DUCKS UNLIMITED
MITIGATION AND ECOLOGICAL SERVICES

Ducks Unlimited – New York In-Lieu Fee Program

Final Instrument

7-31-2012

Ducks Unlimited: Great Lakes / Atlantic Regional Office
1220 Eisenhower Place, Ann Arbor, MI 48108

Ducks Unlimited, Inc.
Great Lakes Atlantic Regional Office
1220 Eisenhower Place
Ann Arbor, MI 48108
734-623-2000

Cover photo: Great Egret at Montezuma National Wildlife Refuge.

Purpose

The Ducks Unlimited-New York In-Lieu Fee (DU-NY-ILF) program will operate as an umbrella ILF program in ten (10) different service areas in western New York. The DU-NY-ILF program will provide a third party compensatory mitigation option for unavoidable impacts to waters of the United States (including both wetlands and streams, e.g. aquatic resources) approved by the Army Corps of Engineers (Corps) under Section 404 of the Clean Water Act ("CWA") and Section 10 of the Rivers and Harbors Act.

The DU-NY-ILF program will also provide a third party compensatory mitigation option for the New York State Department of Environmental Conservation (NYSDEC) permit programs under the Environmental Conservation Law, including the Fresh Water Wetland Act, Article 24; the Stream Protection Act, Article 15; and the Water Pollution Control Act, Article 17 and the Adirondack Park Agency (APA).

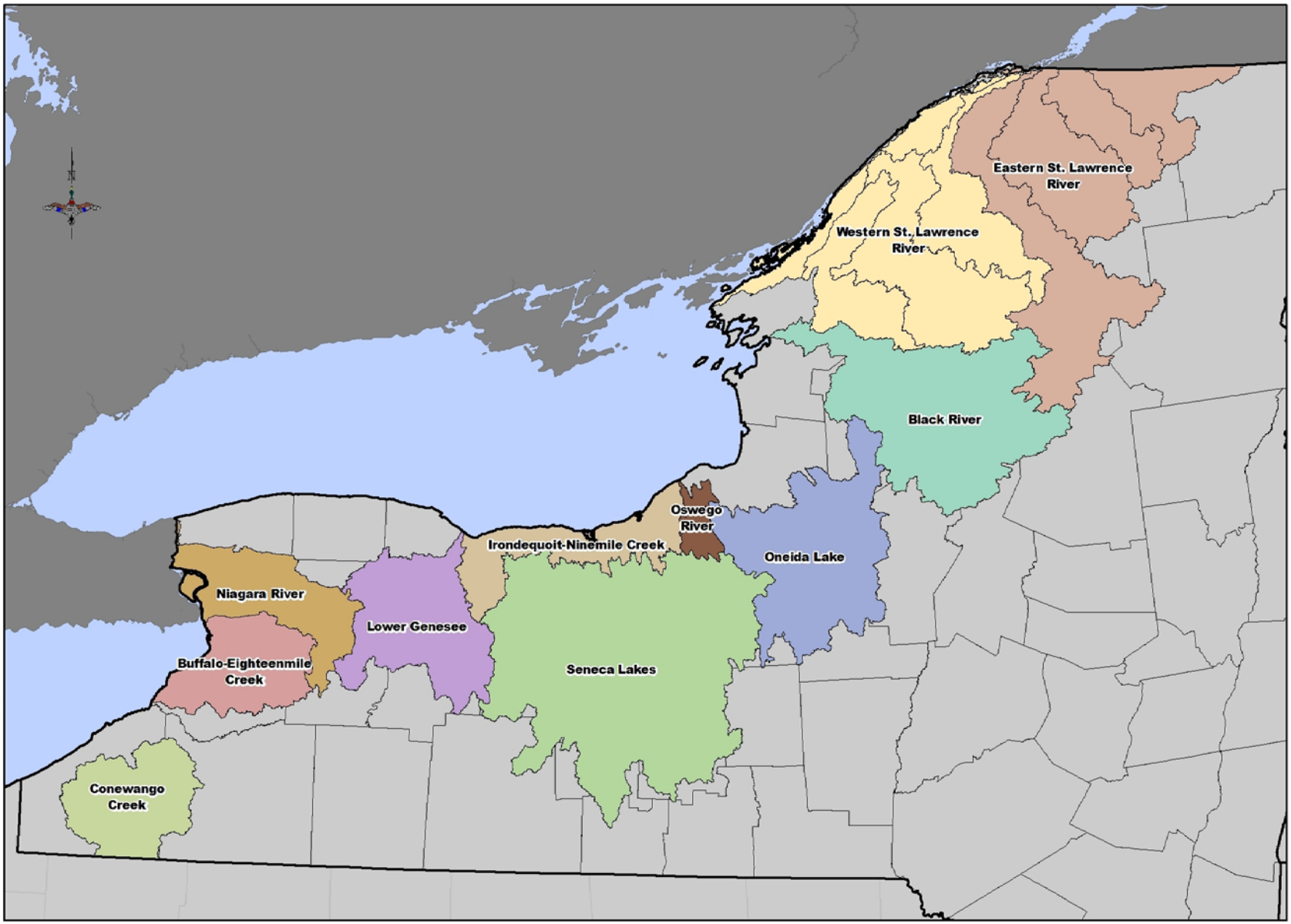
Additionally, the DU-NY-ILF program may be used to satisfy other federal, state, and local regulatory program requirements related to impacts to aquatic resources including enforcement actions. This instrument addresses the required elements for operating an ILF program under the federal 2008 mitigation rule (33 CFR Part 332).

I. Program Service Areas

The DU-NY-ILF program will operate in ten (10) service areas listed below. These service areas are watershed-based and comprised of 8 digit HUC codes. The St. Lawrence service area is comprised of 7 smaller 8 digit HUC codes. This service area will be divided into two sub service areas: The Western St. Lawrence and the Eastern St. Lawrence. The Western St. Lawrence will include the Upper St. Lawrence, Oswegatchie River, Indian River, and Grass River. The Eastern St. Lawrence will include the Raquette River, St. Regis River, and English-Salmon River.

The DU-NY-ILF service areas extend across two Corps Districts (Buffalo and New York) and the St. Lawrence and Black River service areas include land which falls under the authority of the Adirondack Park Agency (APA). Because ILF projects may be sited in either Corps district or in lands that fall within the APA, the IRT committee will include members from both Districts as well as a representative from the APA. The service areas are listed below.

Service area	**Hydrologic Unit Codes (HUC)**
1. Black River	HUC 04150101
2. Buffalo-Eighteen Mile Creek	HUC 04120103
3. Conewango Creek	HUC 05010002
4. Irondequoit-Ninemile Creek	HUC 04140101
5. Lower Genesee	HUC 04140101
6. Niagara River	HUC 04120104
7. Oneida Lake	HUC 04140202
8. Oswego River	HUC 04140203
9. Seneca Lakes	HUC 04140201
10. St. Lawrence River (eastern) St. Lawrence River (western)	HUCs 04150305-8 HUCs 04150301-4



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DU-NY-ILF Service Areas

20 10 0 20 40
Miles

II. ILF Project Development

This section identifies the general framework under which individual ILF projects will be developed and managed.

A. Project Site Selection

Project sites will be selected and developed in accordance with the information detailed in the Compensation Planning Framework (see Appendix I).

DU will work with federal and state agencies and conservation partners to identify project sites suitable for wetland or stream projects. DU will use the Site Selection and Evaluation Key (Appendix IV) to assist in screening candidate project sites. DU will seek feedback from the IRT concerning potential restoration sites prior to developing a mitigation plan.

Site selection will take into account:

a) Watershed conservation priorities: DU will seek to develop projects in areas where the projects will contribute to watershed conservation priorities.

b) Habitat Improvement: Sites will be evaluated based on their potential to address multiple functions and services which may include improvement of fish and wildlife habitat, support for rare or threatened species, flood attenuation, water quality improvement, and recreation values.

c) Site conditions: DU will evaluate the hydrology, soils, native vegetation, and other conditions conducive to aquatic resource development. Projects with greater aquatic resource functional gain per dollar will be given preference.

B. Mitigation Plan

A mitigation plan will be developed for each ILF project and is subject to approval by the District Engineer for Corps permitted impacts. For impacts either jointly or separately permitted by the NYSDEC or Adirondack Park Agency, the mitigation plans will require approval by the appropriate representatives of these agencies. Mitigation plans will be developed and implemented in accordance with 33 CFR 332.4 and NYSDEC regulations and will include the following required twelve elements:

1. Project objectives
2. Site selection criteria
3. Site protection instruments
4. Baseline information
5. Credit determination methodology
6. Work plan
7. Maintenance plan
8. Performance standards
9. Monitoring requirements
10. Long-term management plan
11. Adaptive management plan
12. Financial assurances

With each wetland or stream mitigation project, DU will evaluate the appropriate amount of buffer(s) for the project site based on site specific conditions. For example, if a mitigation project site is adjacent to state protected land or a conservation easement, a buffer may not be required.

C. Ecological Performance Standards

DU will propose performance standards for each ILF project for IRT review and approval. The performance standards will relate to the objectives of the mitigation project. These performance standards will be used to assess whether the project is developing into the desired resource type, providing the expected functions, and attaining any other applicable metrics according to the terms detailed in 33CFR 332.5. Performance standards may be based on variables or measures of functional capacity described in functional assessment methodologies, measurements of hydrology or other aquatic resource characteristics such as diversity of flora and fauna.

D. Project Approval and Instrument Modifications

As in-lieu free project sites are identified and optioned or otherwise secured, DU will submit mitigation plans to the District Engineer that include all applicable items listed in 332.4(c) (2-14). The District Engineer has the final authority to approve a proposed mitigation project for a Corps permitted activity. The District Engineer is advised by members of the IRT on project review. For impacts jointly or separately permitted by the NYSDEC or Adirondack Park Agency, the mitigation plans will require approval by the appropriate representatives of these agencies. The IRT members have a formal process by which to object to any Corps decision. Project approval will be based on factors including site suitability, long-term sustainability, benefits to rare and endangered natural resources, maximum return on expended funds, and other factors. The Corps may add specific requirements and restrictions to each proposed mitigation project. These include conditions on authorizations through the Section 404 and/or Section 10 of the Rivers and Harbors Act permit process that could be required for a mitigation project.

Approved projects will be added as an amendment to the Instrument. In general, IRT members will provide comments on mitigation project proposals by the end of the 30 day public notice period and these comments will be summarized by the IRT chair and given to DU within 15 days from the close of the public notice period. This process is described in Appendix V based on the terms described in 33CFR 332.8 (d)(g)(j).

Because the DU-NY-ILF program extends across two Corps Districts, both the Buffalo and the New York District will participate in the review of proposed mitigation projects in the watersheds which extend across the district boundaries. For projects in these watersheds, approval will require the signature of the District Engineers or appropriate designated representatives from both districts. Otherwise, projects will only require the signature of the appropriate designated representatives from the Corps district in which the project is located. Approval of mitigation projects by the Adirondack Park Agency will only be necessary for sites located within the boundary of the Adirondack Park.

The IRT shall meet on a regular basis as determined by the IRT chair to review and approve ILF projects and discuss program management issues in a timely manner. The IRT shall be responsive to DU in terms of providing feedback and guidance on proposed mitigation sites and mitigation plans. Similarly, DU will be responsive to IRT questions and inquiries as program sponsor.

E. Project Implementation

DU or its authorized agents will provide the necessary personnel, equipment, and materials to implement ILF wetland and stream mitigation projects. Land acquisition and initial physical and biological improvements must be initiated by the third full growing season after the first advance credit

in that service area is sold, unless the District Engineer determines that more time is needed to plan and implement a project based on having insufficient funds. In the event that only a small number of credits sell in a service area, DU may make a request to the IRT to satisfy mitigation obligations in an adjacent service area subject to the approval of the District Engineer. If an insufficient number of credits are sold in a given service area and not enough funds accrue to implement a project, this will not be considered by itself a default of the terms set forth in the Instrument.

The District Engineer may also direct DU to disperse funds from the DU-NY-ILF program account to provide alternative compensatory mitigation to fulfill the mitigation requirements. If a mitigation project is implemented by another organization, DU will transfer an amount of funds from the Program Account not to exceed the original amount paid to the designated organization.

F. Monitoring

Monitoring of the mitigation project is necessary to determine if the project is meeting its performance standards and trending towards success as described in 33CFR 332.6. Each project-specific mitigation plan will include a monitoring plan that will describe the performance standards to be monitored, the methods for monitoring, the length of the monitoring period, the dates that the reports must be submitted, and the frequency for submitting monitoring reports. DU will be responsible for submitting monitoring reports to the IRT based on terms set forth in the permit or mitigation plan.

The content and level of detail of the monitoring reports will be commensurate with the scale and scope of the mitigation project, as well as the mitigation project type. Each report shall contain at a minimum the following:

1. Monitoring results with comparison to performance standards
2. Plans, maps, and photographs to illustrate site conditions
3. A narrative summarizing the condition of the project
4. Recommendations for adaptive management as needed

III Management

DU shall be responsible for maintaining the ILF projects, consistent with the terms in the approved mitigation plan, until the performance standards and any other requirements the District Engineer may have mandated, including the conditions of any Corps permit issued for the ILF mitigation site, have been achieved and the District Engineer has issued a Site Closure Letter.

A. Site Protection

DU shall be responsible for developing and implementing a long-term protection plan for each ILF project in accordance with terms described in 33 CFR 332.7(a). DU will ensure that long-term protection mechanisms are in place prior to project implementation. A copy of the long-term protection mechanism shall be sent to the IRT chair and become part of the official project record. An easement endowment will be established to pay for the annual monitoring and any necessary enforcement of the easement. The easement endowment will be held in a designated account.

Long-term protection may be provided through real estate instruments such as conservation easements held by entities such as federal, tribal, state, or local resource agencies, non-profit conservation organizations including DU, or private land managers; the transfer of title to such entities; or by other restrictive covenants. For federal or state property, long-term protection may be provided through Facility Management Plans or Integrated Natural Resource plans. When approving a method for long-term protection of non-government property other than transfer of title, the District Engineer shall consider relevant legal constraints on the use of conservation easements and/or restrictive covenants in determining whether such mechanisms provide sufficient site protection. To provide sufficient site protection, a conservation easement or restrictive covenant should, where practicable, establish in an appropriate third party (e.g., governmental or non-profit resource management agency) the right to enforce site protections and provide the third party the resources necessary to monitor and enforce these site protections (33 CFR 332.7(a) (1)).

The real estate instrument, management plan, or other mechanism providing long-term protection of the compensatory mitigation site must, to the extent appropriate and practicable, prohibit incompatible uses that might otherwise jeopardize the objectives of the compensatory mitigation project. Where appropriate, multiple instruments recognizing compatible uses (e.g., fishing) may be used (33 CFR 332.7(a) (2)).

The real estate instrument, management plan, or other long-term protection mechanism must contain a provision requiring 60-day advance notification to the district engineer before any action is taken to void or modify the instrument, management plan, or long-term protection mechanism, including transfer of title to, or establishment of any other legal claims over, the compensatory mitigation site (33 CFR 332.7(a) (3)).

B. Sustainability

Each ILF project will be designed, to the maximum extent practical, to require little or no long-term management per the terms described in 33 CFR 332.7(b). This includes minimization of active engineering features and appropriate siting to ensure that natural hydrology and landscape context will support long-term sustainability.

