



In-Lieu Fee Program Prospectus

U.S. Army Corps of Engineers Buffalo, Pittsburgh, and Huntington Districts Ohio Watersheds

May 2015

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Objectives

Conservation Foundation of America (CFA) proposes to address the need for compensatory wetland and stream mitigation in the watershed in Ohio within the Buffalo, Pittsburgh, and Huntington U.S. Army Corps of Engineers (USACE) districts, through the establishment of an in-lieu fee program (ILFP).

The CFA stream and wetland ILFP will provide third-party compensatory mitigation for unavoidable impacts to streams and wetlands identified as waters of the United States and waters of the State of Ohio. More particularly, the ILFP will be used to satisfy the compensatory stream and wetland mitigation requirements of permits issued under Section 404 and 401 of the Clean Water Act, Section 10 of the Rivers and Harbor Act, and isolated wetland permits issued by Ohio EPA under Ohio's isolated wetland law (Ohio Revised Code 6111).

The goal of the proposed ILFP is to provide for no-net loss of wetland acreage and wetland and stream aquatic functions and values in the watersheds within the state of Ohio. Temporal loss of functions and values will be offset by the use of mitigation ratios as determined by the appropriate regulatory agencies. This prospectus addresses the required elements consistent with federal and state requirements including those set forth in 33 CFR Part 332.

Establishment and Operation

The CFA ILFP will operate by providing restoration, establishment, enhancement, and/or preservation of aquatic resources through funds paid to the CFA ILFP to develop resources to satisfy compensatory mitigation requirements for Department of the Army permits, Ohio Water Quality Certifications, or Ohio isolated wetland permits. This section details procedures and practices that will be established and followed during the operation of the CFA ILFP.

Roles and Responsibilities

USACE is the party responsible for approval of ILFP instruments and oversight of compliance and mitigation activities associated with Section 404 of the Clean Water Act, and/or Section 10 of the Rivers and Harbor Act. In addition, as chair of the IRT, USACE is responsible for consulting with the IRT in accordance with 33 CFR 332.8.

Ohio Environmental Protection Agency (EPA) is the party responsible for issuing 401 Water Quality Certifications in Ohio, and permitting and oversight of compliance and mitigation activities associated with Ohio's isolated wetland law (ORC 6111). Ohio EPA also participates as a representative on the IRT.

CFA is the sponsor for the ILFP and is responsible for oversight, implementation, and fiscal management of the ILFP as described in this instrument. CFA is a non-profit entity recognized under Section 501(c)3 of the Internal Revenue Code and its operations directly involve the restoration, enhancement, establishment, and/or preservation of wetland and stream resources. As a non-profit, natural resource based entity, CFA meets the requirements of 33 CFR 332.2 to be an ILFP sponsor. CFA has authority under this instrument to enter into agreements with state agencies, non-profit organizations, for-profit organizations, and individuals to implement the ILFP. All activities conducted by third parties under this instrument are the responsibility of CFA.

Project Identification and Development

Project Site Selection. ILFP mitigation projects will target potential sites best suited to replace lost aquatic resource functions. The evaluation of mitigation sites will include requests for input from existing watershed coordinators, Soil and Water Conservation Districts, other watershed-based groups/NGOs, communities, counties, ecological consultants, and other state and federal resource agencies. Input will also be sought from permit applicants and industry groups in order to better understand the potential need for mitigation in the ILFP service areas in the near future.

Additionally, geographic spatial data resources will be reviewed (such as National Wetland Inventory Maps, Natural Resources Conservation Service Soil Surveys, U.S. Geological Service StreamStats, and aerial imagery) to help identify and review each potential mitigation site. CFA will request timely feedback from the IRT concerning potential mitigation sites prior to developing a conceptual mitigation plan.

Emphasis will be placed on identifying sites that have existing conditions (soils, hydrology, and/or native vegetation) that are conducive to aquatic resource restoration, enhancement, establishment, and/or preservation; are locally and regionally significant in terms of their contribution or potential contribution to reduce sediment and/or nutrient loading and are owned by entities willing to participate in the ILFP. For stream mitigation sites, the ILFP will focus on sites where measureable ecological uplift and nutrient assimilation can be achieved, with priority sites including 303d list waters, site located in sub-watersheds with existing TMDLs, and sites located in sub-watersheds with nutrient impairments, and on headwater stream sites with drainage areas less than 10 mile². Project sites will be selected and developed in accordance with the information detailed in the Compensation Planning Framework (Appendix B).

Site specific information regarding prospective ILFP project sites will be provided within conceptual mitigation plans once potential ILFP project sites have been identified. All conceptual mitigation plans and instrument modifications regarding the addition of ILFP mitigation sites will be coordinated with the appropriate District Engineer in consultation with the IRT.

Mitigation Plan. A mitigation plan will be developed for each ILFP project and is subject to approval by the IRT. Mitigation plans will be developed and implemented in accordance with 33 CFR 332.4 and will include the following required elements:

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

Ecological Performance Standards. CFA will propose performance standards for each ILFP site for IRT review and approval. These performance standards will be used to assess whether the project is developing into the desired resource type, providing the expected functions, and meeting any other applicable metrics according to the terms detailed in 33 CFR 332.5. Performance standards may be based upon 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, consistent with the Mitigation Rule (33 CFR 332.5). Ecological performance standards may also be based upon criteria included within the *Guidelines for Wetland Mitigation Banking in Ohio* (2011) and the *Guidelines for Stream Mitigation Banking and In-Lieu Fee Programs in Ohio v. 1.0* (2014) as developed by the Ohio IRT.

Project Approval and Instrument Modifications. Approved projects or the expansion of a previously approved project site may be added as a modification to the Instrument in accordance with 33 CFR 332.8(g). For modifications of the Instrument, CFA will submit a written request for an instrument modification accompanied by appropriate documentation (e.g. mitigation plan) as detailed in 33 CFR 332.8(d). The process for review and approval of modifications will generally follow the process for instrument approval.

As ILFP project sites are identified and optioned or otherwise secured (e.g. written agreement to purchase or to protect in a manner consistent with the Mitigation Rule), CFA will submit mitigation plans to the appropriate District Engineer that include all applicable items listed in 33 CFR 332.4(c)(2-14). Within 30 days of receipt of CFA's formal request for an instrument modification, the District Engineer will notify CFA whether the instrument modification request is complete under 33 CFR 332.8(d)(2). Within 30 days of receipt of 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 CFA within 15 days of the close of the public comment period per 33 CFR 332.8(d)(4). CFA will review the comments and discuss concerns and issues with the IRT. Within 90 days of receipt of the complete amendment by the IRT members, the District Engineer will notify CFA of the status of the IRT review. Specifically, the District Engineer must indicate to CFA if the amendment is generally acceptable and what changes, if any, are needed. If there are significant unresolved concerns that may lead to a formal objection from one or more IRT members to the amendment, the District Engineer will indicate the nature of those concerns. A revised plan may be submitted to the District Engineer and the IRT for additional comments, if necessary.

At any point, CFA 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 or she intends to approve the Instrument amendment. Project approval will be based upon several factors, including: site suitability, long-term sustainability, benefits to rare and endangered natural resources, maximum ecological return on expended funds, and other factors. The District Engineer may add specific requirements and restrictions to each proposed mitigation project. These include conditions on authorizations through the Section 404 of the Clean Water Act and/or Section 10 of the Rivers and Harbor Act permit process that could be required for a mitigation project.

The District Engineer may use a streamlined modification review process for changes reflecting adaptive management of the ILFP, credit releases, changes in credit releases and credit release schedules, and changes that the District Engineer determines are not significant. CFA will work with the District Engineer to identify other non-significant modifications that would be suitable for review under the streamlined modification review process. In this event, the District Engineer will notify the IRT members of this determination and provide them with copies of the proposed modification. IRT members have 30 days to notify the District Engineer if they have concerns with the proposed modification. If IRT members notify the District Engineer of such concerns, the District Engineer will attempt to resolve those concerns. The District Engineer will notify the IRT members of his or her intent regarding the proposed modification within 60 days of providing the notice to the IRT members. If no IRT member objects, the District Engineer will notify CFA of his or her final decision, and if approved, arrange for it to be signed by the appropriate parties per 33 CFR 332.8(g)(2). The IRT shall meet on a regular basis, as determined by the IRT chair, to review and approve ILF projects and discuss any program management issues.

The IRT shall be responsive to CFA in terms of providing feedback and guidance on proposed mitigation sites and mitigation plans. CFA shall be responsive to IRT questions and inquiries as the program sponsor.

Project Implementation. CFA or its authorized agents will provide the necessary personnel, equipment, and materials to implement ILFP mitigation projects. Within one year of the first advanced credit sale within a service area, CFA will submit a mitigation and monitoring plan to the District Engineer. Land acquisition and initial physical and biological improvements will be completed by the third full growing season after the first advanced credit in that service area is sold, unless the District Engineer determines that CFA requires more time to plan and implement a project due to a lack of sufficient credit sales. It will not be considered a default of the terms set forth in the final Instrument if an insufficient number of credits are sold in a given service area to accrue enough funds to implement an environmentally sustainable project. If this occurs, the District Engineer may direct CFA to transfer funds to any project or proposal that it deems appropriate.

Monitoring. Monitoring of ILFP projects will be conducted to determine if the project is meeting its performance standards and trending towards success as described in 33 CFR 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, and the length of the monitoring period, the dates that the reports must be submitted, and the frequency for submitting monitoring reports. CFA will be responsible for submitting monitoring reports to the IRT based upon terms set forth in the approved mitigation plan. At the request of an authorized representative of USACE or the IRT, CFA shall allow access to ILF project sites to determine compliance with the terms in the instrument.

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 information:

1. Monitoring results with comparisons 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, if needed

Instrument Re-Evaluation. After a period of not more than 5 years from the date of approval, the CFA ILFP instrument will be re-examined to evaluate the objectives and results of the ILFP. The District Engineer, IRT, and CFA will work in good faith to identify strengths and weaknesses within the CFA ILFP, and suggest or recommend adaptive changes to the ILFP and/or the final ILFP Instrument.

Accounting Procedures and Account Reporting Protocols

The ILFP shall establish and maintain a ledger of advance credits, credit development, and credit sales for each service area. Transactions will be tracked in terms of how the credits are generated, i.e., the cost of establishment, restoration, enhancement and/or preservation of wetlands and streams. Information in the ledger shall also include fulfillment and replenishment of advance credits, the beginning and ending balance of available credits and permitted impacts for each resource type, all additions and subtractions of credits, and any other changes in credit availability (e.g., additional credits released, credit sales suspended by USACE, etc.).

Site specific ledgers shall track credits released by type, credits used to fulfill advance credits, and credits sold directly to permittees.

The ILFP shall annually provide USACE with a statement of account(s) holding ILFP funds. The account reports are to be submitted to USACE by March 31 of each year. The reports will include information related to all income, disbursements, and interest earned for each service area account, all permits for which fees were accepted for each service area (including USACE permit number and/or state permit number, the service area in which the authorized impacts are located, the amount of authorized impacts, the amount of required compensatory mitigation, the amount paid to the ILFP, and the dates the funds were received from the permittee), a description of program expenditures (e.g. land acquisition, planning, construction, monitoring, maintenance, contingencies, adaptive management, and administration), the balance of advance credits and released credits at the end of the report period for each service area, and other information that may be reasonably required by USACE and the IRT.

Legal Responsibility for Mitigation

The permittee retains responsibility for providing compensatory mitigation until the appropriate number of credits have been secured from the CFA ILFP and USACE and/or Ohio EPA has received documentation that the CFA ILFP has accepted the responsibility for providing the compensatory mitigation. The written notification will be provided by CFA to USACE and/or Ohio EPA and will provide permit number, amount of mitigation required as per terms of the permit, and a statement identifying the number of credits purchased by the applicant. This notification may be provided by CFA to USACE electronically (via email or facsimile), by overnight carrier, or by U.S. Mail. CFA, USACE, and Ohio EPA shall establish a point of contact for documentation of all transactions at the time of instrument approval. Revisions to the point of contact shall be made in writing to the appropriate USACE regulatory district or division chief, the Director of Ohio EPA, or to the President of CFA as appropriate.

In-Lieu Fee Program Account

CFA shall be permitted to retain up to 10% of all ILFP payments to offset cost of operations and overhead and development of the ILFP instrument/amendments as well as ongoing cost to identify mitigation sites (including costs to work with agencies, and watershed groups, to assist with development of watershed plans, and to assess potential mitigation sites). The remainder of payments received by the ILFP will be deposited into an interest bearing, FDIC-insured account or series of accounts to ensure account levels remain within FDIC insurance limits.

CFA shall account for the funds in accordance with generally accepted accounting principles, and the accounts shall be subject to audit by the District Engineer when deemed necessary after giving notice to CFA. Interest earned by the ILFP and proceeds from the sale of ILFP credits shall remain in the account until approved for use by the District Engineer. Funds in excess of the amount needed for mitigation projects within a designated service area shall be held in reserve in the ILFP and utilized for future expenses associated with new mitigation projects in that service area or for un-anticipated remedial work for projects previously completed by CFA within the service area.

The District Engineer, in consultation with the IRT, will determine whether financial assurances are warranted for an ILFP project. If financial assurances are warranted, they may be provided in a form agreeable to CFA and the District Engineer and may include construction performance bonds, letters of credit or sufficient existing funds in the ILFP account.

For an ILFP project, CFA shall obtain adequate site ownership or formalized access and site protection agreements and initiate biological and physical improvements within three full growing seasons of the date of the first advance credit in the service area being secured by a permittee. If more than three years pass from the date of permit issuance and a mitigation site has not been secured, USACE may direct that the funds be allocated to any project or proposal that it deems appropriate, and that mitigation liability to the ILFP shall be reduced accordingly and transferred to the party receiving such funds. If directed by the District Engineer, CFA will transfer funds to the separate party equal to the value paid for credits purchased from CFA. CFA may be permitted by the District Engineer to retain all or a portion of the administrative fee provided that it can demonstrate the portion of the administrative fee that has been expended to date in an effort to identify a suitable mitigation site to fulfill the mitigation credit requirements.

As per 33 CFR 332.8(n)(4), the District Engineer, at his or her discretion, may allow extensions of the three-year time limit. As an alternative to extending time allowed to implement a project, the District Engineer may direct CFA to disburse funds from the ILFP account to provide alternative compensatory mitigation. Funds paid to the OFW ILFP by applicants will be used to pay for site selection, planning, IRT coordination, design, ecological and cultural resource coordination, acquisition, implementation, monitoring, management and protection of ILFP projects as approved by the District Engineer. Long-term maintenance and management funding will be determined on a project basis and will include funds to support the long-term care and protection of the compensatory mitigation project.

The District Engineer may audit the records pertaining to the ILFP accounts. Complete budgets for ILFP projects will be approved as part of mitigation plans. An annual report will be presented by March 31 of each year and submitted to USACE for review. Reports will include detailed summaries of the ILFP, funds received, credits sold or transferred and expenses incurred, including administrative expenses. The District Engineer will require notification of all deviations in excess of the approved budget. Specific IRT approval will be required for deviations above 10% and at the discretion of the District Engineer. USACE may review ILFP records with 14 days advance written notice. When so requested, CFA shall provide all books, accounts, reports, files, and other records relating to the ILFP.

Proposed Service Areas

The CFA ILFP will operate in 43 geographically distinct primary service areas in the Buffalo, Pittsburgh, and Huntington Districts, based upon the 8-digit HUC watersheds within Ohio. Each of the primary service areas will also have secondary service areas that include the remainder of the 6-digit HUC watershed in which each respective 8-digit HUC primary service area occurs.

USACE and/or Ohio Environmental Protection Agency (EPA) may authorize the use of the ILFP by permit applicants within the secondary service area on a case by case basis, when other ecologically preferable mitigation is unavailable, and consistent with the watershed approach outlined in 33 CFR 332.8.

Need and Technical Feasibility

The ILFP is being developed to satisfy the compensatory wetland and/or stream mitigation needs of the 8-digit HUC watersheds within Ohio in the Buffalo, Pittsburgh, and Huntington Corps Districts.

In 2008, the Federal Rule on Compensatory Mitigation: Mitigation for Losses of Aquatic Resources, Final Rule (33 CFR Parts 325 and 332) was published. This rule provides new guidelines for the creation of mitigation banks and ILFPs using a watershed based approach, and established the following order of preference for mitigation types serving as compensation for unavoidable impacts to water resources: 1) credits from mitigation banks; 2) credits from in-lieu fee programs; and 3) permittee-responsible mitigation.

The use of mitigation banks and ILFPs for compensatory mitigation can help to reduce the risk and uncertainty associated with the replacement of lost water resources and associated functions and services. When compared to permittee-responsible mitigation, mitigation banks and in-lieu fee mitigation sites generally provide larger, more ecologically valuable mitigation options. Additionally, these sites must go through a rigorous scientific and technical analysis prior to their acceptance as an authorized mitigation site. The proposed ILFP will provide a preferred method of compensatory mitigation for projects proposing to impact Waters of the U.S. or State of Ohio.

Long-Term Management Strategy

The ILFP projects completed by CFA will include an appropriate entity to assure long-term stewardship. Established, restored, enhanced, or preserved aquatic resources and their buffers shall be protected in perpetuity in a site protection instrument that shall run with the land and shall remain in place in the event of transfer of the land. Per 33 CFR 332.8(t)(2), real estate instruments, management plans, or other long-term protection mechanisms used for site protection must be finalized before advance credits can become released credits. If portions of acquired properties are not used for compensatory mitigation, those portions may be excluded from the long-term protection mechanisms. Owners and long-term stewardship providers will typically be units of government including: metropolitan park districts; Soil and Water Conservation Districts; Ohio Department of Natural Resources or other appropriate natural resource/educational entities. In some cases, non-governmental organizations or watershed-based organizations may be engaged to provide long-term stewardship and/or ownership of compensatory mitigation projects. Achieving an ecologically stable mitigation project that achieves the maximum level of aquatic ecosystem functions and services with the minimum amount of human involvement will be the goal of each ILFP mitigation project. The Long-Term Management and Maintenance Plan shall include, at a minimum, provisions for:

1. Periodic inspections to evaluate the site for signs of trespassing or vandalism. Maintenance will include reasonable actions to deter trespassers and repair any damaged features.
2. Monitoring the condition of structural elements and facilities of the site such as signage, water level control structures, fencing, roads, and trails and provisions to repair said structures, if necessary.

CFA will be responsible for developing a Long-Term Management and Maintenance Plan for each mitigation site. CFA will enter into an agreement with the long-term management entity/owner. This agreement will be provided to USACE and shall include the requirement that the long-term manager/owner shall manage the site consistent with the terms of the project mitigation plan. Once a mitigation site has met its performance goals and has been transferred to the site steward, the steward will be tasked with meeting any and all long-term management responsibilities outlined in that site's management and maintenance plan. CFA shall transfer the long-term management funds/account or otherwise arrange for disbursements from such funds/account to the land stewardship entity once the IRT has concurred that the project has met the established performance goals or IRT approved modified performance goals and monitoring can be stopped. Since the long-term financial needs vary by project, the amount of management funds transferred to the long-term manager/owner will be established in the mitigation plan for each mitigation project.

Per 33 CFR 332.7(a)(3), 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.

Sponsor Qualifications

CFA is a 501 (c) (3) organization that was formed in 2004 to hold conservation easements and provide services for compensatory mitigation. CFA will partner with Wetlands Resource Center, LLC (WRC) and Oxbow River and Stream Restoration, Inc. (Oxbow) to provide mitigation expertise to the ILFP.

Travis Miller, Vice President of CFA, will manage the day to day requirements of the ILFP. After graduation from Bowling Green State University, Mr. Miller spent seven years with WRC working as the Project Manager on several stream and wetlands mitigation projects. His experience includes stream mitigation for the Cleveland Clinic, Ohio Department of Transportation, and the State of North Carolina Ecosystem Enhancement Program. He also oversaw the restoration of over 4,000 acres of wetland mitigation for the Potash Corporation of Saskatchewan near Belhaven, North Carolina.

The CFA/WRC/Oxbow team utilizes in house design and construction capabilities to ensure start to finish control of the final mitigation product.

WRC has completed 6,000 acres of successful wetland mitigation and 48,000 LF of stream mitigation in Ohio and North Carolina. This partnership has completed several mitigation projects in the state of Ohio for both public and private entities including the restoration of enhancement of 50 acres of wetland and 8,000 LF of stream in the Pond Brook watershed in Summit County. WRC/CFA/Oxbow are currently working on mitigation for the Portsmouth Bypass where it will provide over 65,000 LF of stream restoration and preservation to the Ohio Department of Transportation.

Oxbow was incorporated in the State of Ohio in 1956 and is licensed by the State of Ohio to provide engineering services. Oxbow is a "true" design-build company that offers full-delivery stream and wetland restoration services from initial project assessment to engineering design to construction and finally post construction monitoring. Ohio's leader in design-build natural channel design restoration, Oxbow has completed more than 200 projects restoring over 35 miles of Ohio's streams.

Oxbow has performed both the design and the construction of virtually all types of water resource projects including Lake Erie shoreline protection and jetty construction, logjam removals, channel relocations, fisheries enhancement, stream restoration, wetland restoration, utility crossing restoration, bioengineering of steep slopes, and bank stabilization. Oxbow's first project, completed in 1980, was designed to improve a fishery for the Michigan Department of Natural Resources. This project significantly improved this Cold Water Habitat (CWH) trout stream.

Oxbow is a pioneer in stream ecosystem restoration. First, Oxbow mastered the design-build approach to stream restoration. Oxbow provides its projects with both the knowledge and experience in both their design and construction capabilities. This differs from a partnership between separate consultants and contract Oxbow who do not work together on a daily basis.

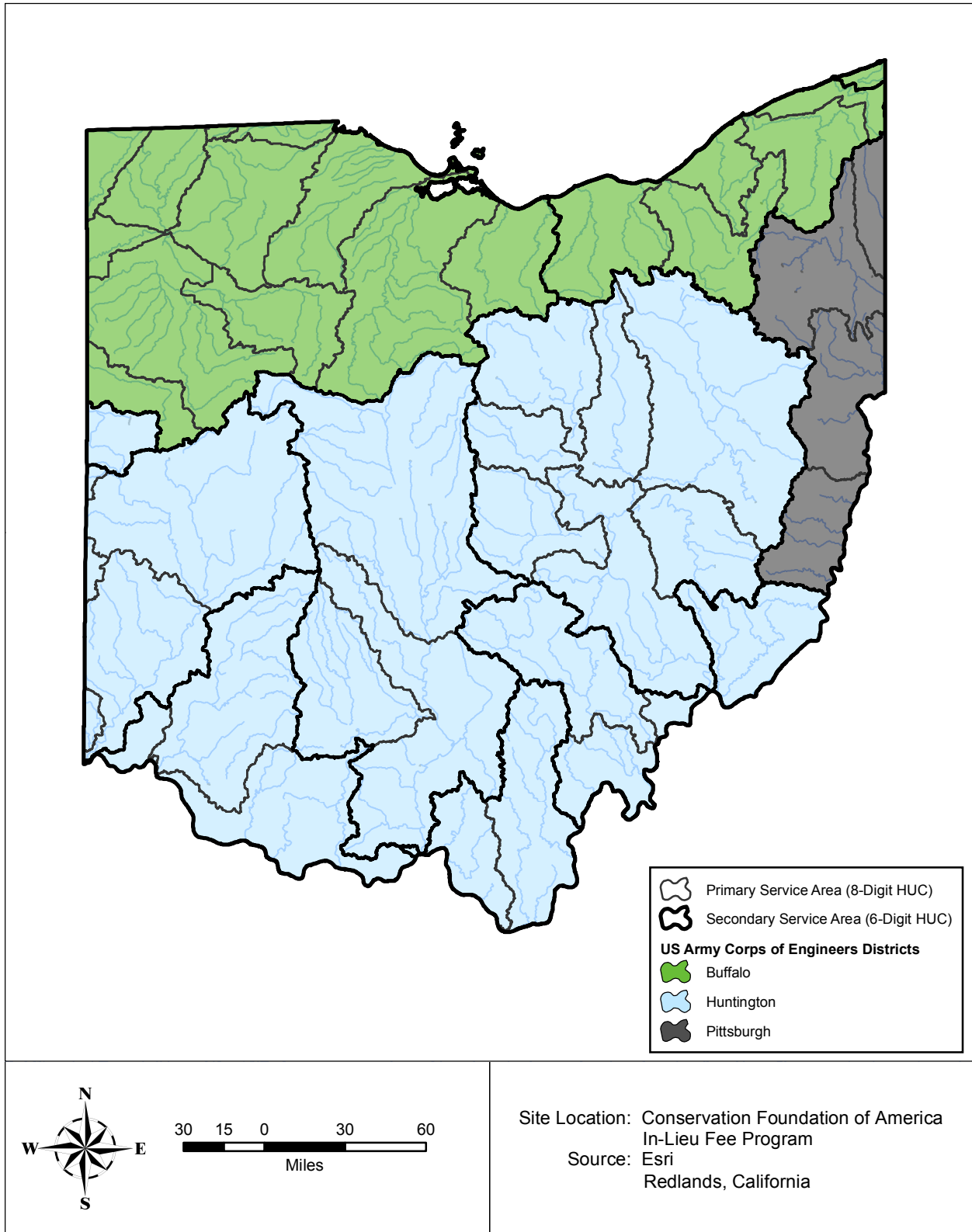
Oxbow uses bio-criteria and bio-assessment to influence its designs including the incorporation of habitat. In 1996, Oxbow began focusing on meeting water quality objectives with Ohio's streams including the development of restoration prediction criteria based on Ohio's Water Quality Standards, particularly the Qualitative Habitat Evaluation Index (QHEI). Through consultation with Ohio EPA and the Midwest Biodiversity Institute, Oxbow developed an easy method to predict habitat and fisheries improvement using existing QHEI and IBI metrics.

Initial input for this process was based on experience with construction of specific habitat features and then incorporating that knowledge back into designs. Oxbow has shared this prediction process through a series of training classes. This prediction method is now used by public agencies and consultants to gauge restoration success.

Finally, Oxbow uses restoration friendly equipment to complete the work. Current design specifications used by both private and public entities are based on those developed by Oxbow. Equipment used in the construction of stream restoration projects minimizes the construction impact and therefore reduces the risk to sensitive environments. Specialized low-ground pressure equipment is designed for less than 4.7 psi when loaded, reducing soil compaction and damage that ordinarily results in reduced vegetation recovery and soil percolation. This equipment also utilizes non-toxic, biodegradable hydraulic oils to eliminate risk of soil contamination in case of leaks or spills.

Appendix A
Location of Service Areas on Ohio Map

Location of Service Areas on Ohio Map



Appendix B

Compensation Planning Framework

Element I

The geographic service area(s), including a watershed-based rationale for the delineation of each service area;

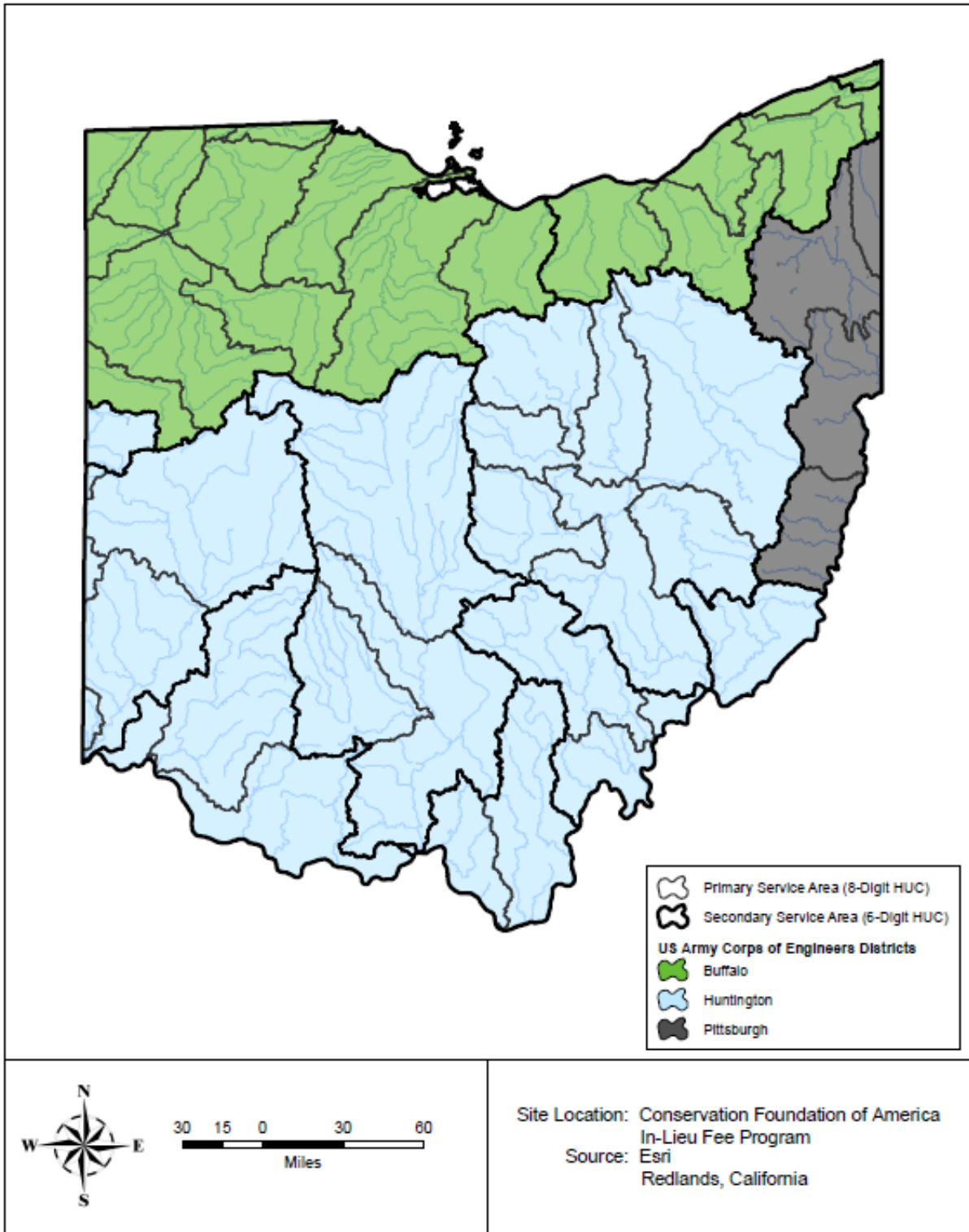
The proposed service areas in which the CFA ILFP will operate are defined by 8-digit HUC watersheds within Ohio in the Buffalo, Pittsburgh, and Huntington District. Service areas may be further refined as recommended and approved by the District Engineers.

Primary service areas are defined by the Forth Level (8-digit) hydrologic unit code (HUC) watersheds, where mitigation would take place for impacts to higher quality wetlands and streams. Secondary Service Areas are defined as the same 6-digit HUC where the impact occurred.

Where there are impacts to Category 1 wetlands of any size, or 0.5 acres and less of impacts to isolated Category 2 wetlands, mitigation may be implemented within the primary service area or the larger secondary service area within which the impact was located.

The CFA ILFP primary service areas include

1. Ottawa-Stony HUC 04100001
2. Raisin HUC 04100002
3. St. Joseph HUC 04100003
4. St. Mary's HUC 04100004
5. Upper Maumee HUC 04100005
6. Tiffin HUC 04100006
7. Auglaize HUC 04100007
8. Blanchard HUC 04100008
9. Lower Maumee HUC 04100009
10. Cedar-Portage HUC 04100010
11. Sandusky HUC 04100011
12. Huron and Vermilion 04100012
13. Black and Rocky HUC 04110001
14. Cuyahoga HUC 04110002
15. Ashtabula-Chagrin HUC 04110003
16. Grand HUC 04110004
17. Chautauqua-Conneaut HUC 04120101
18. Upper Ohio HUC 05030101
19. Shenango HUC 05003102
20. Mahoning HUC 05030103
21. Upper-Ohio Wheeling 05030106
22. Little Muskingum HUC 05030201
23. Upper Ohio-Shade HUC 05030202
24. Hocking HUC 05030204
25. Tuscarawas HUC 05040001
26. Mohican HUC 05040002
27. Walhonding HUC 05040003
28. Muskingum HUC 05040004
29. Wills HUC 05040005
30. Licking HUC 05040006
31. Upper Scioto River HUC 05060001
32. Lower Scioto HUC 05040002
33. Paint HUC 05040003
34. Upper Great Miami HUC 05080001
35. Lower Great Miami HUC 05080002
36. Whitewater HUC 05080003
37. Raccoon HUC 05090101
38. Little Scioto-Tygarts HUC 05090103
39. Ohio Brush-Whiteoak HUC 05090201
40. Little Miami HUC 05090202
41. Middle Ohio- Laughery HUC 05090203
42. Upper Wabash HUC 05120101
43. Mississinewa HUC 05120103



Element II

A description of the threats to aquatic resources in the service area(s), including how the in-lieu fee program will help offset impacts resulting from those threats;

The CFA ILFP will help to offset impacts resulting from the threats described below by providing replacement aquatic resource acreage or length, functions, and values through restoration, establishment, or enhancement, and/or by preserving the highest quality water resources.

Development

Residential, commercial, and industrial development throughout Ohio poses a number of threats to aquatic resources. Direct impacts are associated with the large amount of natural environment (forests, wetlands, prairies, greenspace) being converted into built environment associated with major metropolitan areas within the service areas. Three of the most significant consequences associated with the loss of vegetated areas are non-point source pollution, habitat loss, fragmentation and degradation, and hydrology alteration.

Non-point Source Pollution:

Nonpoint source pollution within urbanized areas is a primary threat to water resources due to its ability to abruptly change the relationships between vegetation, soils, and waterways. Permeable surfaces are replaced with roads, buildings, parking lots, and other impervious surfaces. The effect of impervious surfaces on the volume of stormwater runoff is substantial. As rainfall moves rapidly across the developed landscape, pollutants such as sediments, toxic metal particles, pesticides and fertilizers, petroleum products, harmful bacteria, and salt flow into Ohio's waterways leading to problematic changes in the water quality of the aquatic eco-system.

Habitat Loss, Fragmentation, and Degradation:

The destruction of habitat through activities such as the removal of forests and riparian corridors, filling of wetlands, dredging of rivers, and mowing fields, results in significant impacts on the natural environment and the aquatic function it provides. Besides the actual loss of habitat, these land use practices cause erosion and sedimentation altering both the physical, chemical, and hydrological characteristics of streams, wetlands, floodplains and coastal areas.

Habitat fragmentation and degradation impacts aquatic resources through modifying the biodiversity, health, and connectivity of habitat. Development and road construction are the primary causes of habitat fragmentation and degradation for terrestrial species. Aquatic species experience habitat fragmentation mainly as a result of dams and water diversion. The location of roads and dams have the potential to cause multiple impacts to aquatic resources by altering hydrologic connections through accelerated water flow and sediment transport, disrupting wildlife corridors, and providing pathways for the establishment of invasive species.

