller impacts we will base restoration on the general watershed analysis and plan in the ILP Instrument.

7. Preservation strategy – (332.8(c)(2)(vii))

- We suggest preservation opportunities target smaller unique sites (less than the NY minimum of 12.4 acres that are regulated). Any of the truly unique fens and bogs that may be discovered and that are not under protection will be purchased at the first opportunity. Hopefully having proactively purchased a property with high quality characteristics with internal funds will not preclude it from being eligible for future ILFP funding to repay the purchase, freeing up funds for additional site purchases. A special fiduciary category could be set up tracking the negative fund balance of high quality purchased sites as a mechanism to track that ILFP component. We request the IRT consider this approach so that very high quality sites that may only be occasionally available not have to be passed by because there is not a mitigation need at that time.
- High quality wetland communities that have unique or many functions would be another priority category for potential purchase, especially if they were under threat of development. The quality would be based on the community types described by Edinger et. al. 2002.

- There are certain areas that have the potential for very large-scale wetland complexes, such as the headwaters of the Cohocton River. We suggest protection purchases made in designated “Wetland Complex” areas would aid in not only in protecting the wetland footprint but suggest the purchase include additional restorable portions to provide a longer term benefit. The approach would be for a small portion of credits (set by the IRT- 5% for example) to be used for protection projects.
 - High quality restoration sites would be those that that are adjacent to or provide a corridor between existing wetlands, sites that can support a large restoration effort such as the example from Otsego County map and sites that may be adjacent to older aged forests that may act as refugia for rarer species.
8. Public and private involvement, coordination with federal, state and local aquatic agencies (332.8(c)(2)(viii))

The USC will provide support to ensure public and private involvement through its outreach activities to farmers, small watershed groups, community groups and private citizens. We will use the well-established network and approach developed by the USC Wetland Program for finding potential wetland sites in the past to ensure community involvement. The USC network of Soil and Water District staff are on constant lookout for high quality restoration sites in their travels and meeting with watershed residents. At present the USC has about 140 sites owned by private landowners waiting for restoration as funding permits; these will not be part of the ILFP as they on private lands not for sale. The TWT and USC have already develop an integrated working relationship with federal, state and local agencies that deal with wetland issues and will continue to do so, incorporating the ILFP into this mix.

9. Long term protection and management strategies by sponsor (332.8(c)(2)(ix))

The TWT’s long-term protection and management strategy is to own the majority of sites as fee simple property. Every property in the program will be supported by an endowment investment that will provide long term funding or any management actions needed in the future. The TWT, being a 501C(3) nonprofit will own the properties, tax exempt under section 420-a of the NY Real Property Tax Law. As an additional tool, partners may use easements if they meet the necessary requirements.

10. Periodic evaluation (332.8(c)(2)(x))

A yearly review and report is proposed that would ensure that goals, and priorities are still valid. The extensive and long-term work with SUNY ESF and Binghamton University will provide an avenue to add valuable information on additional community types to include, and functions to consider. The Wetland Briefing Paper discussed in #4 Current Aquatic Resources (332.8(c)(2)(iv)) will be updated over the next three years and included in this yearly evaluation component. Pilot project that would increase the depth and breath of the ILFP such as easements and stream restoration will be described in detail.

11. Other necessary information (332.8(c)(2)(xi))

No other information is suggested at this time.

8. Program Accounting Information(332.8(d)(2)(viii)(B)

1. Develop acceptable FDIC Program Account (332.8(i)(1)) - The ILFP Account will have a checking account established at the TWT Bank, HSBC, a member of the FDIC, named “Susquehanna Basin Headwaters In-Lieu Fee Instrument. A budget will be developed for each site in the account that will track the various cost items (i.e., property purchase, construction, plant materials, etc.).

A separate endowment account for the long-term stewardship is already in place and it will hold the funds set aside for long-term maintenance and protection. A separate checking account for this endowment will be established to ensure that those funds do not become intermingled with the restoration funds.

2. Submit proposed projects to district engineer and set protocol for District Engineer to direct funds to alternative projects if sponsor does not provide mitigation according to requirements (332.8(i)(2)). as described in 332.8(n)(4). – The TWT will develop plans for funding transfers should mitigation not occur.

The TWT will develop appropriate reporting protocols for the requirements listed below.

- a. Provide annual reports, including: all income, disbursements and interest (332.8(i)(3)(i))
- b. List of permits received (332.8(i)(3)(ii): Corps permit number, service area, amount of impact, amount of compensation needed, amount paid to Program, date funds received

- from permittee program expenditures (332.8(i)(3)(iii): land acquisition, planning, construction, monitoring, maintenance, contingencies accounts, administration
- c. Balance of advanced and released credits (332.8(i)(3)(iv))
 - d. Other information requested by district engineer (332.8(i)(3)(v))

Biebighauser, T. 2007, Wetland drainage, restoration and repair, University Press of Kentucky, 241 pp.

Edinger, G.J., D.J. Evans, S. Gebauer, T.G. Howard, D.M. Hunt, and A.M. Olivero (editors). 2002. Ecological Communities of New York State. Second Edition. A revised and expanded edition of Carol Reschke's Ecological Communities of New York State. (Draft for review). New York Natural Heritage Program, New York State Department of Environmental Conservation, Albany, NY.

Huffman & Associates, Inc. (August 1999) Finalized June 2000. Wetlands Status and Trend Analysis of New York State - Mid-1980's to Mid-1990's. Prepared for New York State Department of Environmental Conservation. June 2000. Larkspur, California. 17pp. plus attachments.

Jacobs, A.D. 2007. Delaware Rapid Assessment Procedure Version 5.1. Delaware Department of Natural Resources and Environmental Control, Dover, DE. 34pp.