C. Adaptive Management

If the annual monitoring findings indicate that the ILF project is not making expected progress towards meeting the performance standards, DU shall notify the District Engineer as soon as possible as detailed in the terms described in 33 CFR 332.7(c)(1-3). Likewise, if the IRT determines that the project is not making expected progress towards meeting the performance standards, the IRT Chair shall report, in writing, any findings and recommend corrective measures if needed.

In such instances, the IRT Chair, in consultation with DU and the IRT, will determine the appropriate adaptive management steps necessary to meet the performance standards of the ILF project. Measures may include, but are not limited, to site modifications, design changes, and invasive plant species and animal control. Performance standards and monitoring requirements may be revised based on adaptive management measures necessary to address deficiencies and ensure project success. Performance standards may also be revised to reflect changes in management strategies if the new performance standards ensure that ecological benefits are comparable or superior to those detailed in the original

mitigation plan. No other revisions to performance standards will be allowed except in the case of natural disasters per the terms detailed in 33 CFR 332.7(c) (4).

D. Long-term Management

Project-specific mitigation plans will include a long-term management plan. The long-term management plan will have a description of any anticipated management needs and projected cost estimates. A portion of the credit sales to be determined by the IRT in discussion with DU and the long-term manager shall be placed in an escrow account to ensure that funds will be available for long-term management. The long-term manager will be identified in the project-specific mitigation plan. DU has the authority to change the long-term manager, subject to approval by the District Engineer per 33 CFR 332.7(d).

E. ILF Project Closure

After the end of the designated monitoring period, when the performance standards have been met and approved by the IRT and all credits have been sold, the District Engineer shall issue a written Site Closure Letter to DU. DU may request that an ILF project be closed early if performance standards have been substantially achieved. The District Engineer shall decide whether to grant such requests. If the project is closed and there are still credits available to sell, the credits will be forfeited.

Once the ILF project is closed, the long-term management period will commence and the designated long-term manager will assume responsibility for the site. If there are remaining funds in the project account associated with the particular ILF project, these funds will be released and will be transferred to the Program Account for the service area and segregated from funds accrued for mitigation. The released remainder funds will be used by DU to implement restoration projects within that respective service area or be used within a different ILF program service area subject to approval by the District Engineer. If the remainder funds are used to generate ILF mitigation credits, the project will require a full mitigation plan that will follow the same process (public notice, IRT review) as a typical ILF mitigation project. For a restoration project that will not generate additional credits, a simplified restoration and long-term management plan will be acceptable subject to approval by the District Engineer.

IV Credit Accounting

A. Advanced Credits

Upon approval of the DU-NY-ILF Instrument, DU will be permitted to sell a designated number of advanced wetland and stream credits. The number of advance credits available is specified by service area (see Appendix II) and is derived in part from a review of historical impacts based on data provided by the Buffalo Corps from a Freedom of Information Act request (FOIA). These data were compared to information from the public notice data and information related to DU mitigation projects in New York.

In the service areas with fewer permitted wetland impacts, DU has requested 15 advanced wetland credits to ensure that the ILF program meets potential demand and has sufficient financing for project delivery. In service areas with a greater number of permitted wetland impacts, DU has requested 30-40 advanced credits to ensure that the ILF program meets potential demand and has sufficient financing for project delivery. If demand for wetland credits exceeds the allotted amount of advanced credits, and purchased credits have not been released, DU may request additional advance credits. Very little

information is available regarding the amount of stream mitigation that has been required in the State of New York. DU has requested 10,000 advanced linear feet of stream credits per service area to ensure that the ILF program meets potential demand and has sufficient financing for project delivery.

B. Determining Credits

The number of credits generated for each ILF project will be based on the size and scope of ILF project and the amount of functional lift or ecological improvement generated by the project per the terms described in 33CFR 332.8(o). The amount of wetland credits shall be determined using generally accepted ratios (see Appendix III). The IRT will determine the credit ratio for each project. A functional assessment approach approved by the IRT will be used to assess and describe the aquatic resource types that will be restored, established, enhanced and/or preserved by the ILF project. The number of stream credits shall be determined using a functional assessment approach approved by the IRT. If buffers are required by the District Engineer as part of the mitigation project, credit will generally be provided for those buffers based on site specific conditions.

Preservation of existing wetlands and/or uplands that support a significant population of rare plant or animal species, or that support a rare habitat type, may be proposed to generate credits. Credits generated for preservation will be determined in accordance with the terms described in 33 CFR 332.3(h, i) and 33 CFR 332.8 (o) 6, 7.

C. Cost of Credits

The credit fee will be determined by DU and will be based on full cost accounting. The credit fee covers project expenses for site identification, travel costs, land acquisition, mitigation plan development, permitting, construction, land protection, land protection endowment fee, performance monitoring, contingency measures for adaptive management, long-term management endowment, financial assurances, legal fees, an administrative fee, and any other factors as deemed necessary by DU or the IRT. The credit fee must take into account contingency costs appropriate to the stage of project planning, including uncertainties in construction and real estate expenses. The credit fees vary by service area based on expected land costs and other factors (see Appendix II). DU will evaluate credit fees on an annual basis (by end of calendar year). Fees may be adjusted as deemed necessary to reflect the full cost accounting of operating an ILF program.

DU will receive an administrative fee of 15% per credit. The administrative fee will be deducted when payment is received and deposited into the DU Program account. The administrative fee offsets expenses associated with program administration which includes managing credit sale transactions, annual reporting, accounting, marketing, education and training, and other activities not related to project implementation.

D. Credit Release Schedule

Release of credits must be tied to performance-based milestones (permitting, site protection, construction, planting, and/or establishment of plant and animal communities). When determining the credit release schedule, factors to be considered may include, but are not limited to the type of ILF project (e.g., restoration, enhancement, establishment, etc.), the likelihood of success, the complexity of the project, and the aquatic resource type(s) and function(s) to be provided by the ILF project. The terms of the credit release schedule will be proposed in each mitigation plan. The District Engineer in

consultation with the IRT will determine the credit release schedule, including the percentage of credits released after full achievement of performance standards. A general framework for credit release related to restoration, enhancement, and establishment projects is detailed in the following schedule:

- 15% permit approval and recording of the site protection instrument
- 15% upon completion of construction and approval of as-built report
- 20% - 40% upon incremental achievement of performance standards as evidenced in monitoring reports
- The remaining credits upon full achievement of performance standards

A credit release schedule for preservation might include:

- 15% release at the approval of the preservation plan
- 85% release upon the recording of the conservation restriction document

If the ILF project does not meet designated milestones or achieve the performance-standards detailed in the mitigation plan, the District Engineer may modify the credit release schedule or reduce the number of credits eligible for release.

E. Credit Release Approval

Mitigation obligations assumed by the sale of advanced credits will be fulfilled by the implementation of one or more projects within the service area. Advanced credits which have been sold to permit holders are fulfilled as credits are released at the ILF mitigation site. Credits will be released at particular sites in accordance with a performance based schedule to be included in the mitigation plan approved by the District Engineer(s) and the IRT for each site. Credit release requests by DU will be reviewed by the District Engineer(s) in consultation with the IRT in accordance with 33 CFR 332.8(o)(9) and the mitigation plan for the site.

As advance credits are fulfilled at a mitigation site, an equivalent number of advance credits may be made available for sale at the discretion of the District Engineer. Credits generated in excess of advance credit obligations may be sold as released credits based upon the credit release schedule in the mitigation plan.

F. Use of Credits

All activities authorized by DA permits (Section 404 of the Clean Water Act, Section 10 of the Rivers and Harbors Act), and activities authorized under the NYSDEC's Environmental Conservation Law that includes the Fresh Water Wetland Act, Article 24; The Stream Protection Act, Article 15; and the Water Pollution Control Act, Article 17, and other activities including enforcement actions may be eligible to use the DU-NY-ILF as compensatory mitigation. Credits may be sold to fulfill state requirements even if no Corps authorization is required. The District Engineer or the appropriate representative from the NYSDEC will determine the number of credits (wetland or stream) required to compensate for the authorized impacts. If an impact occurs outside of the DU-NY-ILF service areas, consideration can be given by the Corps or NYSDEC to allow the permittee to purchase credits from the closest ILF service area to the impact.

Upon Corps and NYSDEC (when required) approval of purchase of credits from the DU-NY-ILF, the permittee may contact DU to purchase the necessary credits as required in the DA and/or NYSDEC

permit conditions. The responsibility to provide compensatory mitigation remains with the permittee until payment is received by DU. DU assumes the legal responsibility for compensation requirements once the permittee purchases credits and transfers payment to DU. Credit sales are subject to availability. Credits can only be sold one time. DU reserves the right not to sell credits for any reason.

G. Credit Transaction Notification

Each Corps authorization that includes a special condition requiring purchase of credits from the DU-NY-ILF will include a requirement that DU certify the transfer of responsibility via written communication to the permittee and the Corps.

As sponsor, DU must submit a Credit Sale letter to the Corps once payment is received. The Credit Sale letter must be signed by DU and the permittee and dated. The Credit Sale letter must include the permit number(s) for which DU is accepting fees, the number of credits being purchased, and resource type(s) of credits being purchased, if applicable. DU must submit the signed and dated Credit Sale letter electronically to the Corps within 30 days of receiving payment from the permittee. A copy of each Credit Sale letter will be retained by DU as part of the administrative and accounting records. Credit sales will be reflected in annual accounting reports and on RIBITs. The same process will be followed if the wetland impact is not under Corps jurisdiction and is permitted by the NYSDEC and/or APA.

V In-Lieu Fee Program Account and Reporting

Upon Corps approval of the DU-NY-ILF program, DU will establish an ILF Program Account. The Program Account will be held at a financial institution that is a member of the Federal Deposit Insurance Corporation. Interest that accrues from the program account will be applied towards the management of the ILF program. Disbursements from the Program Account may only be made upon receipt of written authorization from the District Engineer. Funds for the operation of the ILF program and project development may be obtained from other sources and repaid as credits are sold.

As part of the overall Program Account, sub accounts will be established for each service area. The sub accounts will track deposits from the sale of credits and expenses associated with implementing ILF projects in accordance with 33 CFR 328.8 (i) (3). In service areas where DU has met all the mitigation obligations associated with specific credit sales, then DU may use any remaining funds to establish mitigation projects within the same or in a different ILF service area in advance of a credit sale or remaining funds may be used for conservation projects within the same or different service area subject to approval by the Corps districts and the IRT.

DU will maintain a system for tracking the production of credits, credit transactions, and financial transactions by service area and separated for each project within the respective service area. Information will be reported on RIBITS. DU will submit an Annual Program Report to the IRT no later than March 31st of each year and will include program data from the previous calendar year (January 1 – December 31). The Annual Report will include the following documents: summary sheet, income statement, expense statement, credit report summary, and the detailed credit report.

VI Modifications of Instrument

This Instrument may not be modified except by written agreement between DU and the Corps. Instrument modifications, including the addition ILF projects or service areas will generally follow the process outlined in Appendix V as detailed in 33 CFR 332.8(g) (1). The District Engineer may use a streamlined modification review process for changes reflecting adaptive management of the ILF program, credit releases, changes in credit releases, and credit release schedules, and changes that the District Engineer determines are not significant according to the terms detailed in 33 CFR 332.8(g) (2).

VII Other Provisions

Provision of Legal Responsibility

The legal responsibility for providing compensatory mitigation lies with the permittee until the permittee purchases credits from the DU-NY-ILF program. The transfer of liability from the permittee to DU is established by the submission of a credit sale letter signed by DU and the permittee and the transfer of fees from the permittee to DU. DU will assume the responsibility for all aspects of mitigation until the Site Closure Letter is issued. Upon the issuance of the Site Closure Letter, DU may transfer long-term management to a designated entity if such transfer is approved by the IRT.

Default

If the District Engineer determines that DU is in material default of any provision of the Instrument or an approved mitigation plan, the District Engineer may take appropriate action. Such actions may include, but are not limited to, suspending credit sales, decreasing available credits, directing funds to alternate locations, taking enforcement actions or terminating the Instrument. In the event that the DU-NY-ILF program is terminated, DU is responsible for fulfilling any remaining obligations for credits sold.

Instrument Closure Provisions

Closure procedures for either the entire ILF Instrument or a specific service area may proceed within thirty (30) days upon written notification by either the Buffalo and New York District Engineers or Ducks Unlimited. In the event that either the ILF Instrument or a specific service area is closed, DU is responsible for fulfilling any remaining obligations for credits sold prior to closure unless the obligation is specifically transferred to another entity as agreed to by the District Engineer and DU. DU shall be reimbursed from the ILF program account for all costs incurred in fulfilling the remaining obligations. The Corps may direct DU to use these funds to purchase credits from another source of third-party mitigation, or disburse funds to a governmental or non-profit natural resource management entity willing to undertake further compensation activities. The Corps itself cannot accept directly, retain, or draw upon those funds in the event of a default.

Any funds remaining in the program account after the mitigation obligations are satisfied must be used for the restoration and/or preservation of aquatic resources and associated upland buffers within the service area in which the funds reside unless otherwise approved by the District Engineer.

Force Majeure

DU or a grantee will not be responsible for ILF project failure that is attributed to natural catastrophes such as flood, fire, drought, or regional pest infestation that the District Engineer determines is beyond the reasonable control of DU to prevent or mitigate. DU shall bear the burden of demonstrating that the Force Majeure event was caused by circumstances beyond the control of DU and the damage is irreparable by any practical and reasonable means. The IRT has sole reasonable discretion to determine whether an event is a Force Majeure.

Dispute Resolution

Resolution of disputes between IRT members and the District Engineer shall be resolved in accordance with the terms detailed in 33 CFR 332.8 (e). Resolution of disputes related to overall program management or as it pertains to individual ILF projects, e.g. satisfaction of performance standards will be resolved between DU and the District Engineer in consultation with the IRT.

Validity of the Instrument

This Instrument will become valid on the latter date of the signature of DU and the Buffalo and New York Corps District Engineers. This Instrument may only be amended or modified with the written approval of the DU and the District Engineer.

Notice

Any notice required or permitted hereunder shall be deemed to have been given either (i) when delivered by hand, or (ii) three (3) working days following the date deposited in the United States mail, postage prepaid, by registered or certified mail, return receipt requested, or (iii) sent by Federal Express or similar next day nationwide delivery system, addressed as follows (or addressed in such other manner as the party being notified shall have requested by written notice to the other party):

District Engineer
U.S. Army Corps of Engineers - Buffalo District
1776 Niagara Street
Buffalo, NY 14207

District Engineer
U.S. Army Corps of Engineers - New York District
Jacob K. Javits Federal Building
26 Federal Plaza, Room 2109
New York, NY 10278-0090

Ducks Unlimited, Inc.
Chief Counsel
1 Waterfowl Way
Memphis, TN 38120-2351

Invalid Provisions

In the event that one or more of the provisions contained in this Instrument were developed inadvertently or with malicious intent and found to be invalid, illegal, or unenforceable in any respect, such invalidity, illegality or unenforceability will not affect any other provisions hereof, and this Instrument shall not be construed as invalid, illegal, or unenforceable.

Headings and Captions

Any paragraph heading or captions contained in this Instrument shall be for convenience of reference only and shall not affect the construction or interpretation of any provisions of this Instrument.

Binding

This Instrument shall be immediately binding upon DU and its successors, assignees and legal representatives upon signing by DU and the Buffalo and New York Corps.