Hydrology Alteration:

Natural hydrology can be modified physically through activities such as the installation of dams and culverts, stream channelization, draining and filling of wetlands, vegetation removal, and runoff from urban and agricultural sources. These disturbances to natural hydrology often lead to changes in water temperature and oxygen levels, flow patterns, stream gradient, and overall water quality resulting in a degraded and/or non-functional aquatic ecosystem.

Invasive Species

Invasive species is defined as non-indigenous species (e.g. plants, animals, fungus, or bacterium) that have the potential to adversely impact the native habitats they invade. Although not all non-native species become a nuisance, the ones that do can have a detrimental effect on the native Ohio species resulting in a decline in the health and function of aquatic systems in Ohio.

Once invasive species are established, it is difficult to eliminate or control them. Even if the native species are not completely eliminated, the ecosystem often becomes less diverse. A less diverse ecosystem is more susceptible to further disturbances from other stressors including diseases and natural disasters.

Invasive plant species are particularly damaging to the ecological integrity of Ohio's wetlands and streams. Some that pose the greatest threat to the aquatic resources in Ohio include species such as *Phragmites australis* (common reed), *Frangula alnus* (glossy buckthorn), *Phalaris arundinaceae* (reed canary grass), *Lythrum salicaria* (purple loosestrife), and many others.

Nutrient Enrichment

The two main sources of nutrient enrichment in Ohio's waterways are agricultural run-off and failing municipal and residential wastewater treatment systems. The nutrients that are most problematic are phosphorus and nitrogen from animal and human waste, fertilizers, pesticides, and herbicides.

Phosphorus and nitrogen have long been identified as key controlling factors in the eutrophication of our waterways. Eutrophic is a term that describes a waterbody enriched with nutrients causing a proliferation of plant growth. As the aquatic vegetation dies it consumes the dissolved oxygen in the water, resulting in hypoxic conditions. Although eutrophication is a natural process, anthropogenic activities significantly accelerate this progression of biological productivity. The term "cultural eutrophication" is often used to describe anthropogenic activities that produce nutrients, such as phosphate and nitrates, resulting in nutrient overload in receiving waters.

Cultural eutrophication in Lake Erie was first identified in the 1960's. Over-nourishment resulted in accelerated growth (blooms) of cyanobacteria. The more dominant and concerning cyanobacteria found in Lake Erie is *Microcystis aeruginosa*, which is often referred to as "toxic algae" due to a potent toxin called Microcystin found in the algae. The initial consequence of the blooms is an unpleasant odor, which quickly develops into a more cumulative effect including eutrophication, threats to drinking water and irrigation, and a reduction in recreational activities such as fishing and boating. Impacts from eutrophication are not limited to Lake Erie. Eutrophic conditions are a threat to all waterways and aquatic ecosystems.

Element III

An analysis of historic aquatic resource loss in the service area(s);

Following the trends of the time, Ohio began to experience significant growth in the early to mid-1800's that continued well into the twentieth century. Much of this growth was attributed to the favorable geographic and ecological conditions of the area that allowed the Great Lakes and Ohio River region to evolve as a center for commerce and industry.

Prior to the industrialization extensive settlement of the state, Ohio supported a number of unique natural areas: the northern portion of the Ohio landscape was comprised of vast mosaics of upland and forested wetlands, interspersed with freshwater marshes, sphagnum peat bogs, prairies, and pristine waterways. The southern, unglaciated portion of Ohio was characterized by more rugged topography, with rolling hills and high-gradient streams. One of the most notable wetlands located in northeast Ohio at the time was the Great Black Swamp, which is estimated to have been 3,072,000 acres in size (Dahl and Allord 1996). Over the last 200 years, agriculture, development, and industry have systematically destroyed and degraded much of the natural environment and aquatic resources throughout the state.

Agriculture

Agriculture has long been a source of aquatic degradation throughout the state. Beginning in the early 1800s, Ohioans started draining, clearing and plowing their land for farming. Innovation and technology further accelerated the level of large-scale conversion of wetlands to farmland. By 1884 Ohio had 20,000 miles of public ditches designed to drain 11 million acres of land (Dahl and Allord 1996).

As populations increased, and farming became more mechanized, farming practices had a greater impact on aquatic resources. Improper agricultural methods caused concentrations of nutrients, fecal coliforms bacteria and sediment loads in the surrounding waterways. Grazing and other agriculture practices resulted in destruction of riparian corridors and erosion that raised sediment input to nearby waterways. The introduction of agricultural chemicals and the large-scale application of these chemicals, caused long-term damage that still exist in present day.

Agricultural contamination of aquatic resources remains a major source of water pollution. Estimates by the US Environmental Protection Agency indicate that agriculture is the leading source of pollution of the nation's rivers, lakes, and wetlands, and among the leading sources of pollution of estuaries.

Development

By the mid-eighteen hundreds, development was in full swing. The geographic location and natural amenities found within Ohio greatly contributed to the rate of expansion. The region's proximity to the Great Lakes, Erie Canal, Ohio River, and railroad system helped facilitate a vast and interconnected transportation and trade network, which in turn spurred more development.

This symbiotic relationship with transportation was the economic engine that put the region on the development fast track, causing significant impacts to aquatic resources. Dredging and channelization degraded waterways, and impacted much of the adjacent wetlands. A significant amount of the timber needed to fuel the operation of Ohio's railroads often came from many of the forested wetlands, including the Great Black Swamp, which was drained channelized and deforested almost entirely by the end of the nineteenth century.

Government policies also played a role in furthering the trends of the time through legislation such as the Swamp Land Act, which promoted wetland drainage and reclamation to encourage settlement and development (Dahl and Allord 1996). By endorsing the draining and filling of wetlands for the purpose of development, the Federal Government helped shape the public's perception regarding the value wetlands provided which set the tone well into the twentieth century.

By the mid-1900's, wide-spread urban and suburban development converted vast amounts of un-Developed Land into built environments. The unrestrained and largely unregulated development activities such as logging, stream channelization, filling of wetlands, and construction of roads, caused major destruction and degradation of aquatic resources as well as the value and these resources. Over time, stormwater run-off, sewer overflows, and failing septic systems emerged as another environmentally damaging consequence of development.

Industry

Industry in Ohio has a long legacy of polluting and degrading aquatic resources. Heavy industry began to take root with the introduction of iron and steel foundries in the mid-1800s. Soon to follow were petroleum-refining industries, automobile manufacturing, glass manufacturing and the chemical industry. These businesses utilized toxic chemicals and heavy metals in their everyday operations that were directly released into the waterways. Once regulations such as the Clean Water Act, National Environmental Policy Act, and Resource Conservation and Recovery Act, were introduced, monitoring of the production, use, and disposal of toxic substances greatly reduced the direct impacts to our waterways. However, as the role industry historically played in region began to slow down, leaching from poorly maintained or abandoned industrial sites arose and remains to this day a source of pollution that impacts the health of the aquatic ecosystem.

Element IV

An analysis of current aquatic resource conditions in the service area(s), supported by an appropriate level of field documentation;

Improving aquatic resources in the state of Ohio will require a collaborative effort between government, public, and private organizations. The CFA ILFP will act as a tool in maintaining and improving water quality in Ohio. To better assess the aquatic needs of each watershed, CFA will reference and incorporate multiple information sources pertaining to past and current conditions of aquatic resources within the ILFPs service areas. This section provides an overall discussion of general trends across the ILFP's service areas, as well as relevant information on each individual service area.

Integrated Water Quality Report

Ohio EPA's 2014 *Ohio Integrated Water Quality Monitoring and Assessment Report* provides an overview of current water quality conditions in the state of Ohio, including water resources, quality, and goals, as well as current and future monitoring and management of water quality conditions. This particular report is required by the federal Clean Water Act to fulfill two purposes:

- To provide a summary of the status of the State's surface waters
- To develop a list of waters that do not meet established goals—the "impaired waters."

Under the Clean Water Act, once impaired waters are identified the state must take action to improve them. To help achieve the water quality goals within the state of Ohio, Ohio EPA assesses biological integrity and habitat, and uses the combined measures to assess the progress with which the state's waters are meeting goals outlined in the Clean Water Act. In addition to the biological integrity assessments, Ohio EPA collects data on the chemical quality of the water, sediment, and wastewater discharges; data on the contaminants in fish flesh; and physical habitat information about streams (Ohio EPA 2014b).

These assessments allow for an understanding of current conditions and the identification of specific needs for improving water quality. Based on the Ohio EPA *Ohio 2014 Integrating Water Quality Monitoring and Assessment Report*, overall water quality in the state of Ohio is improving.

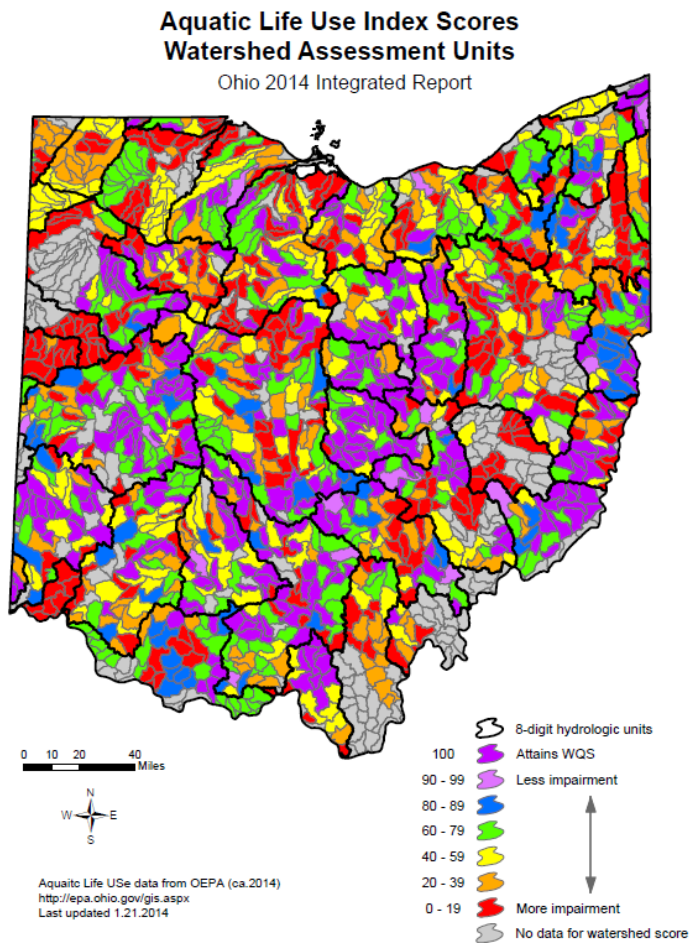
One metric used to show progress in water quality is the status of Ohio’s large rivers (those that drain more than 500 square miles). Over the last 30 years, there has been a significant improvement in the attainment status of large rivers. In 1980, only 21 percent of the large rivers met water quality standards, increasing to 62 percent in the 1990s, and to 89 percent today. The goal for 2020 is to have 100% full attainment (Ohio EPA 2014b). However, to meet this goal, understanding primary causes of water quality impairment is essential. Much of the current impairments are associated with modifications in the landscape that result from various land use practices associated with agriculture and urban development. Managing land use practices more effectively and restoring and protecting natural streams are a few of the recommendations made by Ohio EPA in order to meet the goal of full attainment.

Ohio EPA Biological and Water Quality Reports

Ohio EPA collects data from streams and rivers in five to seven areas of the state on an annual basis. Data collected includes chemical samples, measurements of streams, and examination and counting of fish and aquatic insects. There are three major objectives for the studies:

- To determine how the stream is doing compared to goals assigned in the Ohio Water Quality Standards;
- To determine if the goals assigned to the river or stream are appropriate and attainable; and
- To determine if the stream’s condition has changed since the last time the stream was studied.

The data gathered by surveys is processed, evaluated and synthesized in a biological and water quality report. The findings from these surveys are used to help guide water quality management in the state of Ohio. This information also provides the basis for the list of impaired and threatened waters required by Section 303(d) of the Clean Water Act. (Ohio EPA 2015).



Wetland Status and Trends

U.S. Fish and Wildlife Service (USFWS) examined recent trends in wetland extent and habitat type throughout the conterminous United States between 2004 and 2009, and issued their findings in 2011. The intent of this examination was not to assess the quality of the wetlands, but rather to provide baseline information to facilitate collaborative efforts for future assessment of wetland conditions. Although this report does not focus on any one state, it does provide a relevant representation of the overall wetland trends in the United States. Examinations of wetlands during this time period showed an increase in wetlands in certain categories, but overall indicated wetland losses outnumbered gains. As a result of past actions, fragmented wetland habitats are likely to have less structural stability to withstand environmental adversity in the future. Failure to restore wetland hydrology and biological integrity may have long-term ecological and economic impacts if reestablishment or mitigation options become more limited. Since wetland abundance and distribution affects wetland biodiversity, it is important to recognize that reestablishment and mitigation actions could improve ecological interactions if wetland type (diversity) and geospatial interspersions were considerations (Dahl 2011).

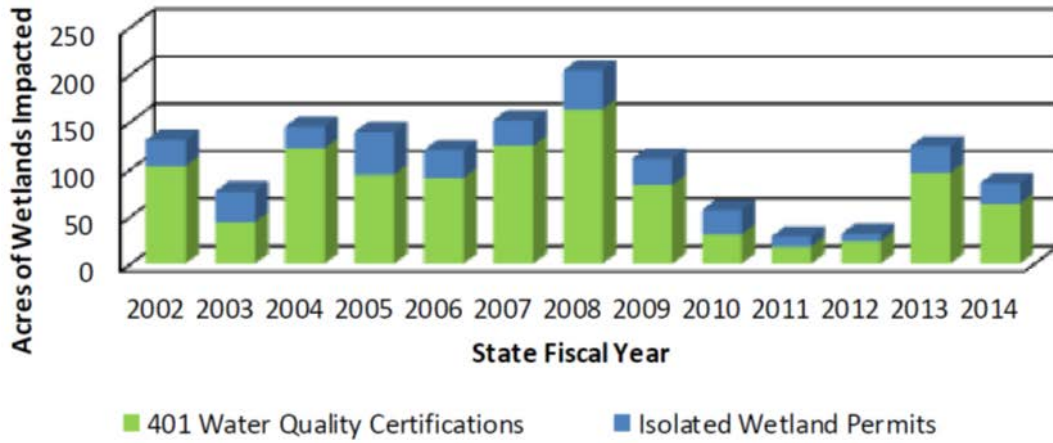
Permitting Trends

Permitting trends in Ohio have shown a steady decline in the number of 401 Water Quality Certification (WQC) issued with the last 5 years showing the lowest number of permits issued since tracking began in 2002. The reasons for the decline are complex and potentially reflect economic conditions, land use trends, and changing wetland regulation and enforcement measures. The total number of permits issued over the last 5 years under the section 401 program was 227 with an average of 45.40 permits. Isolated wetland permits totaled 204 with an average of 40.8 permits. Although the data shown below does not include Nationwide Permits, it does provide a good overview of the general permitting trends in Ohio. The information presented below shows the trends in permit activity since the isolated wetland permit program was created. The number of 401 WQC and isolated wetland permits issued during each fiscal year is shown below in Graph 1. Graph 2 shows the total number of acres of wetland impacts authorized by the two programs (401 WQC and isolated wetland permitting) by State Fiscal Year. Finally, Graph 3 displays the total length of stream impacts authorized by 401 WQCs (Ohio EPA 2014a).

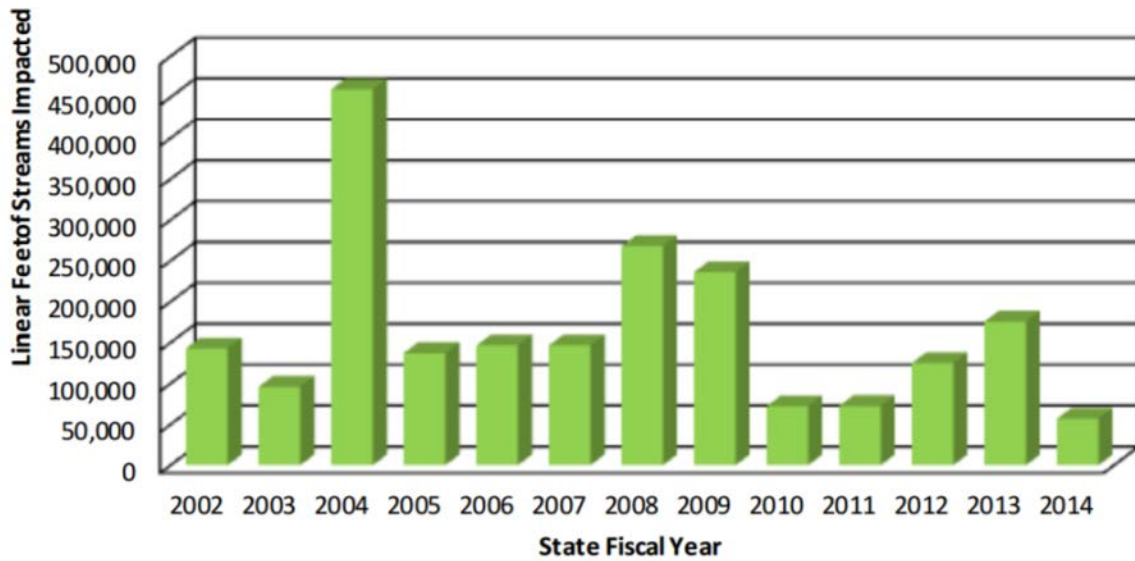
Graph 1. Number of 401 WQC and Isolated Wetland Permits Granted



Graph 2. Acreage of Wetland Impacts Authorized by 401 WQC and Isolated Wetland Permits.



Graph 3. Linear Feet of Stream Impacts Authorized by 401 WQC



Service Area 1: Ottawa-Stony HUC 04100001

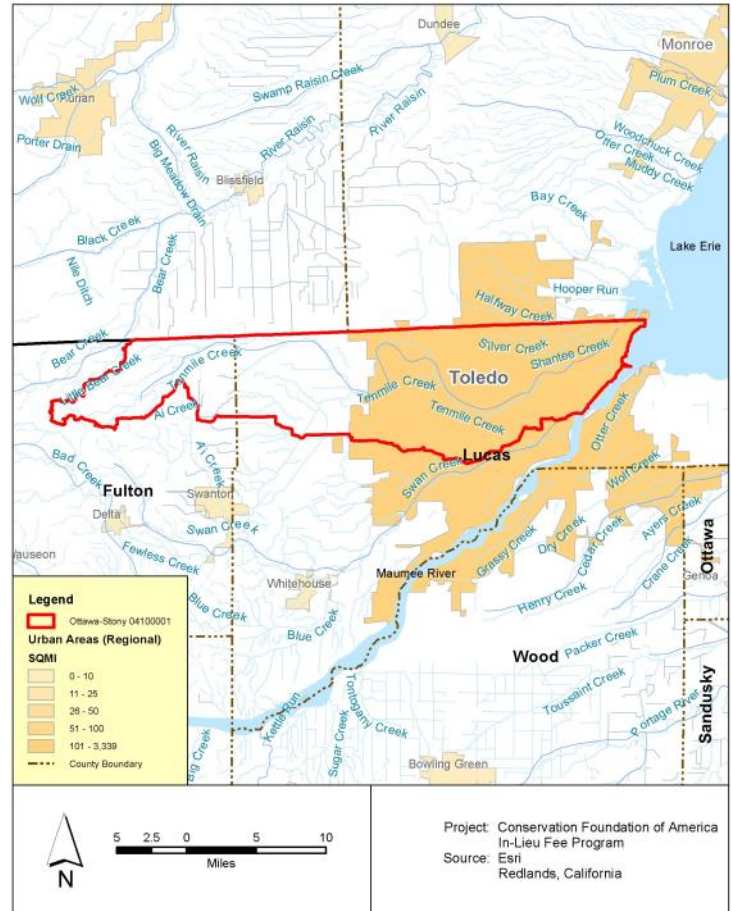
Watershed Characteristics

Geographic Size	146 miles ²
6-digit HUC	Western Lake Erie
Counties	Lucas, Fulton
Approximate 2010 Population	254,000
Primary Land Use	Agriculture, Developed Land

Federally Listed Species:

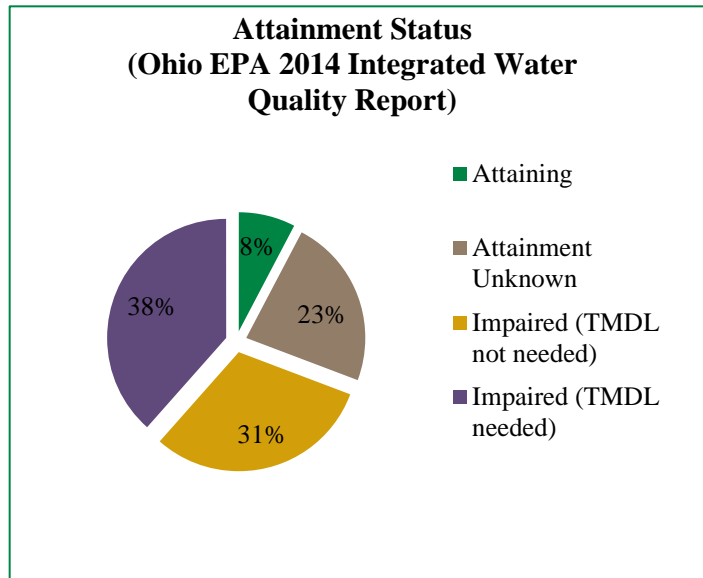
The list below is based on county occurrence of Federally Listed Species located within the watershed that may benefit from the CFA ILF Project.

- Candidate Species
 - eastern massasauga
- Threatened Species
 - eastern prairie fringed orchid,
 - northern long-eared bat
- Endangered Species
 - Indiana bat, Karner blue butterfly, Kirtland's warbler, piping plover, rayed bean
- Species of Special Concern
 - bald eagle



Aquatic Life Use Attainment Status

Ohio EPA's 2014 Integrated Water Quality Monitoring and Assessment Report provides current aquatic life use attainment status for each HUC-12 watershed. The aquatic life use scores are based on fish aquatic macroinvertebrate data against the biological criteria contained in Ohio's water quality standards. Attainment status for each Service Area was tabulated by calculating the HUC-12 scores found within the 8-digit watershed. Primary pollutants and sources that pose a threat to water quality are derived from Ohio EPA's 2014 Integrated Report as well as Ohio EPA's biological and Water Quality Reports.



The primary threat or impact to aquatic resources within this watershed includes:

- Sedimentation/Siltation
- Nutrients
- Organic enrichment
- Direct habitat alterations
- Flow alteration

The primary sources of the impacts or threats within this watershed include:

- Combined sewer overflows
- Sanitary sewer overflows
- Stormwater runoff

Wetland and Stream Impacts

Water resource permitting trends based upon Ohio EPA 401 WQC and Isolated Wetland permit data for the last 5 years in the Ottawa-Stony watershed show low wetland and stream impacts.

Water Resource Impacts	2010	2011	2012	2013	2014	5-Year Average
Wetlands (acres)	-	-	-	14.16	-	2.83
Streams (linear feet)	-	283	825	18,926	-	4,006.8

Service Area 2: Raisin HUC 04100002

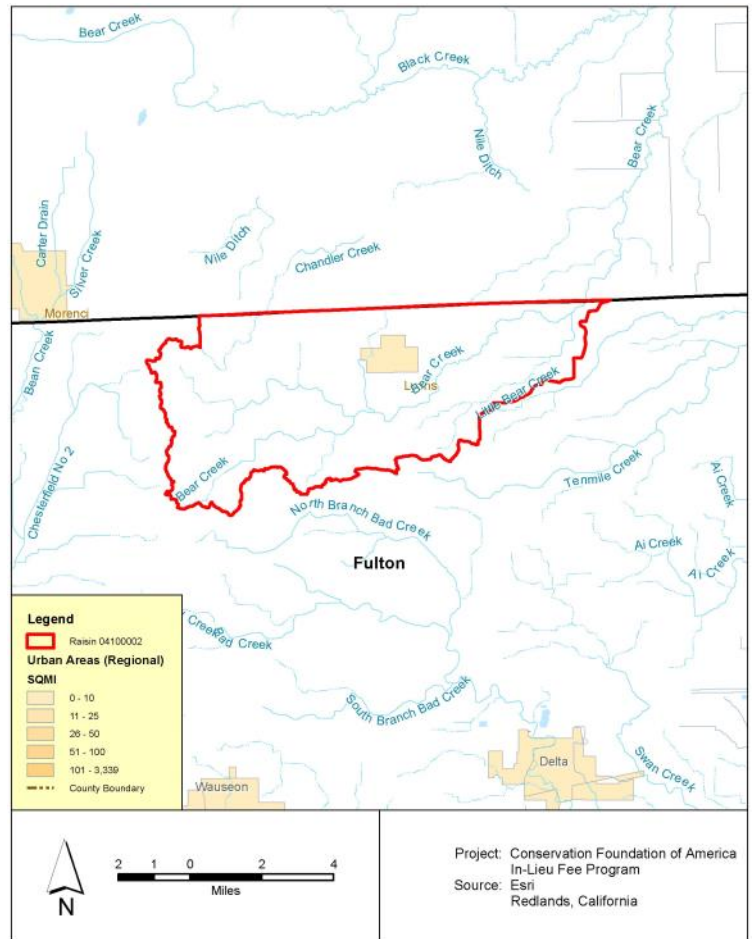
Watershed Characteristics

Geographic Size	26 miles ²
6-digit HUC	Western Lake Erie
Counties	Fulton
Approximate 2010 Population	1,435
Primary Land Use	Agriculture

Federally Listed Species:

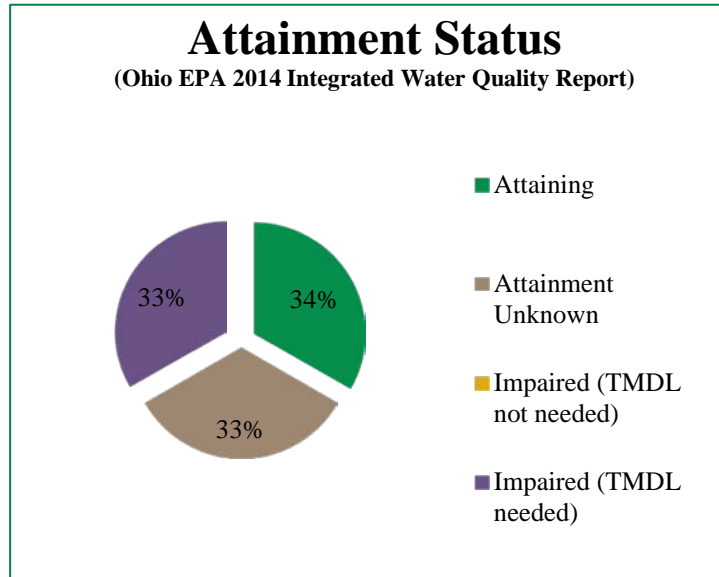
The list below is based on county occurrence of Federally Listed Species located within the watershed that may benefit from the CFA ILF Project.

- Threatened Species
 - northern long-eared bat
- Endangered Species
 - Indiana bat, rayed bean
- Species of Special Concern
 - bald eagle



Aquatic Life Use Attainment Status

Ohio EPA's 2014 Integrated Water Quality Monitoring and Assessment Report provides current aquatic life use attainment status for each HUC-12 watershed. The aquatic life use scores are based on fish aquatic macroinvertebrate data against the biological criteria contained in Ohio's water quality standards. Attainment status for each Service Area was tabulated by calculating the HUC-12 scores found within the 8-digit watershed. Primary pollutants and sources that pose a threat to water quality are derived from Ohio EPA's 2014 Integrated Report as well as Ohio EPA's biological and Water Quality Reports.



The primary threat or impact to aquatic resources within this watershed includes:

- Sedimentation/siltation
- Nutrients

The primary sources of the impacts or threats within this watershed include:

- Hydrologic alteration
- Habitat alteration

Wetland and Stream Impacts

Water resource permitting trends based upon Ohio EPA 401 WQC and Isolated Wetland permit data for the last 5 years in the Raisin watershed show no wetland or stream impacts.

Water Resources 2010-2014	2010	2011	2012	2013	2014	5-Year Average
Wetlands (acres)	-	-	-	-	-	0
Streams (linear feet)	-	-	-	-	-	0

Service Area 3: St. Joseph 04100003

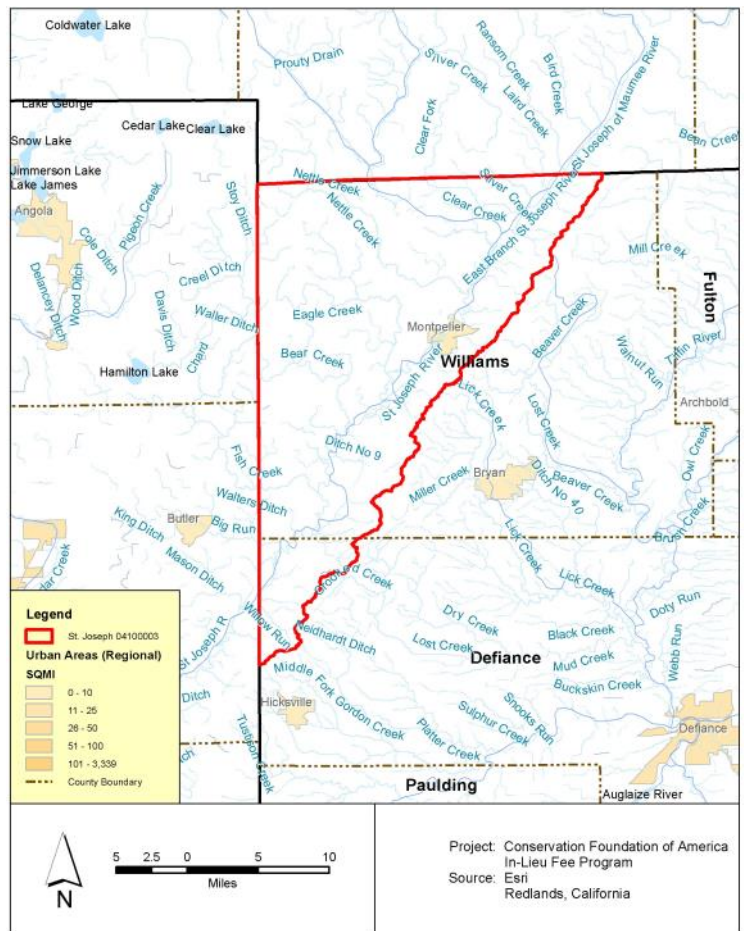
Watershed Characteristics

Geographic Size	238 miles ²
6-digit HUC	Western Lake Erie
Counties	Defiance, Williams
Approximate 2010 Population	15,700
Primary Land Use	Agriculture

Federally Listed Species:

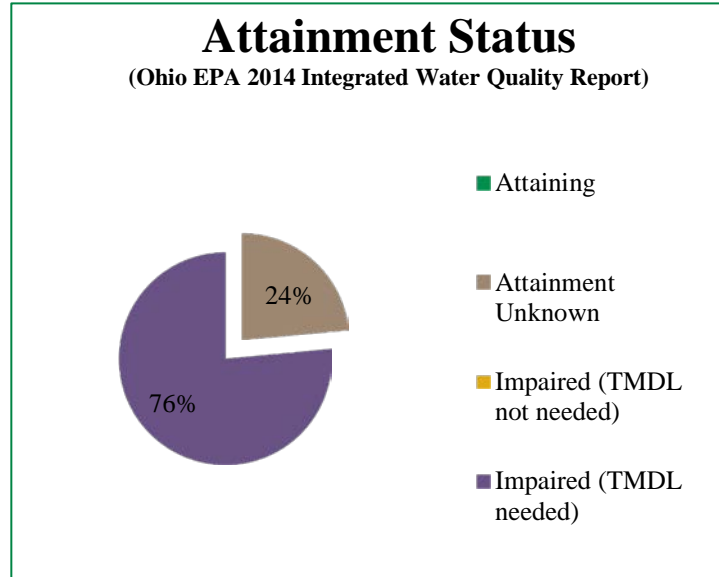
The list below is based on county occurrence of Federally Listed Species located within the watershed that may benefit from the CFA ILF Project.

- Threatened Species
 - northern long-eared bat, copperbelly water snake
- Endangered Species
 - Indiana bat, clubshell, northern riffleshell, white cat's paw pearly mussel, rayed bean
- Species of Special Concern
 - bald eagle



Aquatic Life Use Attainment Status

Ohio EPA's 2014 Integrated Water Quality Monitoring and Assessment Report provides current aquatic life use attainment status for each HUC-12 watershed. The aquatic life use scores are based on fish aquatic macroinvertebrate data against the biological criteria contained in Ohio's water quality standards. Attainment status for each Service Area was tabulated by calculating the HUC-12 scores found within the 8-digit watershed. Primary pollutants and sources that pose a threat to water quality are derived from Ohio EPA's 2014 Integrated Report as well as Ohio EPA's biological and Water Quality Reports.



The primary threat or impact to aquatic resources within this watershed includes:

- Sedimentation/ siltation
- Nutrients
- Organic enrichment
- Metals
- Habitat alteration
- Flow alteration

The primary sources of the impacts or threats within this watershed include:

- Non-irrigated crop production
- Channelization-agriculture

Wetland and Stream Impacts

Water resource permitting trends based upon Ohio EPA 401 WQC and Isolated Wetland permit data for the last 5 years in the St. Joseph River watershed shows no wetland or stream impacts.