Liability of Regulatory Agencies

The Buffalo and New York Corps, the NYSDEC, and signing IRT members that administer the ILF programs to protect wetlands and waterways and serve the public's interest will not guarantee the availability of credits to any entity, or ensure the financial success of the ILF program bank, specific individuals, or entities. The public should not construe this Instrument as a guarantee in any way that the IRT will approve sale of credits from the ILF program, or that the regulatory agencies will forgo other mitigation options that may also serve the public interest.

Right to Refuse Service

Corps or NYSDEC approval of purchase or transfer of credits from the DU-NY-ILF program does not signify DU's acceptance or confirmation of DU's offer to sell or transfer credits. DU reserves the right to refuse to sell or transfer credits from the DU-NY-ILF program for any reason.

VIII. Signatures:

Ducks Unlimited:

_____ Date: 9-6-12

Randy L. Graves C.A.O. Ducks Unlimited, Inc

Buffalo District Engineer:

for Diane C Krajewski Date: 19-Sep-2012

Owen J. Beaudoin, Lieutenant Colonel
Corps of Engineers

New York District Engineer

Thomas H. Creamer 28 Sep 12

"FOR AND IN BEHALF OF" Date: SEP 2 8 2012

Paul E. Owen, Colonel, U.S.Army Commander

Optional IRT Agency Signatures

New York State Department of Environmental Conservation

_____ Date: _____

US Fish and Wildlife Agency

_____ Date: _____

US Environmental Protection Agency

_____ Date: _____

Adirondack Park Agency

_____ Date: _____

Appendices

Appendix I Compensation Planning Framework:

The compensation planning framework adopts a landscape-watershed approach to selecting and implementing ILF projects that restore, enhance, establish or preserve aquatic resources under the DU-NY-ILF program. This framework and the Site Selection Key will be used to identify, evaluate, and screen potential ILF projects. The compensation planning framework includes the following required 10 elements:

I. Description of geographic service areas, including a watershed-based rational for the delineation of each service area
II. Description of the threats to aquatic resources and how the ILF program will help offset impacts resulting from those threats
III. An analysis of historic aquatic resource loss in the service areas
IV. An analysis of current aquatic resources conditions in the service areas
V. A statement of aquatic resource goals and objectives for each service area
VI. A prioritization strategy for selecting and implementing compensatory mitigation projects
VII. An explanation of how any preservation strategies may satisfy the criteria for use of preservation
VIII. A description of stakeholder involvement in plan development and program implementation
IX. A description of the long-term protection and management strategies for activities conducted by the ILF program sponsor
X. A strategy for periodic evaluation and reporting on the progress of the program

The mission of Ducks Unlimited is to conserve, restore, and manage wetlands and associated habitats that benefit wildlife and people. To achieve the mission, DU uses an ecosystem approach for conservation planning which is defined in our International Conservation Plan (ICP, www.ducks.org).

An ecosystem approach to conservation planning and delivery is consistent with the watershed approach that will be utilized to identifying and implementing ILF projects. A watershed approach allows for a step-down approach to conservation delivery in which the largest planning units are defined conceptually by watershed boundaries, whereas actual ILF projects will occur within specific service areas consistent with the compensation planning framework.

ILF projects that support restoration of a range of wetland types will contribute to the long-term conservation and management of critical habitats and associated wildlife species within the basin.

ELEMENT I: GEOGRAPHIC SERVICE AREAS INCLUDING A WATERSHED-BASED APPROACH FOR THE DELINEATION OF SERVICE AREAS

The DU-NY-ILF program will operate in the ten (10) service areas listed below. Nine of these service areas are sized at an 8 digit HUC scale. The St. Lawrence service area is comprised of eight smaller individual 8 digit HUCs. This service area has been split into two sub service areas labeled the western St. Lawrence and the eastern St. Lawrence. The western St. Lawrence includes the Upper St. Lawrence, Oswegatchie River, Indian River, and Grass River. The eastern St. Lawrence includes the Raquette River, St. Regis River, and English-Salmon River.

Service area	**Hydrologic Unit Codes (HUC)**
1. Black River	HUC 04150101
2. Buffalo-Eighteen Mile Creek	HUC 04120103
3. Conewango Creek	HUC 05010002
4. Irondequoit-Ninemile Creek	HUC 04140101
5. Lower Genesee	HUC 04140101
6. Niagara River	HUC 04120104
7. Oneida Lake	HUC 04140202
8. Oswego River	HUC 04140203
9. Seneca Lakes	HUC 04140201
10. St. Lawrence River (eastern) St. Lawrence River (western)	HUCs 04150305-8 HUCs 04150301-4

DU will mitigate for aquatic resource loss within the watersheds by completing projects in the same watershed where the impact occurred (e.g., a watershed approach) whenever possible. The type of impacts and watershed priorities will guide ILF project selection, plan development, and implementation. The service areas were selected based on the likelihood of future wetland and stream impacts. Furthermore, DU has a familiarity with these service areas based on mitigation project related work and DU's New York conservation program which has operated for more than 20 years.

ELEMENTS II, III, IV, AND V: INCLUDES DESCRIPTION OF THREATS TO AQUATIC RESOURCES, HISTORICAL AND CURRENT RESOURCES LOST IN EACH SERVICE AREA, AND STATEMENT OF GOALS AND OBJECTIVES.

As the ILF sponsor, DU will take into account the goals and objectives of watershed management plans and other conservation priority plans in identifying and implementing projects. While watershed and conservation plans can vary in their focus (e.g., water quality, biodiversity, and habitat restoration), the plans provide valuable information on conservation threats and strategies throughout the watersheds and on which agencies and conservation groups are leading the efforts. This section provides a description of watershed characteristics, threats and impacts, conservation planning, and watershed management goals by service area. ILF projects that support restoration of a range of wetland types will contribute to the long-term conservation and management of critical habitats and associated wildlife species within service areas.

Service Area 1 - Black River (HUC 04150101)

Watershed Characteristics

The Black River watershed is located in north central New York. It drains the western slope of the Adirondack Mountains and the eastern edge of Tug Hill, before entering into Lake Ontario. The Black River watershed is dominated by forest cover. Approximately half of the watershed boundary lies within the Adirondack Park. The entire watershed contains 3,910 miles of rivers and streams and over 600 lakes and ponds, including 179 significant freshwater lakes and reservoirs (NYSDEC 2010).

The Black River flows over 180 miles, encompasses 1,920 square miles, and is fed by the Beaver and Moose Rivers (NYSDEC 2009) and spans across Hamilton, Herkimer, Jefferson, Lewis and Oneida counties. The Black River, a designated Blueway Trail, is a major destination for scenic viewing, fishing and water-based recreation, including kayaking and rafting.

Threats and Impacts

Water quality threats and impacts are the result of 1) acid rain, 2) atmospheric deposition of mercury, 3) agriculture and other non-point sources, 4) and site-specific and rural community wastewater treatments in non-sewered areas (NYSDEC 2010). Within the Black River Basin, 21% of the river miles (806 miles) are listed as Priority Water bodies by NYSDEC (2010). There are 75 lakes on the Priority Waterbody List that have impaired uses or minor impacts. About 85% of all lakes are impaired by acid rain (NYSDEC 2009).

Anthropogenic changes caused by development (residential and commercial, roads, power lines), dredging, and wetland draining, in addition to natural changes such as forest succession have reduced both the habitat quantity and the habitat quality and disrupted the ecological functions of remaining habitat patches (NYSDEC 2010d).

Conservation Planning

The NYSDEC is implementing a Black River Watershed management plan. The purpose of the plan is to ensure that the resources in the Black River and its associated tributaries, lakes, and wetlands are protected and improved wherever possible. The goal of the Black River Comprehensive Strategy (NYSDEC 2010d) is to restore the chemical, physical and biological integrity of the ecosystem in a manner that reflects the communities concern for the preservation and protection of the watershed (EPA 2010). Implementation of the Black River Watershed management plan will assist in the protection and restoration of key habitats, improve water quality and ensure compatible land use development, helping to protect the River's natural resources (Bergmann Associates 2010).

Watershed Management Goals

(**Bold** represents watershed goals that ILF projects may support)

1) **Partnerships, collaborations, and education**: improve communication between groups, promote shared ownership, build partnerships, and provide a richer understanding of the water quality issues
2) Development, infrastructure and storm water management: reduce the adverse impacts from new development, reduce loading of nutrients, bacteria, and sediment into water bodies
3) Wastewater management: reduce nutrient loads
4) Agricultural practices and management: maintain viable agricultural land use, minimize negative impacts
5) **Floodplain management**: Improve preservation of riverine and lacustrine floodplains and shorelines, improve coverage and accuracy of floodplain delineation
6) Forestry practices: Ensure continued viability of the forestry practices, minimize negative impacts
7) **Invasive species control**: prevent establishment of invasive species
8) **Planning and land use**: ensure management plans and safe land use practices are in place

Characteristics of the Focus Areas in the Black River Watershed:

Key habitats in the Black River watershed include the Mainstream Black River Valley, Adirondack Mountains and foothills, Tug Hill Plateau, Lower Black River, wetland habitats, and cave systems. These areas serve as important ecological resources within the watershed and represent focus areas for management and restoration (Bergmann Associates 2010).

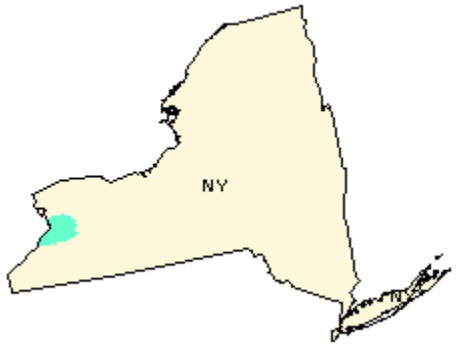
1) Mainstream Black River Valley: The mainstream central portion of the Black River is undammed and represents a contiguous stretch of river important to fish, game, and non-game species. The area also contains floodplain forests, uncommon plant communities, and wetlands.
2) Adirondack Mountains and foothills: The Adirondacks represent one the largest undeveloped areas in the northeast US. The area provides a variety of habitats from mature to early succession forests which support a variety of ecological communities.

3) Tug Hill Plateau: The Tug Hill Plateau represents another large area of undeveloped lands and provides many of the same ecological benefits as the Adirondacks.
4) Unforested upland habitat: the Black River Watershed supports many grassland and shrub-land habitats. These varying succession habitats support a variety of birds and mammals.
5) Lower Black River: The lower Black River is important to fisheries and provides habitat for nongame fish, such as spawning sturgeon.
6) Wetlands: The Black River supports a variety of wetland habitat which provide breeding and wintering habitat for many fish and wildlife species.
7) Caves: The limestone caves provide habitat for a variety of animals such as the federally-endangered Indiana Bat. *(Information adapted from Bergmann Associates 2010 and NYSDEC 2010)*

Examples of common, threatened, and endangered species, and species of special concern located within the watershed that may benefit from ILF projects include the following:

A) Common Species
   - Fish: Grass pickerel (*Eox Americanus vermicultatus*), Eastern silvery minnow (*Hybognathus hankinsoni*), Mimic shiner (*Notropis volucellus*)
   - Reptiles and Amphibians: redback salamander (*Plethodon cinereus*), spring peeper (*Hyla crucifer*), eastern milk snake (*Lampropelus triangulum*)
   - Mammals: white tailed deer (*Odocolieus virginianus*), beaver (*Castor Canadensis*)
   - Birds: herons, warblers, waterfowl, and water birds
B) Endangered Species
   - Black tern, round whitefish (*Prosopium cylindraeum*)
C) Threatened Species:
   - Lake Sturgeon (*Acipenser fulvescens*), Blanding turtle (*Emys blandingi*)
D) Species of Special Concern:
   - Brook Trout (*Salvelinus froninalis*), wood turtle (*Clemys insculpta*), golden-winged warbler (*Vermivora chrysoptera*)

Service Area 2 – Buffalo-Eighteen mile Creek (HUC 04120103)



Watershed Characteristics

The Buffalo Eighteen-mile Creek Watershed encompasses approximately 732 square miles and drains into portions of Erie and Wyoming Counties in western New York State. In the upper basin, the land use

patterns within the watershed are primarily agricultural and woodland. In the lower basin, there is greater residential and industrial real estate development (Great Lakes Commission 2009).

There are three sub-watersheds in the Buffalo Eighteen-mile Creek Watershed: the Cayuga, Cazenovia, and Buffalo.

- The Cayuga Creek watershed drains 126 square miles across Erie, Genesee, and Wyoming Counties, and supports protected remnants of original forest cover of about 400 contiguous acres.
- Cazenovia Creek watershed drains 138 square miles of southern Erie County, joining the Buffalo River about 6 miles above Lake Erie. The contiguous forest and aquatic communities remaining in Cazenovia Creek's headwaters have statewide significance. The topography is characterized by deposits of dense, fine-grained lacustrine clays. The stream channel is largely clay-lined, the water turbid, and the soils poorly drained. The northern portion of the watershed supports a diversity of habitats, including a mosaic of uplands and wetlands (Wooster and Matthier 2008). Riverine aquatic communities within the watershed include a mixture of large rivers and streams, headwater streams, intermittent streams, and springs (NYSDEC 2010d).
- The Buffalo River watershed supports a wide diversity of wildlife: fish species include pirate perch, gizzard shad, grass pickerel, striped shiner and horneyhead chub; at least 5 species of reptiles and amphibians, including eastern box turtle (special concern); 52 species of birds, including the short-eared owl (endangered), upland sandpiper and northern harrier (threatened), and American bittern, grasshopper sparrow and horned lark (special concern) (Gomez and Sullivan 2006).

Threats and Impacts

In the mid-1980s, the International Joint Commission (IJC) listed 42 "Areas of Concern" (AOCs), or severely degraded rivers and harbors across the U.S. - Canada Great Lakes basin which included the lower 6.2 miles of the Buffalo River (Wooster and Matthier 2008). This stretch of the Buffalo River, which is upstream from the mouth of Lake Erie and 1.4 miles from the City Ship Canal, is considered an AOC by NYSDEC because of the degradation of the aquatic resources, in part due to environmental impacts related to historic industrial activity. These impacts have contributed to the loss of fish and wildlife habitat and have impacted the macro-invertebrate community in the river.

Other sources of pollutants include wastewater facility discharge and other non-point source pollutants that have resulted in river contamination (e.g., mercury, PCBs, chromium). Stream bank erosion has facilitated further pollution of the Buffalo River (Great Lakes Commission 2009).

Habitat loss and fragmentation related from agricultural practices and real estate development is the most frequently cited threat to species groups occurring in the watershed (NYSDEC 2010c).

Conservation Planning

The NYSDEC has stated that restoration of fish and wildlife habitat is a primary conservation goal in the watershed (NYSDEC 2010f). The existing diversity of fish and wildlife species living in the watershed

underscores the potential for restoring wildlife and fisheries populations through conservation efforts. Watersheds along Lake Erie contain a greater amount of wetlands when compared to the majority of New York State. Therefore, wetland conservation in this basin should be considered a priority for habitat restoration and conservation objectives (NYSDEC 2010d).