Water Resource Impacts	2010	2011	2012	2013	2014	5-Year Average
Wetlands (acres)	-	-	-	-	-	0
Streams (linear feet)	-	-	-	-	-	0

Service Area 4: St. Marys 04100004

Watershed Characteristics

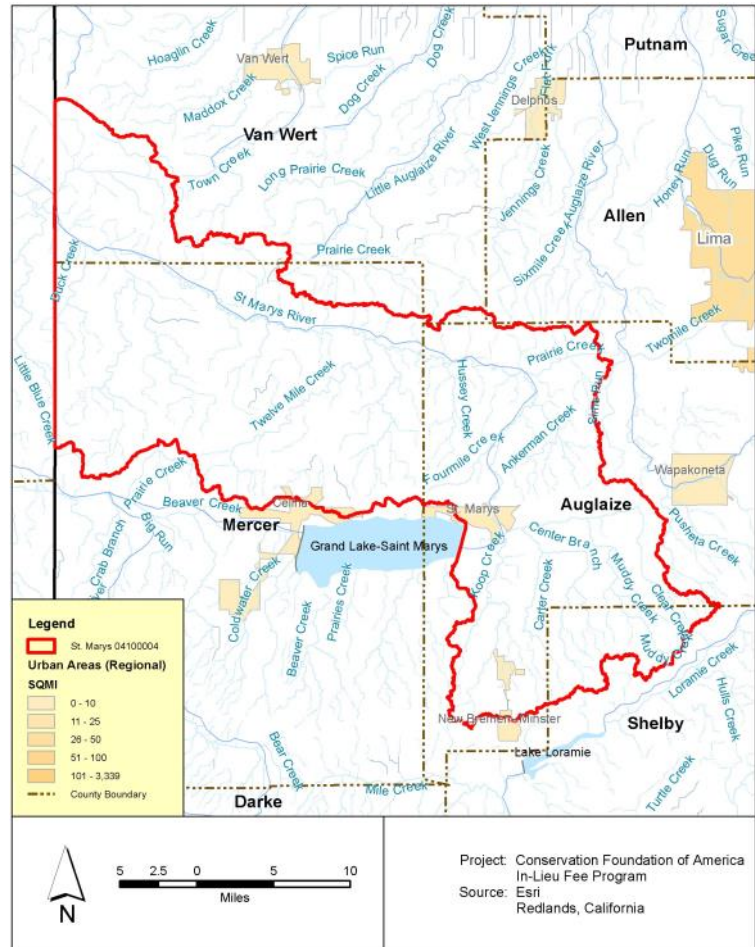
Geographic Size	400 miles ²
6-digit HUC	Western Lake Erie
Counties	Allen, Auglaize, Mercer, Shelby, Van Wert
Approximate 2010 Population	33,450
Primary Land Use	Agriculture

Federally Listed Species:

The list below is based on county occurrence of Federally Listed Species located within the watershed that may benefit from the CFA

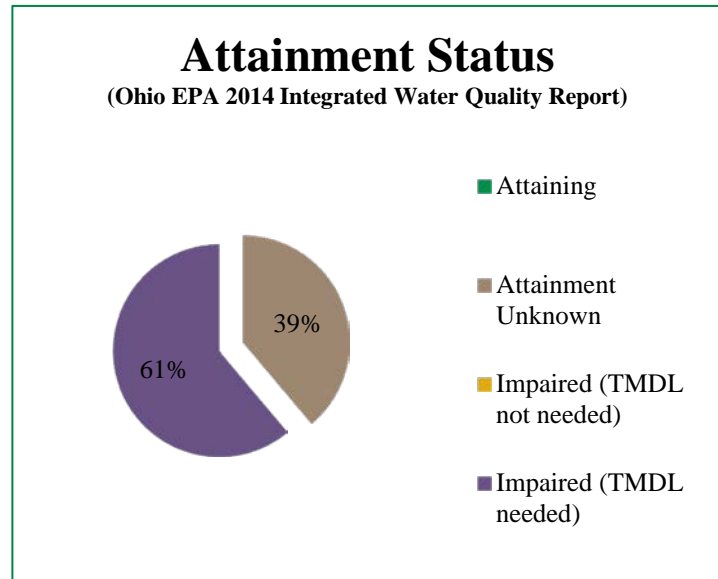
ILF Project

- Threatened Species
 - northern long-eared bat
- Endangered Species
 - Indiana bat, rayed bean
- Species of Special Concern
 - bald eagle



Aquatic Life Use Attainment Status

Ohio EPA's 2014 Integrated Water Quality Monitoring and Assessment Report provides current aquatic life use attainment status for each HUC-12 watershed. The aquatic life use scores are based on fish aquatic macroinvertebrate data against the biological criteria contained in Ohio's water quality standards. Attainment status for each Service Area was tabulated by calculating the HUC-12 scores found within the 8-digit watershed. Primary pollutants and sources that pose a threat to water quality are derived from Ohio EPA's 2014 Integrated Report as well as Ohio EPA's biological and Water Quality Reports.



The primary threat or impact to aquatic resources within this watershed includes:

- Sedimentation/siltation
- Flow regime alteration
- Direct habitat alteration
- Nutrients
- Metals
- Organic enrichment

The primary sources of the impacts or threats within this watershed include:

- Non-point source pollution
- Dam or impoundment
- Channelization- agriculture

Wetland and Stream Impacts

Water resource permitting trends based upon Ohio EPA 401 WQC and Isolated Wetland permit data for the last 5 years in the St. Mary's River watershed shows no wetland or stream impacts.

Water Resource Impacts	2010	2011	2012	2013	2014	5-Year Average
Wetlands (acres)	-	-	-	-	-	0
Streams (linear feet)	-	-	-	-	-	0

Service Area 5: Upper Maumee HUC 04100005

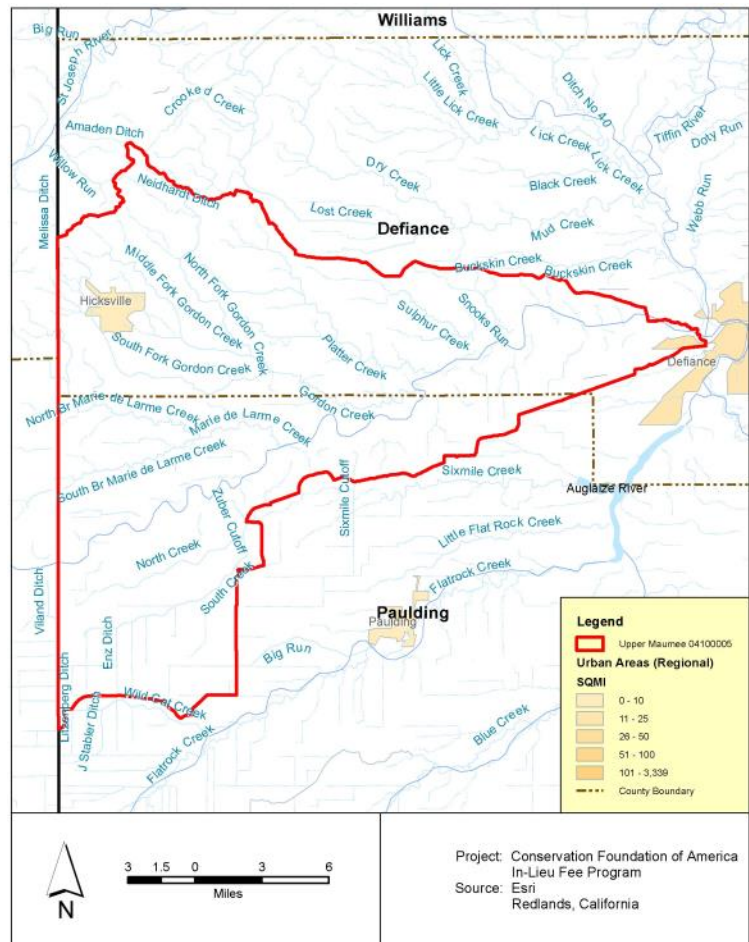
Watershed Characteristics

Geographic Size	190 miles ²
6-digit HUC	Western Lake Erie
Counties	Defiance, Paulding
Approximate 2010 Population	13,200
Primary Land Use	Agriculture

Federally Listed Species:

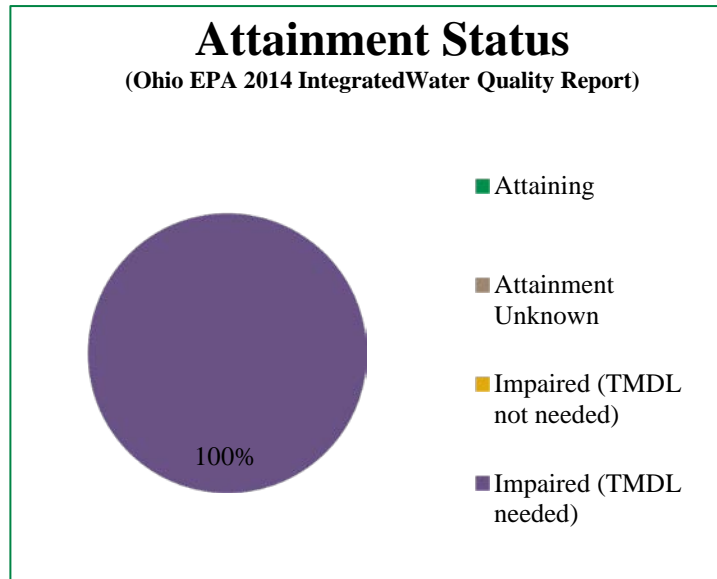
The list below is based on county occurrence of Federally Listed Species located within the watershed that may benefit from the CFA ILF Project.

- Threatened Species
 - northern long-eared bat,
 - copperbelly water snake
- Endangered Species
 - Indiana bat, clubshell,
 - northern riffleshell, white cat's paw pearly mussel,
 - rayed bean.
- Species of Special Concern
 - bald eagle



Aquatic Life Use Attainment Status

Ohio EPA's 2014 Integrated Water Quality Monitoring and Assessment Report provides current aquatic life use attainment status for each HUC-12 watershed. The aquatic life use scores are based on fish aquatic macroinvertebrate data against the biological criteria contained in Ohio's water quality standards. Attainment status for each Service Area was tabulated by calculating the HUC-12 scores found within the 8-digit watershed. Primary pollutants and sources that pose a threat to water quality are derived from Ohio EPA's 2014 Integrated Report as well as Ohio EPA's biological and Water Quality Reports.



The primary threats or impacts to aquatic resources within this watershed include:

- Flow alteration
- Unionized ammonia
- Direct habitat alterations
- Siltation

The primary sources of the impacts or threats within this watershed include:

- Stream bank destabilization-agriculture
- Removal of riparian vegetation-agriculture
- Non-irrigated crop production
- Minor municipal point source
- Channelization-agriculture

Wetland and Stream Impacts

Water resource permitting trends based upon Ohio EPA 401 WQC and Isolated Wetland permit data for the last 5 years in the Upper Maumee River watershed shows no wetland or stream impacts.

Water Resource Impacts	2010	2011	2012	2013	2014	5-Year Average
Wetlands (acres)	-	-	-	-	-	0
Streams (linear feet)	-	-	-	-	-	0

Service Area 6: Tiffin HUC 04100006

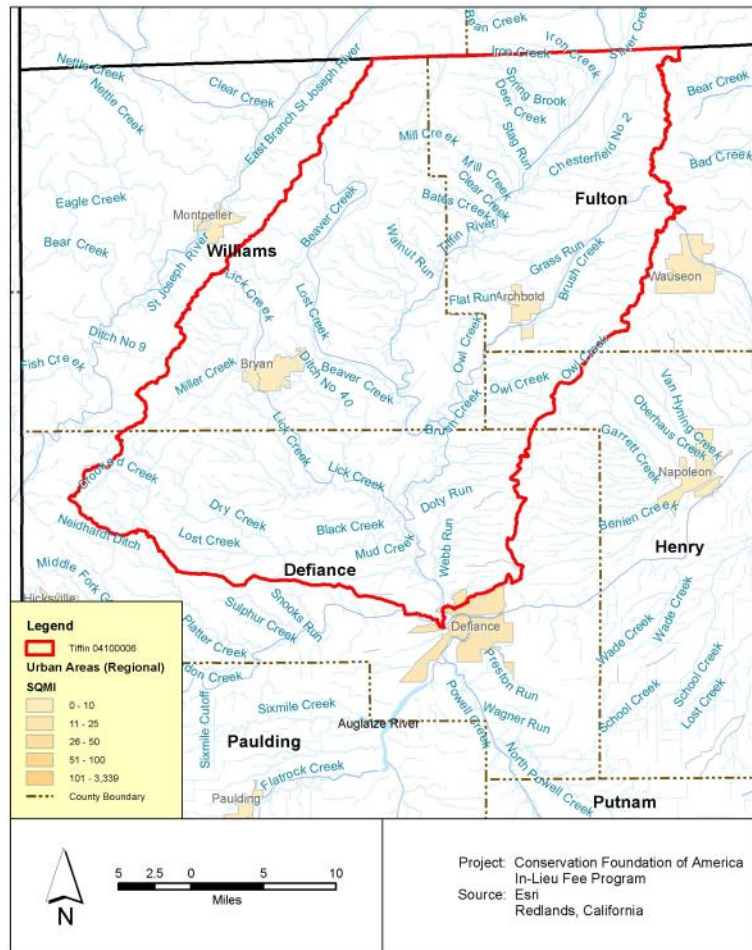
Watershed Characteristics

Geographic Size	558 miles ²
6-digit HUC	Western Lake Erie
Counties	Defiance, Fulton, Henry, Williams
Approximate 2010 Population	43,300
Primary Land Use	Agriculture

Federally Listed Species:

The list below is based on county occurrence of Federally Listed Species located within the watershed that may benefit from the CFA ILF Project.

- Threatened Species
 - northern long-eared bat, copperbelly water snake
- Endangered Species
 - Indiana bat, clubshell, northern riffleshell, white cat's paw, pearly mussel, rayed bean
- Species of Special Concern
 - bald eagle



Aquatic Life Use Attainment Status

Ohio EPA's 2014 Integrated Water Quality Monitoring and Assessment Report provides current aquatic life use attainment status for each HUC-12 watershed. The aquatic life use scores are based on fish aquatic macroinvertebrate data against the biological criteria contained in Ohio's water quality standards. Attainment status for each Service Area was tabulated by calculating the HUC-12 scores found within the 8-digit watershed. Primary pollutants and sources that pose a threat to water quality are derived from Ohio EPA's 2014 Integrated Report as well as Ohio EPA's biological and Water Quality Reports.

The primary threats or impacts to aquatic resources within this watershed include:

- Direct habitat alteration
- Organic enrichment
- Siltation
- Nutrients
- Flow modification

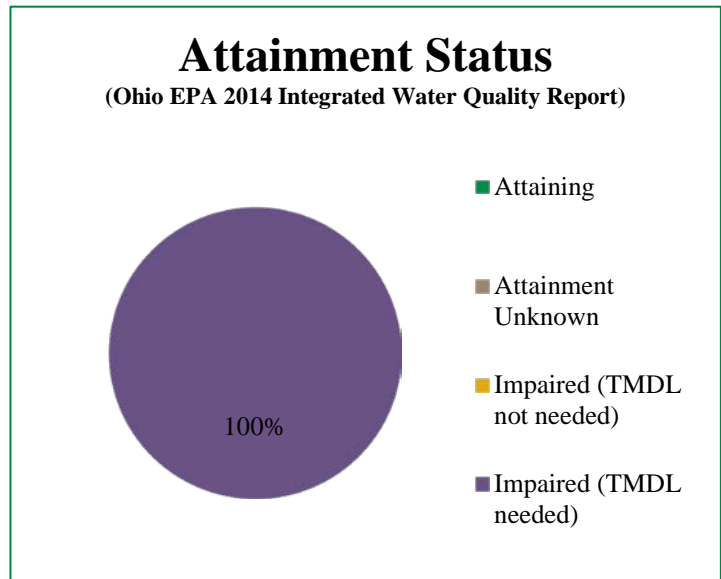
The primary sources of the impacts or threats within this watershed include:

- Non-irrigated crop production
- Minor municipal point source
- Major industrial point source
- Removal of riparian vegetation – agriculture
- Flow regulation/modification - agriculture

Wetland and Stream Impacts

Water resource permitting trends based upon Ohio EPA 401 WQC and Isolated Wetland permit data for the last 5 years in the Tiffin watershed shows minimal wetland permits and no stream impacts.

Water Resource Impacts	2010	2011	2012	2013	2014	5-Year Average
Wetlands (acres)	-	-	4.91	-	-	0.98
Streams (linear feet)	-	-	-	-	-	0



Service Area 7: Auglaize HUC 04100007

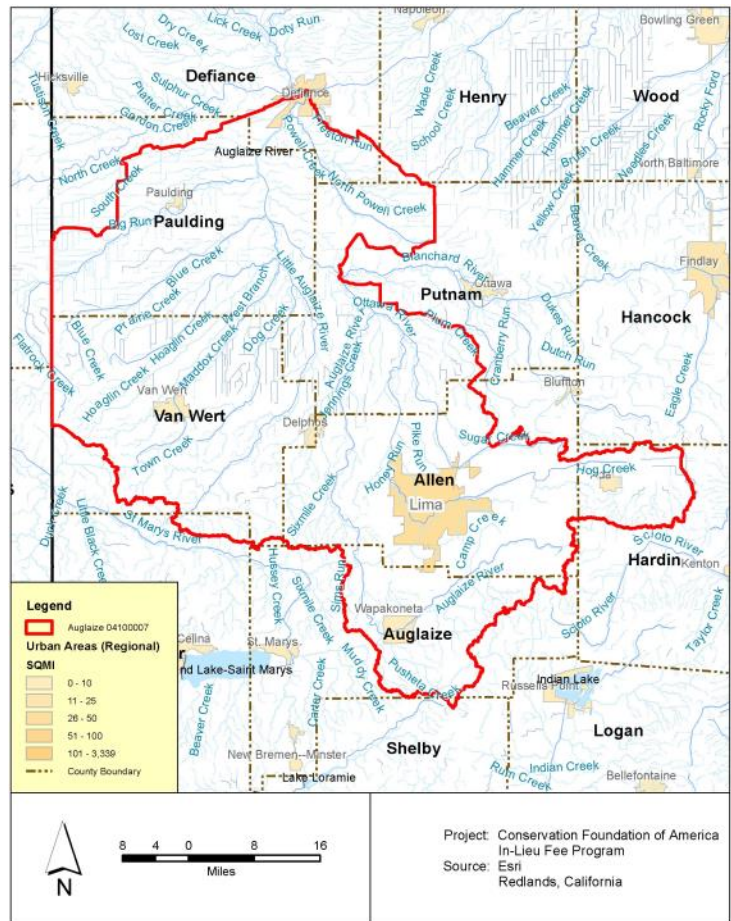
Watershed Characteristics

Geographic Size	1,565 miles ²
6-digit HUC	Western Lake Erie
Counties	Allen, Auglaize, Defiance, Hancock, Hardin, Henry, Mercer, Paulding, Putnam, Shelby, Van Wert
Approximate 2010 Population	196,600
Primary Land Use	Agriculture, Developed Land

Federally Listed Species:

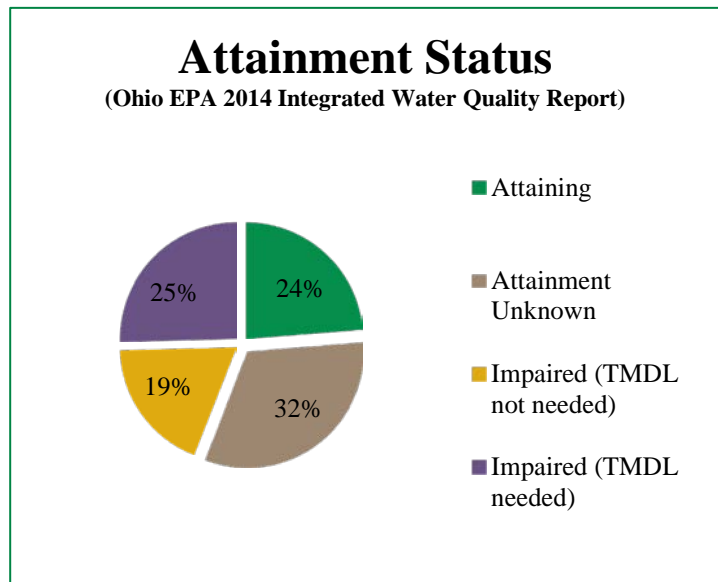
The list below is based on county occurrence of Federally Listed Species located within the watershed that may benefit from the CFA ILF Project.

- Threatened Species
 - northern long-eared bat, copperbelly water snake
- Endangered Species
 - Indiana bat, clubshell, northern riffleshell, white cat's paw, pearly mussel, rayed bean
- Species of Special Concern
 - bald eagle



Aquatic Life Use Attainment Status

Ohio EPA's 2014 Integrated Water Quality Monitoring and Assessment Report provides current aquatic life use attainment status for each HUC-12 watershed. The aquatic life use scores are based on fish aquatic macroinvertebrate data against the biological criteria contained in Ohio's water quality standards. Attainment status for each Service Area was tabulated by calculating the HUC-12 scores found within the 8-digit watershed. Primary pollutants and sources that pose a threat to water quality are derived from Ohio EPA's 2014 Integrated Report as well as Ohio EPA's biological and Water Quality Reports.



The primary threats or impacts to aquatic resources within this watershed include:

- Direct habitat alterations
- Nutrient enrichment
- Siltation
- Oxygen, dissolved

The primary sources of the impacts or threats within this watershed include:

- Crop production with subsurface drainage
- Channelization

Wetland and Stream Impacts

Water resource permitting trends based upon Ohio EPA 401 WQC and Isolated Wetland permit data for the last 5 years in the Auglaize River watershed shows no wetland permits were issued while in 2014 there were a large amount of stream impacts.

Water Resource Impacts	2010	2011	2012	2013	2014	5-Year Average
Wetlands (acres)	-	-	-	-	-	0
Streams (linear feet)	-	-	-	-	33,932	6,786.40

Service Area 8: Blanchard HUC 04100008

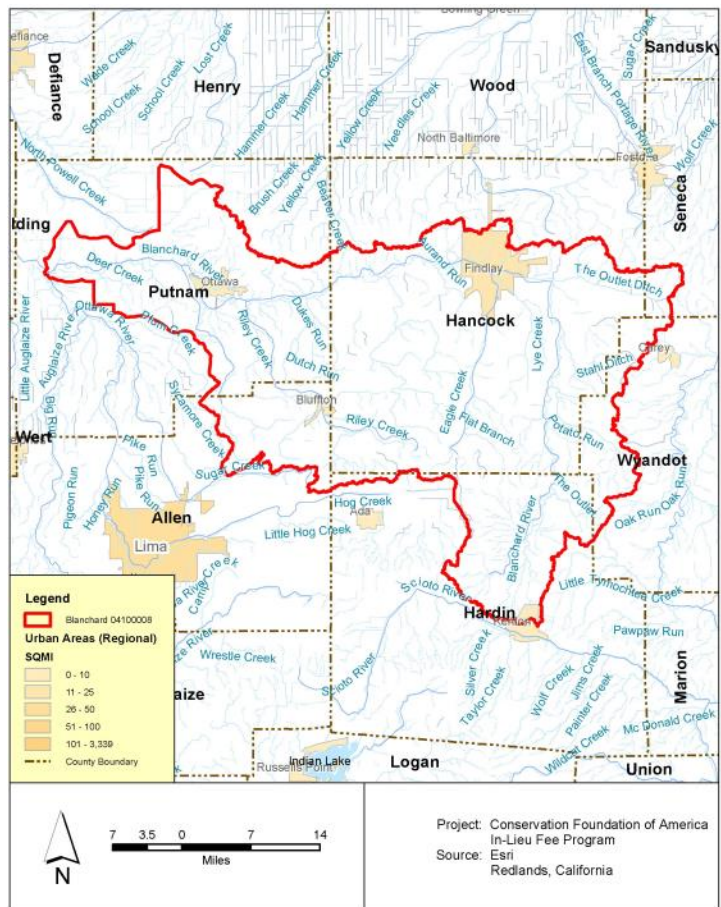
Watershed Characteristics

Geographic Size	772.4 miles ²
6-digit HUC	Western Lake Erie
Counties	Allen, Hancock, Hardin, Putnam, Seneca, Wyandot
Approximate 2010 Population	94,800
Primary Land Use	Agriculture

Federally Listed Species:

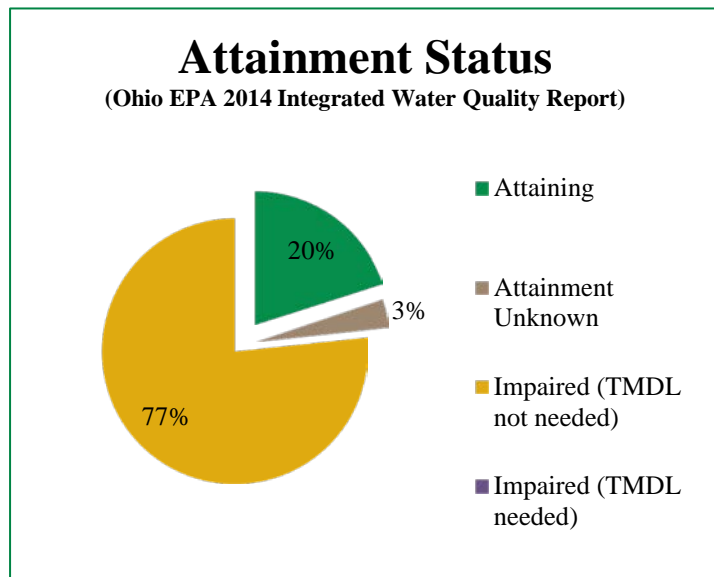
The list below is based on county occurrence of Federally Listed Species located within the watershed that may benefit from the CFA ILF Project.

- Candidate Species
 - eastern massasauga
- Threatened Species
 - northern long-eared bat,
 - copperbelly water snake
- Endangered Species
 - Indiana bat, clubshell,
 - rayed bean
- Species of Special Concern
 - bald eagle



Aquatic Life Use Attainment Status

Ohio EPA's 2014 Integrated Water Quality Monitoring and Assessment Report provides current aquatic life use attainment status for each HUC-12 watershed. The aquatic life use scores are based on fish aquatic macroinvertebrate data against the biological criteria contained in Ohio's water quality standards. Attainment status for each Service Area was tabulated by calculating the HUC-12 scores found within the 8-digit watershed. Primary pollutants and sources that pose a threat to water quality are derived from Ohio EPA's 2014 Integrated Report as well as Ohio EPA's biological and Water Quality Reports.



The primary threat or impact to aquatic resources within this watershed includes:

- Sedimentation/siltation
- Organic enrichment (sewage) biological indicators
- Phosphorus (total)
- Oxygen, dissolved
- Habitat alteration

The primary sources of the impacts or threats within this watershed include:

- Municipal point source discharges
- Crop production with subsurface drainage
- Channelization
- Streambank modifications/destabilization

Wetland and Stream Impacts

Water resource permitting trends based upon Ohio EPA 401 WQC and Isolated Wetland permit data for the last 5 years in the Blanchard River watershed shows moderate wetland and stream impacts.

Water Resource Impacts	2010	2011	2012	2013	2014	5-Year Average
Wetlands (acres)	-	-	-	-	7.87	1.57
Streams (linear feet)	-	-	-	-	1,497	299.40

Service Area 9: Lower Maumee HUC 04100009

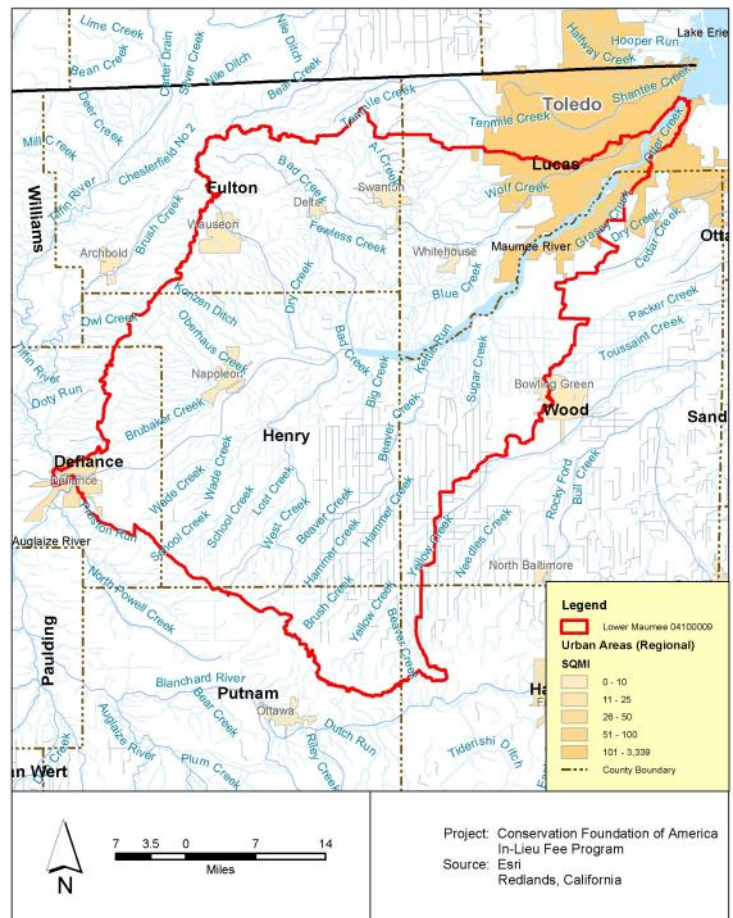
Watershed Characteristics

Geographic Size	1,081 miles ²
6-digit HUC	Western Lake Erie
Counties	Defiance, Fulton, Hancock, Henry, Lucas, Putnam, Wood
Approximate 2010 Population	280,800
Primary Land Use	Agriculture

Federally Listed Species:

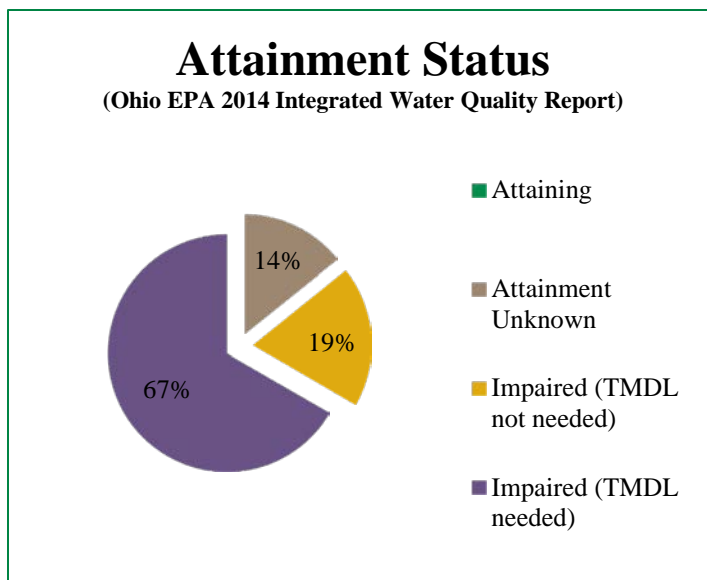
The list below is based on county occurrence of Federally Listed Species located within the watershed that may benefit from the CFA ILF Project.

- Candidate Species
 - eastern massasauga
- Threatened Species
 - northern long-eared bat, copperbelly water snake, eastern prairie fringed orchid
- Endangered Species
 - Indiana bat, clubshell, northern riffleshell, white cat's paw pearly mussel, rayed bean, Karner blue butterfly, Kirtland's warbler, piping plover, rayed bean
- Species of Special Concern
 - bald eagle



Aquatic Life Use Attainment Status

Ohio EPA's 2014 Integrated Water Quality Monitoring and Assessment Report provides current aquatic life use attainment status for each HUC-12 watershed. The aquatic life use scores are based on fish aquatic macroinvertebrate data against the biological criteria contained in Ohio's water quality standards. Attainment status for each Service Area was tabulated by calculating the HUC-12 scores found within the 8-digit watershed. Primary pollutants and sources that pose a threat to water quality are derived from Ohio EPA's 2014 Integrated Report as well as Ohio EPA's biological and Water Quality Reports.



The primary threats or impacts to aquatic resources within this watershed include:

- Nutrients
- Direct habitat alterations
- Flow alteration
- Sediment/siltation
- Organic enrichments

The primary sources of the impacts or threats within this watershed include:

- Channelization – agriculture
- Non-irrigated crop production
- Wastewater discharge

Wetland and Stream Impacts

Water resource permitting trends based upon Ohio EPA 401 WQC and Isolated Wetland permit data for the last 5 years in the Lower Maumee watershed shows moderate wetland permits and high stream impacts.

Water Resource Impacts	2010	2011	2012	2013	2014	5-Year Average
Wetlands (acres)	1.67	-	4.27	-	0.24	1.24
Streams (linear feet)	4,082	9,510	6,390	-	700	4,136.40

Service Area 10: Cedar-Portage HUC 04100010

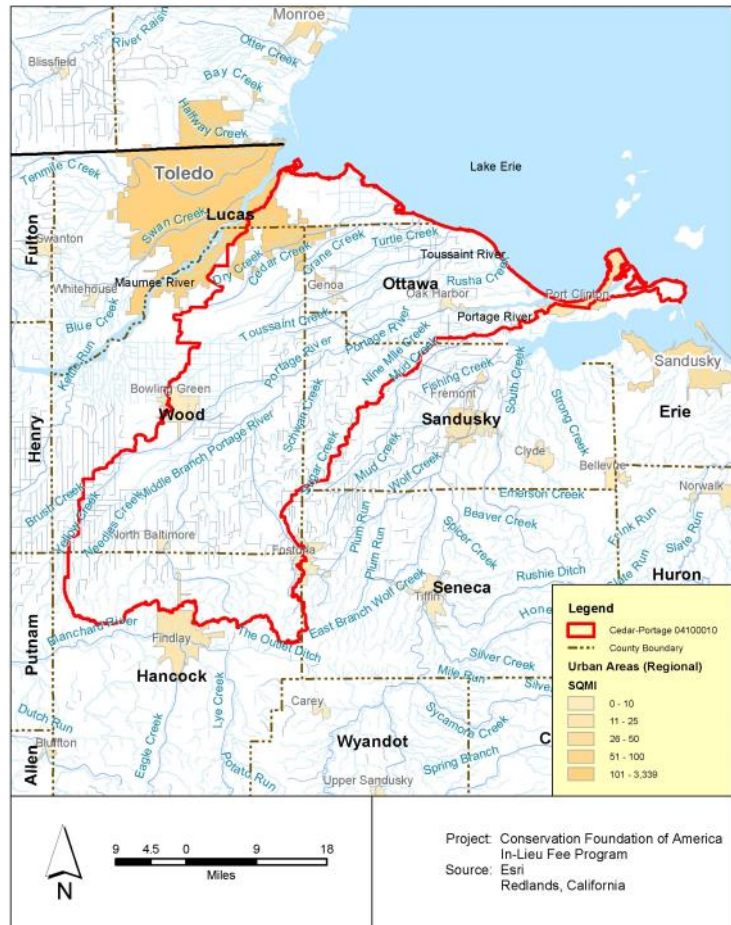
Watershed Characteristics

Geographic Size	968 miles ²
6-digit HUC	Western Lake Erie
Counties	Hancock, Lucas, Ottawa, Sandusky, Seneca, Wood
Approximate 2010 Population	156,000
Primary Land Use	Agriculture, Developed Land

Federally Listed Species:

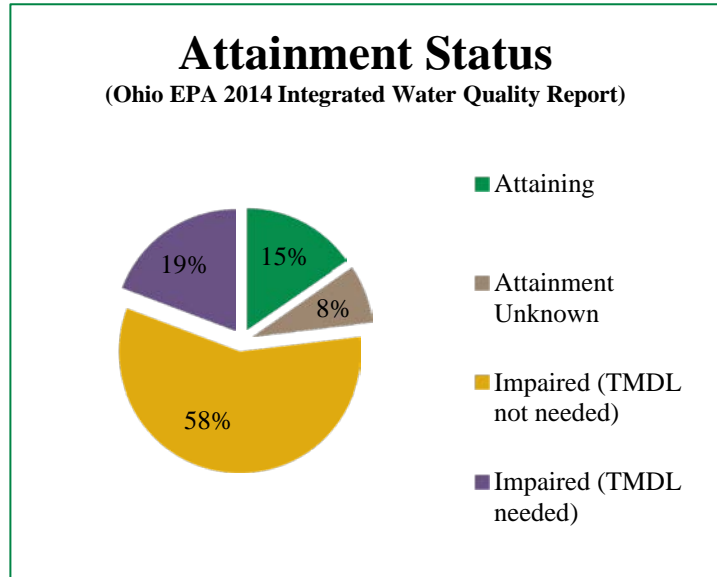
The list below is based on county occurrence of Federally Listed Species located within the watershed that may benefit from the CFA ILF Project.

- Candidate Species
 - eastern massasauga
- Threatened Species
 - northern long-eared bat,
 - eastern prairie fringed orchid
- Endangered Species
 - Indiana bat, Karner blue butterfly, Kirtland’s warbler, piping plover, rayed bean
- Species of Special Concern
 - Lake Erie watersnake , bald eagle



Aquatic Life Use Attainment Status

Ohio EPA's 2014 Integrated Water Quality Monitoring and Assessment Report provides current aquatic life use attainment status for each HUC-12 watershed. The aquatic life use scores are based on fish aquatic macroinvertebrate data against the biological criteria contained in Ohio's water quality standards. Attainment status for each Service Area was tabulated by calculating the HUC-12 scores found within the 8-digit watershed. Primary pollutants and sources that pose a threat to water quality are derived from Ohio EPA's 2014 Integrated Report as well as Ohio EPA's biological and Water Quality Reports.



The primary threats or impacts to aquatic resources within this watershed include:

- Nutrients
- Sedimentation/siltation
- Oxygen, dissolved
- Direct habitat alterations
- Habitat alteration

The primary sources of the impacts or threats within this watershed include:

- Upstream source
- Channelization
- Industrial point source discharge
- Municipal point source discharges

Wetland and Stream Impacts

Water resource permitting trends based upon Ohio EPA 401 WQC and Isolated Wetland permit data for the last 5 years in the Cedar-Portage watershed shows moderate wetland and stream impacts.

Water Resource Impacts	2010	2011	2012	2013	2014	5-Year Average
Wetlands (acres)	0.49	-	-	1.51	0.40	0.48
Streams (linear feet)	-	649	-	-	2,060	541.80

Service Area 11: Sandusky HUC 04100011

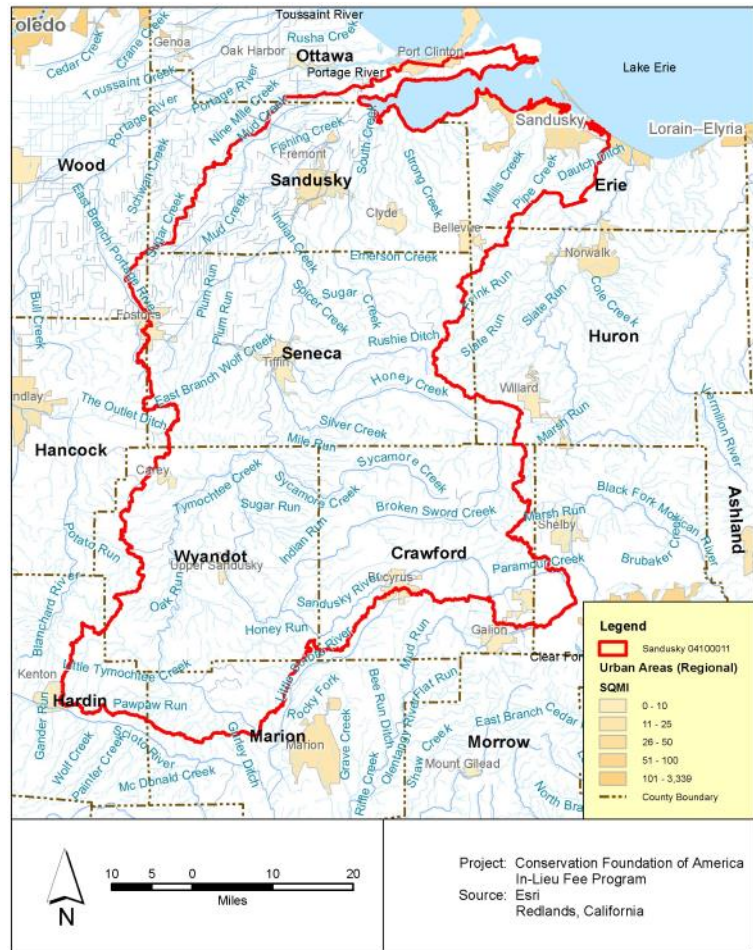
Watershed Characteristics

Geographic Size	1,825.5 miles ²
6-digit HUC	Western Lake Erie
Counties	Crawford, Erie, Hancock, Hardin, Huron, Marion, Ottawa, Richland, Sandusky, Seneca, Wood, Wyandot
Approximate 2010 Population	219,300
Primary Land Use	Agriculture, Developed Land

Federally Listed Species:

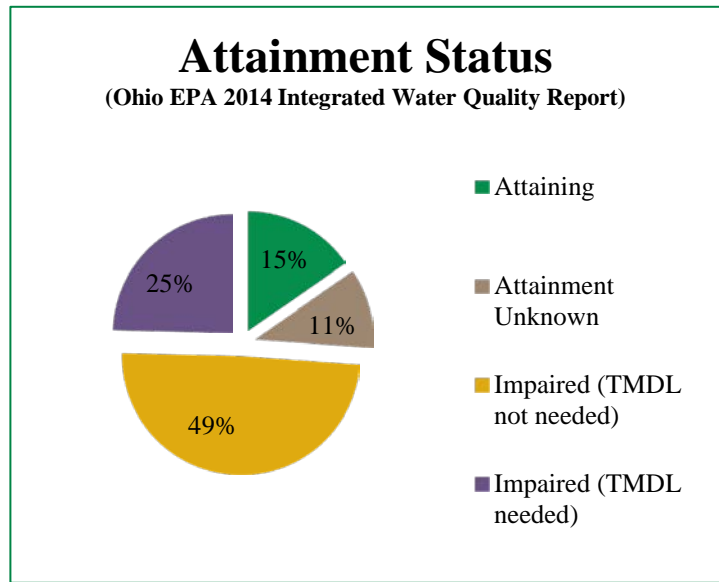
The list below is based on county occurrence of Federally Listed Species located within the watershed that may benefit from the CFA ILF Project.

- Candidate Species
 - eastern massasauga
- Threatened Species
 - northern long-eared bat, copperbelly water snake, lakeside daisy, red knot
- Endangered Species
 - Indiana bat, clubshell, rayed bean, Kirtland's warbler, piping plover
- Species of Special Concern
 - Lake Erie watersnake, bald eagle



Aquatic Life Use Attainment Status

Ohio EPA's 2014 Integrated Water Quality Monitoring and Assessment Report provides current aquatic life use attainment status for each HUC-12 watershed. The aquatic life use scores are based on fish aquatic macroinvertebrate data against the biological criteria contained in Ohio's water quality standards. Attainment status for each Service Area was tabulated by calculating the HUC-12 scores found within the 8-digit watershed. Primary pollutants and sources that pose a threat to water quality are derived from Ohio EPA's 2014 Integrated Report as well as Ohio EPA's biological and Water Quality Reports.



The primary threat or impact to aquatic resources within this watershed includes:

- Nutrients
- Direct habitat alteration
- Flow alteration
- Sediment/siltation

The primary sources of the impacts or threats within this watershed include:

- Removal of riparian vegetation – agriculture
- Channelization
- Crop production with subsurface drainage
- Septic systems, urban runoff/storm sewers
- Dam/ impoundment
- Municipal point source discharges.

Wetland and Stream Impacts

Water resource permitting trends based upon Ohio EPA 401 WQC and Isolated Wetland permit data for the last 5 years in the Sandusky watershed shows minimal wetland and stream impacts.

Water Resource Impacts	2010	2011	2012	2013	2014	5-Year Average
Wetlands (acres)	-	-	0.66	-	0.77	0.29
Streams (linear feet)	170	-	3,814	-	150	826.80

Service Area 12: Huron-Vermilion HUC 04100012

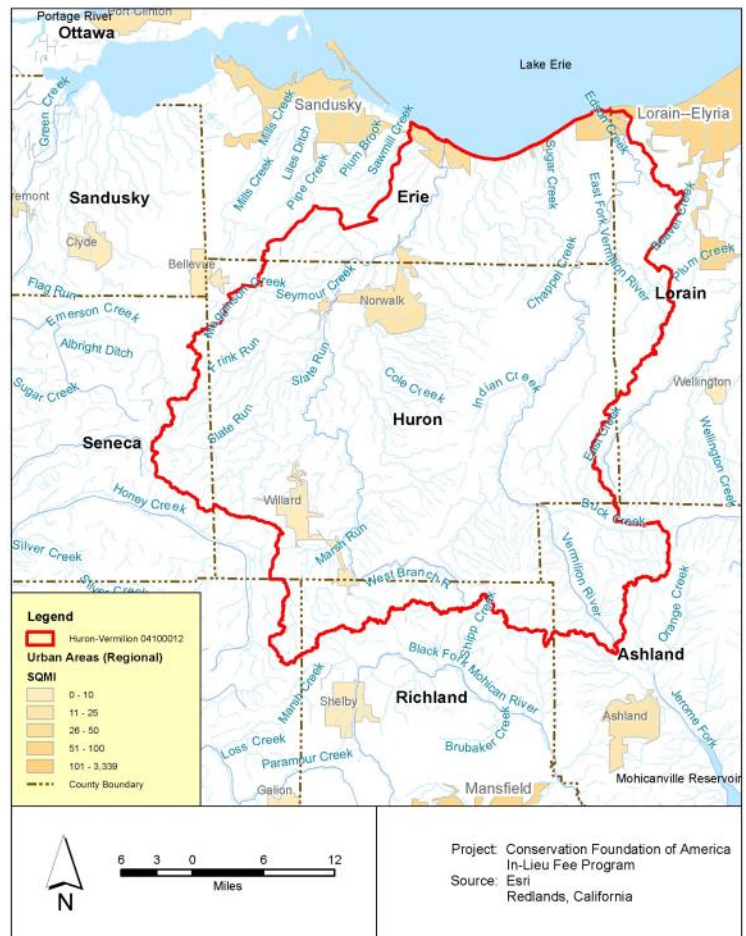
Watershed Characteristics

Geographic Size	764 miles ²
6-digit HUC	Western Lake Erie
Counties	Ashland, Crawford, Erie, Huron, Lorain, Richland, Seneca
Approximate 2010 Population	95,600
Primary Land Use	Agriculture, Forest, Developed Land

Federally Listed Species:

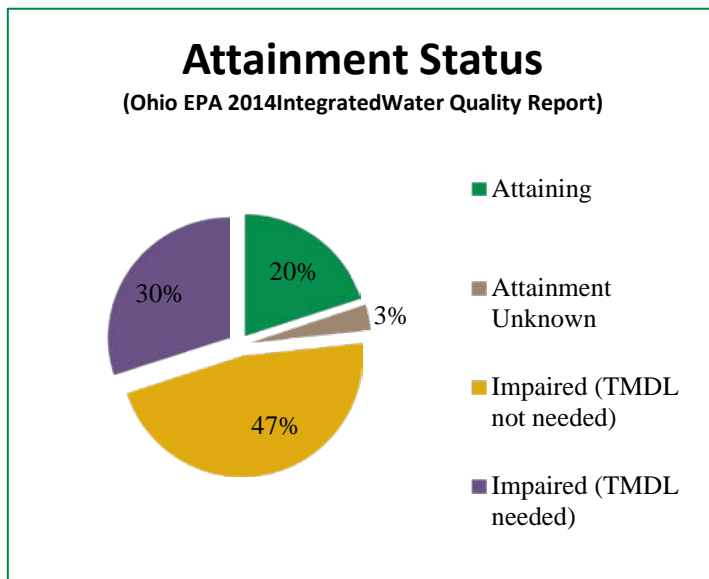
The list below is based on county occurrence of Federally Listed Species located within the watershed that may benefit from the CFA ILF Project.

- Candidate Species
 - eastern massasauga
- Threatened Species
 - northern long-eared bat, lakeside daisy, red knot
- Endangered Species
 - Indiana bat, Kirtland's warbler, piping plover
- Species of Special Concern
 - eastern hellbender, Lake Erie watersnake, bald eagle



Aquatic Life Use Attainment Status

Ohio EPA's 2014 Integrated Water Quality Monitoring and Assessment Report provides current aquatic life use attainment status for each HUC-12 watershed. The aquatic life use scores are based on fish aquatic macroinvertebrate data against the biological criteria contained in Ohio's water quality standards. Attainment status for each Service Area was tabulated by calculating the HUC-12 scores found within the 8-digit watershed. Primary pollutants and sources that pose a threat to water quality are derived from Ohio EPA's 2014 Integrated Report as well as Ohio EPA's biological and Water Quality Reports.



The primary threat or impact to aquatic resources within this watershed includes:

- Sedimentation/siltation
- Nutrients
- Direct Habitat alterations
- Organic enrichment

The primary sources of the impacts or threats within this watershed include:

- Agricultural activities
- Municipal wastewater discharge
- Failing septic systems
- Non-irrigated crop production
- Major municipal point source
- Channelization - development

Wetland and Stream Impacts

Water resource permitting trends based upon Ohio EPA 401 WQC and Isolated Wetland permit data for the last 5 years in the Huron-Vermillion watershed shows no wetland or stream impacts.

Water Resource Impacts	2010	2011	2012	2013	2014	5-Year Average
Wetlands (acres)	-	-	-	-	-	0
Streams (linear feet)	-	-	-	-	-	0

Service Area 13: Black-Rocky HUC 04110001

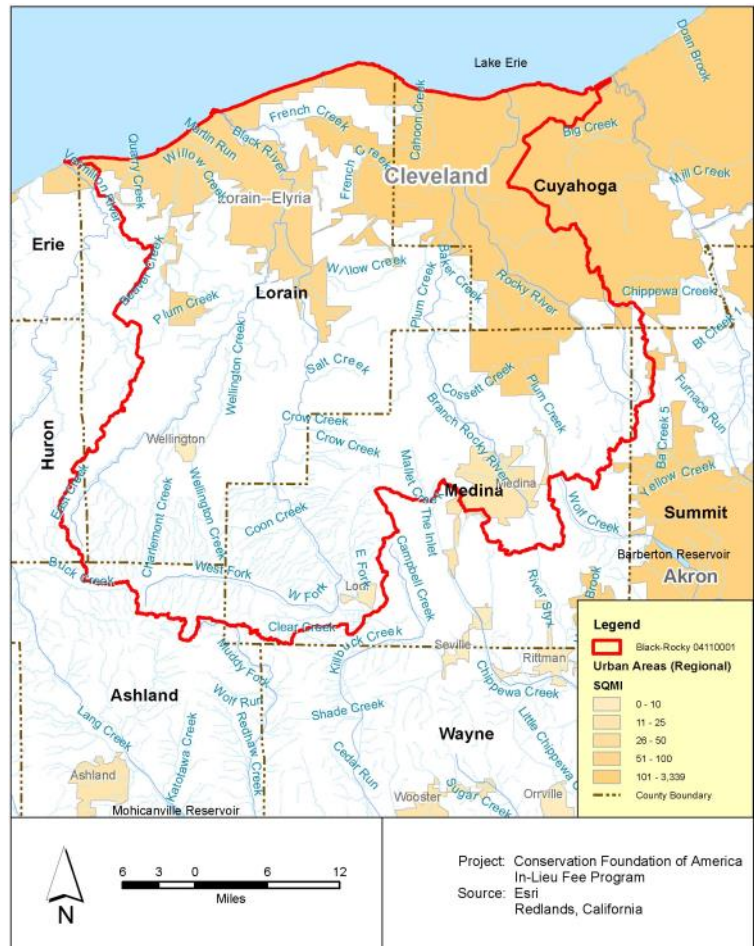
Watershed Characteristics

Geographic Size	897 miles ²
6-digit HUC	Southern Lake Erie
Counties	Ashland, Cuyahoga, Erie, Huron, Lorain, Medina, Summit
Approximate 2010 Population	792,300
Primary Land Use	Developed Land, Agriculture, Forest

Federally Listed Species:

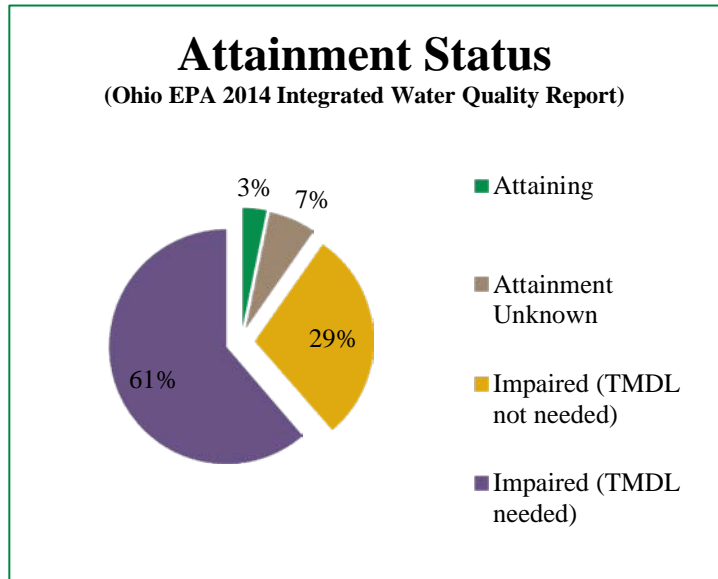
The list below is based on county occurrence of Federally Listed Species located within the watershed that may benefit from the CFA ILF Project.

- Candidate Species
 - eastern massasauga
- Threatened Species
 - northern long-eared bat, lakeside daisy, northern monkshood
- Endangered Species
 - Indiana bat, Kirtland's warbler, piping plover
- Species of Special Concern
 - bald eagle, eastern hellbender, Lake Erie watersnake



Aquatic Life Use Attainment Status

Ohio EPA's 2014 Integrated Water Quality Monitoring and Assessment Report provides current aquatic life use attainment status for each HUC-12 watershed. The aquatic life use scores are based on fish aquatic macroinvertebrate data against the biological criteria contained in Ohio's water quality standards. Attainment status for each Service Area was tabulated by calculating the HUC-12 scores found within the 8-digit watershed. Primary pollutants and sources that pose a threat to water quality are derived from Ohio EPA's 2014 Integrated Report as well as Ohio EPA's biological and Water Quality Reports.



The primary threat or impact to aquatic resources within this watershed includes:

- Siltation/sedimentation
- Direct habitat alterations
- Organic enrichment
- Fecal coliform

The primary sources of the impacts or threats within this watershed include:

- Combined sewer overflows
- Municipal wastewater discharge
- Agricultural activities
- Dam/impoundment
- Channelization
- Urban runoff/storm sewers

Wetland and Stream Impacts

Water resource permitting trends based upon Ohio EPA 401 WQC and Isolated Wetland permit data for the last 5 years in the Black-Rocky watershed shows frequent and relatively high wetland and stream impacts.

Water Resource Impacts	2010	2011	2012	2013	2014	5-Year Average
Wetlands (acres)	12.64	5.54	1.16	5.70	3.52	5.71
Streams (linear feet)	2,300	1,673	627	1,193	773	1,313.20

Service Area 14: Cuyahoga HUC 04110002

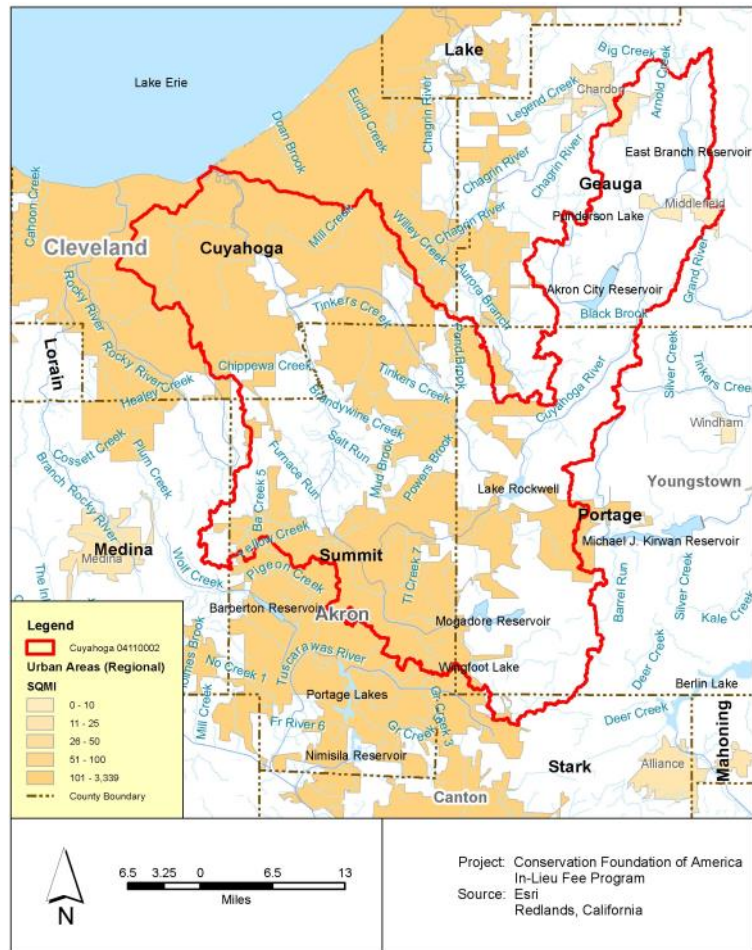
Watershed Characteristics

Geographic Size	811 miles ²
6-digit HUC	Southern Lake Erie
Counties	Cuyahoga, Geauga, Portage, Summit
Approximate 2010 Population	1,004,500
Primary Land Use	Developed Land, Forest, Agriculture

Federally Listed Species:

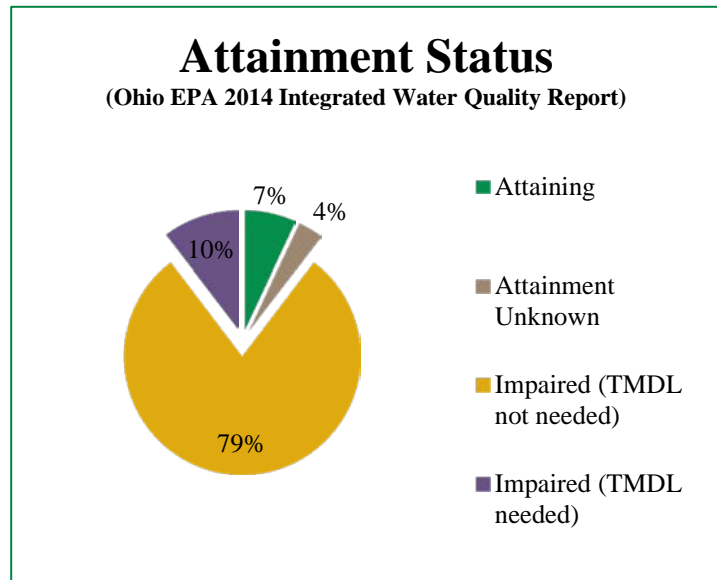
The list below is based on county occurrence of Federally Listed Species located within the watershed that may benefit from the CFA ILF Project.

- Candidate Species
 - eastern massasauga
- Threatened Species
 - northern long-eared bat, northern monkshood
- Endangered Species
 - Indiana bat, Kirtland's warbler, Mitchell's satyr, piping plover
- Species of Special Concern
 - bald eagle



Aquatic Life Use Attainment Status

Ohio EPA's 2014 Integrated Water Quality Monitoring and Assessment Report provides current aquatic life use attainment status for each HUC-12 watershed. The aquatic life use scores are based on fish aquatic macroinvertebrate data against the biological criteria contained in Ohio's water quality standards. Attainment status for each Service Area was tabulated by calculating the HUC-12 scores found within the 8-digit watershed. Primary pollutants and sources that pose a threat to water quality are derived from Ohio EPA's 2014 Integrated Report as well as Ohio EPA's biological and Water Quality Reports.



The primary threat or impact to aquatic resources within this watershed includes:

- Organic enrichment
- Dissolved oxygen
- Nutrients
- Flow alteration
- Direct habitat alterations

The primary sources of the impacts or threats within this watershed include:

- Urban runoff/storm sewers
- Onsite wastewater systems (septic tanks)
- Land development/suburbanization
- Major municipal point source

Wetland and Stream Impacts

Water resource permitting trends based upon Ohio EPA 401 WQC and Isolated Wetland permit data for the last 5 years in the Cuyahoga watershed shows both frequent and relatively high wetland and stream impacts.

Water Resource Impacts	2010	2011	2012	2013	2014	5-Year Average
Wetlands (acres)	1.81	2.27	1.55	9.31	0.64	3.12
Streams (linear feet)	2,198	1,280.50	840	350	-	933.70

Service Area 15: Ashtabula-Chagrin HUC 04110003

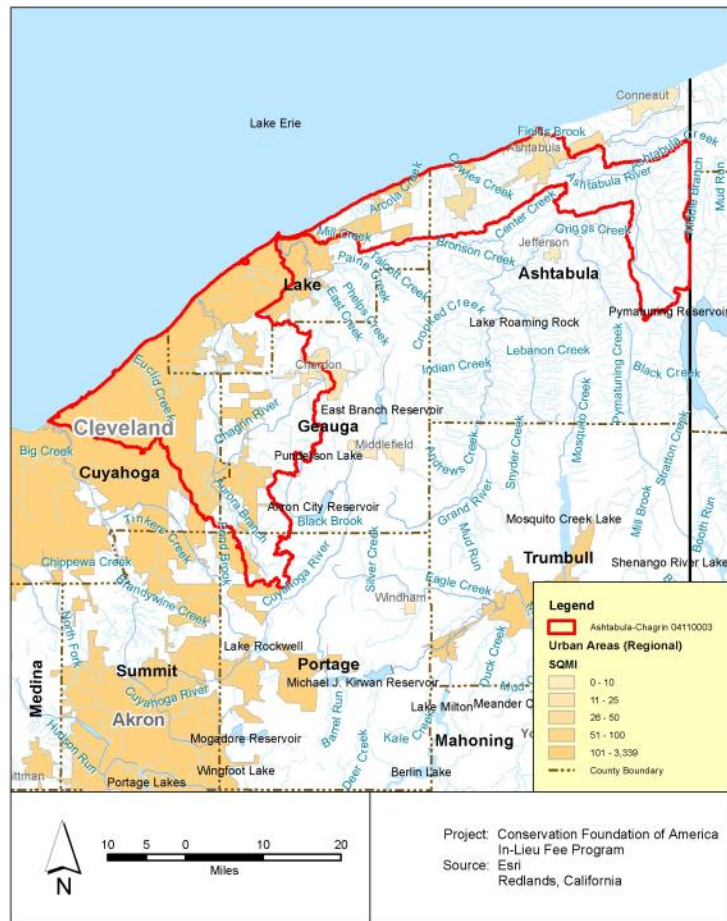
Watershed Characteristics

Geographic Size	623 miles ²
6-digit HUC	Southern Lake Erie
Counties	Ashtabula, Cuyahoga, Geauga, Lake, Portage
Approximate 2010 Population	673,000
Primary Land Use	Developed Land, Forest, Agriculture

Federally Listed Species:

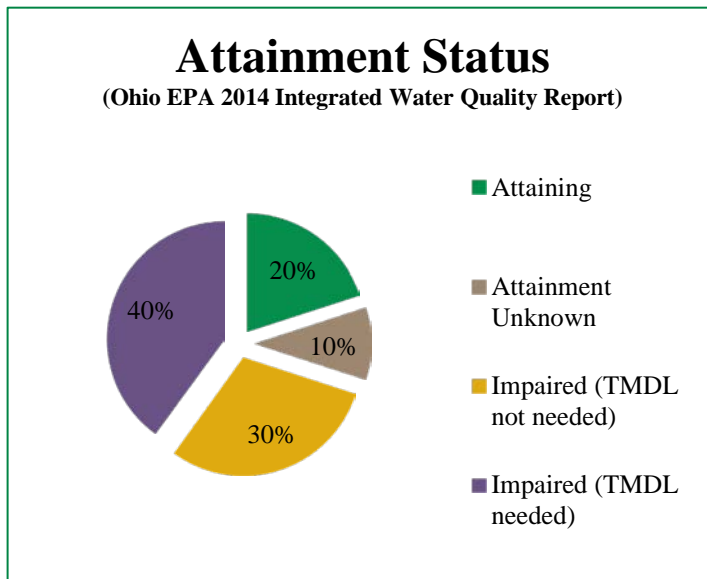
The list below is based on county occurrence of Federally Listed Species located within the watershed that may benefit from the CFA ILF Project.

- Candidate Species
 - eastern massasauga
- Threatened Species
 - northern long-eared bat, northern monkshood
- Endangered Species
 - Indiana bat, Kirtland's warbler, piping plover, clubshell, snuffbox, Mitchell's satyr
- Species of Special Concern
 - bald eagle



Aquatic Life Use Attainment Status

Ohio EPA's 2014 Integrated Water Quality Monitoring and Assessment Report provides current aquatic life use attainment status for each HUC-12 watershed. The aquatic life use scores are based on fish aquatic macroinvertebrate data against the biological criteria contained in Ohio's water quality standards. Attainment status for each Service Area was tabulated by calculating the HUC-12 scores found within the 8-digit watershed. Primary pollutants and sources that pose a threat to water quality are derived from Ohio EPA's 2014 Integrated Report as well as Ohio EPA's biological and Water Quality Reports.



The primary threat or impact to aquatic resources within this watershed includes:

- Thermal modifications
- Flow alteration
- Direct habitat alterations
- Nutrients
- Metals
- Organic enrichment
- Sedimentation/siltation

The primary sources of the impacts or threats within this watershed include:

- Land development/suburbanization
- Urban runoff/storm sewers
- Dredge mining

Wetland and Stream Impacts

Water resource permitting trends based upon Ohio EPA 401 WQC and Isolated Wetland permit data for the last 5 years in the Ashtabula-Chagrin watershed shows both frequent and relatively high wetland and stream impacts.

Water Resource Impacts	2010	2011	2012	2013	2014	5-Year Average
Wetlands (acres)	2.90	4.33	0.56	10.36	-	3.63
Streams (linear feet)	1,001	481	214	5,102	-	1,359

Service Area 16: Grand HUC 04110004

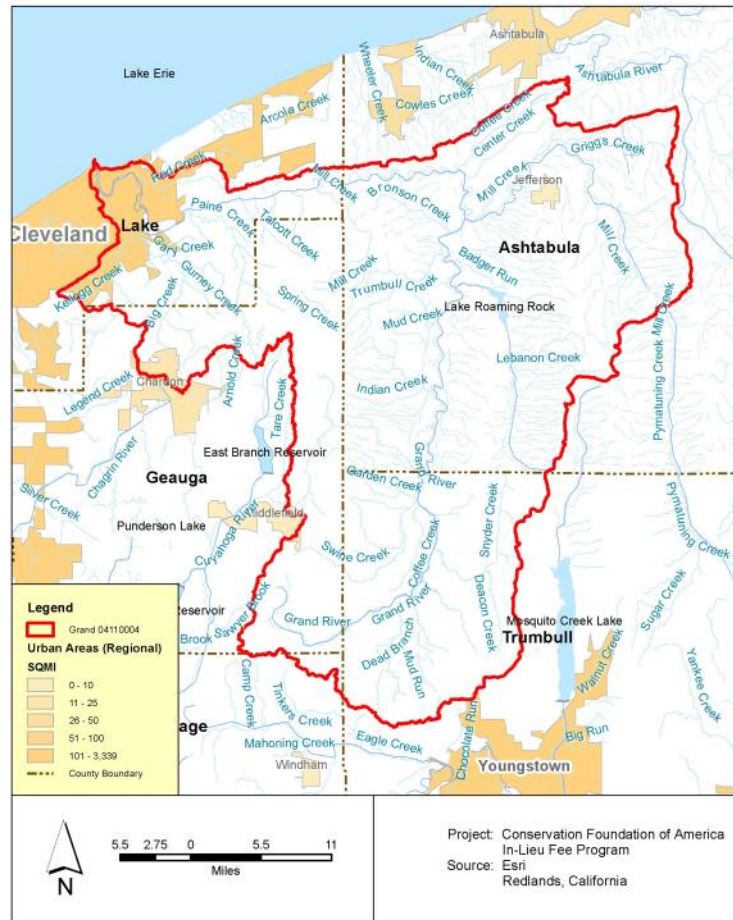
Watershed Characteristics

Geographic Size	705 miles ²
6-digit HUC	Southern Lake Erie
Counties	Ashtabula, Geauga, Lake, Portage, Trumbull
Approximate 2010 Population	116,000
Primary Land Use	Forest, Developed Land, Agriculture

Federally Listed Species:

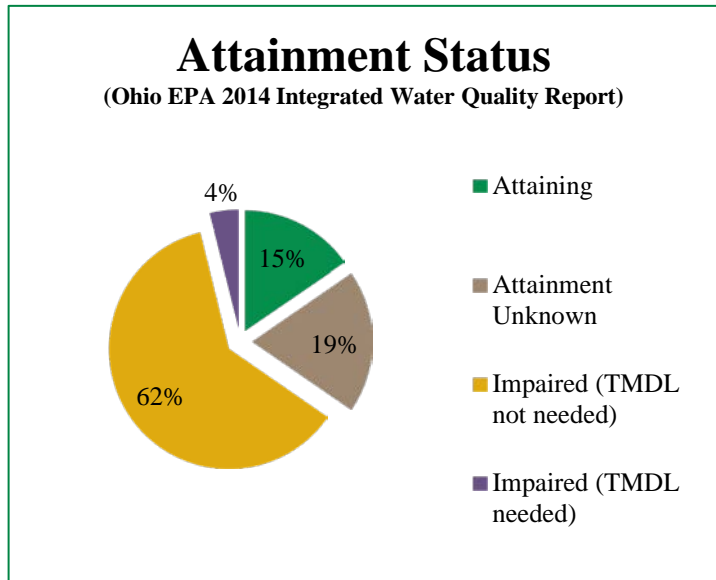
The list below is based on county occurrence of Federally Listed Species located within the watershed that may benefit from the CFA ILF Project.

- Candidate Species
 - eastern massasauga
- Threatened Species
 - northern long-eared bat,
 - northern monkshood
- Endangered Species
 - Indiana bat, clubshell, Mitchell's satyr, Kirtland's warbler, piping plover, snuffbox
- Species of Special Concern
 - bald eagle



Aquatic Life Use Attainment Status

Ohio EPA's 2014 Integrated Water Quality Monitoring and Assessment Report provides current aquatic life use attainment status for each HUC-12 watershed. The aquatic life use scores are based on fish aquatic macroinvertebrate data against the biological criteria contained in Ohio's water quality standards. Attainment status for each Service Area was tabulated by calculating the HUC-12 scores found within the 8-digit watershed. Primary pollutants and sources that pose a threat to water quality are derived from Ohio EPA's 2014 Integrated Report as well as Ohio EPA's biological and Water Quality Reports.



The primary threat or impact to aquatic resources within this watershed includes:

- Flow alterations
- Direct habitat alterations
- Nutrients

The primary sources of the impacts or threats within this watershed include:

- Dam/impoundment
- Land development/suburbanization
- Urban runoff/storm sewers

Wetland and Stream Impacts

Water resource permitting trends based upon Ohio EPA 401 WQC and Isolated Wetland permit data for the last 5 years in the Grand watershed shows frequent permitting activity for both wetlands and streams, but a more moderate degree in terms of actual impacts.