Watershed Management Goals

Objectives for the Buffalo River Watershed are outlined in NYSDEC Comprehensive Wildlife Conservation Strategy for NY (NYSDEC 2010d):

(**Bold** represents watershed goals that ILF projects may support)

1) **Improved stability of stream banks**
2) **Minimize bank erosion**
3) Develop a management use plan for intense human-use areas
4) **Enhance existing aquatic habitat**
5) **Ensure long-term monitoring to ensure success**
6) Evaluate and assess habitat conditions for mammals, birds, herptofauna, and fish
7) **Invasive species control**
8) Update and maintain water treatment facilities
9) **Restore habitat connectivity**
10) **Improve stream quality**
11) **Restore hydrological functions that benefit habitat and wildlife and fish species**
12) **Maintain stream systems by protecting intact gorge landscapes and riparian buffers.**
13) **Protect and maintain Lake Erie and Niagara River near shore habitat and natural shoreline habitat, including beds of submerged and emergent aquatic vegetation**
14) **Restore priority habitats affected by land use practices.**
15) **Prevent further introductions of aquatic and terrestrial non-native invasive species.**
16) **Reduce pollution and siltation runoff into streams and tributaries.**
17) **Protect and maintain existing, functional core areas of mature forests**

Wildlife and associated Habitat Conservation Priorities

The ILF projects may support priority objectives for the watershed outlined by NYSDEC Comprehensive Wildlife Conservation Strategy for NY (2010d). A summary includes:

A) Early Succession Forest/Shrubland Birds: Maintain, restore, and enhance early succession habitats through the use of prescribed fire, mowing, and other management tools
B) Forest Breeding Raptors: Maintain appropriate breeding habitat for forest breeding raptors
C) Freshwater Marsh-Nesting Birds: Manage water levels in nesting areas to prevent nest loss for freshwater marsh-nesting birds, and optimize water and vegetation cover for waterfowl and turtles
D) Grassland Birds: Use mowing and/or prescribed fire to manage the vegetative structure of established grasslands
E) Beach and Island Ground-Nesting Birds and Transient Shorebirds: Reestablish high-quality transient shorebird foraging habitats by manufacturing sand flats, and mudflats

F) Lake and River Reptiles: Manage uplands adjacent to aquatic habitat and restore hardened shoreline areas to provide adequate and secure nesting sites and dispersal routes for migrating animals
G) Freshwater Fish: Restore in-stream and riparian habitat
H) Turtles: Manage adverse effects of habitat fragmentation
I) Freshwater Mussels: Restore degraded habitat sites to allow for recolonization or reintroduction of listed mussels
J) Lake and River Reptiles: Manage water-borne pollutants that adversely affect lake and river reptiles
K) Invasive species: Control and minimize the spread of invasive aquatic species

Service Area 3 - Conewango Creek (HUC 05010002)

Watershed Characteristics

The Conewango Creek Watershed has a total of 1,406 miles of river/streams in New York and Pennsylvania of which 781 miles are in New York, according to the NYSDEC. This watershed encompasses an area over 900 square miles. The Conewango Creek watershed covers much of southeastern Chautauqua County and southwestern Cattaraugus County. The Conewango Creek is a tributary of the Alleghany River. The majority of the landscape is covered with forest, wetlands, and streams, but agricultural lands are also common in the watershed. The watershed varies from the rugged, heavily wooded Allegheny Hills along the Pennsylvania border to the flatter lands in the north and west.

The predominant land-cover classifications are deciduous and mixed forest (67% combined) and agricultural lands (NYSDEC 2010d). The Conewango Creek Watershed has meandering river channels with substrates of clay and sand. The lower section and flooded backwaters have not been greatly impacted by agricultural activities (NYSDEC 2010d). According to NYSDEC data, wetland types in the watershed, recorded during the 1990s, were 59% forested, 22% scrub-shrub, 11% emergent, and 8% open water.

Threats and Impacts

Scrub-shrub and emergent wetlands have declined in the watershed, while open areas and forests have increased (NYSDEC 2010d). Similarly, upland and riparian buffers adjacent to stream corridors are

declining and there is a noticeable loss of aquatic habitats throughout the basin which in turn negatively impacts the diversity and populations of both fish and amphibian species (NYSDEC 2010d).

Overall, populations of marsh nesting birds, grassland birds, reptiles, and amphibians are also declining, while species that are associated with forested habitats are stable. The major environmental stressors in the Conewango Creek watershed are related to residential development, urban and industrial runoff, contaminants from abandoned and active oil and gas wells, non-point source pollution, agriculture, forestry practices, and gravel mining (NYSDEC 2010c).

The watershed has also seen a reduction in natural habitats and riparian buffer loss resulting in excessive nutrient and sediment loading (NYSDEC 2010d). Many of these impacts can be attributed to poor agricultural management, including livestock with unrestricted access to streams, improper manure application on fields, intensively cultivated crop lands with minimal riparian buffers, and fertilizer and pesticide application in the absence of approved management plans (NYSDEC (2009b).

Conservation Planning

The main watershed management goal for the Conewango Creek watershed is for the watershed to remain as one of the pristine areas of the state such that its rich diversity of habitat will support a diverse ecosystem of plant and wildlife species. Goals for habitat improvement are detailed in the plans such as the NYSDEC Wildlife Action Plan, the Natural Heritage Program, and TNC priority natural areas.

Watershed Management Goals

(**Bold** represents watershed goals that ILF projects may support)

1) Determine the status and trends of grasslands, early and late-succession forests, wetlands and aquatic habitats in the basin
2) **Set goals by habitat types**
3) **Monitor quality and quantity of habitat types**
4) Set nutrient and sediment reduction targets
5) Identify specific threats
6) **Establish normal stream flow and conditions**
7) Implement Best Management Practices for farming to reduce erosion, protect habitat, and reduce nutrient loading

Wildlife and associated Habitat Conservation Priorities:

The ILF projects may support priority objectives for the watershed outlined by NYSDEC Comprehensive Wildlife Conservation Strategy for NY (2010d). A summary includes:

A) Early Successional Forest/shrub land birds: Identify and provide high core habitats within the basin and priority avian species
B) Freshwater Marsh Nesting Birds: Manage water levels in nesting areas to prevent nest flooding, and optimize water and vegetation cover for waterfowl; Restore emergent marsh to benefit freshwater marsh nesting birds
C) Grassland Birds: Use mowing and/or prescribed fire to manage vegetative structure of established grasslands

D) Herp and fauna: Manage uplands adjacent to aquatic habitat to provide adequate and secure nesting sites and dispersal routes for migrating animals
E) Freshwater Bivalves: Evaluate threats to mussels and prioritize areas within the basin for remedial actions
F) Bats: High priority species are tree-roosting bats, eastern red and hoary bats; and the cave-roosting Indiana bat
G) Fisheries: Manage land use practices in riparian areas of the basin to foster buffer strip restoration and retention to minimize loss of stream cover

Service Area 4 - Irondequoit-Ninemile Creek (HUC 4140101)

Watershed Characteristics

The Irondequoit-Ninemile watershed is located along Lake Ontario and encompasses 708 sq. miles, according to the USGS. The watershed is located in a highly urbanized area. Portions of the watershed also occur in a rural setting, with considerable agricultural lands and forest tracts. The Irondequoit Creek encompasses 316 miles in Monroe, Ontario, and Wayne Counties. The watershed supports a diversity of plant and animal communities given the temperate climate, wide range of wetland and terrestrial habitats, and floodplain soils. A mix of herbaceous and woody vegetation provides robust riparian buffers.

Threats and Impacts

Habitat loss and fragmentation have impaired the watershed. Additional stressors have occurred from the discharge of chemicals into the tributaries and lakes of the watershed which have resulted in fish consumption advisories (NYS Comprehensive Wildlife Action Strategy). Similarly, nutrient runoff which leads to aquatic plant growth has impacted water quality of the near shore waters. The basin is currently home to at least 129 Species of Greatest Conservation Need, representing 24% of the total Priority Species. Threats to the watershed include (**bold** text refers to threats that ILF projects might address):

A) **Habitat fragmentation**: over half the land throughout the basin has been altered by human activities and fragmentation is a substantial threat to terrestrial species
B) Energy developments: damming of rivers and streams for hydropower has had a lasting negative effects on aquatic habitats
C) **Water level fluctuations**: diminished habitat quality for marsh-nesting birds, warm water fish, and other species

D) **Contaminants**: the level of contamination depends on the land uses surrounding the lakes and the discharges to the lakes and their tributaries, such as sewage, heavy metals, phosphorus loading, PCBs, mercury
E) **Exotic/invasive** species: the basin is home to several invasive plants and animals such as zebra mussels (*Dreissena polymorpha*), Purple loosestrife (*Lythrum salicaria*), and double-breasted cormorants (*Phalacrocorax auritus*)

Conservation Planning

Several species of concern can be found throughout the watershed such as the Chittenango ovate amber snail and the Indiana bat (*Myotis sodalist*), both of which are federally listed species. Similarly, the bog turtle (*Glyptemys muhlenbergii*), anther threatened species can be found in the watershed (NYSDEC 2010d). The NYSDEC compiled a list of critical habitats that support the life-history stages of the priority species which include:

A) Terrestrial open-upland systems: Grasslands, lakeside beaches, and cliffs provide critical nesting habitat for grassland birds, foraging areas for raptors, and habitat for many species of butterflies and adult odonates
B) Forested lands: Forests provide critical breeding habitat for deciduous/mixed forest breeding birds, early successional forest/shrubland birds, and forest breeding raptors
C) Lakes and streams: emergent wetlands and wooded wetlands provide habitat for freshwater marsh-nesting birds, turtles and amphibians
D) Warm water, cold water, still and flowing waters: A wide variety of animals from birds to fish to insects are found in the open waters of lakes in the basin
E) Barrier beaches and sand dunes, seasonal mudflats, and some agricultural lands: These habitats provide habitat for migrating shorebirds

Watershed Management Goals

(**Bold** represents watershed goals that ILF projects may support)

1) **Protection and enhancement of sensitive natural areas and resources**
2) **Improve and protect water quality for desired uses which emphasize a healthy ecosystem**
3) Ensure development around the watershed without impacting significant resources (e.g., environmental, historical, archeological)
4) Minimize and resolve water surface use conflicts among stakeholders
5) Improve public access for recreational opportunities
6) **Manage land use practices to produce long-term benefits for species of conservation concern**
7) **Identify, manage, protect, maintain, and restore habitat/natural communities over as broad of a spatial scale as possible**
8) **Work with land managers to incorporate wildlife-based objectives into traditional land management activities such as forestry and agriculture**
9) **Identify specific and appropriate focus areas for grassland bird conservation**
10) Water level management in lakes, the canal system, and at numerous dams
11) Update the federal recovery plan to guide establishment of additional endangered species

12) **Manage invasive plant species to enhance habitats**
13) **Maintain or increase the amount of early successional forest and shrublands**
14) **Increase capabilities for water level management, especially for wetlands**

Service Area 5 - Lower Genesee (HUC 04130003)

Watershed Characteristics

The Lower Genesee Watershed is part of the overall Genesee River Basin which encompasses 2,500 square miles of New York. The watershed contains 24 separate sub-watersheds. The watershed's primary drainage channel (i.e., the Genesee River) travels through highly industrialized portions of Rochester before entering Lake Ontario (USACE 2004). The Lower Genesee Watershed encompasses 1,070 square miles.

There are approximately 31 lakes, ponds, and reservoirs within the watershed of which 9 are listed as priority water bodies, as reported on the New York State Water Quality Monitoring Strategy. Priority water bodies are defined as waters that have documented water quality impacts, impairments, or threats (Genesee/Finger Lakes Regional Planning Commission 2004).

Wetland habitats in Lower Genesee Watershed include wooded swamps, emergent marshes, wet meadows, riparian and linear wetlands, and open water habitats. The majority of the wetlands are located in the central and northern portions of the watershed. THE NYSDEC reports that only 2% of the watershed is composed of wetlands and open water habitats (NYSDEC 2010d).

New York Natural Heritage Program has designated certain areas of the watershed as priority areas for preservation (NYSDEC 2010d). The watershed also has statewide significance for a variety of other priority species including marsh birds, riparian tiger beetles, Eastern massasauga rattlesnakes (*Sistrurus catenatus catenatus*), and western chorus frogs (*Pseudacris triseriata*) (NYSDEC 2010d).

Threats and Impacts

Impacts to the Genesee River and Lower Genesee Watershed are caused by nutrient loading from pesticide use in agriculture, stream bank erosion, stormwater run-off, and hydrological modifications. Additional environmental stressors in the watershed result from residential and commercial

development. The most frequently cited threats to species groups occurring in the watershed are caused by construction related to new buildings, road ditches, and roads (NYSDEC 2010c).

Conservation Planning

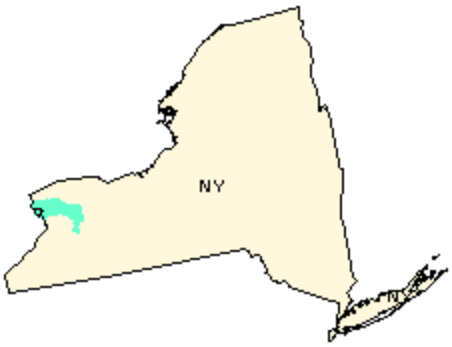
Management goals for the Genesee River watershed are based on short and long-term goals to target the primary pollutant sources (see Genesee River watershed Action Strategy; Genesee/Finger Lakes Regional Planning Commission 2004).

Watershed Management Goals

(**Bold** represents watershed goals that ILF projects may support)

1) **Stream bank erosion**: Initiate the Genesee River Watershed Sediment Transport Model, stream bank inventories, structural and regulatory controls, and bioengineering to reduce erosion
2) Storm water run-off: Develop management programs and compliance measures for all counties
3) **Hydrological and Habitat Management**: apply the Genesee River Watershed Sediment Transport Model, develop watershed plans to improve wetlands and riparian habitats
4) Wastewater Treatment Systems: public outreach programs and routine inspections
5) Municipal Drainage/Industrial Discharge: Full compliance and improvements related to facilities
6) Toxic and Contaminated Sediments: Develop an innovative strategy with agencies to remove contaminants
7) Determine the current and historical extent of grasslands, early successional and shrub, deciduous/mixed forest cover, and wetlands in the basin
8) **Conduct habitat mosaic planning and set target goals for these habitat types**
9) **Maintain and improve stream systems by protecting and enhancing riparian buffers**
10) **Maintain and improve priority conservation areas for priority species**
11) **Reduce pollution and siltation runoff into streams and tributaries**
12) **Prevent further introductions of aquatic and terrestrial non-native species**
13) **Monitor the quality and quantity of habitats on a 10-year rotational cycle**
14) **Identify key areas for acquisition, restoration, and/or other means of protection**

Service Area 6 – Niagara River (HUC 04120104)



Watershed Characteristics

The Niagara River Watershed is located in western New York near Buffalo and encompasses 774 sq. miles. Historically, productive marshes were used by resident and migrating wildlife for feeding,

breeding, and wintering habitat along the Niagara River. Over 80 species of fish have been reported in the Niagara River. However, industrial development has significantly altered the landscape, reducing wetland habitat and degrading water quality (NYSDEC 2007). There has been a loss of scrub-shrub and emergent marsh systems in the watershed such that wetland conservation in the Niagara River Watershed is a priority objective for the NYSDEC (2010d).

The Niagara River Islands and the river corridor serve as a major north-south flyway for migrating birds (Wooster and Matthier 2008). Historical reports from the NYSDEC indicate that the shoreline areas once contained massive beds of aquatic plants. Species included wild celery (*Vallisneria americana*), four species of pondweed (*Potmogeton Richardsonii, P.gramineus* and var. *graminifolius,* and *P. pectinatus*), and *Chara* or stonewort (Wooster and Matthier 2008).

Threats and Impacts

The most frequently cited threat to both aquatic and terrestrial species groups occurring in the watershed is loss of habitat loss and fragmentation from development. This threat includes 'hardening' of the landscape from the construction of buildings and roads as well as activities associated with land-clearing and wetland draining for agriculture and mining (NYSDEC 2010d).

Major water quality concerns in the watershed include 1) industrial discharge, 2) urban storm water and sewer overflow, 3) stream bank erosion, and 4) agricultural and other non-point sources of nutrient and various other pollutants (NYSDEC 2007).

The Water Quality Summary provided by NYSDEC (2007) reported that one-fourth of the river miles in the Niagara River watershed (1,216 miles) are listed as Priority Water bodies and have been identified as either "not supporting designated activities and uses" or having impacts or threats to the water quality. Agriculture, sediment contamination, and failing on-site septic systems are likely causes of the impairments.

Conservation Planning

The primary goal for the Niagara Watershed is to ensure the quantity and quality of essential habitats via the following:

*Priority objectives for the watershed are outlined by NYSDEC Comprehensive Wildlife Conservation Strategy for NY (2010d); **bold** represents watershed goals that will benefit from the NY-ILF program.*

1) **Improve water quality**
2) **Reduce and improve contaminated river sediments**
3) **Reduce point-source pollutants control**
4) **Improving fish and wildlife habitat**
5) **Establish Long-term monitoring**
6) Improve Waste water treatment facilities
7) Improve Human health
8) **Maintain stream systems by protecting intact gorge landscapes and riparian buffers**
9) **Protect and maintain Lake Erie and Niagara River near shore habitat and natural shoreline habitat, including beds of submerged and emergent aquatic vegetation**
10) **Improve connectivity and habitat function of protected areas in the basin**

11) **Restore priority habitats affected by land use practices**
12) **Prevent further introductions of aquatic and terrestrial non-native invasive species**
13) **Reduce pollution and siltation runoff into streams and tributaries**
14) **Protect and maintain existing, functional core areas of mature forest**

Priority Habitats for Protection

Defined by NYSDEC (2010d) and Wooster and Matthier (2008):

A) Riparian Buffers
B) Wetland habitat
C) Costal habitats
D) River and streams
E) Buffalo Harbor (including lakefront above and below mouth of the Buffalo River, break walls and Bird Island Pier)
F) Contiguous forest habitat

Wildlife and associated Habitat Conservation Priorities

Priority objectives for the watershed outlined by NYSDEC Comprehensive Wildlife Conservation Strategy for NY (2010d) may benefit from the ILF projects:

A) Early Successional Forest/Shrubland Birds: Maintain, restore, and enhance early successional habitats through the use of prescribed fire, mowing, and other management tools
B) Forest Breeding Raptors: Maintain appropriate breeding habitat for forest breeding raptors
C) Freshwater Marsh-Nesting Birds: Manage water levels in nesting areas to prevent nest loss for freshwater marsh-nesting birds, and optimize water and vegetation cover for waterfowl and uncommon turtles of wetlands
D) Grassland Birds: Use mowing and/or prescribed fire to manage the vegetative structure of established grasslands
E) Beach and Island Ground-Nesting Birds and Transient Shorebirds: Re-establish high-quality transient shorebird foraging habitats
F) Lake and River Reptiles: Manage uplands adjacent to aquatic habitat and restore hardened shoreline areas to provide adequate and secure nesting sites and dispersal routes for migrating animals
G) Freshwater Fish: Restore in-stream and riparian habitat
H) Uncommon Turtles of Wetlands: Manage adverse effects of habitat fragmentation
I) Freshwater Mussels: Restore degraded habitat sites to allow for recolonization or reintroduction of listed mussels
J) Lake and River Reptiles: Manage water-borne pollutants that adversely affect lake and river reptiles
K) Invasive species: Control and minimize the spread of invasive aquatic species

Service Area 7 - **Oneida Lake (HUC 04140202)**

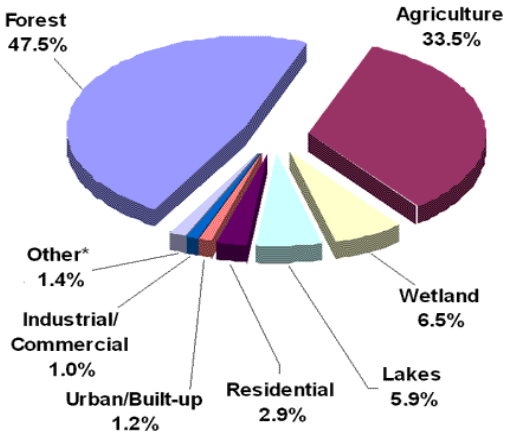
Watershed Characteristics

The Oneida Lake Watershed includes 69 municipalities and encompasses a total of 1,470 sq. miles. Surface and ground water from this watershed drain into Oneida Lake (Central New York Regional Planning and Development Board [CNYRPDB] 2010). Oneida Lake is the largest water body located entirely within New York State and the lake is shallow and nutrient rich (Harrington 2001). In this watershed, there are 2,330 miles of rivers and 428 lakes totaling 66,391 acres. The watershed was once part of a vast forest system covering much of the region, but today about 80% of the watershed is covered with second growth forest (Oneida Lake and Watershed Advisory Council 2004).

The Oneida watershed provides habitat for a highly productive warm water fish, migratory and resident waterfowl, various NYSDEC priority species, and is a valuable recreational resource for New York. Oneida Lake has islands, shoals, and marshes that provide nesting and nursery habitat for many aquatic and semi-aquatic species. The watershed historically supported Atlantic salmon, lake sturgeon, and American eel populations (NYSDEC 2010d). The watershed also supports a small population of Eastern massasauga rattlesnakes and bog turtle.

Threats and Impacts

Wetlands in the watershed have been significantly reduced by development and agriculture. These losses have resulted in a reduced ability of the watershed to filter nutrient and sediment pollutants, temper water levels during periods of high precipitation, and provide habitat for wildlife. Wetlands and slow-flowing streams which characterize much of the region are susceptible to flooding due to the flat terrain (Harrington 2001). Continued development and land use change poses the greatest threat to the remaining natural areas (NYSDEC 2010). This growth in this watershed coincides with locations of some of the most sensitive habitats and the rare species that depend upon them.



Land use in Oneida Lake watershed (NYSDEC 2010f)

Current threats to the watershed (NYSDEC 2010d):

(**Bold** indicates threats that ILF projects may help address)

A) **Habitat fragmentation**: over half the land throughout the basin has been altered by human activities
B) Energy developments: damming of rivers and streams for hydropower has had a lasting negative effects on aquatic habitats
C) **Water level fluctuations**: diminished habitat quality for marsh-nesting birds, warm water fish and other species
D) Human disturbance: habitat degradation through extensive use
E) **Contaminants and degradation of water quality**: nature of the contamination depends on the land uses surrounding the lakes and the discharges to the lakes and their tributaries, such as sewage, heavy metals, phosphorus loading, PCBs, mercury
F) **Exotic, invasive,** and over abundant species: several invasive plants and animals of concern in this basin, including aquatic and terrestrial, for example, zebra mussels (*Dreissena polymorpha*), Purple loosestrife (*Lythrum salicaria*), double-breasted cormorants (*Phalacrocorax auritus*)
G) **Habitat loss and degradation:** loss of critical habitat as a result of development

Conservation Planning

The Central New York Regional Planning and Development Board (CNYRPDB) is leading the implementation of the Oneida Lake Watershed Management Plan as a regional initiative. This presents an opportunity for local governments and stakeholders to identify and prioritize issues of concern in the watershed and to select restoration and enhancement goals for the long-term protection of water resources (CNYRPDB 2004).

Watershed Management Goals

(**Bold** represents watershed goals that ILF projects may support)

1) Cooperation among organizations, pool services, and enhanced communication
2) Ability to prioritize projects to develop ecologically based, cost effective solutions
3) Increase recreational opportunities
4) **Increase biodiversity**

5) Expand economic potential for watershed residents
6) Improve opportunities for research grants
7) Water resource goals are established as grassroots, locally based
8) Improve watershed riparian zones
9) Reduce impacts of invasive species
10) Implement a comprehensive management plan
11) Better protection and enhancement of sensitive natural areas and resources
12) Improve and protect water quality for desired uses which emphasize a healthy ecosystem
13) Ensure development around the watershed without impacting significant resources (e.g., environmental, historical, archeological)
14) Minimize and resolve water surface use conflicts and conflicts among stakeholders
15) Manage animals, habitats, and land use practices to produce long-term benefits for species of conservation concern
16) Identify, manage, protect, maintain, and restore habitat/natural communities over as broad a spatial scale as possible
17) Work with land managers to incorporate wildlife-based objectives into traditional land management activities such as forestry and agriculture
18) Identify specific and appropriate focus areas for grassland bird conservation
19) Water level management in lakes, the canal system and at numerous dams
20) Update the federal recovery plan to guide establishment of additional endangered species
21) Maintain or increase the amount of early successional forest and shrublands
22) Increase capabilities for water level management, especially for wetlands
23) Restore degraded emergent marshes
24) Manage uplands adjacent to aquatic habitats used by lake and river reptiles to maintain necessary linkages between the two for nesting and dispersal habitat

Priority Land Acquisition and Protection (NYSDEC 2010f):

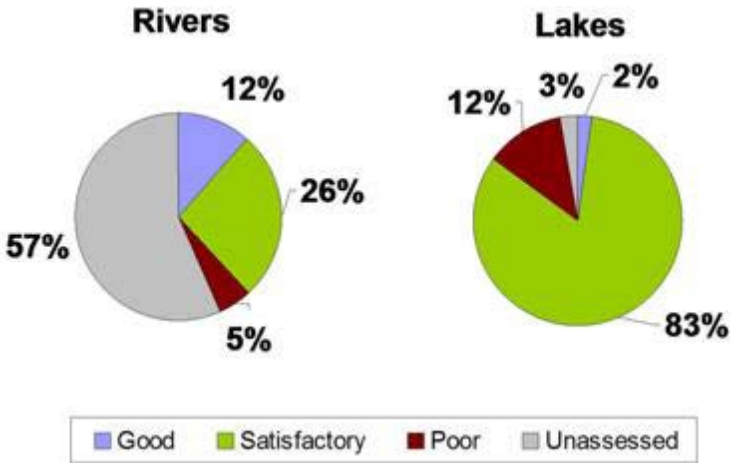
A) Conservation of private agricultural lands that are suitable for management of grassland dependent priority species
B) Private working forest lands (of various ages and composition) that support priory species
C) Riparian habitat to buffer stream and lake habitats
D) Acquire core habitats for cerulean warblers
E) Acquire known critical habitats for bog turtles
F) Target management and protection on land identified in the NYSDEC Open Space Plan (e.g., North shore of Oneida Lake wetland parcels in Toad Harbor and Big Bay swamps, Cicero wildlife management area)

Service Area 8 - Oswego River (HUC 04140203)

Watershed Characteristics

The Oswego River Watershed is located on the southeastern shore of Lake Ontario and includes the harbor area and the lower segment of the Oswego River up to the Varick power dam. This watershed is one of several watersheds that are part of the larger Finger Lake region. The watershed encompasses 131 sq. miles (Great Lake Commission). The harbor is characterized as a multiple-use resource. The NYSDEC (2010i) also characterized the Oswego River Basin as largely rural, with considerable agricultural lands as well as tracts of forest and woodland. The Oswego River is second only to the Niagara River in size as a tributary to Lake Ontario.

The watershed supports a diversity of plant communities as a result of the temperate climate, wide range of wetland and terrestrial habitats, nutritious limestone bedrock, and floodplain soils. A mix of herbaceous and woody vegetation provides robust riparian buffers. The watershed is home to the Chittenango ovate amber snail and the Indiana bat, both of which federally listed species. Similarly, the bog turtle a federally threatened species and the Atlantic salmon are found in the watershed (NYSDEC 2010d).



Oswego Watershed water quality in rivers and lakes (chart from NYSDEC 2010i).

Threats and Impacts

The Oswego River has been listed as an Area of Concern (AOC) by the EPA. There are two major water quality issues in the watershed. The first issue of concern relates to impacts associated with industrial activity, municipal discharges, and urban runoff (NYSDEC 2010i). The second issue has to do with the protection of the water resources from various point and non-point sources of pollution (NYSDEC 2010i).

Conservation Planning

The NYSDEC has compiled a list of critical habitats that support the life-history stages of the priority species and as a result NYSDEC has identified priority conservation areas, which include:

A) Terrestrial open-upland systems: Grasslands, lakeside beaches, and cliffs provide critical nesting habitat for grassland birds, foraging areas for raptors, and habitat for many species of butterflies and adult odonates
B) Forested lands: Forests provide critical breeding habitat for deciduous/mixed forest breeding birds, early successional forest/shrubland birds, and forest breeding raptors
C) Lakes and streams: lakes have emergent wetlands and wooded wetlands that provide habitat for freshwater marsh-nesting birds and for many turtles and amphibians
D) Warm water, cold water, still and flowing waters: A wide variety of animals from birds to fish to insects are found in the open waters of lakes in the basin

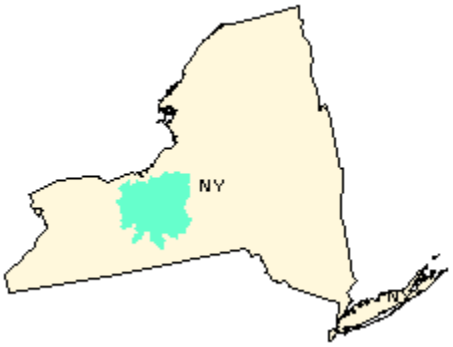
Watershed Management Goals

(**Bold** represent goals that will be addressed by the DU-NY-ILF program)

1. Hazardous waste site remediation
2. Comprehensive contaminated sediment management strategy
3. Point source discharge control
4. Non-point source pollution control
5. Air pollution control
6. **Fish and Wildlife Assessments/Actions**
7. Health and Environmental Assessments/Actions
8. Investigations and Monitoring Activities
9. **Better protection and enhancement of sensitive natural areas and resources**
10. **Improve and protect water quality for desired uses which emphasize a healthy ecosystem**
11. Ensure development around the watershed without impacting significant resources (e.g., environmental, historical, archeological)
12. Minimize and resolve water surface use conflicts and conflicts among stakeholders
13. Improve public access to a diversity of recreational opportunities
14. **Manage animals, habitats, and land use practices to produce long-term benefits for species of conservation concern**
15. **Identify, manage, protect, maintain, and restore habitat/natural communities over as broad a spatial scale as possible**
16. **Work with land managers to incorporate wildlife-based objectives into traditional land management activities such as forestry and agriculture**
17. **Identify specific and appropriate focus areas for grassland bird conservation**
18. Water level management in lakes, the canal system and at numerous dams

19. Update the federal recovery plan to guide establishment of additional endangered species
20. **Manage invasive plant species to enhance habitats**
21. **Maintain or increase the amount of early successional forest and shrublands**
22. **Increase capabilities for water level management, especially for wetlands**

Service Area 9 - Seneca Lakes (HUC 04140201)



The Seneca Lakes Watershed is part of the Finger Lakes – Ontario Basin which encompasses 3,430 sq. miles (Great Lakes Commission) and includes eleven glaciated lakes. There are twenty-nine sub-watersheds and direct drainages associated within the Seneca Lake watershed which drains the Oswego, Oneida, Seneca and Clyde Rivers. The watershed is one of the largest in the state, draining 5,070 square miles (NYSDEC 2010i). There are about 8,896 miles of rivers and streams (and canals) and over 400 lakes and ponds (NYSDEC 2010i). The lakes and principal tributaries on the southern edge of the region drain more than one quarter of the watershed.