Water Resource Impacts	2010	2011	2012	2013	2014	5-Year Average
Wetlands (acres)	0.20	0.42	0.02	2.35	0.21	0.64
Streams (linear feet)	592	-	60	1,662	-	462.80

Service Area 17: Chautauqua-Conneaut 04120101

Watershed Characteristics

Geographic Size	63 miles ²
6-digit HUC	Eastern Lake Erie
Counties	Ashtabula
Approximate 2010 Population	18,800
Primary Land Use	Forest, Developed Land, Agriculture

Federally Listed Species:

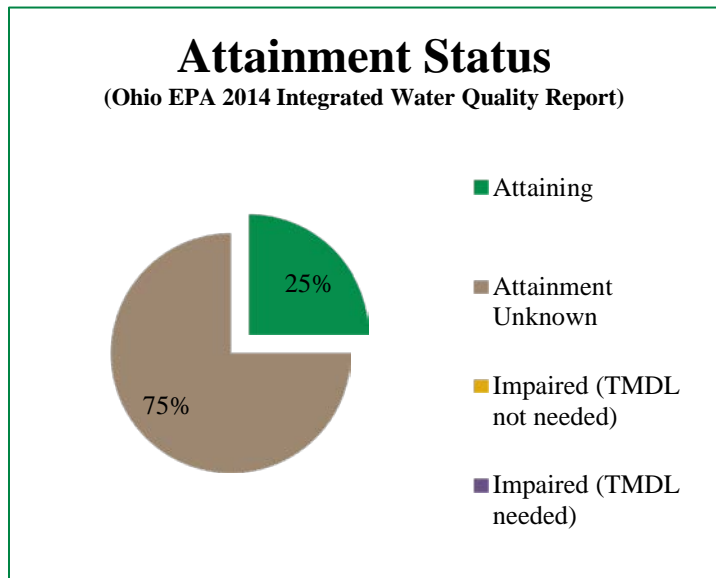
The list below is based on county occurrence of Federally Listed Species located within the watershed that may benefit from the CFA ILF Project.

- Candidate Species
 - eastern massasauga
- Threatened Species
 - northern long-eared bat
- Endangered Species
 - Indiana bat, Kirtland's warbler, piping plover, clubshell, snuffbox
- Species of Special Concern
 - bald eagle



Aquatic Life Use Attainment Status

Ohio EPA's 2014 Integrated Water Quality Monitoring and Assessment Report provides current aquatic life use attainment status for each HUC-12 watershed. The aquatic life use scores are based on fish aquatic macroinvertebrate data against the biological criteria contained in Ohio's water quality standards. Attainment status for each Service Area was tabulated by calculating the HUC-12 scores found within the 8-digit watershed. Primary pollutants and sources that pose a threat to water quality are derived from Ohio EPA's 2014 Integrated Report as well as Ohio EPA's biological and Water Quality Reports.



The primary threat or impact to aquatic resources within this watershed includes:

- No significant existing threats identified

The primary sources of the impacts or threats within this watershed include:

- No significant existing sources identified

Wetland and Stream Impacts

Water resource permitting trends based upon Ohio EPA 401 WQC and Isolated Wetland permit data for the last 5 years in the Chautauqua-Conneaut watershed shows no wetland or stream impacts.

Water Resource Impacts	2010	2011	2012	2013	2014	5-Year Average
Wetlands (acres)	-	-	-	-	-	0
Streams (linear feet)	-	-	-	-	-	0

Service Area 18: Upper Ohio HUC 05030101

Watershed Characteristics

Geographic Size	822 miles ²
6-digit HUC	Upper Ohio – Beaver
Counties	Carroll, Columbiana, Harrison, Jefferson, Mahoning
Approximate 2010 Population	159,420
Primary Land Use	Forest, Agriculture, Developed Land

Federally Listed Species:

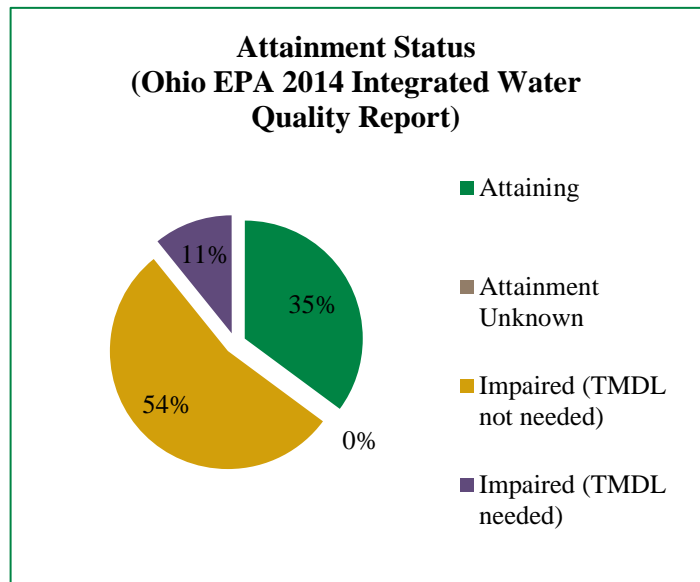
The list below is based on county occurrence of Federally Listed Species located within the watershed that may benefit from the CFA ILF Project.

- Candidate Species
 - eastern massasauga
- Threatened Species
 - northern long-eared bat
- Endangered Species
 - Indiana bat
- Species of Special Concern
 - bald eagle
 - eastern hellbender



Aquatic Life Use Attainment Status

Ohio EPA's 2014 Integrated Water Quality Monitoring and Assessment Report provides current aquatic life use attainment status for each HUC-12 watershed. The aquatic life use scores are based on fish aquatic macroinvertebrate data against the biological criteria contained in Ohio's water quality standards. Attainment status for each service area was tabulated by calculating the HUC-12 scores found within the 8-digit watershed. Primary pollutants and sources that pose a threat to water quality are derived from Ohio EPA's 2014 Integrated Report as well as Ohio EPA's biological and Water Quality Reports.



The primary threat or impact to aquatic resources within this watershed includes:

- Sedimentation/Siltation
- Flow alteration
- Organic enrichment
- Direct habitat alterations
- Pesticides

The primary sources of the impacts or threats within this watershed include:

- Combined sewer overflows
- Surface mining
- Stormwater runoff
- Channelization and development
- Pasture land

Wetland and Stream Impacts

Water resource permitting trends based upon Ohio EPA 401 WQC and Isolated Wetland permit data for the last 5 years in the Upper Ohio watershed show moderate wetland impacts and minimal stream impacts.

Water Resource Impacts	2010	2011	2012	2013	2014	5-Year Average
Wetlands (acres)	1.35	1.35	0.07	-	0.75	0.704
Streams (linear feet)	-	-	-	1,156	-	231.2

Service Area 19: Shenango HUC 05030102

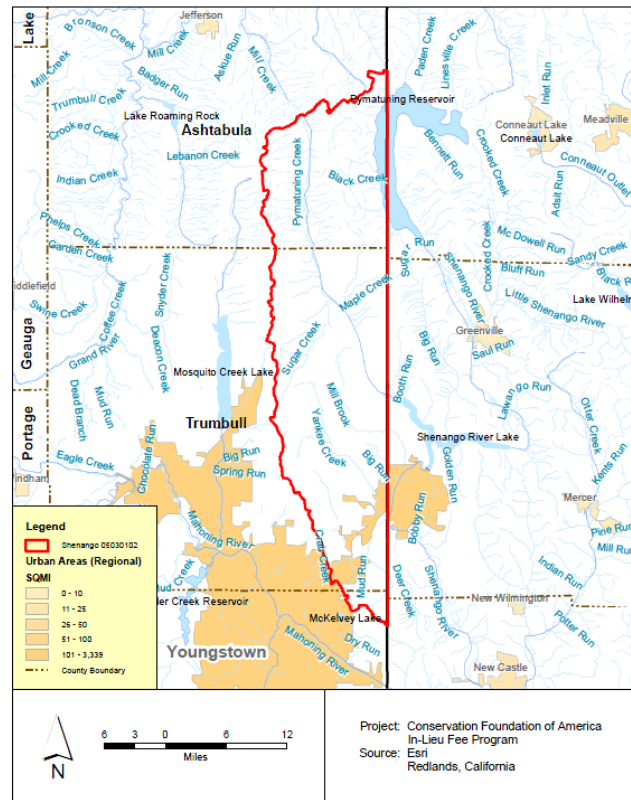
Watershed Characteristics

Geographic Size	284 miles ²
6-digit HUC	Upper Ohio – Beaver
Counties	Ashtabula, Mahoning, Trumbull
Approximate 2010 Population	37,920
Primary Land Use	Agriculture, Forest, Developed Land

Federally Listed Species:

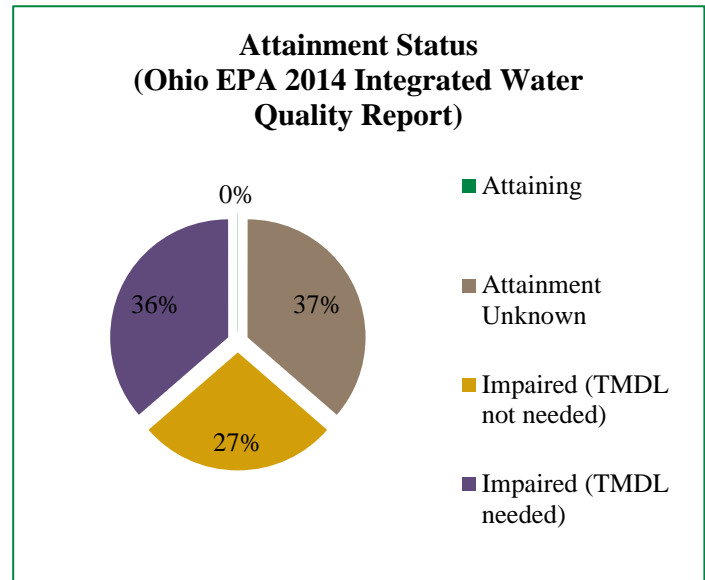
The list below is based on county occurrence of Federally Listed Species located within the watershed that may benefit from the CFA ILF Project.

- Candidate Species
 - eastern massasauga
- Threatened Species
 - northern long-eared bat
- Endangered Species
 - Indiana bat, kirkland’s wabler,
piping plover, clubshell,
snuffbox
- Species of Special Concern
 - bald eagle



Aquatic Life Use Attainment Status

Ohio EPA's 2014 Integrated Water Quality Monitoring and Assessment Report provides current aquatic life use attainment status for each HUC-12 watershed. The aquatic life use scores are based on fish aquatic macroinvertebrate data against the biological criteria contained in Ohio's water quality standards. Attainment status for each service area was tabulated by calculating the HUC-12 scores found within the 8-digit watershed. Primary pollutants and sources that pose a threat to water quality are derived from Ohio EPA's 2014 Integrated Report as well as Ohio EPA's biological and Water Quality Reports.



The primary threat or impact to aquatic resources within this watershed includes:

- Sedimentation/siltation
- Nutrients
- Flow alteration
- Direct habitat alterations
- Organic enrichment

The primary sources of the impacts or threats within this watershed include:

- Livestock (grazing or feeding operations)
- Channelization
- Urban run-off
- Failing septic systems

Wetland and Stream Impacts

Water resource permitting trends based upon Ohio EPA 401 WQC and Isolated Wetland permit data for the last 5 years in the Shenango watershed show minimal wetland impacts and no stream impacts.

Water Resources 2010-2014	2010	2011	2012	2013	2014	5-Year Average
Wetlands (acres)	-	-	0.02	-	0.09	0.022
Streams (linear feet)	-	-	-	-	-	0

Service Area 20: Mahoning HUC 05030103

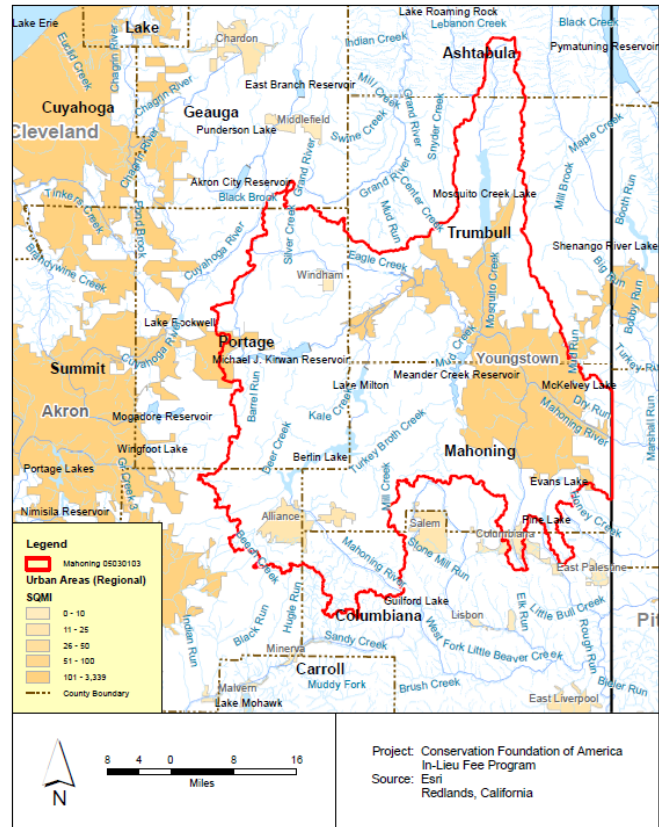
Watershed Characteristics

Geographic Size	1083 miles ²
6-digit HUC	Upper Ohio – Beaver
Counties	Ashtabula, Trumbull, Portage, Stark, Mahoning, Columbiana, Geauga
Approximate 2010 Population	85,409
Primary Land Use	Forest, Agriculture, Developed Land

Federally Listed Species:

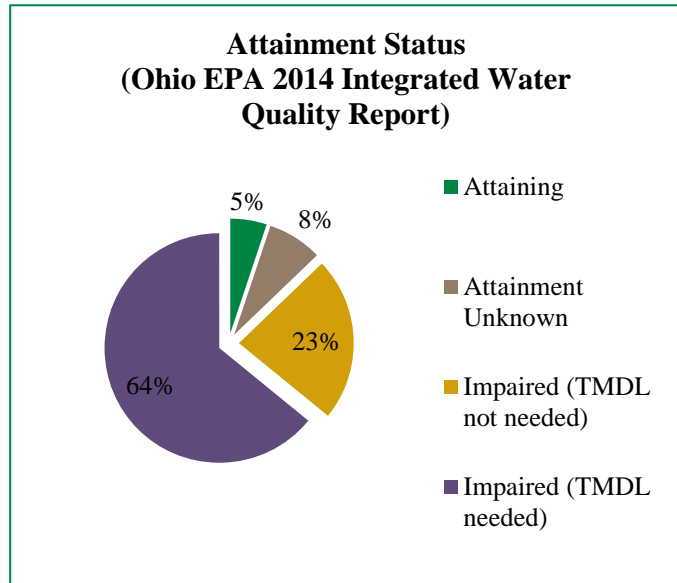
The list below is based on county occurrence of Federally Listed Species located within the watershed that may benefit from the CFA ILF Project.

- Threatened Species
 - northern long-eared bat
- Endangered Species
 - Indiana bat
- Species of Special Concern
 - bald eagle, eastern hellbender



Aquatic Life Use Attainment Status

Ohio EPA's 2014 Integrated Water Quality Monitoring and Assessment Report provides current aquatic life use attainment status for each HUC-12 watershed. The aquatic life use scores are based on fish aquatic macroinvertebrate data against the biological criteria contained in Ohio's water quality standards. Attainment status for each service area was tabulated by calculating the HUC-12 scores found within the 8-digit watershed. Primary pollutants and sources that pose a threat to water quality are derived from Ohio EPA's 2014 Integrated Report as well as Ohio EPA's biological and Water Quality Reports.



The primary threat or impact to aquatic resources within this watershed includes:

- Sedimentation/ siltation
- Nutrients
- Habitat alteration
- Flow alteration
- Fish deformities
- Metals

The primary sources of the impacts or threats within this watershed include:

- Non-irrigated crop production
- Channelization-agriculture
- Spills
- Combined sewer overflows
- Sand/gravel/rock mining or quarries

Wetland and Stream Impacts

Water resource permitting trends for the last 5 years in the Mahoning watershed shows moderate wetland and stream impacts.

Water Resource Impacts	2010	2011	2012	2013	2014	5-Year Average
Wetlands (acres)	4.97	1.18	3.64	8.50	0.03	3.66
Streams (linear feet)	1,817	-	250	1,408	534	801.94

Service Area 21: Upper Ohio-Wheeling HUC 05030106

Watershed Characteristics

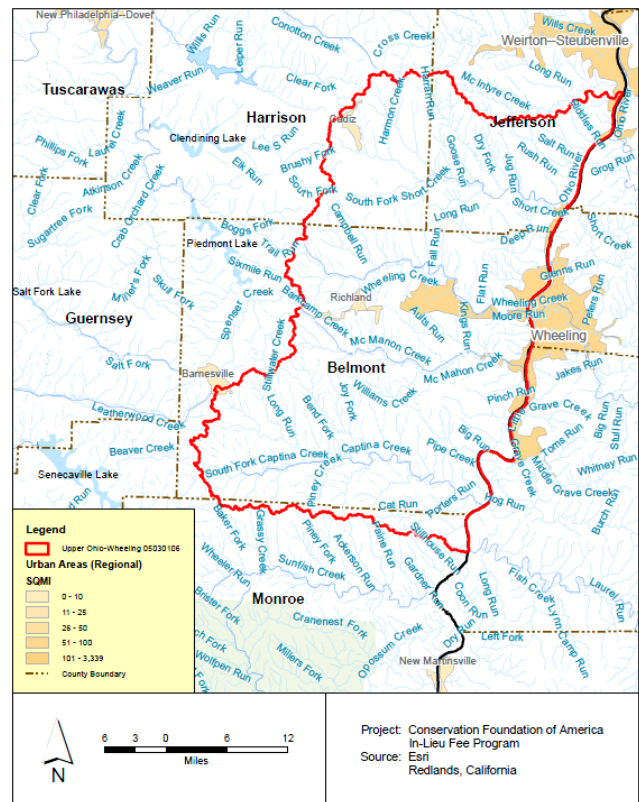
Geographic Size	638 miles ²
6-digit HUC	Upper Ohio-Beaver
Counties	Belmont, Harrison, Jefferson, Monroe
Approximate 2010 Population	38,185
Primary Land Use	Forest, Agriculture, Developed Land

Federally Listed Species:

The list below is based on county occurrence of Federally Listed Species located within the watershed that may benefit from the CFA

ILF Project

- Threatened Species
 - northern long-eared bat
- Endangered Species
 - Indiana bat
- Species of Special Concern
 - bald eagle, eastern hellbender



Aquatic Life Use Attainment Status

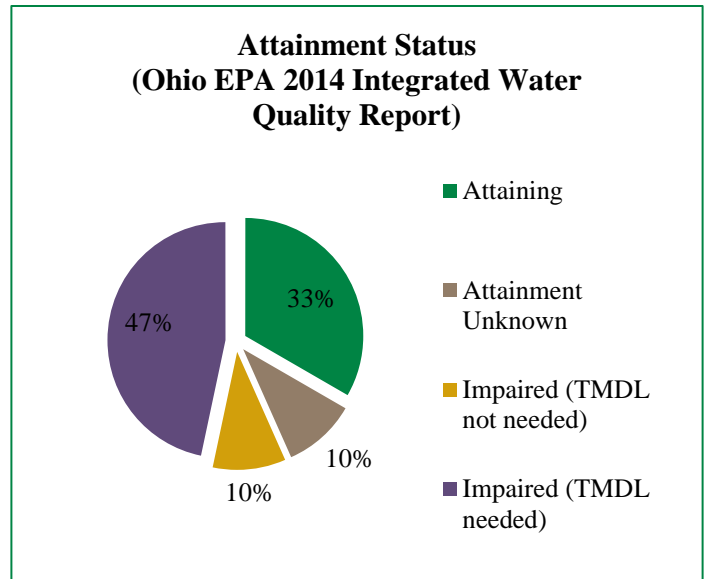
Ohio EPA's 2014 Integrated Water Quality Monitoring and Assessment Report provides current aquatic life use attainment status for each HUC-12 watershed. The aquatic life use scores are based on fish aquatic macroinvertebrate data against the biological criteria contained in Ohio's water quality standards. Attainment status for each service area was tabulated by calculating the HUC-12 scores found within the 8-digit watershed. Primary pollutants and sources that pose a threat to water quality are derived from Ohio EPA's 2014 Integrated Report as well as Ohio EPA's biological and Water Quality Reports.

The primary threat or impact to aquatic resources within this watershed includes:

- Sedimentation/siltation
- Flow regime alteration
- Direct habitat alteration
- Metals
- Organic enrichment

The primary sources of the impacts or threats within this watershed include:

- Inappropriate waste disposal
- Dam or impoundment
- Mining
- Acid mine drainage
- Agriculture



Wetland and Stream Impacts

Water resource permitting trends based upon Ohio EPA 401 WQC and Isolated Wetland permit data for the last 5 years in the Upper Ohio-Wheeling watershed shows minimal wetland impacts and no stream impacts.

Water Resource Impacts	2010	2011	2012	2013	2014	5-Year Average
Wetlands (acres)	-	-	-	-	0.44	0.08
Streams (linear feet)	-	-	-	-	-	0

Service Area 22: Little Muskingum HUC 05030201

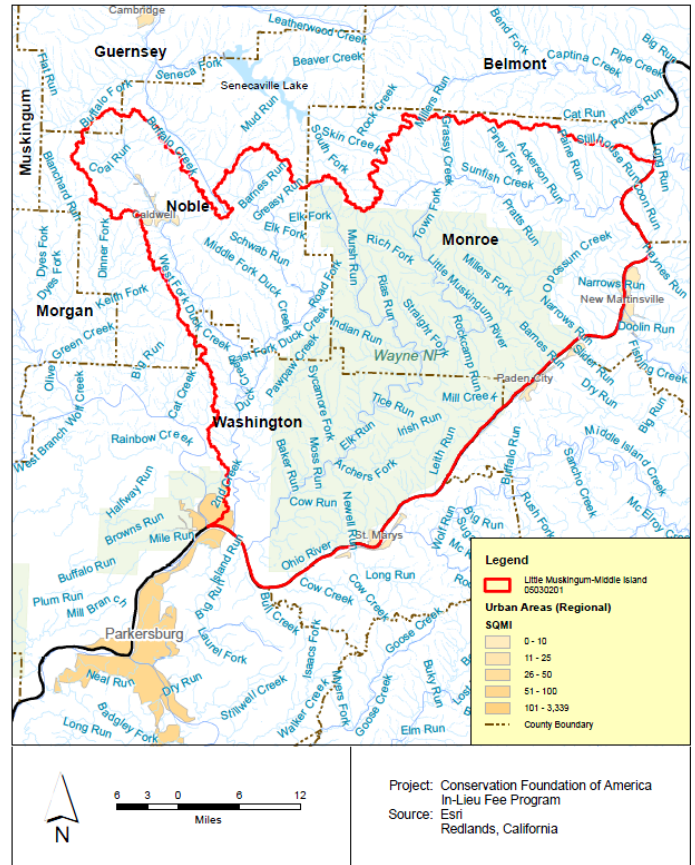
Watershed Characteristics

Geographic Size	861 miles ²
6-digit HUC	Upper Ohio-Beaver
Counties	Belmont, Guernsey, Monroe, Noble, Washington
Approximate 2010 Population	51,555
Primary Land Use	Forest, Agriculture, Developed Land

Federally Listed Species:

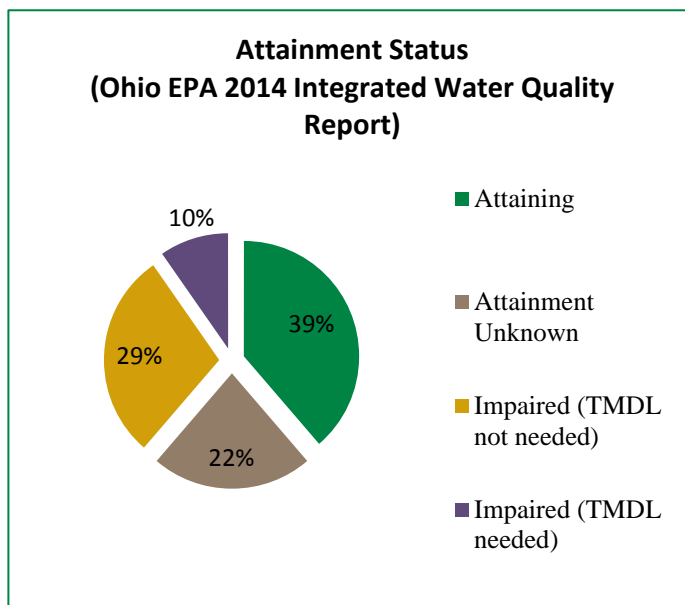
The list below is based on county occurrence of Federally Listed Species located within the watershed that may benefit from the CFA ILF Project.

- Threatened Species
 - northern long-eared bat
- Endangered Species
 - Indiana bat, fanshell, pink mucket pearly mussel, sheepnose, clubshell, snuffbox,
- Species of Special Concern
 - bald eagle, timber rattlesnake, eastern hellbender



Aquatic Life Use Attainment Status

Ohio EPA's 2014 Integrated Water Quality Monitoring and Assessment Report provides current aquatic life use attainment status for each HUC-12 watershed. The aquatic life use scores are based on fish aquatic macroinvertebrate data against the biological criteria contained in Ohio's water quality standards. Attainment status for each Service Area was tabulated by calculating the HUC-12 scores found within the 8-digit watershed. Primary pollutants and sources that pose a threat to water quality are derived from Ohio EPA's 2014 Integrated Report as well as Ohio EPA's biological and Water Quality Reports.



The primary threat or impact to aquatic resources within this watershed includes:

- Sedimentation/Siltation
- Nutrients
- Metals
- Direct habitat alterations
- Flow alteration

The primary sources of the impacts or threats within this watershed include:

- Urban runoff/storm sewers
- Channelization
- Agriculture
- Mining and acid mine drainage
- Dam/impoundments

Wetland and Stream Impacts

Water resource permitting trends based upon Ohio EPA 401 WQC and Isolated Wetland permit data for the last 5 years in the Little Muskingum watershed shows minimal wetland impacts and moderate stream impacts.

Water Resource Impacts	2010	2011	2012	2013*	2014*	5-Year* Average
Wetlands (acres)	-	0.07	-	0.05	1.02	0.228
Streams (linear feet)	400	13,181	-	12,436	1,535	5,510.40

* Additional Ohio EPA 401 stream and wetland impacts occurred in multiple watersheds. However, data for specific impacts within this HUC could not be located.

Service Area 23: Upper Ohio-Shade HUC 05030202

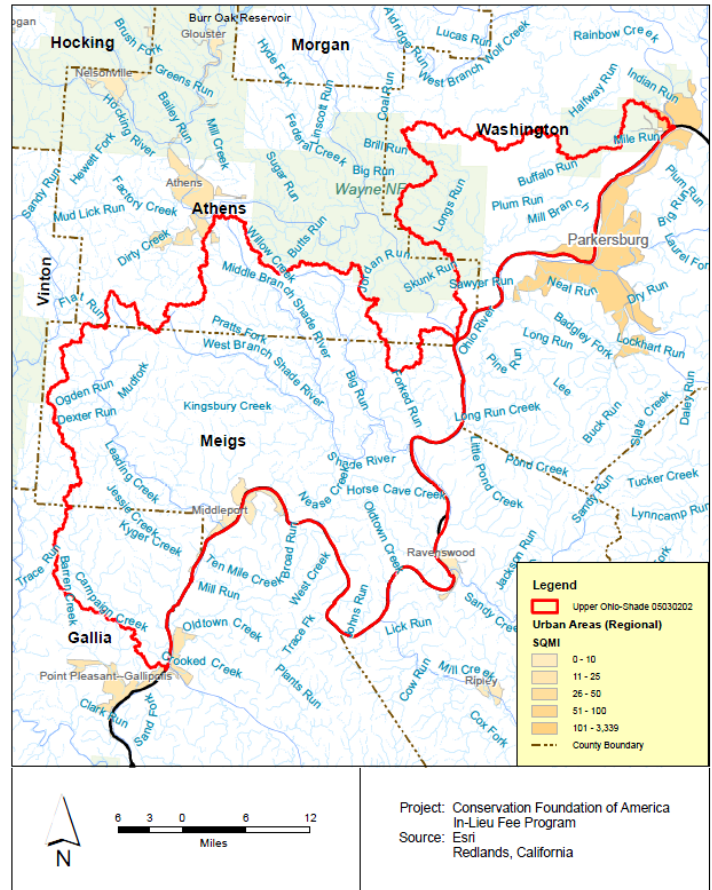
Watershed Characteristics

Geographic Size	711 miles ²
6-digit HUC	Upper Ohio-Little Kanawha
Counties	Athens, Gallia, Meigs, Vinton, Washington
Approximate 2010 Population	170,940
Primary Land Use	Forest, Agriculture, Developed Land

Federally Listed Species:

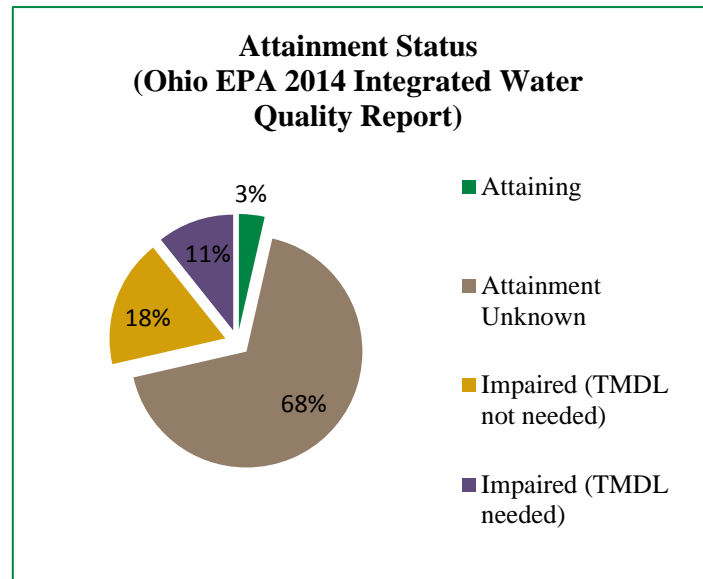
The list below is based on county occurrence of Federally Listed Species located within the watershed that may benefit from the CFA ILF Project.

- Threatened Species
 - northern long-eared bat
- Endangered Species
 - Indiana bat, fanshell, pink mucket pearly mussel, rayed bean, sheepnose, snuffbox, American burying beetle
- Species of Special Concern
 - bald eagle, eastern hellbender, timber rattlesnake



Aquatic Life Use Attainment Status

Ohio EPA's 2014 Integrated Water Quality Monitoring and Assessment Report provides current aquatic life use attainment status for each HUC-12 watershed. The aquatic life use scores are based on fish aquatic macroinvertebrate data against the biological criteria contained in Ohio's water quality standards. Attainment status for each Service Area was tabulated by calculating the HUC-12 scores found within the 8-digit watershed. Primary pollutants and sources that pose a threat to water quality are derived from Ohio EPA's 2014 Integrated Report as well as Ohio EPA's biological and Water Quality Reports.



The primary threat or impact to aquatic resources within this watershed includes:

- Sedimentation/siltation
- Direct habitat alterations
- Metals

The primary sources of the impacts or threats within this watershed include:

- Mining (surface mining, subsurface mining, acid mine drainage)
- Non-irrigated crop production
- Agriculture
- Channelization

Wetland and Stream Impacts

Water resource permitting trends based upon Ohio EPA 401 WQC and Isolated Wetland permit data for the last 5 years in the Upper Ohio-Shade watershed shows no wetland impacts and moderate stream impacts.

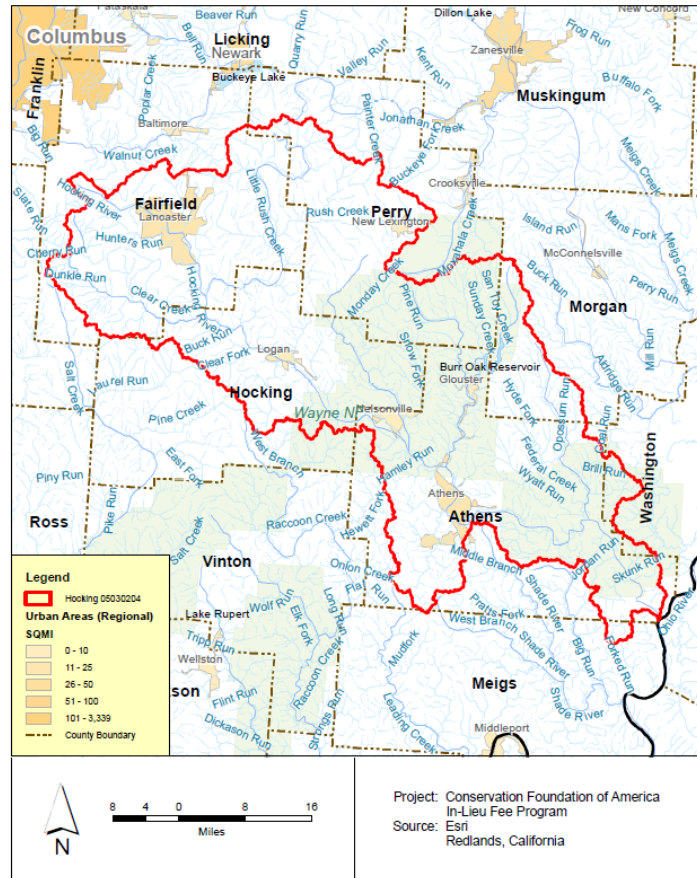
Water Resources 2010-2014	2010	2011	2012	2013*	2014*	5-Year* Average
Wetlands (acres)	-	-	-	-	-	0
Streams (linear feet)	-	616	12,310	-	2,540	3,093.20

* Additional Ohio EPA 401 stream and wetland impacts occurred in multiple watersheds. However, data for specific impacts within this HUC could not be located.

Service Area 24: Hocking HUC 05030204

Watershed Characteristics

Geographic Size	1196 miles ²
6-digit HUC	Upper Ohio-Little Kanawha
Counties	Athens, Fairfield, Hocking, Meigs, Morgan, Perry, Pickaway, Washington
Approximate 2010 Population	170,940
Primary Land Use	Forested, Agriculture, Developed Land



Federally Listed Species:

The list below is based on county occurrence of Federally Listed Species located within the watershed that may benefit from the CFA ILF Project.