Historically, the Seneca Lake Watershed was dominated by a mixture of northern hardwood and softwoods (Genesee/Finger Lakes Regional Planning Commission 2007) but land conversion resulted in a conversion of forested land to agriculture. However, as agricultural lands become abandoned, many formerly cleared lands have reverted back to forests.

Threats and Impacts

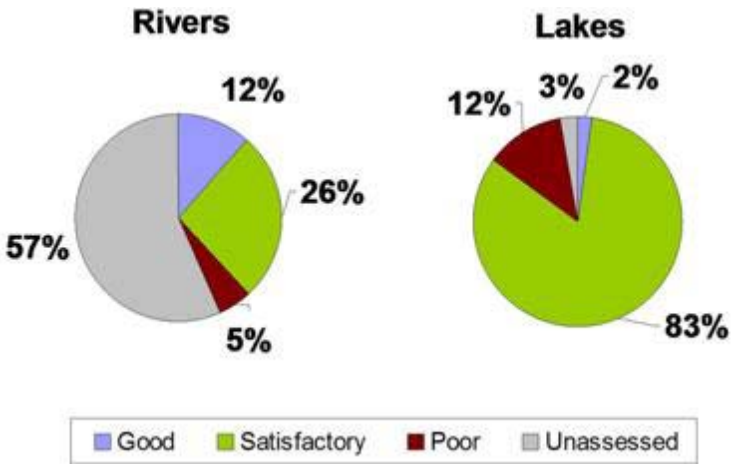
There are several water quality concerns in the watershed. The first issue is pollution associated past industrial activity, municipal discharges, and urban runoff. The second issue is the protection of the water resources provided by the Finger Lakes from various point and non-point sources of pollution (NYSDEC 2010i). Additionally, invasive species such as the Eurasian water milfoil (*Myriophyllum spicatum*) and zebra mussels (*Dreissena polymorpha)* have impacted the Seneca Lake Watershed.

Current threats to the watershed (NYSDEC 2010i):

(**Bold** indicates threats that ILF projects may minimize)

A) **Habitat fragmentation**: over half the land throughout the basin has been altered by human activities and fragmentation
B) Energy development: damming of rivers and streams for hydropower has negatively impacted the aquatic habitats

C) **Water level fluctuations**: diminished habitat quality for marsh-nesting birds, warm water fish, and other species
D) Human disturbance: habitat degradation through extensive use of natural areas
E) **Contaminants and degradation of water quality**: types of contamination varies based on the land uses adjacent to the lakes and discharges to the lakes and their tributaries
F) **Exotic, invasive, and over abundant species**: there are several invasive plants and animals of concern in this basin, including aquatic and terrestrial, for example, zebra mussels (*Dreissena polymorpha*), Purple loosestrife (*Lythrum salicaria*), and double-breasted cormorants (*Phalacrocorax auritus*).
G) Agricultural runoff and other non-point pollutants



Water quality assessment of the Finger Lakes Region (Seneca Lakes), NYSDEC 2010i.

Conservation Planning

The watershed supports approximately 178 species that are listed on NYSDEC species of greatest conservation need, 49 of which are thought to be extirpated from the watershed. Management and conservation objectives for the watershed target animals, habitats, and land use practices to produce long-term benefits for species of conservation concern (NYSDEC 2010d). Protection of wetlands not currently covered by Article 24 regulations is also a primary objective for the watershed (NYSDEC 2010d). A focus area identified by NYSDEC in the watershed is the Montezuma wetland complex which is an area of state-wide significance.

The NYSDEC has compiled a list of critical habitats that support the life-history stages of the priority species, and as a result NYSDEC has identified priority conservation areas, which include:

A) Terrestrial open-upland systems: Grasslands, lakeside beaches, and cliffs: provide critical nesting habitat for grassland birds, foraging areas for raptors, and habitat for many species of butterflies and adult odonates
B) Forested lands: Forests provide critical breeding habitat for deciduous/mixed forest breeding birds, early successional forest/shrubland birds, and forest breeding raptors

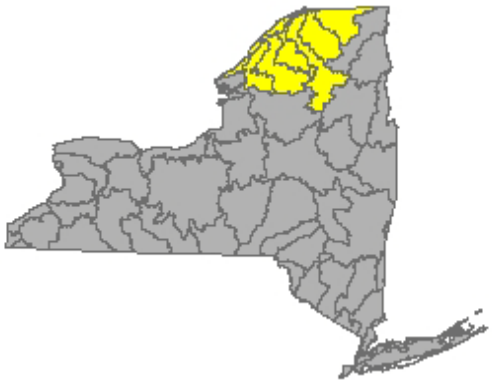
C) Lakes and streams: lakes have emergent wetlands at their fringes and there are extensive wooded wetlands provide some of the best and most extensive habitat for freshwater marsh-nesting birds and are critical for many turtle and amphibians
D) Barrier beaches and dunes, and mudflats: provide critical habitat for migrating shorebirds
E) Warm water, cold water, still and flowing waters: A wide variety of animals from birds to fish to insects are found in the open waters of lakes in the basin
F) Wetlands: emergent and shrub wetlands adjacent to stream, rivers and lakes.

Watershed Management Goals

(**Bold** represents watershed goals that ILF projects may support)

1) Agriculture: agricultural best management practices
2) Forestry: watershed stream-side management plans (e.g., STMZ), and sustainable forestry management plan
3) Roads: best management practices to control pollutants on roads and ditches
4) **Stream bank stabilization**
5) Public education
6) Storm water, erosion, and sediment control and management
7) Development of a comprehensive watershed management plan
8) Identification and reduction of containment loading
9) **Increased riparian buffers**
10) **Better protection and enhancement of sensitive natural areas and resources**
11) **Improve and protect water quality for desired uses which emphasize a healthy ecosystem**
12) Ensure development around the watershed without impacting significant resources (e.g., environmental, historical, archeological)
13) Minimize and resolve water surface use conflicts and conflicts among stakeholders
14) Improve public access to a diversity of recreational opportunities
15) **Manage animals, habitats, and land use practices to produce long-term benefits for species of conservation concern**
16) **Identify, manage, protect, maintain, and restore habitat/natural communities over as broad a spatial scale as possible**
17) **Work with land managers to incorporate wildlife-based objectives into traditional land management activities such as forestry and agriculture**
18) **Identify specific and appropriate focus areas for grassland bird conservation**
19) Water level management in lakes, the canal system and at numerous dams
20) Update the federal recovery plan to guide establishment of additional endangered species
21) **Manage invasive plant species to enhance habitats**
22) **Maintain or increase the amount of early successional forest and shrublands**
23) **Increase capabilities for water level management, especially for wetlands**

Service Area 10: St. Lawrence River – Eastern and Western (HUCs 04150301-04150308)



Note: map does not show split b/w eastern and western watershed

Watershed Characteristics

The St. Lawrence River Watershed lies at the border of New York and Canada. Within New York, the watershed drains the northern and western Adirondack Mountains and the lake plain region of the St. Lawrence Valley (NYSDEC 2009c). The St. Lawrence service is comprised of eight 8 digit HUCS that encompasses all of St. Lawrence county, most of Franklin, Jefferson, Lewis, Herkimer, and Hamilton counties, and a small part of western Essex and Clinton counties. The entire service area covers 5,600 square miles of land in New York (NYSDEC 2010g). There are 11,371 miles of freshwater rivers and streams, 376 significant freshwater lakes, ponds, and reservoirs, and 185 miles of St. Lawrence shoreline (NYSDEC 2010g). The service area will be divided into an Eastern and Western sub-service area as noted in the Section I Program Service Area.

The land use in the watershed is split between dense forested woodlands in the northern and western Adirondack Mountains and flat agricultural lands along the lake plain (NYSDEC 2009c). The major economic activities in the watershed are agriculture, logging, mining, and recreation/tourism (NYSDEC 2009c).

The Thousand Islands section (northwestern Jefferson County and southwestern St. Lawrence County) is comprised of numerous islands, shoals, and channels. The middle corridor (St. Lawrence County) is narrow and supports mostly riverine systems. The watershed provides spawning grounds for fish, nesting habitat and migratory corridor for birds, raptors, and waterfowl, and habitat for amphibians, invertebrates, and other species of conservation concern (NYSDEC 2010d).

Threats and Impacts

The atmospheric deposition of pollutants such as acid rain and mercury which originate outside the basin negatively impacts the water quality. Similarly, the water quality is affected by agricultural practices and industrial development. Acid rain and mercury deposition limit fish consumption and aquatic life, and poor agricultural practices and run-off contribute to nutrient and sediment loading in the waterways (NYSDEC 2010e).

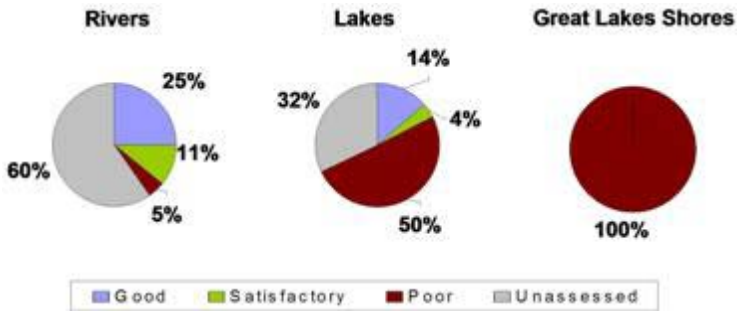
Impacts from agricultural activities are also frequently cited in this vary rural and agriculturally intensive area. Hazardous wastes and other industrial impacts associated with resource extraction are also a concern in specific areas.

Current Watershed Threats (NYSDEC 2010d):

(**Bold** represents threat that will be targeted by the DU-NY-ILF program)

- **A) Habitat loss and fragmentation**
- **B) Degraded water quality**
- C) Atmospheric deposition
- **D) Altered hydrology**
- **E) Invasive species**
- F) Incompatible silviculture and agriculture practices
- G) Human-wildlife interactions
- H) Climate change

The chart below show the quality of the St. Lawrence (Saint Lawrence River Basin Waterbody Inventory/Priority Waterbodies Report, issued as a Final Draft Report in February 2009).



Good water quality*: Fully Supports designated activities and uses*
Satisfactory*: Fully supports designated activities and uses, but with minor impacts*
Poor (Impaired)*: Does not support designated uses and activities*
Unassessed*: Insufficient data available (*NYSDEC 2010e)

Conservation Planning

About fifteen percent of the 11,371 river miles in the St. Lawrence Watershed are included on the NYSDEC Priority Water bodies list and are considered stressed or threatened (NYSDEC 2009c). Sixty-nine percent of the 376 lakes in the watershed are included on the Priority list.

The NYSDEC has identified critical habitat for priority conservation (NYSDEC 2010d). In order to be designated a priority habitat, priority species must be present during one life stage or the habitat must face significant threat due to current land use trends in the watershed (i.e., wetland habitat protected from drainage for agriculture). Priority habitats identified by the NYSDEC for the St. Lawrence watershed will be targeted for the ILF projects, these habitats and their associated priority species include the

following (information below was adapted from NYSDEC comprehensive wildlife conservation strategy 2010d):

A) Forested habitats: Include lowland deciduous, evergreen, and mixed forests. Predominant vegetation types in this region are beech-maple forest, hemlock northern hardwood forest, and spruce-fir forests. The forest habitats support a diversity of mammals, such as marten (*Martes Americana*) and fisher (*Martes pennanti)*
B) Early succession habitats: Support a host of early successional birds such as Canada warbler (*Wilsonia canadensis*), ruffed grouse (*Bonasa umbellus*), and American woodcock (*Scolopax minor*); raptors, such as long-eared owl (*Asia outs*), and forest interior birds
C) Wetlands: Areas of particular concern are wetlands embedded in a forest matrix, wooded wetlands, bogs, wooded swamp/bottomland forest, shrub swamps, wetlands in a grassland matrix, vernal pools, and coastal wetlands. These wetland habitats support wetland birds such as American bittern (*Botaurus lentiginosus*), least bittern (*Ixobrychus exilis*), and pied-billed grebe (*Podilymbus podiceps*). Marsh and vernal pool habitats also support herpetofauna such as blue-spotted salamander (*Ambystoma laterale*). These habitats also provide critical breeding areas for northern pike (*Esox lucius*) and littoral fishes, Blanding's turtles (*Emydoidea blandingii*), northern harriers (*Circus cyaneus*), and least bitterns.
D) Freshwater wetlands and tributaries: Support a mixture of wetlands and associated grassland buffers which provide critical habitat for a variety of priority migratory bird species, such as American woodcock, golden-winged warbler (*Vermivora chrysoptera*), and a diversity of waterfowl species.
E) Grasslands: Support an abundance and diverse population of bobolink (*Dolichonyx oryzivorus*), eastern meadowlark (*Sturnella magna*), short eared owl (*Asia flammeus*), upland sandpiper (*Bartramia longicauda*), Henslow's sparrow (*Ammodramus henslowii*), savannah sparrow (*Passerculus sandwichensis*), grasshopper sparrow (*Ammodramus savannarum*), and sedge wren (*Cistothorus platensis*).

Watershed Management

(**Bold** represents watershed goals that ILF projects may support)

1) Work with conservation stakeholders to manage, protect, and enhance the at-risk biodiversity
2) Manage animals, habitats, and land use practices to produce sustainable benefits for species of conservation concern
3) Identify, manage, maintain, and protect/restore habitats and communities over a broad spatial scale
4) Control and reduce the spread of invasive species
5) Development, infrastructure and storm water management: reduce the adverse impacts from new development, reduce loading of nutrients, bacteria, and sediment into water bodies
6) Agricultural practices and management: maintain viable agricultural land use, minimize negative impacts
7) Floodplain management: Improve preservation of riverine and lacustrine floodplains and shorelines, improve coverage and accuracy of floodplain delineation
8) Forestry practices: Ensure continued viability of the forestry practices, minimize negative impacts
9) Work with land managers to incorporate wildlife-based objectives

ELEMENT VI: PRIORITIZATION FOR SELECTING AND IMPLEMENTING MITIGATION ACTIVITIES

Potential sites for ILF mitigation projects will target priority conservation habitats best suited to replace lost wetland functions. As part of the DU site identification methodology, we have combined several data layers into decision tools to identify potential projects on the ground. These tools include GIS base layers of hydric soils, soil features (NRCS Web Soil Surveys), digital elevation models, land use (i.e., agricultural landscapes), development trends, water quality rankings, spatial analyses including surrounding landscapes, invasive species type and distribution, National Wetland Inventory data, and conservation/protected lands distribution. Sample data layers for targeting mitigation projects can be found below (Figures A-D).

In addition to the data analysis, DU will engage in discussions with our network of conservation partners (i.e., federal, state, and NGOs) and draw on our relationships with landowners in the site identification phase. Many partners have extensive lists of priority lands that are targeted for restoration (e.g., TNC priority natural areas).

Criteria for site selection will include:

A) Additional success parameters*:* Threats from invasive species or vandalism should be low or manageable. The project will be evaluated for its ability to result in successful and sustainable net gain of aquatic resource area and/or function.

B) Multiple objectives: Projects will be evaluated based on their potential to address multiple functions and services such as improvement of fish and wildlife habitat, support for rare species, flood attenuation, water quality improvement, and recreation or education values. Projects that can utilize native plant community diversity and natural processes will yield greater functional gains and be given higher preference.

C) Support regional conservation initiatives and is compatible with the surrounding landscape: Projects should be located where they compliment adjacent land uses, meet regional conservation priorities, address limiting factors in watersheds, increase habitat diversity, support state wildlife action plans, reduce fragmentation, establish corridors and enhance the function of existing natural areas.