- Candidate Species
 - eastern massasauga
- Threatened Species
 - northern long-eared bat, northern monkshood, rabbitsfoot (proposed)
- Endangered Species
 - Indiana bat, fanshell, pink mucket pearly mussel, rayed bean, sheepsnose, snuffbox, Scioto madtom, clubshell, northern riffleshell, American burying beetle, running buffalo clover
- Species of Special Concern
 - eastern hellbender, timber rattlesnake, bald eagle

Aquatic Life Use Attainment Status

Ohio EPA's 2014 Integrated Water Quality Monitoring and Assessment Report provides current aquatic life use attainment status for each HUC-12 watershed. The aquatic life use scores are based on fish aquatic macroinvertebrate data against the biological criteria contained in Ohio's water quality standards. Attainment status for each Service Area was tabulated by calculating the HUC-12 scores found within the 8-digit watershed. Primary pollutants and sources that pose a threat to water quality are derived from Ohio EPA's 2014 Integrated Report as well as Ohio EPA's biological and Water Quality Reports.

The primary threat or impact to aquatic resources within this watershed includes:

- Sedimentation/ siltation
- Nutrients
- Metals
- Habitat alteration
- Flow alteration

The primary sources of the impacts or threats within this watershed include:

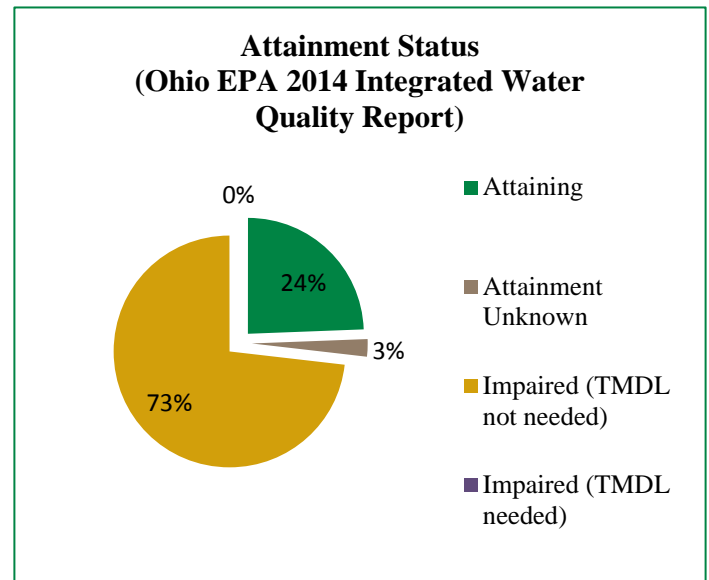
- Urban runoff/storm sewers
- Channelization- agriculture
- Non-irrigated crop production
- Mining (surface mining, acid mine drainage)

Wetland and Stream Impacts

Water resource permitting trends based upon Ohio EPA 401 WQC and Isolated Wetland permit data for the last 5 years in the Hocking watershed shows minimal wetland impacts and moderate stream impacts.

Water Resource Impacts	2010	2011	2012	2013*	2014*	5-Year* Average
Wetlands (acres)	0.21	-	1.53	-	-	0.348
Streams (linear feet)	-	-	9,439	-	913	2,070.40

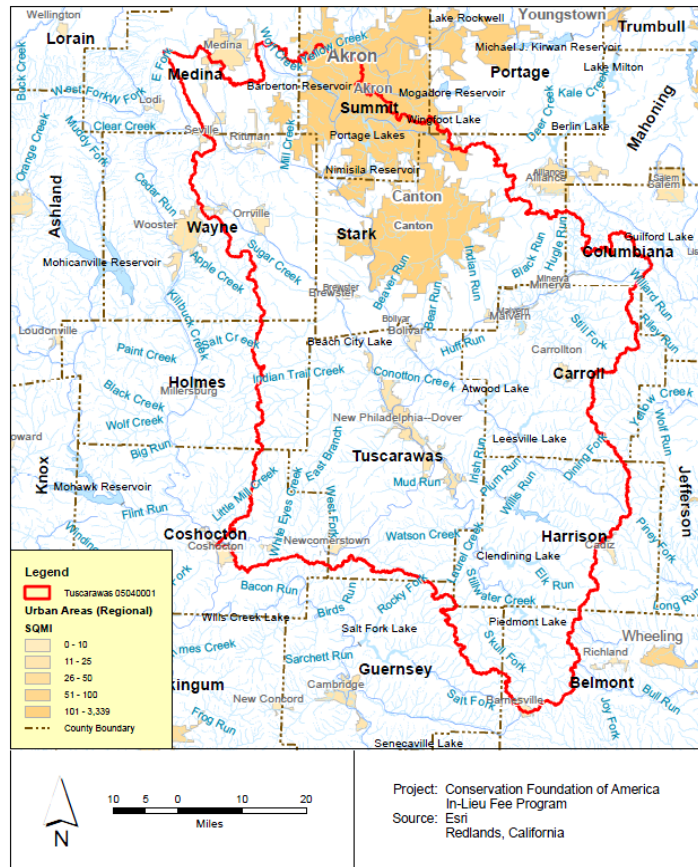
* Additional Ohio EPA 401 stream and wetland impacts occurred in multiple watersheds. However, data for specific impacts within this HUC could not be located.



Service Area 25: Tuscarawas HUC 05040001

Watershed Characteristics

Geographic Size	2593 miles ²
6-digit HUC	Muskingum
Counties	Belmont, Carroll, Columbiana, Coshocton, Guernsey, Harrison, Holmes, Jefferson, Medina, Portage, Stark, Summit, Tuscarawas, Wayne
Approximate 2010 Population	797,908
Primary Land Use	Forested, Agriculture, Developed Land



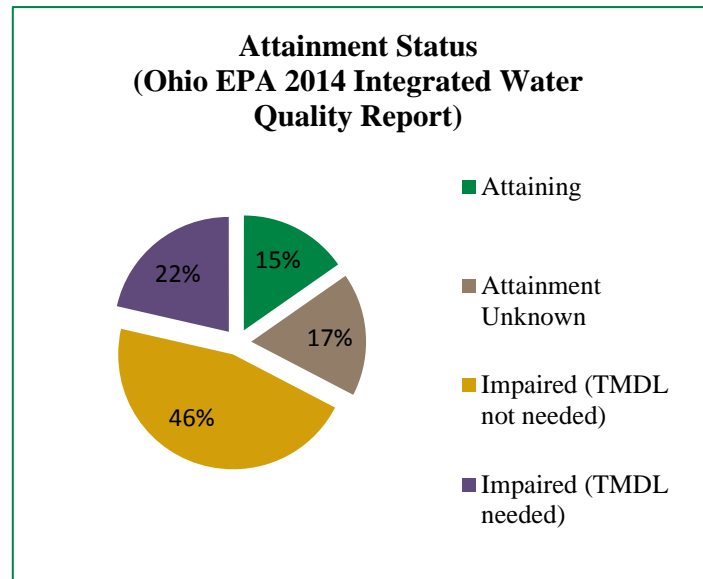
Federally Listed Species:

The list below is based on county occurrence of Federally Listed Species located within the watershed that may benefit from the CFA ILF Project.

- Candidate Species
 - eastern massasauga
- Threatened Species
 - northern long-eared bat, eastern prairie fringed orchid, northern monkshood, rabbitsfoot (proposed)
- Endangered Species
 - Indiana bat, fanshell, rayed bean, sheepsnose, clubshell, purple cat's paw pearly mussel, Mitchell's satyr
- Species of Special Concern
 - bald eagle, eastern hellbender

Aquatic Life Use Attainment Status

Ohio EPA's 2014 Integrated Water Quality Monitoring and Assessment Report provides current aquatic life use attainment status for each HUC-12 watershed. The aquatic life use scores are based on fish aquatic macroinvertebrate data against the biological criteria contained in Ohio's water quality standards. Attainment status for each Service Area was tabulated by calculating the HUC-12 scores found within the 8-digit watershed. Primary pollutants and sources that pose a threat to water quality are derived from Ohio EPA's 2014 Integrated Report as well as Ohio EPA's biological and Water Quality Reports.



The primary threat or impact to aquatic resources within this watershed includes:

- Sedimentation/siltation
- Flow regime alteration
- Direct habitat alteration
- Nutrients
- Metals

The primary sources of the impacts or threats within this watershed include:

- Non-irrigated crop production
- Septic tanks
- Mining (surface mining, acid mine drainage)
- Dam or impoundment
- Channelization- agriculture

Wetland and Stream Impacts

Water resource permitting trends based upon Ohio EPA 401 WQC and Isolated Wetland permit data for the last 5 years in the Tuscarawas watershed shows minimal wetland impacts and a high level of stream impacts.

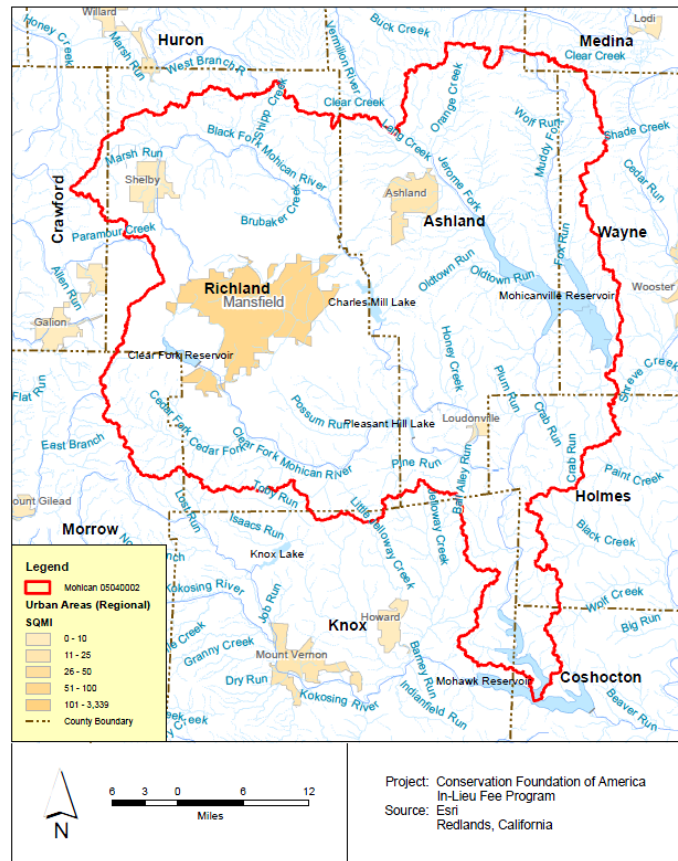
Water Resource Impacts	2010	2011	2012	2013*	2014*	5-Year* Average
Wetlands (acres)	1.12	3.61	5.66	7.07	0.26	3.544
Streams (linear feet)	13,330.50	7,630	18,759	8,347	32,888	16,191.90

* Additional Ohio EPA 401 stream and wetland impacts occurred in multiple watersheds. However, data for specific impacts within this HUC could not be located.

Service Area 26: Mohican HUC 05040002

Watershed Characteristics

Geographic Size	1005 miles ²
6-digit HUC	Muskingum
Counties	Ashland, Coshocton, Crawford, Holmes, Knox, Medina, Huron, Morrow, Richland, Wayne
Approximate 2010 Population	181,486
Primary Land Use	Forested, Agriculture, Developed Land



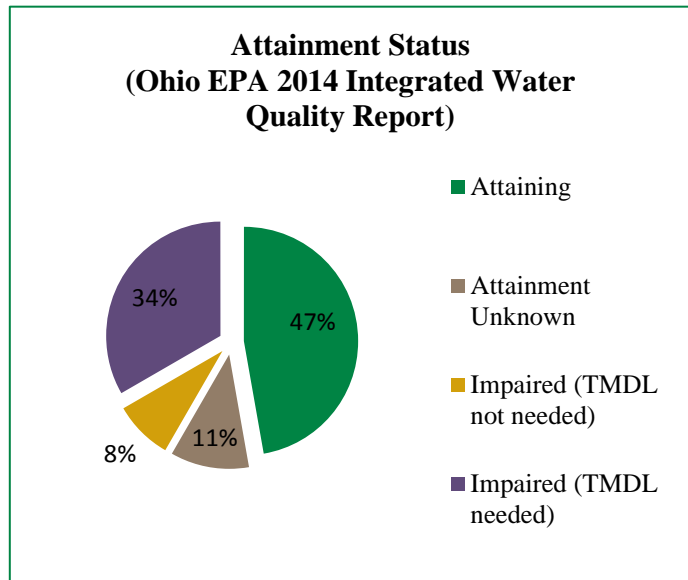
Federally Listed Species:

The list below is based on county occurrence of Federally Listed Species located within the watershed that may benefit from the CFA ILF Project.

- Candidate Species
 - eastern massasauga
- Threatened Species
 - northern long-eared bat, eastern prairie fringed orchid
- Endangered Species
 - Indiana bat, rayed bean, clubshell, fanshell, purple cat's paw pearly mussel, sheepnose
- Species of Special Concern
 - bald eagle, eastern hellbender

Aquatic Life Use Attainment Status

Ohio EPA's 2014 Integrated Water Quality Monitoring and Assessment Report provides current aquatic life use attainment status for each HUC-12 watershed. The aquatic life use scores are based on fish aquatic macroinvertebrate data against the biological criteria contained in Ohio's water quality standards. Attainment status for each Service Area was tabulated by calculating the HUC-12 scores found within the 8-digit watershed. Primary pollutants and sources that pose a threat to water quality are derived from Ohio EPA's 2014 Integrated Report as well as Ohio EPA's biological and Water Quality Reports.



The primary threats or impacts to aquatic resources within this watershed include:

- Flow alteration
- Nutrients/eutrophication biological indicators
- Suspended algae
- Direct habitat alterations
- Siltation/sedimentation

The primary sources of the impacts or threats within this watershed include:

- Livestock access
- Non-point source urban runoff
- Dam/impoundment
- Municipal point source
- Channelization-agriculture

Wetland and Stream Impacts

Water resource permitting trends based upon Ohio EPA 401 WQC and Isolated Wetland permit data for the last 5 years in the Mohican watershed shows moderate wetland and stream impacts.

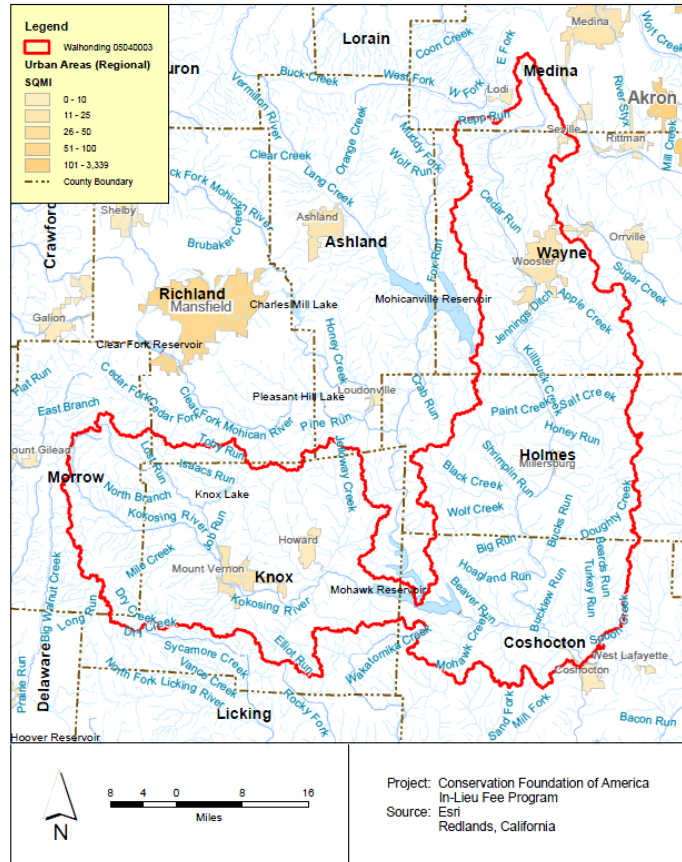
Water Resource Impacts	2010	2011	2012	2013*	2014*	5-Year* Average
Wetlands (acres)	0.49	-	-	24.90	-	5.078
Streams (linear feet)	2,219	-	-	169	-	477.60

* Additional Ohio EPA 401 stream and wetland impacts occurred in multiple watersheds. However, data for specific impacts within this HUC could not be located.

Service Area 27: Walhonding HUC 05040003

Watershed Characteristics

Geographic Size	1250 miles ²
6-digit HUC	Muskingum
Counties	Ashland, Coshocton, Holmes, Knox, Medina, Morrow, Richland, Wayne
Approximate 2010 Population	153,082
Primary Land Use	Forested, Agriculture, Developed Land



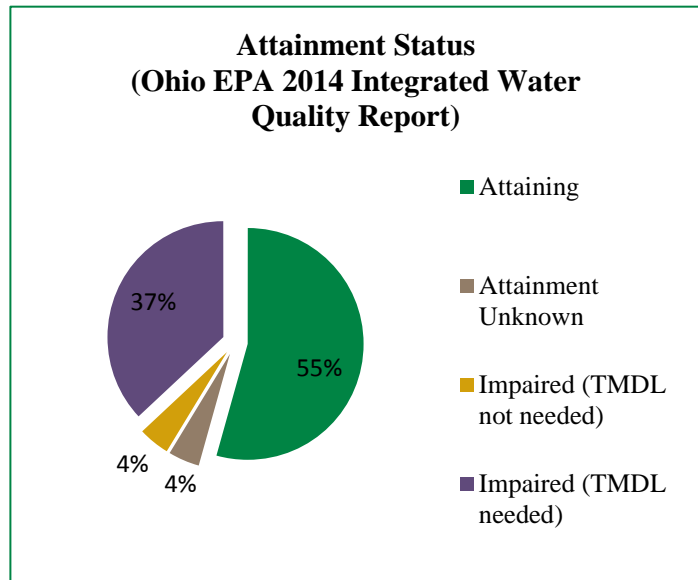
Federally Listed Species:

The list below is based on county occurrence of Federally Listed Species located within the watershed that may benefit from the CFA ILF Project.

- Candidate Species
 - eastern massasauga
- Threatened Species
 - northern long-eared bat, eastern prairie fringed orchid, rabbitsfoot (proposed)
- Endangered Species
 - Indiana bat, rayed bean, clubshell, sheepsnose, fanshell, purple cat's paw pearly mussel, snuffbox
- Species of Special Concern
 - bald eagle, eastern hellbender

Aquatic Life Use Attainment Status

Ohio EPA's 2014 Integrated Water Quality Monitoring and Assessment Report provides current aquatic life use attainment status for each HUC-12 watershed. The aquatic life use scores are based on fish aquatic macroinvertebrate data against the biological criteria contained in Ohio's water quality standards. Attainment status for each Service Area was tabulated by calculating the HUC-12 scores found within the 8-digit watershed. Primary pollutants and sources that pose a threat to water quality are derived from Ohio EPA's 2014 Integrated Report as well as Ohio EPA's biological and Water Quality Reports.



The primary threats or impacts to aquatic resources within this watershed include:

- Direct habitat alteration
- Organic enrichment
- Siltation
- Nutrients
- Flow modification

The primary sources of the impacts or threats within this watershed include:

- Channelization
- Dam/impoundment
- Municipal and Industrial point source
- Municipal point source

Wetland and Stream Impacts

Water resource permitting trends based upon Ohio EPA 401 WQC and Isolated Wetland permit data for the last 5 years in the Walhonding watershed shows minimal wetland permits and no stream impacts.

Water Resource Impacts	2010	2011	2012	2013*	2014*	5-Year* Average
Wetlands (acres)	0.43	-	0.67	-	-	0.22
Streams (linear feet)	-	-	-	-	-	0

* Additional Ohio EPA 401 stream and wetland impacts occurred in multiple watersheds. However, data for specific impacts within this HUC could not be located.

Service Area 28: Muskingum HUC 05040004

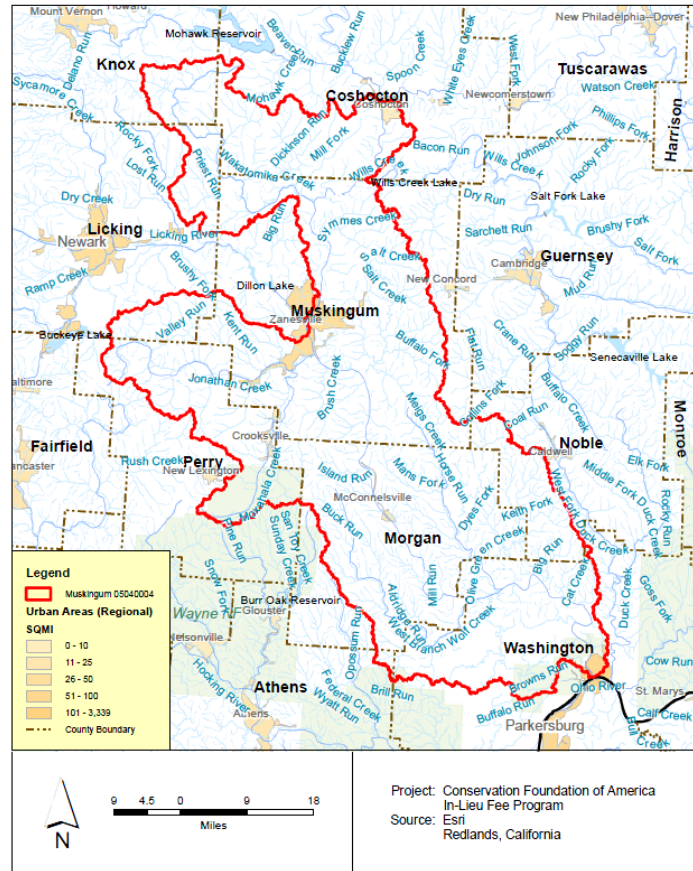
Watershed Characteristics

Geographic Size	1565 miles ²
6-digit HUC	Muskingum
Counties	Athens, Coshocton, Guernsey, Knox, Licking, Morgan, Muskingum, Noble, Perry, Washington
Approximate 2010 Population	128,868
Primary Land Use	Forested, Agriculture, Development Land

Federally Listed Species:

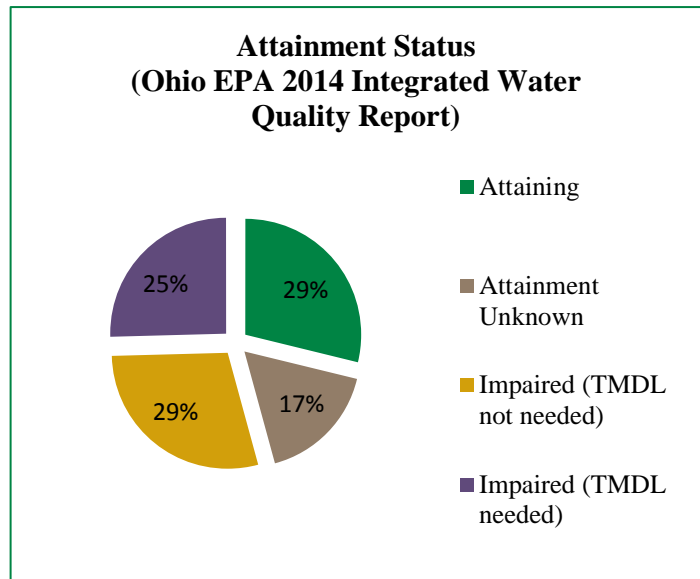
The list below is based on county occurrence of Federally Listed Species located within the watershed that may benefit from the CFA ILF Project.

- Candidate Species
 - eastern massasauga
- Threatened Species
 - northern long-eared bat,
 - rabbitsfoot (proposed)
- Endangered Species
 - Indiana bat, American burying beetle, fanshell, pink mucket pearly mussel, rayed bean, clubshell, fanshell, purple cat's paw pearly mussel, sheepnose, snuffbox
- Species of Special Concern
 - bald eagle, eastern hellbender, timber rattlesnake



Aquatic Life Use Attainment Status

Ohio EPA's 2014 Integrated Water Quality Monitoring and Assessment Report provides current aquatic life use attainment status for each HUC-12 watershed. The aquatic life use scores are based on fish aquatic macroinvertebrate data against the biological criteria contained in Ohio's water quality standards. Attainment status for each Service Area was tabulated by calculating the HUC-12 scores found within the 8-digit watershed. Primary pollutants and sources that pose a threat to water quality are derived from Ohio EPA's 2014 Integrated Report as well as Ohio EPA's biological and Water Quality Reports.



The primary threats or impacts to aquatic resources within this watershed include:

- Direct habitat alterations
- Nutrient enrichment
- Siltation
- Metals

The primary sources of the impacts or threats within this watershed include:

- Dam/impoundment
- Mining
- Septic systems
- Acid mine drainage
- Channelization

Wetland and Stream Impacts

Water resource permitting trends based upon Ohio EPA 401 WQC and Isolated Wetland permit data for the last 5 years in the Muskingum watershed shows minimal wetland impacts and moderate stream impacts.

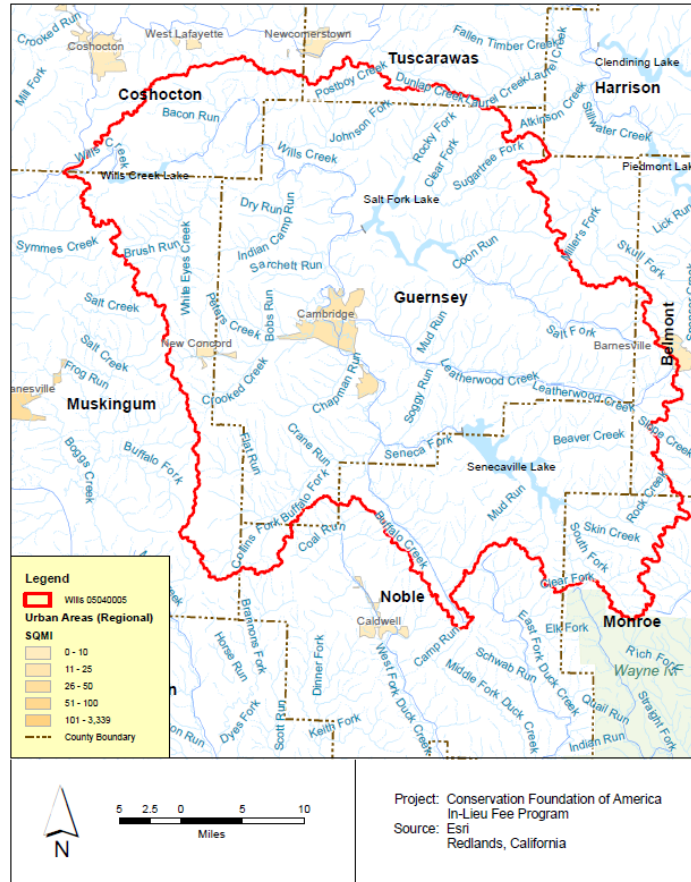
Water Resource Impacts	2010	2011	2012	2013*	2014*	5-Year* Average
Wetlands (acres)	0.84	0.84	1.04	0.06	2.32	1.02
Streams (linear feet)	-	35	2,177	-	3,462	1,134.80

* Additional Ohio EPA 401 stream and wetland impacts occurred in multiple watersheds. However, data for specific impacts within this HUC could not be located.

Service Area 29: Wills HUC 05040005

Watershed Characteristics

Geographic Size	853 miles ²
6-digit HUC	Muskingum
Counties	Belmont, Coshocton, Guernsey, Harrison, Monroe, Muskingum, Noble, Tuscarawas
Approximate 2010 Population	51,815
Primary Land Use	Forested, Agriculture



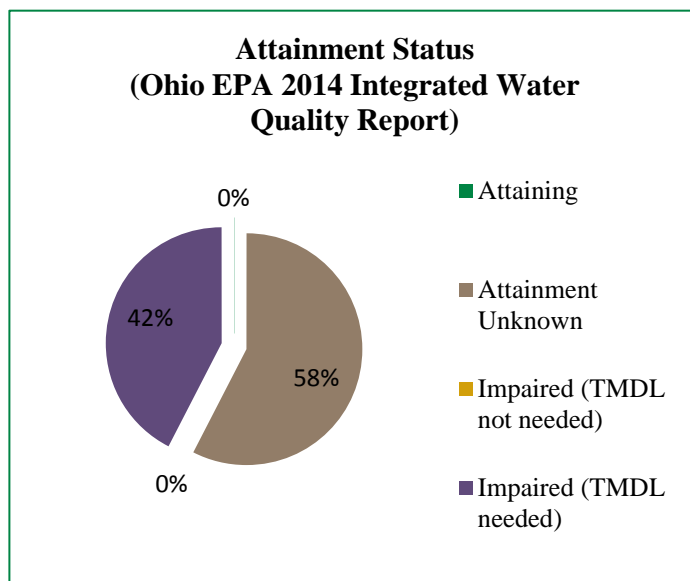
Federally Listed Species:

The list below is based on county occurrence of Federally Listed Species located within the watershed that may benefit from the CFA ILF Project.

- Threatened Species
 - northern long-eared bat, rabbitsfoot (proposed)
- Endangered Species
 - Indiana bat, rayed bean, clubshell, fanshell, purple cat's paw pearly mussel, sheepnose, snuffbox
- Species of Special Concern
 - bald eagle, eastern hellbender

Aquatic Life Use Attainment Status

Ohio EPA’s 2014 Integrated Water Quality Monitoring and Assessment Report provides current aquatic life use attainment status for each HUC-12 watershed. The aquatic life use scores are based on fish aquatic macroinvertebrate data against the biological criteria contained in Ohio’s water quality standards. Attainment status for each Service Area was tabulated by calculating the HUC-12 scores found within the 8-digit watershed. Primary pollutants and sources that pose a threat to water quality are derived from Ohio EPA’s 2014 Integrated Report as well as Ohio EPA’s biological and Water Quality Reports.



The primary threat or impact to aquatic resources within this watershed includes:

- Sedimentation/siltation
- Metals
- Habitat alteration

The primary sources of the impacts or threats within this watershed include:

- Agriculture
- Hazardous waste
- Septic systems

Wetland and Stream Impacts

Water resource permitting trends based upon Ohio EPA 401 WQC and Isolated Wetland permit data for the last 5 years in the Wills watershed shows moderate wetland impacts and a high degree of stream impacts.

Water Resource Impacts	2010	2011	2012	2013*	2014*	5-Year* Average
Wetlands (acres)	0.43	0.09	1.21	5.02	-	1.35
Streams (linear feet)	11,065	-	19,475	-	1,101	6,328

* Additional Ohio EPA 401 stream and wetland impacts occurred in multiple watersheds. However, data for specific impacts within this HUC could not be located.

Service Area 30: Licking HUC 05040006

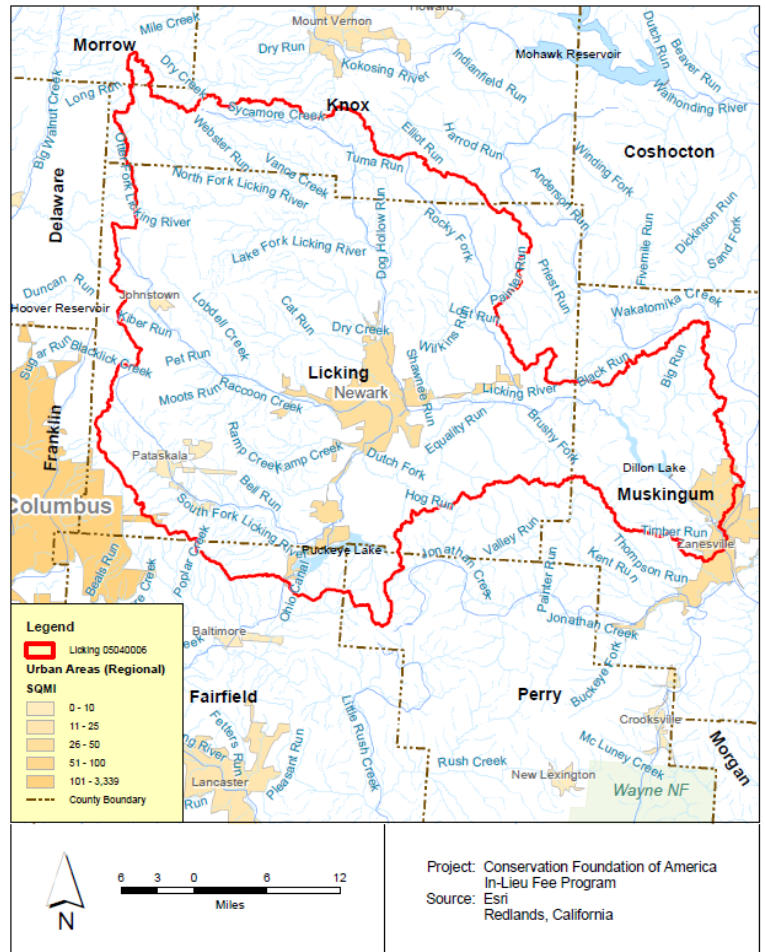
Watershed Characteristics

Geographic Size	780 miles ²
6-digit HUC	Muskingum
Counties	Fairfield, Franklin, Knox, Licking, Morrow, Muskingum, Perry
Approximate 2010 Population	184,489
Primary Land Use	Agriculture, Forested, Developed Land

Federally Listed Species:

The list below is based on county occurrence of Federally Listed Species located within the watershed that may benefit from the CFA ILF Project.

- Candidate Species
 - eastern massasauga
- Threatened Species
 - northern long-eared bat, rabbitsfoot (proposed)
- Endangered Species
 - Indiana bat, rayed bean, Scioto madtom, clubshell, northern riffleshell, fanshell, sheepsnose, snuffbox, American burying beetle
- Species of Special Concern
 - bald eagle, eastern hellbender



Aquatic Life Use Attainment Status

Ohio EPA's 2014 Integrated Water Quality Monitoring and Assessment Report provides current aquatic life use attainment status for each HUC-12 watershed. The aquatic life use scores are based on fish aquatic macroinvertebrate data against the biological criteria contained in Ohio's water quality standards. Attainment status for each Service Area was tabulated by calculating the HUC-12 scores found within the 8-digit watershed. Primary pollutants and sources that pose a threat to water quality are derived from Ohio EPA's 2014 Integrated Report as well as Ohio EPA's biological and Water Quality Reports.

The primary threats or impacts to aquatic resources within this watershed include:

- Ammonia
- Nutrients
- Direct habitat alterations
- Flow alteration
- Sediment/siltation

The primary sources of the impacts or threats within this watershed include:

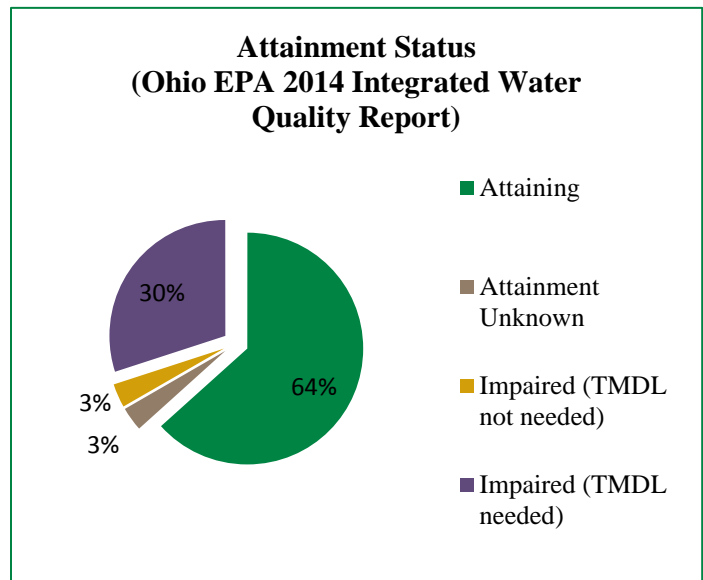
- Channelization – agriculture
- Dam/impoundment
- Septic systems
- Municipal point source
- Urban runoff/storm sewers

Wetland and Stream Impacts

Water resource permitting trends based upon Ohio EPA 401 WQC and Isolated Wetland permit data for the last 5 years in the Licking watershed shows moderate wetland permits and high stream impacts.

Water Resource Impacts	2010	2011	2012	2013*	2014*	5-Year* Average
Wetlands (acres)	0.10	-	-	-	-	0.02
Streams (linear feet)	4,263	-	-	-	-	852.60

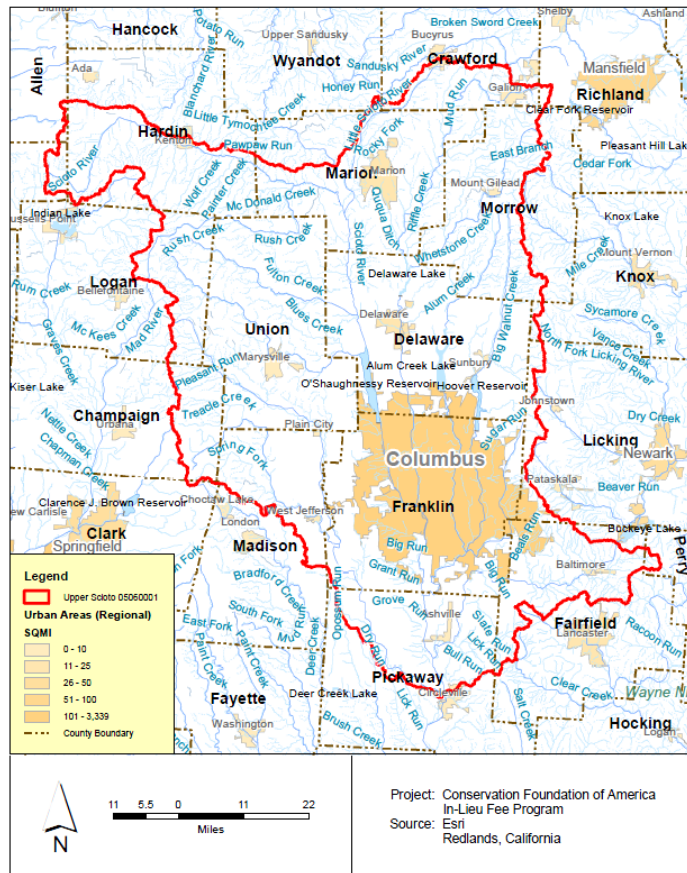
* Additional Ohio EPA 401 stream and wetland impacts occurred in multiple watersheds. However, data for specific impacts within this HUC could not be located.



Service Area 31: Upper Scioto River HUC 05060001

Watershed Characteristics

Geographic Size	3196 miles ²
6-digit HUC	Scioto
Counties	Allen, Auglaize, Champaign, Clark, Crawford, Delaware, Fairfield, Franklin, Hardin, Knox, Licking, Logan, Madison, Marion, Morrow, Perry, Pickaway, Richland, Union, Wyandot
Approximate 2010 Population	1.66 million
Primary Land Use	Agriculture, Developed Land, Forested



Federally Listed Species:

The list below is based on county occurrence of Federally Listed Species located within the watershed that may benefit from the CFA ILF Project.

- Candidate Species
 - eastern massasauga
- Threatened Species
 - northern long-eared bat, eastern prairie fringed orchid, copperybelly water snake, rabbitsfoot (proposed)
- Endangered Species
 - Indiana bat, rayed bean, Scioto madtom, clubshell, northern riffleshell, snuffbox, American burying beetle
- Species of Special Concern
 - bald eagle, eastern hellbender

Aquatic Life Use Attainment Status

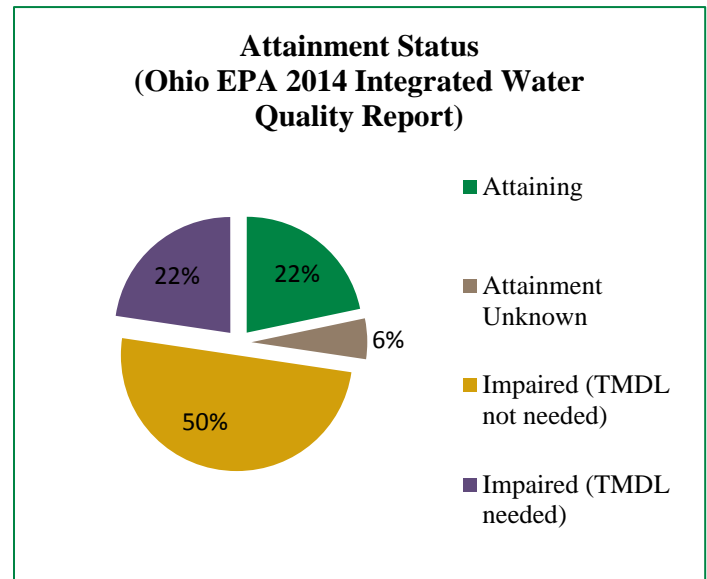
Ohio EPA's 2014 Integrated Water Quality Monitoring and Assessment Report provides current aquatic life use attainment status for each HUC-12 watershed. The aquatic life use scores are based on fish aquatic macroinvertebrate data against the biological criteria contained in Ohio's water quality standards. Attainment status for each Service Area was tabulated by calculating the HUC-12 scores found within the 8-digit watershed. Primary pollutants and sources that pose a threat to water quality are derived from Ohio EPA's 2014 Integrated Report as well as Ohio EPA's biological and Water Quality Reports.

The primary threats or impacts to aquatic resources within this watershed include:

- Nutrients
- Flow alteration
- Organic enrichment
- Metals
- Sedimentation/siltation
- Direct habitat alterations

The primary sources of the impacts or threats within this watershed include:

- On-site treatment systems
- Urban runoff/storm sewers
- Development (urban and suburban)
- Channelization (agriculture and development)
- Municipal point source



Wetland and Stream Impacts

Water resource permitting trends based upon Ohio EPA 401 WQC and Isolated Wetland permit data for the last 5 years in the Upper Scioto River watershed shows moderate wetland and stream impacts.

Water Resource Impacts	2010	2011	2012	2013*	2014*	5-Year* Average
Wetlands (acres)	12.12	2.82	1.40	7.32	3.74	5.48
Streams (linear feet)	-	829	2,647	4,455	3,815	2,349.20

* Additional Ohio EPA 401 stream and wetland impacts occurred in multiple watersheds. However, data for specific impacts within this HUC could not be located.

Service Area 32: Lower Scioto HUC 05060002

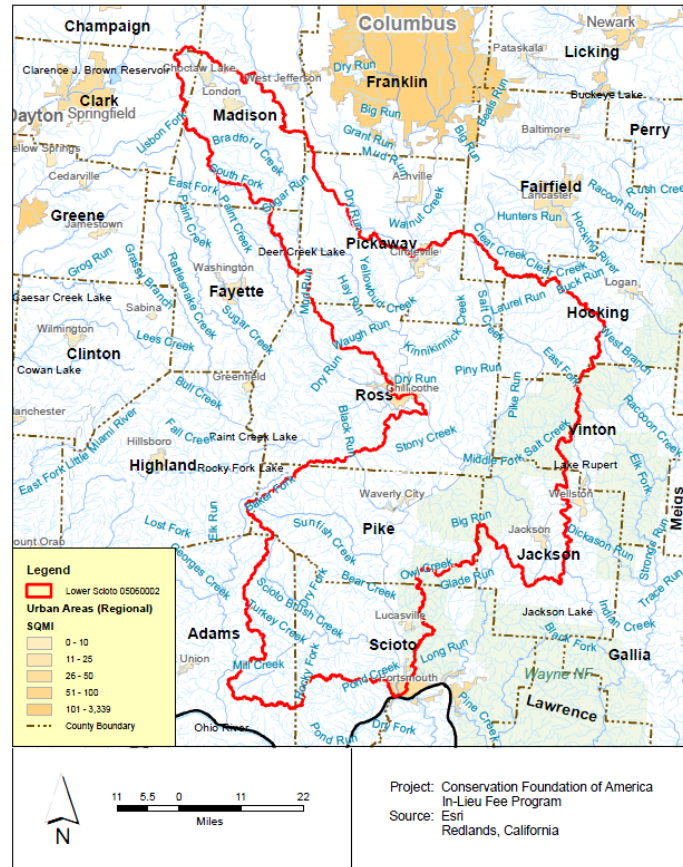
Watershed Characteristics

Geographic Size	2175 miles ²
6-digit HUC	Scioto
Counties	Clark, Clinton, Fayette, Greene, Highland, Madison, Pickaway, Pike, Ross
Approximate 2010 Population	181,836
Primary Land Use	Agriculture, Developed Land

Federally Listed Species:

The list below is based on county occurrence of Federally Listed Species located within the watershed that may benefit from the CFA ILF Project.

- Candidate Species
 - eastern massasauga
- Threatened Species
 - northern long-eared bat, eastern prairie fringed orchid, rabbitsfoot (proposed)
- Endangered Species
 - Indiana bat, Scioto madtom, clubshell, rayed bean, snuffbox, northern riffleshell
- Species of Special Concern
 - eastern hellbender, timber rattlesnake, bald eagle



Aquatic Life Use Attainment Status

Ohio EPA's 2014 Integrated Water Quality Monitoring and Assessment Report provides current aquatic life use attainment status for each HUC-12 watershed. The aquatic life use scores are based on fish aquatic macroinvertebrate data against the biological criteria contained in Ohio's water quality standards. Attainment status for each Service Area was tabulated by calculating the HUC-12 scores found within the 8-digit watershed. Primary pollutants and sources that pose a threat to water quality are derived from Ohio EPA's 2014 Integrated Report as well as Ohio EPA's biological and Water Quality Reports.

The primary threat or impact to aquatic resources within this watershed includes:

- Nutrients
- Direct habitat alteration
- Flow alteration
- Sediment/siltation
- Organic enrichment
- Metals

The primary sources of the impacts or threats within this watershed include:

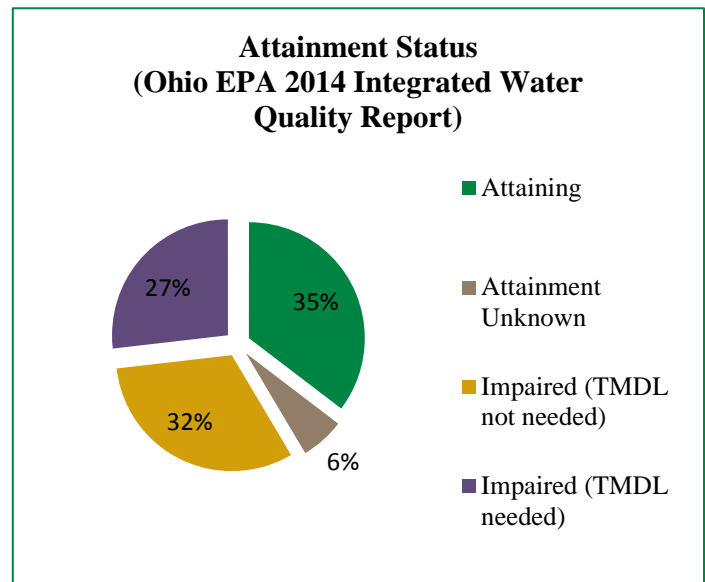
- Channelization
- Packaging plants
- Septic systems, urban runoff/storm sewers
- Dam/ impoundment
- Point source discharges (municipal and industrial)

Wetland and Stream Impacts

Water resource permitting trends based upon Ohio EPA 401 WQC and Isolated Wetland permit data for the last 5 years in the Lower Scioto watershed shows minimal wetland impacts and no stream impacts.

Water Resource Impacts	2010	2011	2012	2013*	2014*	5-Year* Average
Wetlands (acres)	-	0.04	-	-	-	0.008
Streams (linear feet)	-	-	-	-	-	0

* Additional Ohio EPA 401 stream and wetland impacts occurred in multiple watersheds. However, data for specific impacts within this HUC could not be located



Service Area 33: Paint HUC 05060003

Watershed Characteristics

Geographic Size	1142 miles ²
6-digit HUC	Scioto
Counties	Clark, Madison, Greene, Fayette, Pickaway, Ross, Highland, Clinton, Pike
Approximate 2010 Population	219,300
Primary Land Use	Agriculture, Developed Land

Federally Listed Species:

The list below is based on county occurrence of Federally Listed Species located within the watershed that may benefit from the CFA ILF Project.

- Candidate Species
 - eastern massasauga
- Threatened Species
 - northern long-eared bat, eastern prairie fringed orchid, rabbitsfoot (proposed)
- Endangered Species
 - Indiana bat, Scioto madtom, clubshell, northern riffleshell, rayed bean, snuffbox
- Species of Special Concern
 - timber rattlesnake, eastern hellbender, bald eagle



Aquatic Life Use Attainment Status

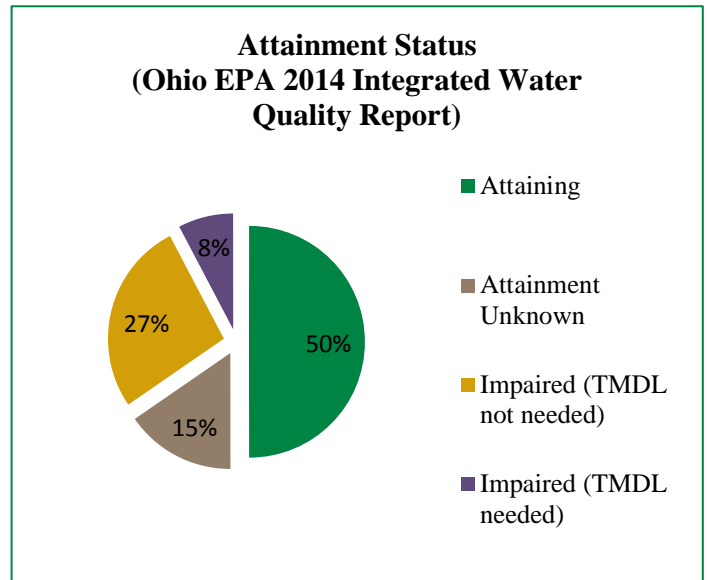
Ohio EPA's 2014 Integrated Water Quality Monitoring and Assessment Report provides current aquatic life use attainment status for each HUC-12 watershed. The aquatic life use scores are based on fish aquatic macroinvertebrate data against the biological criteria contained in Ohio's water quality standards. Attainment status for each Service Area was tabulated by calculating the HUC-12 scores found within the 8-digit watershed. Primary pollutants and sources that pose a threat to water quality are derived from Ohio EPA's 2014 Integrated Report as well as Ohio EPA's biological and Water Quality Reports.

The primary threat or impact to aquatic resources within this watershed includes:

- Sedimentation/siltation
- Nutrients
- Direct Habitat alterations
- Organic enrichment
- Oxygen, dissolved

The primary sources of the impacts or threats within this watershed include:

- Agricultural activities
- Septic systems
- Non-irrigated crop production
- Dam/impoundments
- Urban runoff/storm sewers
- Channelization



Wetland and Stream Impacts

Water resource permitting trends based upon Ohio EPA 401 WQC and Isolated Wetland permit data for the last 5 years in the Paint watershed shows minimal wetland impacts and no stream impacts.

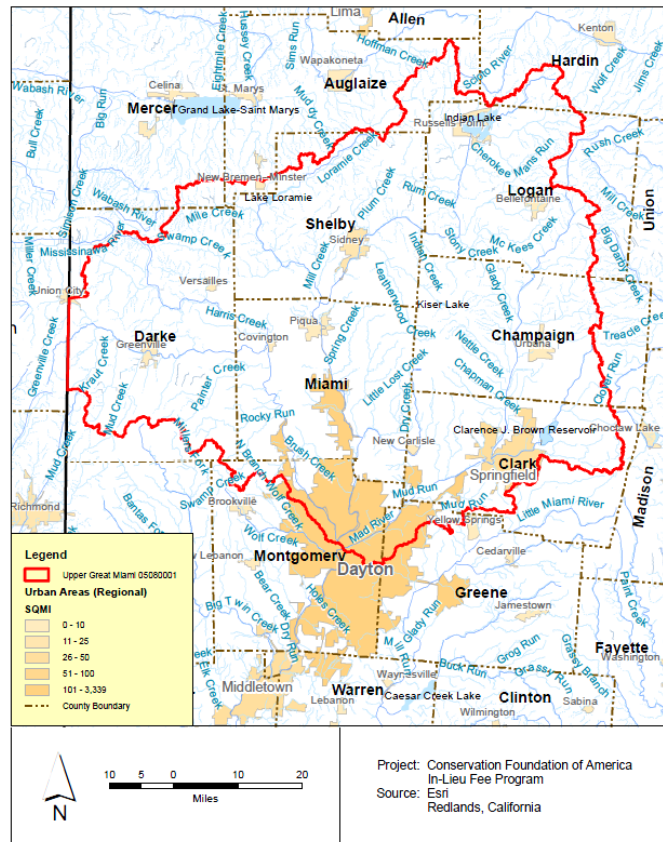
Water Resource Impacts	2010	2011	2012	2013*	2014*	5-Year* Average
Wetlands (acres)	-	2.45	-	-	-	0.49
Streams (linear feet)	-	-	-	-	-	0

* Additional Ohio EPA 401 stream and wetland impacts occurred in multiple watersheds. However, data for specific impacts within this HUC could not be located.

Service Area 34: Upper Great Miami HUC 05080001

Watershed Characteristics

Geographic Size	2482 miles ²
6-digit HUC	Great Miami
Counties	Allen, Auglaize, Champaign, Clark, Darke, Greene, Hardin, Logan, Madison, Mercer, Miami, Montgomery, Preble, Shelby
Approximate 2010 Population	613,997
Primary Land Use	Developed Land Agriculture,



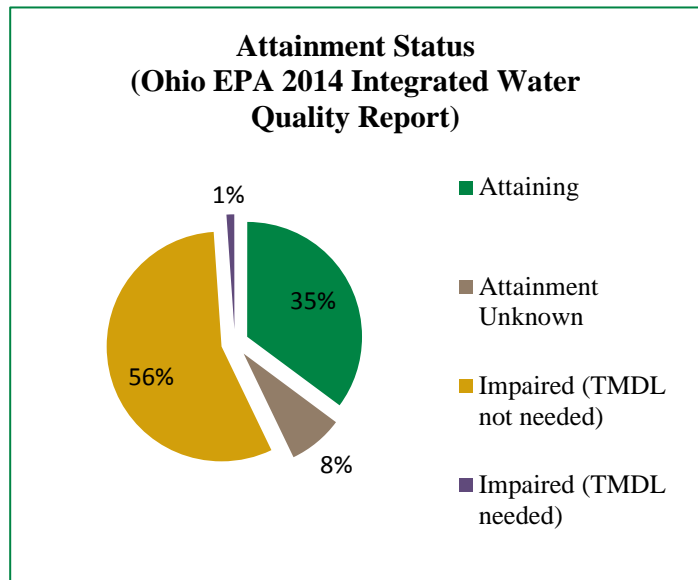
Federally Listed Species:

The list below is based on county occurrence of Federally Listed Species located within the watershed that may benefit from the CFA ILF Project.

- Candidate Species
 - eastern massasauga
- Threatened Species
 - northern long-eared bat, eastern prairie fringed orchid, copperbelly water snake, rabbitsfoot (proposed)
- Endangered Species
 - Indiana bat, Scioto madtom, clubshell, northern riffleshell, rayed bean, snuffbox
- Species of Special Concern
 - bald eagle

Aquatic Life Use Attainment Status

Ohio EPA's 2014 Integrated Water Quality Monitoring and Assessment Report provides current aquatic life use attainment status for each HUC-12 watershed. The aquatic life use scores are based on fish aquatic macroinvertebrate data against the biological criteria contained in Ohio's water quality standards. Attainment status for each Service Area was tabulated by calculating the HUC-12 scores found within the 8-digit watershed. Primary pollutants and sources that pose a threat to water quality are derived from Ohio EPA's 2014 Integrated Report as well as Ohio EPA's biological and Water Quality Reports.



The primary threat or impact to aquatic resources within this watershed includes:

- Siltation/sedimentation
- Direct habitat alterations
- Organic enrichment
- Temperature
- Metals

The primary sources of the impacts or threats within this watershed include:

- Septic systems
- Point source (industrial and municipal)
- Industrial thermal discharge
- Dam/impoundment
- Channelization-development
- Urban runoff/storm sewers

Wetland and Stream Impacts

Water resource permitting trends based upon Ohio EPA 401 WQC and Isolated Wetland permit data for the last 5 years in the Upper Great Miami watershed shows moderate wetland and stream impacts.

Water Resource Impacts	2010	2011	2012	2013*	2014*	5-Year* Average
Wetlands (acres)	-	0.60	0.47	-	0.10	5.0
Streams (linear feet)	-	670	-	2,161	220	610.20

* Additional Ohio EPA 401 stream and wetland impacts occurred in multiple watersheds. However, data for specific impacts within this HUC could not be located.

Service Area 35: Lower Great Miami HUC 05080002

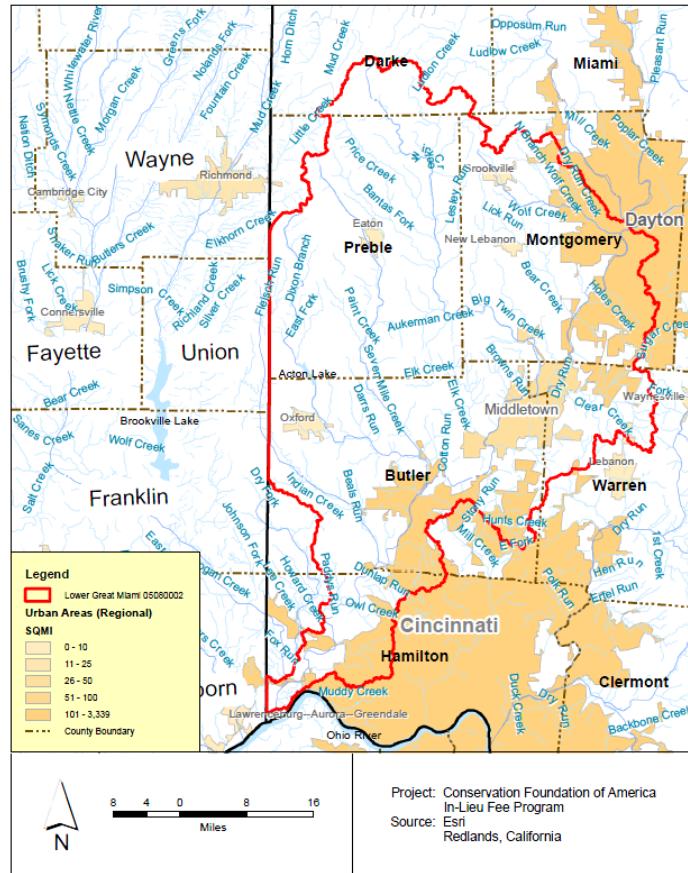
Watershed Characteristics

Geographic Size	1320 miles ²
6-digit HUC	Great Miami Butler, Darke, Hamilton, Montgomery, Preble, Warren
Counties	Butler, Darke, Hamilton, Montgomery, Preble, Warren
Approximate 2010 Population	741,677
Primary Land Use	Developed Land, Forest Agriculture

Federally Listed Species:

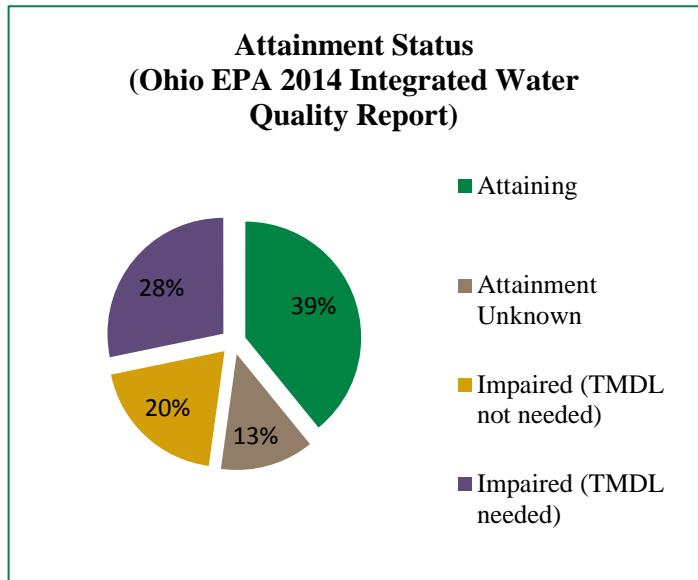
The list below is based on county occurrence of Federally Listed Species located within the watershed that may benefit from the CFA ILF Project.

- Candidate Species
 - eastern massasauga
- Threatened Species
 - northern long-eared bat
- Endangered Species
 - Indiana bat, running buffalo clover, fanshell, pink mucket pearly mussel, sheepnose, rayed bean, snuffbox
- Species of Special Concern
 - bald eagle



Aquatic Life Use Attainment Status

Ohio EPA's 2014 Integrated Water Quality Monitoring and Assessment Report provides current aquatic life use attainment status for each HUC-12 watershed. The aquatic life use scores are based on fish aquatic macroinvertebrate data against the biological criteria contained in Ohio's water quality standards. Attainment status for each Service Area was tabulated by calculating the HUC-12 scores found within the 8-digit watershed. Primary pollutants and sources that pose a threat to water quality are derived from Ohio EPA's 2014 Integrated Report as well as Ohio EPA's biological and Water Quality Reports.



The primary threat or impact to aquatic resources within this watershed includes:

- sediment and siltation
- Nutrients
- Metals
- Flow alteration

The primary sources of the impacts or threats within this watershed include:

- Urban runoff/storm sewers
- Agriculture
- Dam/impoundment
- Industrial thermal discharge
- Point source (industrial and municipal)

Wetland and Stream Impacts

Water resource permitting trends based upon Ohio EPA 401 WQC and Isolated Wetland permit data for the last 5 years in the Lower Great Miami watershed shows moderate wetland and stream impacts.

Water Resource Impacts	2010	2011	2012	2013*	2014*	5-Year* Average
Wetlands (acres)	2.84	-	-	0.20	0.14	0.636
Streams (linear feet)	6,983	-	-	6,465	4,150	3,519.60

* Additional Ohio EPA 401 stream and wetland impacts occurred in multiple watersheds. However, data for specific impacts within this HUC could not be located.

Service Area 36: Whitewater HUC 05080003

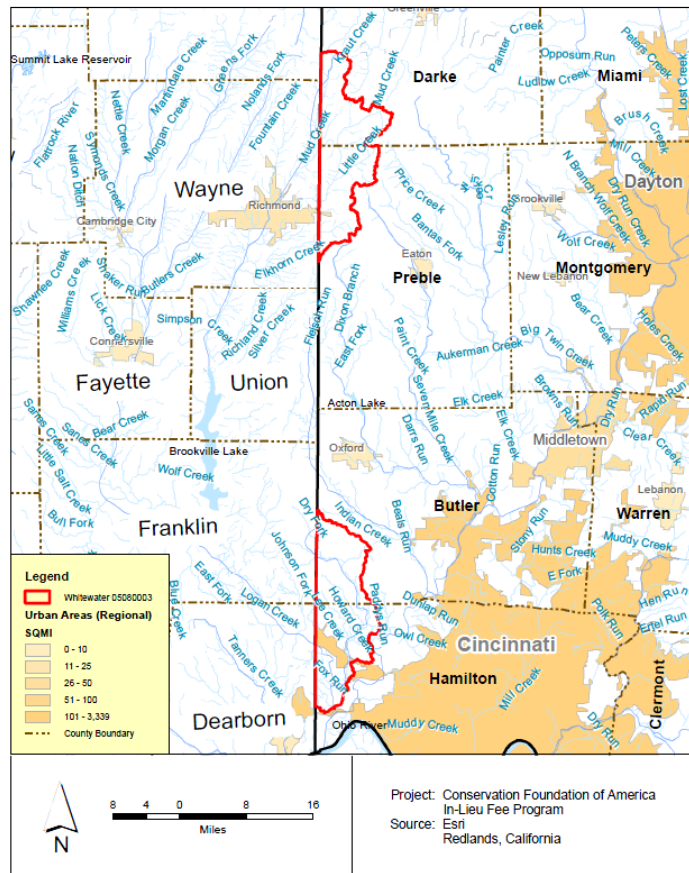
Watershed Characteristics

Geographic Size	144 miles ²
6-digit HUC	Great Miami
Counties	Butler, Darke, Hamilton, Preble
Approximate 2010 Population	27,206
Primary Land Use	Developed Land, Forest, Agriculture

Federally Listed Species:

The list below is based on county occurrence of Federally Listed Species located within the watershed that may benefit from the CFA ILF Project.

- Candidate Species
 - eastern massasauga
- Threatened Species
 - northern long-eared bat
- Endangered Species
 - Indiana bat, running buffalo clover, rayed bean, fanshell, pink mucket pearly mussel, sheepsnose, snuffbox
- Species of Special Concern
 - bald eagle



Aquatic Life Use Attainment Status

Ohio EPA's 2014 Integrated Water Quality Monitoring and Assessment Report provides current aquatic life use attainment status for each HUC-12 watershed. The aquatic life use scores are based on fish aquatic macroinvertebrate data against the biological criteria contained in Ohio's water quality standards. Attainment status for each Service Area was tabulated by calculating the HUC-12 scores found within the 8-digit watershed. Primary pollutants and sources that pose a threat to water quality are derived from Ohio EPA's 2014 Integrated Report as well as Ohio EPA's biological and Water Quality Reports.

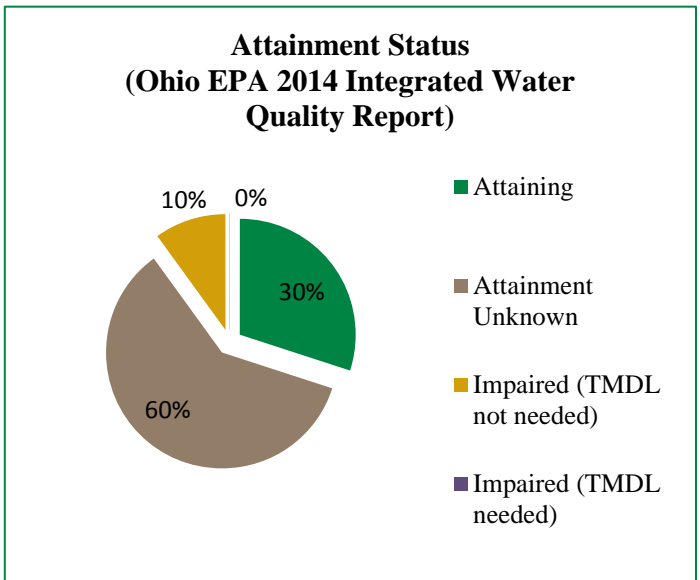
The primary threat or impact to aquatic resources within this watershed includes:

The primary threat or impact to aquatic resources within this watershed includes:

- No significant existing threats identified

The primary sources of the impacts or threats within this watershed include:

- No significant existing sources identified



Wetland and Stream Impacts

Water resource permitting trends based upon Ohio EPA 401 WQC and Isolated Wetland permit data for the last 5 years in the Whitewater watershed shows no wetland and stream impacts.

Water Resource Impacts	2010	2011	2012	2013*	2014*	5-Year* Average
Wetlands (acres)	-	-	-	-	-	0
Streams (linear feet)	-	-	-	-	-	0

* Additional Ohio EPA 401 stream and wetland impacts occurred in multiple watersheds. However, data for specific impacts within this HUC could not be located.

Service Area 37: Raccoon HUC 05090101

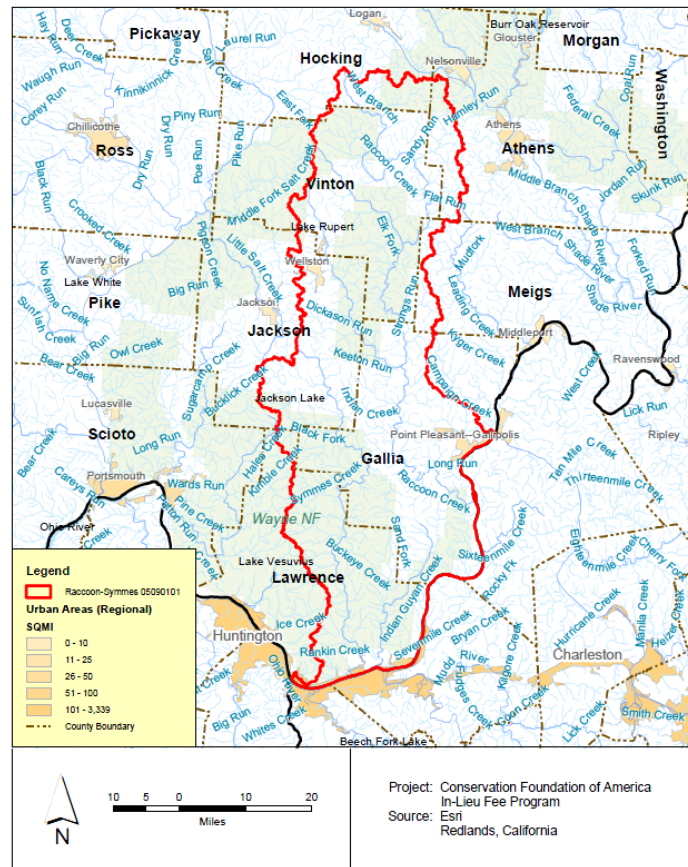
Watershed Characteristics

Geographic Size	1237 miles ²
6-digit HUC	Middle Ohio-Raccoon
Counties	Athens, Gallia, Hocking, Jackson, Lawrence, Meigs, Vinton
Approximate 2010 Population	87,634
Primary Land Use	Forest, Developed Land, Agriculture

Federally Listed Species:

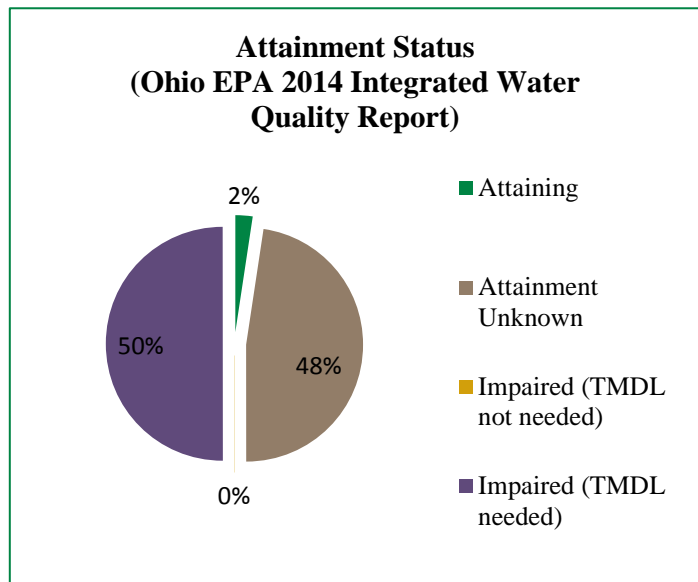
The list below is based on county occurrence of Federally Listed Species located within the watershed that may benefit from the CFA ILF Project.