D) Project costs: Projects with high aquatic resource functional gain per dollar will be given preference.

E) Address water quality issues: Focus on the most degraded areas or most severe water quality issues important for maintaining or improving ecosystem functions.

Figure A – Land Cover Map by Service Area

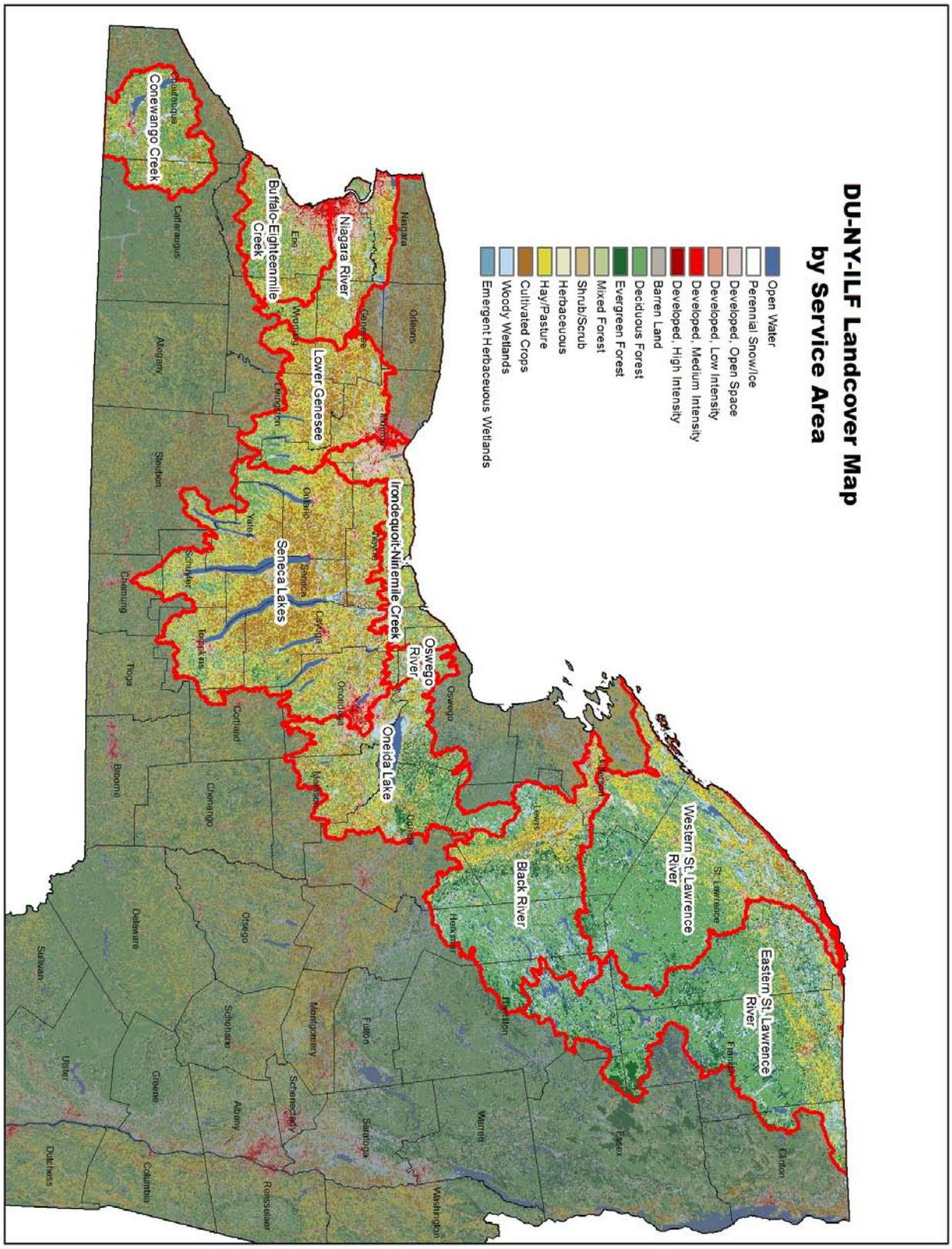


Figure B Protected Lands Map by Service Area

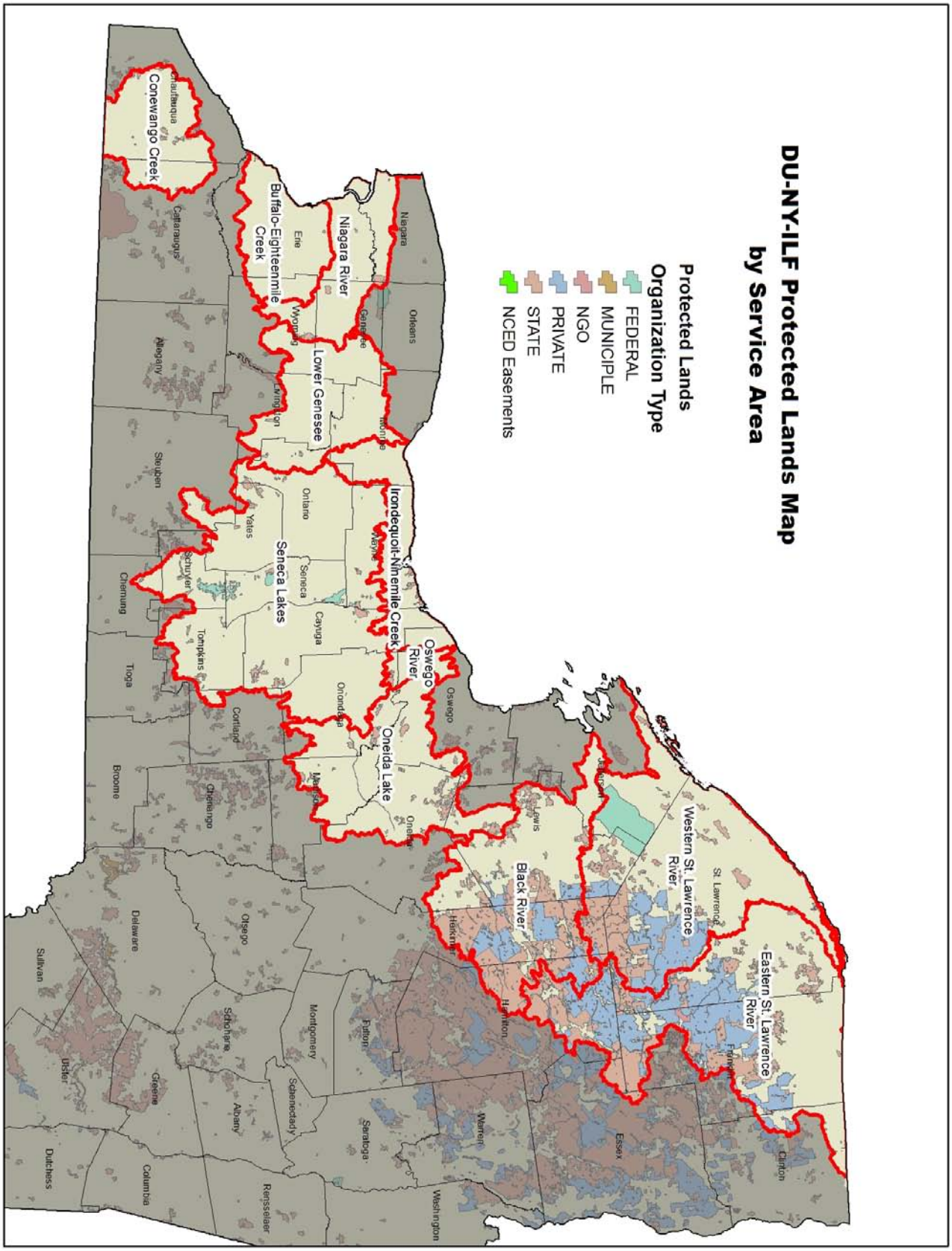


Figure C National Wetlands Inventory Map by Service Area

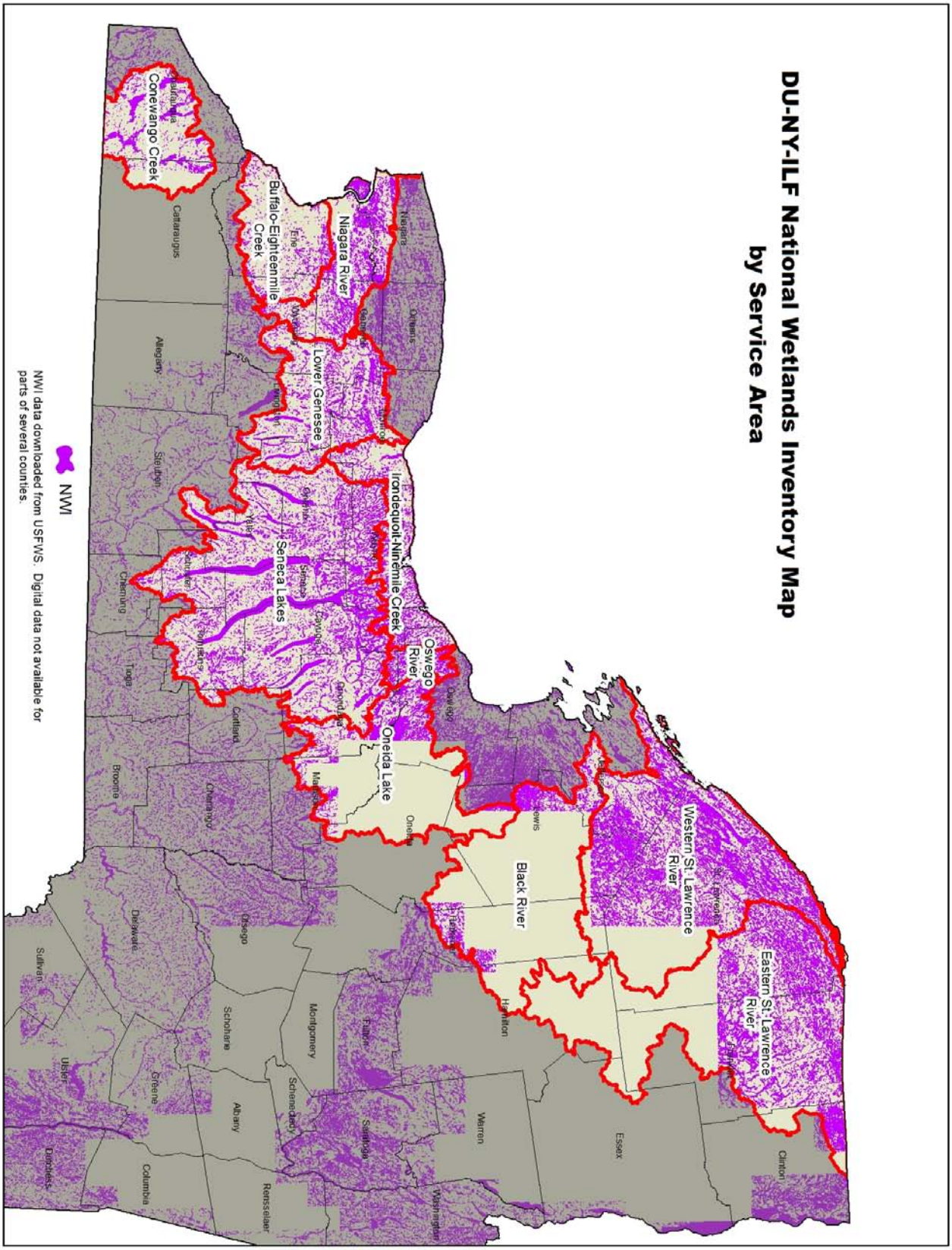
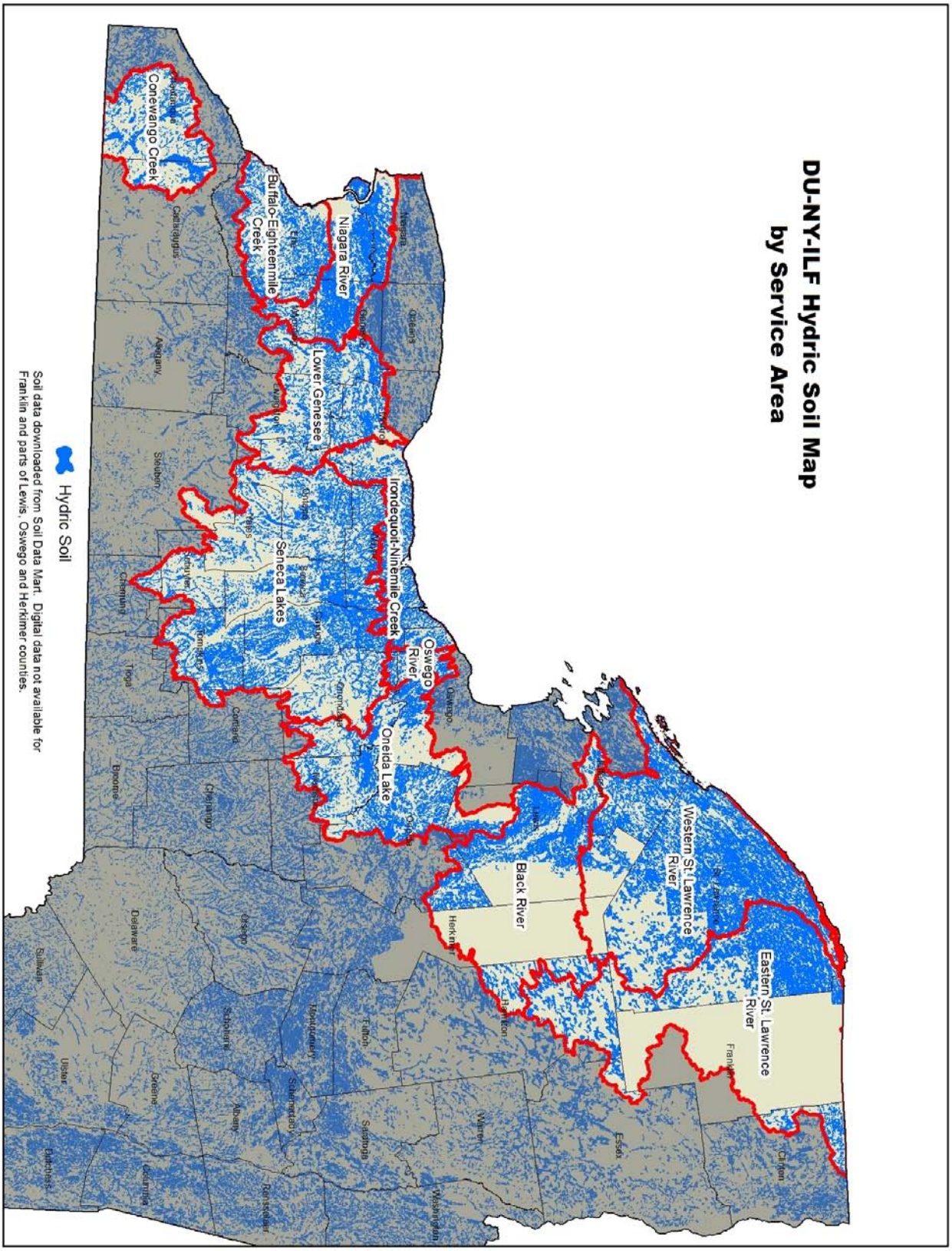


Figure D Hydric Soil Map by Service Area



ELEMENT VII: PRESERVATION OBJECTIVES

According to the definition in the federal mitigation rule (33 CFR 332.3(h)), preservation refers to the removal of a threat or preventing the decline of aquatic resources. The term includes activities associated with the protection and maintenance of aquatic resources though legal and physical mechanisms. Preservation does not result in a gain of aquatic resources.

Under the DU-NY-ILF program, preservation objectives will be consistent with the watershed approach to protecting aquatic habitat. Preservation will support regional conservation initiatives and projects will be located where they complement adjacent land uses, meet regional conservation priorities, address limiting factors in watersheds, increase habitat diversity, support state wildlife action plans, reduce fragmentation, establish corridors and enhance the function of existing natural areas. For example, DU may focus on preserving riparian buffers along a stream, floodplain forest, or critical corridors for contiguous habitat.

Preservation actions will be targeted at the habitat level which will correspond with the goals for managing New York's Species of Greatest Conservation Need (i.e., New York Wildlife Action Plan; NYSDEC 2005) and reducing current habitat threats which include:

1) conversion of floodplains, lakeshores, and riparian communities to agriculture;
2) removal or alteration of vegetative communities;
3) interruption of corridors;
4) dams, drainage and ditching that affect flooding, and erosion;
5) habitat alteration from invasive species; and
6) increased human activities disturbing wildlife activities (NYSDEC 2005).

Preservation strategies will be based on their potential to alleviate threats and protect functions and services, such as improvement of fish and wildlife habitat (increase corridors, reduced fragmentation), increase native species, support for rare species, flood attenuation, and water quality improvement.

In accordance with the federal mitigation rule (33 CFR 332.3(f) (3) (h)), preservation-only projects may be used to provide compensatory mitigation when the following criteria are met:

1) The resource to be preserved provides physical, chemical, or biological function for the watershed.
2) The resource to be preserved contributes significantly to the ecological sustainability of the watershed
3) The resources are under threat of destruction or adverse modifications
4) The preserved sites will be permanently protected through a legal instrument.
5) The project manager determines the compensatory mitigation is necessary to offset unavoidable impacts to aquatic habitat.

DU's goal for setting ecological criteria for selecting and prioritizing aquatic ecosystems is designed with the explicit purpose of functionally integrating landscapes capable of perpetually sustaining healthy populations of wildlife through retention and restoration of their ecological integrity. The main conservation principles include:

(i) Focus on essential wetland habitat
(ii) Use ecosystem management
(iii) Conserve existing habitat
(iv) Use appropriate levels of management intervention
(v) Integrate adaptive resource management

The broad approach of DU's conservation goals leads to water quality improvements, flood control, and soil and water conservation. DU's conservation mission and goals address the Mitigation Rule's requirements for preservation. Preservation shall be done to protect all aquatic resource and associated buffer restoration, establishment, and/or enhancement activities. DU's conservation actions are designed to abate threats, maintain and restore functioning wetland complexes, and to sustain these complexes in perpetuity.

ELEMENT VIII: DESCRIPTION OF STAKEHOLDERS' INVOLVEMENT

As the DU-NY-ILF program sponsor, DU will work closely with federal and state agencies, other conservation partners, and private landowner to identify projects that take into account local knowledge and planning efforts. DU has a long history of working collaboratively with a wide variety of partners. DU will readily engage with partners in NY to evaluate wetland and stream mitigation opportunities and in the development of mitigation plans and assessment methods. Efforts will be made to utilize methods for assessing aquatic resource functions pre- and post-project implementation that are commonly used by the NYSDEC and other conservation entities thus allowing projects to inform and be compared against other restoration activities.

DU's team of mitigation biologists, engineers, and GIS specialists can provide full service delivery of mitigation projects from site identification to land protection. Nonetheless, DU will continue to work closely with volunteers and partners to deliver projects that maximize conservation potential. Partnerships with organizations and agencies are a hallmark of DU.

DU will continue to develop and build partnerships that share common goals and understandings. For example, developing partnerships and management strategies with conservation groups and other private landowners can provide technical and financial assistance for wetland protection, enhancement, and management. Partnerships will also benefit wetland dependent wildlife by improving water quality, conserving critical wetland habitat, and expanding on existing conservation lands. Partnerships allow for a coordinated identification of current threats to conservation targets, implementation of management plans to abate threats, and ensure long term protection at a variety of eco-regional scales. DU will develop a diversity of partners from state, federal, private, academic, and industrial entities that will provide alliances and collaboration required to achieve successful conservation results.

Potential partners and stakeholders include:

Federal Government Agencies:

- Natural Resources Conservation Service
- US Fish and Wildlife Service
- National Park Service
- US Army Corps of Engineers
- Environmental Protection Agency
- Soil and Water Conservation Districts
- US Forest Service
- National Oceanic and Atmospheric Administration

State Agencies:

- NYSDEC, Agency of Natural Resources (i.e., Department of Environmental Conservation, Department of Fish and Wildlife, Clean and Clear, etc.).
- NYS Parks Department
- NY State Historical Society

Other:

- Conservation organizations
- Land Trusts
- Private landowners
- Forestry and Logging Corporations
- Native American Tribal Nations

Partners can assist with a variety of tasks, including:

- Locate and identify suitable lands for mitigation projects
- Hold easements (i.e., Land Trusts)
- Assist with development and implementation of monitoring programs
- Assist with expansion of contiguous habitat
- Provide long term management and protection
- Provide local knowledge and contacts

ELEMENT IX: DESCRIPTION OF LONG TERM PROTECTION AND MANAGEMENT

DU will be responsible for developing and implementing a long-term protection and management plan for each DU-NY-ILF project. On privately-owned property, including property held by DU or other conservation organizations, real estate instruments will be developed and recorded to guarantee protection in perpetuity. Draft conservation easements or equivalent protection mechanisms will be submitted to the IRT as part of each project mitigation plan for review and approval. In the event that projects are implemented on publicly-owned property, long-term protection and management may be provided through facility management plans or integrated natural resource plans.

DU-NY-ILF projects will be designed, to the maximum extent practicable, to require little or no long-term management efforts once performance standards have been achieved. DU shall be responsible for maintaining DU-NY-ILF program projects consistent with the mitigation plan to ensure long-term viability as functional aquatic resources. DU shall retain responsibility unless and until the long-term management responsibility is formally transferred to a long-term manager with Corps approval. The long-term management plan developed for each DU-NY-ILF project will include a description of

anticipated management needs with annual cost estimates and an identified funding mechanism (such as non-wasting endowments, trusts, contractual arrangements with future responsible parties, or other appropriate financial instruments).

The final conservation easement or equivalent mechanism for long-term protection will be submitted to the IRT for review upon acquisition of the site and will be the first milestone for which credit release can occur. . Upon achieving its performance standards and approved transfer of the project for long-term protection and management, DU will request that the Corps issue written "closure certification" in coordination with the IRT.

ELEMENT X: PROGRAM MONITORING AND REPORTING

As detailed in Section V of the Instrument, DU will submit an Annual Program Report to the IRT no later than March 31st of each year and will include program data from the previous calendar year (January 1 – December 31).

Additionally, every 3 years, DU will submit a program findings/evaluation report to the District Engineer as an addendum to the Annual Program Report. In this report, anticipated to be a relatively brief document, DU will address how the goals and objectives set forth in the Instrument and detailed in the Compensation Planning Framework are being met in terms site selection and project implementation. The report may also include relevant 'lessons learned' and describe any proposed changes to the Compensation Planning Framework.

Appendix II: Wetland and Stream Advance Credits and Credit Fee Schedule

Resource Compensation Rates*				
Service Area	**Number of Advanced Wetland Credits**	**Fee for one (1) credit of wetland mitigation**	**Number of Advanced Stream Credits**	**Fee for one (1) linear foot of stream mitigation**
Black River (HUC 4150101)	15	$72,000	10,000	$315
Buffalo-Eighteen Mile (HUC 04120103)	40	$94,000	10,000	$420
Conewango-Creek (HUC 05010002)	15	$72,000	10,000	$315
Irondequoit-Ninemile Creek (HUC 04140101)	40	$92,000	10,000	$410
Lower Genesee (HUC 04130003)	30	$80,000	10,000	$350
Niagara River (HUC 04120104)	15	$83,000	10,000	$365
Oneida Lake (HUC 04140202)	30	$82,000	10,000	$360
Oswego River (HUC 04140203)	30	$85,000	10,000	$380
Seneca Lakes (HUC 04140201)	30	$82,000	10,000	$360
St. Lawrence - Eastern (HUCs 04150305-8)	15	$ 70,000	10,000	$310
St. Lawrence - Western (HUCs 04150301-4)	15	$ 70,000	10,000	$310

*Credit prices are subject to change on an annual basis.

The credit fees are determined using full cost accounting and may include the following expenses related to: Site identification; land acquisition; mitigation plan development; permitting; contracting and construction management; land protection; land protection endowment fee; performance monitoring (5-10 year period); contingency measures for adaptive management; long-term management endowment; financial assurances; legal fees; and program administration, and other tasks or expenses necessary to ensure project success.

Appendix III Wetland Credit Generation Ranges

Proposed Mitigation Activity	Ratio Range
Rehabilitation	3:1 – 10-1
Enhancement	3:1 – 10-1
Wetland Establishment	Up to 1:1
Wetland Re-establishment	Up to 1:1
Preservation (aquatic)	10:1 – 20:1
Preservation (upland buffer)	15:1
Upland Buffer Restoration	4:1 to 15:1

Appendix IV: Site Selection and Evaluation Key

Some or all of following steps will be utilized to identify, evaluate, and rank wetland sites. A modified process will guide site selection for stream mitigation. Site selection will be made in close consultation with the IRT.

1. Identify service area for ILF project and review Compensation Planning Framework to determine watershed priorities.

2. Site Identification. If a potential site(s) is not already identified, DU will work with the IRT and other federal, state, and conservation stakeholders to assist in identifying potential sites within the watershed; DU will review its landowner database, contact private landowners, and review property listings for sale, and DU will take additional necessary steps to identify sites.

3. Property analysis.
   Once a site(s) is identified, DU will map National Wetland Inventory data, state wetlands, priority conservation areas, and agricultural lands layer over candidate site(s). The following screens will be applied.
   i. Is the entire site(s) classified as a wetland?
      a) if Yes ..... POINTS = 0
      b) if No ..... POINTS = 1

   ii. Are there adjacent or nearby wetlands?
      a) if Yes ..... POINTS = 1
      b) if No ..... POINTS = 0

   iii. Are there adjacent or nearby conservation lands?
      a) if Yes ..... POINTS = 1
      b) if No..... POINTS = 0

4. Site specific analysis. DU will evaluate the soils and other features to determine if the site would support the wetland restoration.
   a) if Yes. ..... POINTS = 1
   b) if No, remove site from consideration.

5. Contact landowner or land manager.
   If the parcel is privately owned, DU may contact the landowner to determine if the landowner is 1. interested in a wetland restoration project on the property and willing to grant a conservation easement to DU or other easement holder, or 2. if the property owner is willing to sell the property?
   a) if Yes ..... POINTS = 1
   b) if No, remove site from consideration.

   If the parcel is federally or state owned, DU will contact the agency to discuss interest in a wetland restoration project and willingness to assume long-term management responsibility?
   a) if Yes ..... POINTS = 1
   b) if No, remove site from consideration.

6. Conduct site visit.
   Determine if site will support the proposed wetland acres for the mitigation project.

a) if site exceeds required acres..... POINTS = 2
b) if site satisfies required acres..... POINTS = 1

Determine if there logistical or environmental issues that would jeopardize restoration success.
a) if Yes..... POINTS = 0
b) if No..... POINTS = 1

7. Evaluate Flora and Fauna.
Determine if site will support or expand habitat for species of concern.
a) if Yes..... POINTS = 1
b) if No..... POINTS = 0

Determine if the site could support one or more exemplary wetland natural communities.
a) If Yes,..... POINTS = 1
b) If No..... POINTS = 0

Determine if the site will expand or improve priority conservation areas
a) If Yes..... POINTS = 1
b) If No..... POINTS = 0

8) Rank site(s).

9) Consult with IRT for preliminary review. Schedule site visit as needed.

10) Begin the mitigation planning.

Appendix V Instrument Modifications

The addition of in-lieu project site, the expansion of a previously approved project site, or the addition of a new service area requires an amendment to the Instrument under 33 CFR 332.8 (g). For amendments or modifications of the Instrument, DU will submit a written request for an instrument modification accompanied by appropriate documentation (e.g. mitigation plan, new service area) as detailed in 33 CFR 332.8 (d). The process for review and approval of amendments will generally follow the process for Instrument approval.

As in-lieu fee project sites are identified and secured, DU will submit a mitigation plan to the District Engineer that include all applicable items listed in 33 CFR 332.4(c)(2-14). Within 30 days of receipt of DU's formal request for an instrument modification, the District Engineer will notify DU whether the instrument modification request is complete under 33 CFR 332.8 (d)(2). Within 30 days of receipt a complete instrument modification request and mitigation plan, the District Engineer will provide public notice of the request. The comment period will be 30 days, unless otherwise determined by the District Engineer. Copies of all comments will be provided to IRT members and DU within 15 days of the close of the public comment period per 33 CFR 332.8 (d) (4).

DU will review the comments and discuss concerns and issues with the IRT. A revised plan may be submitted for additional comment.

At any point, DU may declare that the mitigation plan is a final submission and request approval from the District Engineer. Within 30 days of receipt of the final plan, the District Engineer will notify the IRT members whether or not he intends to approve the final amendment.

Streamlined Review Process

The District Engineer may use a streamlined modification review process for changes reflecting adaptive management of the ILF Program, credit releases, changes in credit releases and credit release schedules, and changes that the District Engineer determines are not significant. In this event, the District Engineer will notify the IRT members and DU of this determination and provide them with copies of the proposed modification. IRT members and DU have 30 days to notify the District Engineer if they have concerns with the proposed modification. If IRT members or DU notify the District Engineer of such concerns, the District Engineer will attempt to resolve those concerns. The District Engineer will notify the IRT members and DU of his intent regarding the proposed modification within 60 days of providing the notice to the IRT members. If no IRT member objects, by initiating the dispute resolution process (33 CFR 332.8) within 15 days of receipt of the notification, the District Engineer will notify the sponsor of his final decision and, if approved, arrange for it to be signed by the appropriate parties per 33 CFR 332.8 (8) (2).

This section describes the anticipated actions, responsibilities, and timelines for approval of ILF projects. The actual process may vary on a case by case situation.

DU Action	**IRT Action**	**Anticipated Timeframe**
DU may request a site visit to a proposed site (optional).	IRT chair will schedule site visit with IRT members.	Timeframe TBD
DU may ask for a preliminary review of mitigation plan (optional).	IRT chair will provide copies of plan to IRT and provide comments to DU.	30 days from receipt
DU submits mitigation plan to IRT chair.	IRT chair reviews plan and determines if the plan is complete.	Notify DU within 30 days of receipt
DU submits complete mitigation plan.	IRT chair prepares plan for public notice.	Plan goes on public notice within 30 days of receipt
		Public notice period is 30 days
	IRT chair summarizes comments and submits these to DU and IRT.	15 days from close of public notice period.
DU reviews comments and concerns and makes revisions.	IRT chair facilitates discussion between IRT and DU.	Timeframe TBD.
DU submits final mitigation plan and request approval from District Engineer.	District Engineer will notify DU and the IRT members whether or not he intends to approve the amendment.	Within 30 days up receipt of final plan.