- Threatened Species
 - northern long-eared bat, northern monkshood, small whorled pogonia
- Endangered Species
 - Indiana bat, American burying beetle, running buffalo clover, fanshell, pink mucket, pearly mussel, sheepnose, snuffbox
- Species of Special Concern
 - bald eagle, timber rattlesnake, eastern hellbender



Aquatic Life Use Attainment Status

Ohio EPA's 2014 Integrated Water Quality Monitoring and Assessment Report provides current aquatic life use attainment status for each HUC-12 watershed. The aquatic life use scores are based on fish aquatic macroinvertebrate data against the biological criteria contained in Ohio's water quality standards. Attainment status for each Service Area was tabulated by calculating the HUC-12 scores found within the 8-digit watershed. Primary pollutants and sources that pose a threat to water quality are derived from Ohio EPA's 2014 Integrated Report as well as Ohio EPA's biological and Water Quality Reports.



The primary threat or impact to aquatic resources within this watershed includes:

- Thermal modifications
- Flow alterations
- Direct habitat alterations
- Nutrients
- Metals
- Sedimentation/siltation

The primary sources of the impacts or threats within this watershed include:

- Point source (industrial and municipal)
- Mining (acid mine drainage, mine tailing)
- Agriculture
- Confined animal feeding lots

Wetland and Stream Impacts

Water resource permitting trends based upon Ohio EPA 401 WQC and Isolated Wetland permit data for the last 5 years in the Raccoon watershed shows frequent permitting activity for both wetlands and streams, but minimal impacts to wetlands and more moderate impacts to streams.

Water Resource Impacts	2010	2011	2012	2013*	2014*	5-Year* Average
Wetlands (acres)	5.34	-	0.02	-	-	1.072
Streams (linear feet)	12,395	-	-	-	700	2,619

* Additional Ohio EPA 401 stream and wetland impacts occurred in multiple watersheds. However, data for specific impacts within this HUC could not be located.

Service Area 38: Little Scioto-Tygarts HUC 05090103

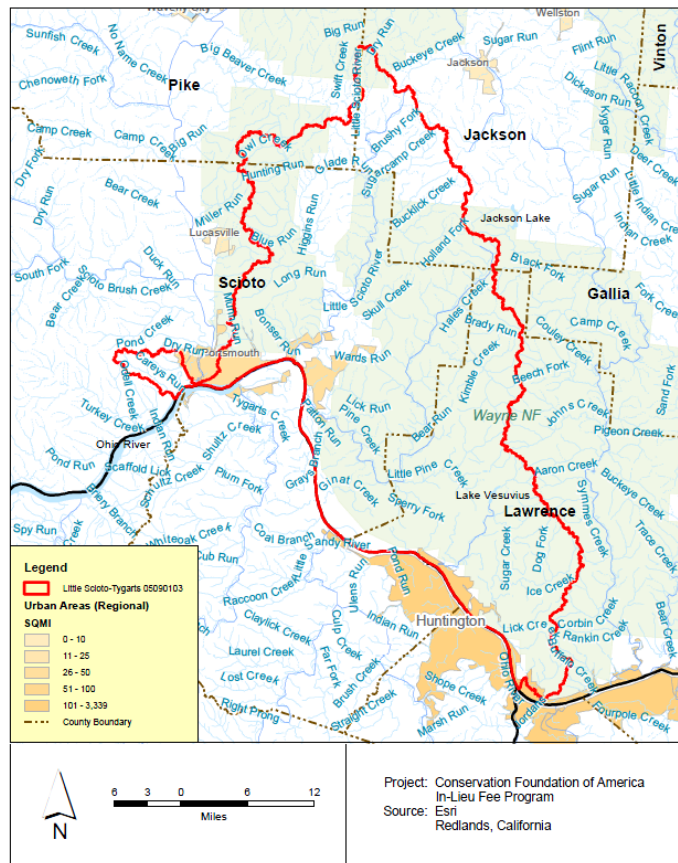
Watershed Characteristics

Geographic Size	574 miles ²
6-digit HUC	Middle Ohio-Raccoon
Counties	Gallia, Jackson, Lawrence, Pike, Scioto
Approximate 2010 Population	87,472
Primary Land Use	Forest, Developed Land, Agriculture

Federally Listed Species:

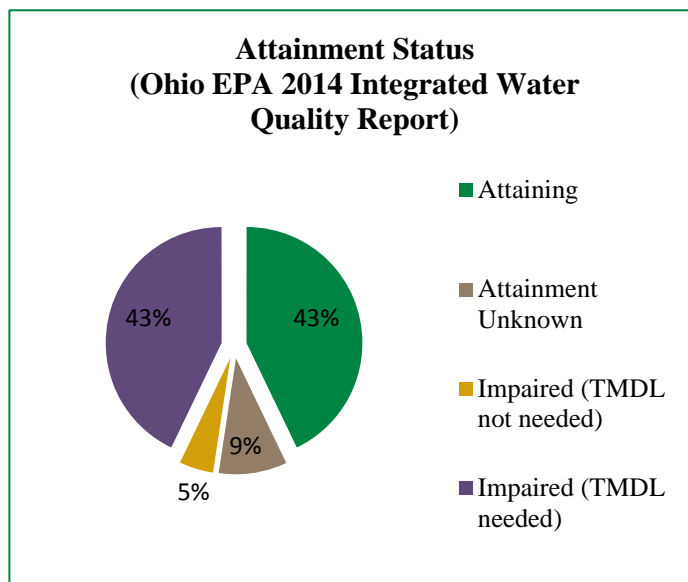
The list below is based on county occurrence of Federally Listed Species located within the watershed that may benefit from the CFA ILF Project.

- Threatened Species
 - northern long-eared bat, small whorled pogonia, Virginia spiraea
- Endangered Species
 - Indiana bat, running buffalo clover, fanshell, pink mucket pearly mussel, sheepsnose, northern riffleshell, snuffbox, clubshell, rayed bean
- Species of Special Concern
 - bald eagle, eastern hellbender, timber rattlesnake



Aquatic Life Use Attainment Status

Ohio EPA's 2014 Integrated Water Quality Monitoring and Assessment Report provides current aquatic life use attainment status for each HUC-12 watershed. The aquatic life use scores are based on fish aquatic macroinvertebrate data against the biological criteria contained in Ohio's water quality standards. Attainment status for each Service Area was tabulated by calculating the HUC-12 scores found within the 8-digit watershed. Primary pollutants and sources that pose a threat to water quality are derived from Ohio EPA's 2014 Integrated Report as well as Ohio EPA's biological and Water Quality Reports.



The primary threat or impact to aquatic resources within this watershed includes:

The primary threat or impact to aquatic resources within this watershed includes:

- Sedimentation/siltation
- Metals
- Nutrients
- Organic enrichment

The primary sources of the impacts or threats within this watershed include:

- dam/impoundment
- acid mine drainage
- urban runoff/storm sewers
- Septic systems

Wetland and Stream Impacts

Water resource permitting trends based upon Ohio EPA 401 WQC and Isolated Wetland permit data for the last 5 years in the Little Scioto-Tygarts watershed shows minimal wetland and stream impacts.

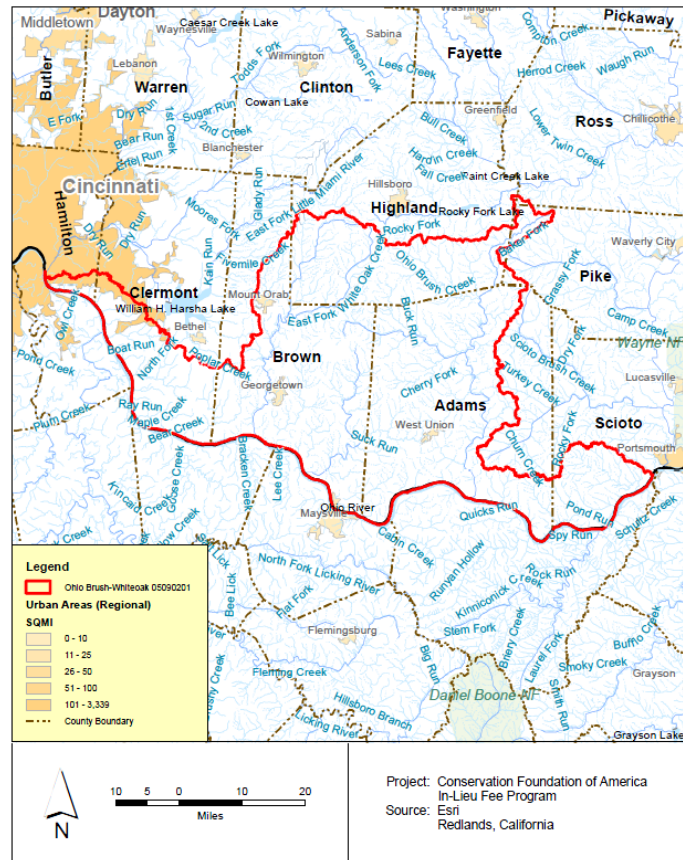
Water Resource Impacts	2010	2011	2012	2013*	2014*	5-Year* Average
Wetlands (acres)	0.45	-	0.07	-	0.04	0.112
Streams (linear feet)	-	597	-	890	-	297.40

* Additional Ohio EPA 401 stream and wetland impacts occurred in multiple watersheds. However, data for specific impacts within this HUC could not be located.

Service Area 39: Ohio Brush-Whiteoak HUC 05090201

Watershed Characteristics

Geographic Size	1327 miles ²
6-digit HUC	Middle Ohio-Little Miami
Counties	Adams, Brown, Clermont, Hamilton, Highland, Pike, Ross, Scioto
Approximate 2010 Population	122,784
Primary Land Use	Forest, Developed Land, Agriculture



Federally Listed Species:

The list below is based on county occurrence of Federally Listed Species located within the watershed that may benefit from the CFA ILF Project.

- Threatened Species
 - northern long-eared bat, small whorled pogonia, Virginia spiraea
- Endangered Species
 - Indiana bat, running buffalo clover, fanshell, pink mucket pearly mussel, northern riffleshell, clubshell, rayed bean, sheepnose, snuffbox
- Species of Special Concern
 - bald eagle, eastern hellbender, timber rattlesnake

Aquatic Life Use Attainment Status

Ohio EPA's 2014 Integrated Water Quality Monitoring and Assessment Report provides current aquatic life use attainment status for each HUC-12 watershed. The aquatic life use scores are based on fish aquatic macroinvertebrate data against the biological criteria contained in Ohio's water quality standards. Attainment status for each Service Area was tabulated by calculating the HUC-12 scores found within the 8-digit watershed. Primary pollutants and sources that pose a threat to water quality are derived from Ohio EPA's 2014 Integrated Report as well as Ohio EPA's biological and Water Quality Reports.

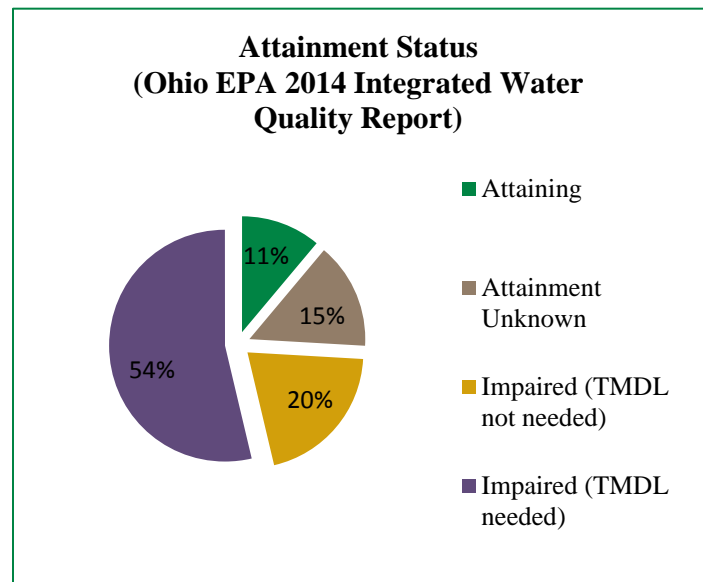
The primary threat or impact to aquatic resources within this watershed includes:

The primary threat or impact to aquatic resources within this watershed includes:

- Nutrients/eutrophication
- Sedimentation/siltation
- Habitat alterations
- Flow alteration

The primary sources of the impacts or threats within this watershed include:

- Municipal point source discharge
- Unrestricted cattle access
- Impoundments/dams
- Septic systems
- Channelization (agriculture and development)



Wetland and Stream Impacts

Water resource permitting trends based upon Ohio EPA 401 WQC and Isolated Wetland permit data for the last 5 years in the Ohio Brush-Whiteoak watershed shows minimal wetland impacts and moderate stream impacts.

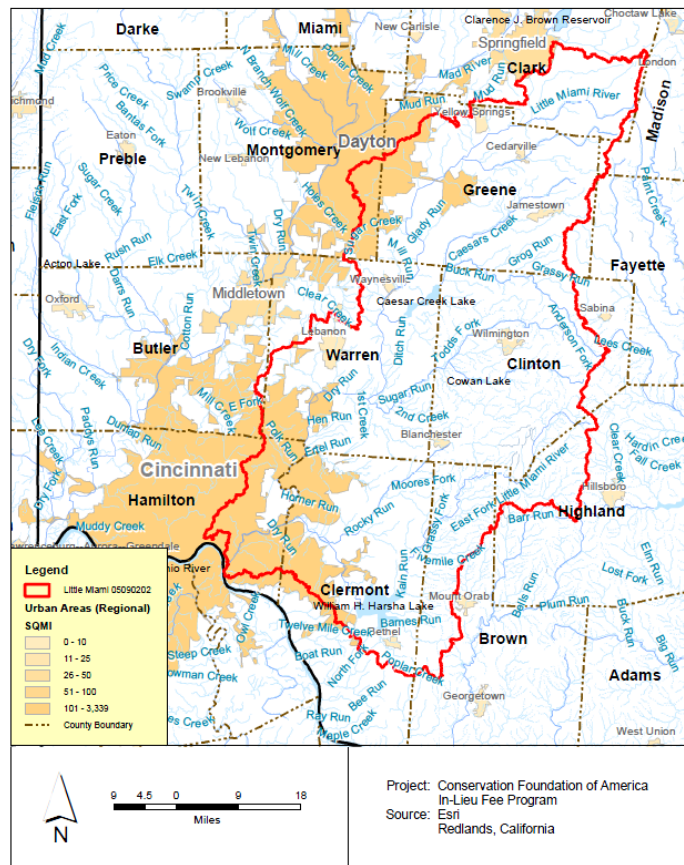
Water Resource Impacts	2010	2011	2012	2013*	2014*	5-Year* Average
Wetlands (acres)	-	-	0.49	1.81	-	0.460
Streams (linear feet)	-	20,780	-	11,656	170	6,521

* Additional Ohio EPA 401 stream and wetland impacts occurred in multiple watersheds. However, data for specific impacts within this HUC could not be located.

Service Area 40: Little Miami HUC 05090202

Watershed Characteristics

Geographic Size	1759 miles ²
6-digit HUC	Middle Ohio-Little Miami
Counties	Brown, Butler, Clark, Clermont, Clinton, Fayette, Greene, Hamilton, Highland, Madison, Montgomery, Warren
Approximate 2010 Population	766,056
Primary Land Use	Forest, Developed Land, Agriculture



Federally Listed Species:

The list below is based on county occurrence of Federally Listed Species located within the watershed that may benefit from the CFA ILF Project.

- Candidate Species
 - eastern massasauga
- Threatened Species
 - northern long-eared bat, eastern prairie fringe orchid, rabbitsfoot (proposed)
- Endangered Species
 - Indiana bat, Scioto madtom, running buffalo clover, fanshell, pink mucket pearly mussel, clubshell, rayed bean, sheepnose, snuffbox
- Species of Special Concern
 - bald eagle, timber rattlesnake

Aquatic Life Use Attainment Status

Ohio EPA's 2014 Integrated Water Quality Monitoring and Assessment Report provides current aquatic life use attainment status for each HUC-12 watershed. The aquatic life use scores are based on fish aquatic macroinvertebrate data against the biological criteria contained in Ohio's water quality standards. Attainment status for each Service Area was tabulated by calculating the HUC-12 scores found within the 8-digit watershed. Primary pollutants and sources that pose a threat to water quality are derived from Ohio EPA's 2014 Integrated Report as well as Ohio EPA's biological and Water Quality Reports.

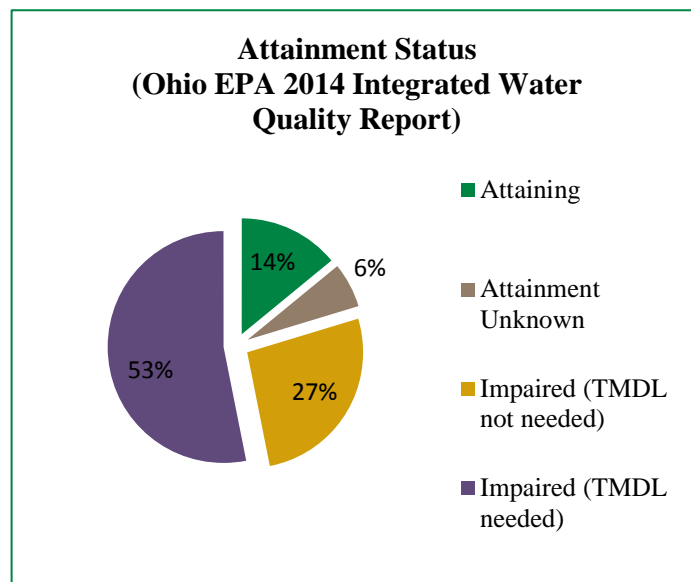
The primary threat or impact to aquatic resources within this watershed includes:

The primary threat or impact to aquatic resources within this watershed includes:

- Nutrients/eutrophication
- Metals
- Sedimentation/siltation
- Flow alteration
- Organic enrichment

The primary sources of the impacts or threats within this watershed include:

- Point source (municipal and industrial)
- Urban runoff/storm sewers
- Agriculture
- Surface mining
- Septic systems



Wetland and Stream Impacts

Water resource permitting trends based upon Ohio EPA 401 WQC and Isolated Wetland permit data for the last 5 years in the Little Miami watershed shows minimal wetland and stream impacts.

Water Resource Impacts	2010	2011	2012	2013*	2014*	5-Year* Average
Wetlands (acres)	1.16	0.81	0.46	0.04	0.12	0.518
Streams (linear feet)	-	270	-	265	-	107

* Additional Ohio EPA 401 stream and wetland impacts occurred in multiple watersheds. However, data for specific impacts within this HUC could not be located.

Service Area 41: Middle Ohio-Laughery HUC 05090203

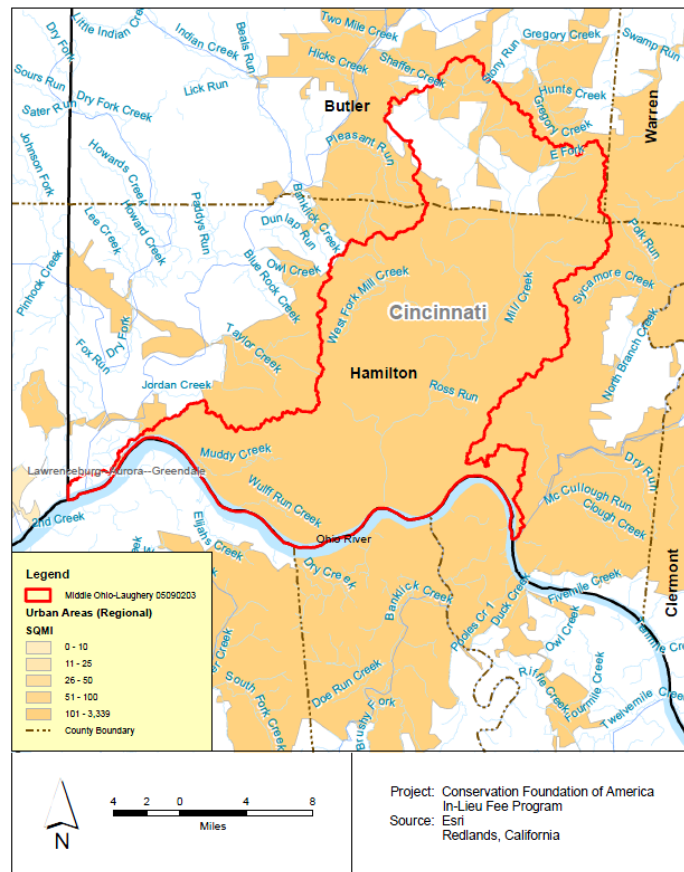
Watershed Characteristics

Geographic Size	217 miles ²
6-digit HUC	Middle Ohio-Little Miami
Counties	Butler, Hamilton, Warren
Approximate 2010 Population	592,410
Primary Land Use	Forest, Developed Land

Federally Listed Species:

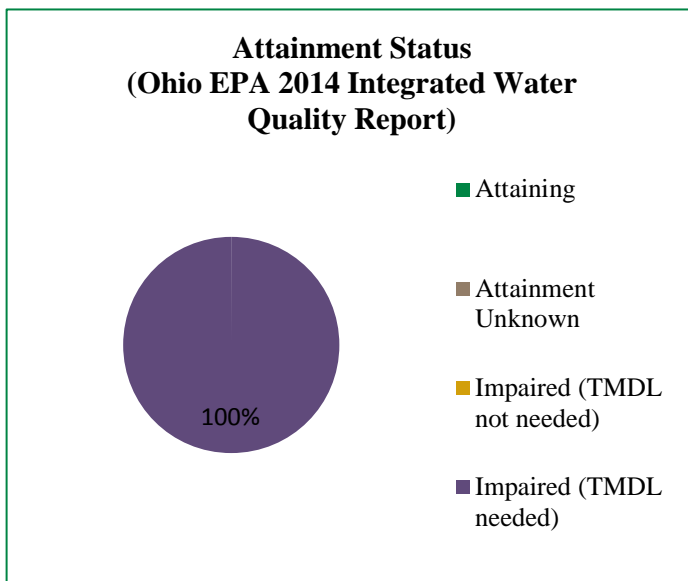
The list below is based on county occurrence of Federally Listed Species located within the watershed that may benefit from the CFA ILF Project.

- Candidate Species
 - eastern massasauga
- Threatened Species
 - northern long-eared bat
- Endangered Species
 - Indiana bat, running buffalo clover, fanshell, rayed bean, pink mucket pearly mussel, sheepnose, snuffbox
- Species of Special Concern
 - bald eagle



Aquatic Life Use Attainment Status

Ohio EPA's 2014 Integrated Water Quality Monitoring and Assessment Report provides current aquatic life use attainment status for each HUC-12 watershed. The aquatic life use scores are based on fish aquatic macroinvertebrate data against the biological criteria contained in Ohio's water quality standards. Attainment status for each Service Area was tabulated by calculating the HUC-12 scores found within the 8-digit watershed. Primary pollutants and sources that pose a threat to water quality are derived from Ohio EPA's 2014 Integrated Report as well as Ohio EPA's biological and Water Quality Reports.



The primary threat or impact to aquatic resources within this watershed includes:

- Organic enrichment
- Sedimentation/siltation
- Habitat alteration
- Nutrients
- Oil/grease

The primary sources of the impacts or threats within this watershed include:

- Point source (municipal and industrial)
- Urban runoff/storm sewers
- Channelization
- Streambank modification and stabilization
- Combined sewer overflow

Wetland and Stream Impacts

Water resource permitting trends based upon Ohio EPA 401 WQC and Isolated Wetland permit data for the last 5 years in the Middle Ohio-Laughery watershed shows minimal wetland impacts and moderate stream impacts.

Water Resource Impacts	2010	2011	2012	2013*	2014*	5-Year* Average
Wetlands (acres)	-	0.01	-	-	-	0.002
Streams (linear feet)	349	-	-	1,092	3,100	908.20

* Additional Ohio EPA 401 stream and wetland impacts occurred in multiple watersheds. However, data for specific impacts within this HUC could not be located.

Service Area 42: Upper Wabash HUC 05120101

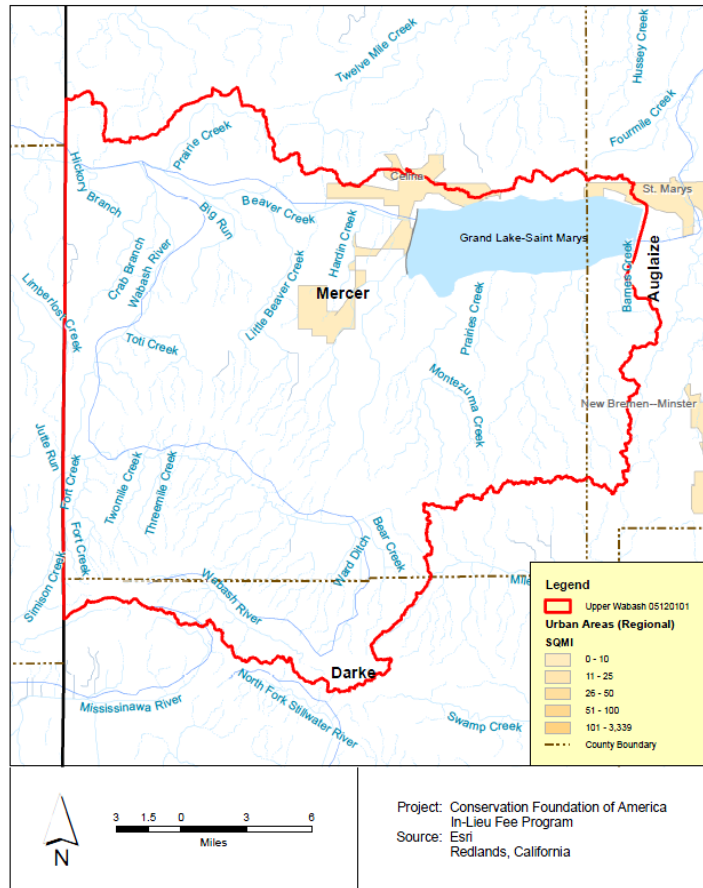
Watershed Characteristics

Geographic Size	301 miles ²
6-digit HUC	Wabash
Counties	Auglaize, Darke, Mercer
Approximate 2010 Population	30,715
Primary Land Use	Developed Land, Agriculture

Federally Listed Species:

The list below is based on county occurrence of Federally Listed Species located within the watershed that may benefit from the CFA ILF Project.

- Threatened Species
 - northern long-eared bat
- Endangered Species
 - Indiana bat, rayed bean
- Species of Special Concern
 - bald eagle



Aquatic Life Use Attainment Status

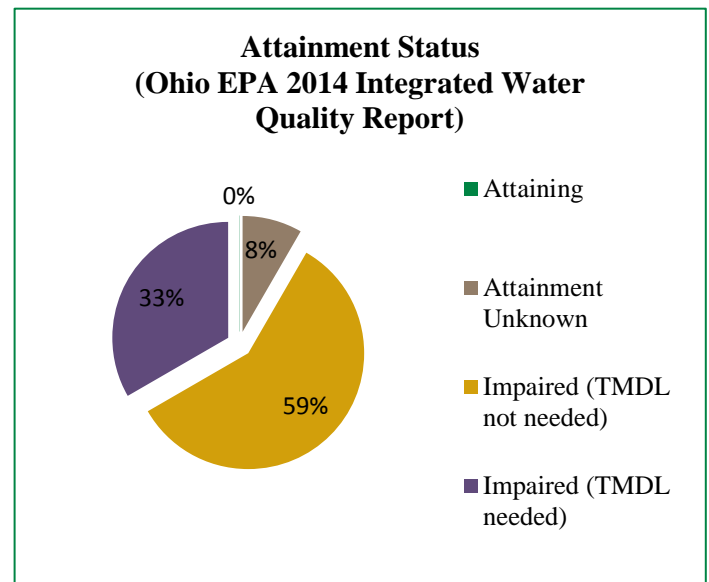
Ohio EPA's 2014 Integrated Water Quality Monitoring and Assessment Report provides current aquatic life use attainment status for each HUC-12 watershed. The aquatic life use scores are based on fish aquatic macroinvertebrate data against the biological criteria contained in Ohio's water quality standards. Attainment status for each Service Area was tabulated by calculating the HUC-12 scores found within the 8-digit watershed. Primary pollutants and sources that pose a threat to water quality are derived from Ohio EPA's 2014 Integrated Report as well as Ohio EPA's biological and Water Quality Reports.

The primary threat or impact to aquatic resources within this watershed includes:

- Direct habitat alteration
- Organic enrichment
- Nutrients
- Sedimentation/siltation

The primary sources of the impacts or threats within this watershed include:

- Channelization-agriculture
- Non-irrigated crop production
- Streambank modification and stabilization
- Removal of riparian vegetation- agriculture
- Confined animal feeding operations



Wetland and Stream Impacts

Water resource permitting trends based upon Ohio EPA 401 WQC and Isolated Wetland permit data for the last 5 years in the Upper Wabash watershed shows minimal wetland impacts and no stream impacts.

Water Resource Impacts	2010	2011	2012	2013*	2014*	5-Year* Average
Wetlands (acres)	1.91	-	-	-	-	0.382
Streams (linear feet)	-	-	-	-	-	0

* Additional Ohio EPA 401 stream and wetland impacts occurred in multiple watersheds. However, data for specific impacts within this HUC could not be located.

Service Area 43: Mississinewa HUC 05120103

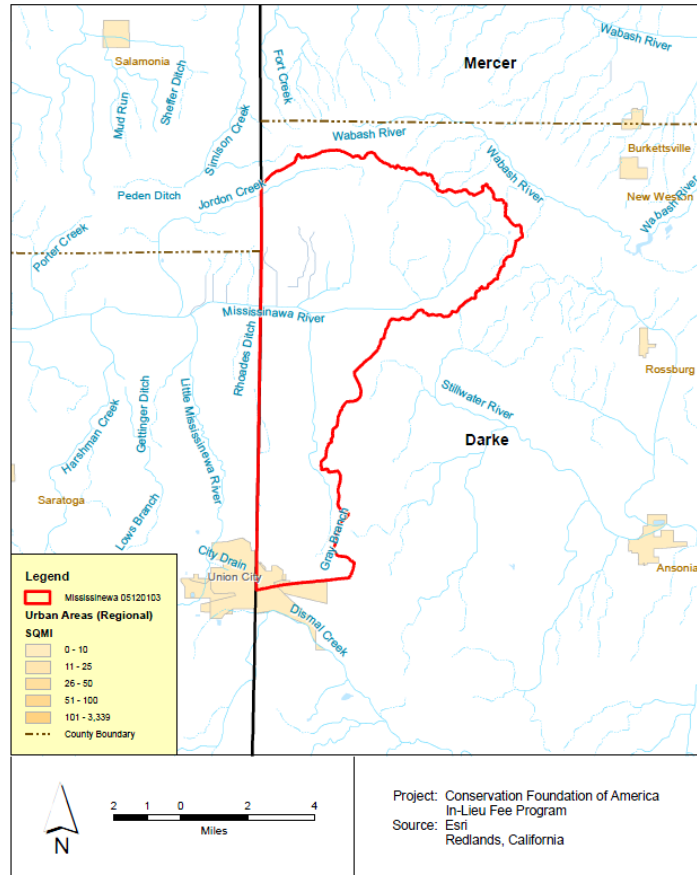
Watershed Characteristics

Geographic Size	30 miles ²
6-digit HUC	Wabash
Counties	Darke
Approximate 2010 Population	1,607
Primary Land Use	Agriculture

Federally Listed Species:

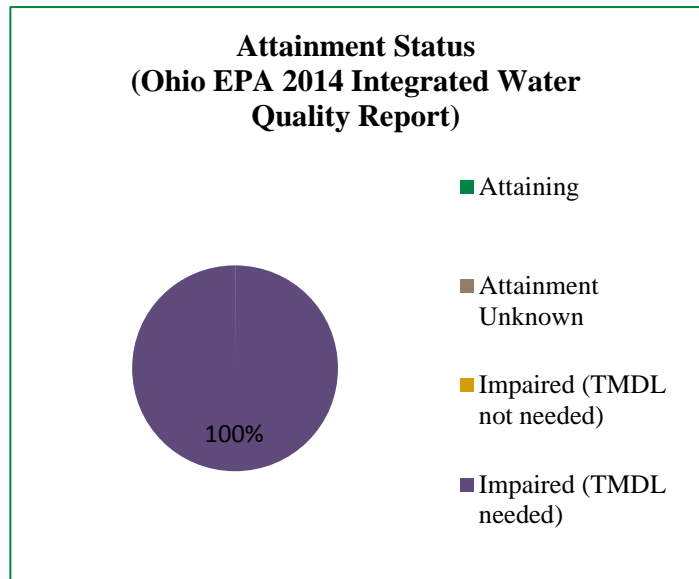
The list below is based on county occurrence of Federally Listed Species located within the watershed that may benefit from the CFA ILF Project.

- Candidate Species
 - eastern massasauga
- Threatened Species
 - northern long-eared bat , copperbelly water snake, lakeside daisy
- Endangered Species
 - Indiana bat, clubshell , rayed bean, Kirtland's warbler, piping plover
- Species of Special Concern
 - bald eagle, Lake Erie watersnake



Aquatic Life Use Attainment Status

Ohio EPA's 2014 Integrated Water Quality Monitoring and Assessment Report provides current aquatic life use attainment status for each HUC-12 watershed. The aquatic life use scores are based on fish aquatic macroinvertebrate data against the biological criteria contained in Ohio's water quality standards. Attainment status for each Service Area was tabulated by calculating the HUC-12 scores found within the 8-digit watershed. Primary pollutants and sources that pose a threat to water quality are derived from Ohio EPA's 2014 Integrated Report as well as Ohio EPA's biological and Water Quality Reports.



The primary threat or impact to aquatic resources within this watershed includes:

- Direct habitat alteration
- Sedimentation/siltation
- Flow alteration

The primary sources of the impacts or threats within this watershed include:

- Channelization-agriculture
- Non-irrigated crop production
- Streambank modification and stabilization
- Removal of riparian vegetation- agriculture
- Confined animal feeding operations
- Dam/impoundment

Wetland and Stream Impacts

Water resource permitting trends based upon Ohio EPA 401 WQC and Isolated Wetland permit data for the last 5 years in the Mississinewa watershed shows no wetland or stream impacts.

Water Resource Impacts	2010	2011	2012	2013*	2014*	5-Year* Average
Wetlands (acres)	-	-	-	-	-	0
Streams (linear feet)	-	-	-	-	-	0

* Additional Ohio EPA 401 stream and wetland impacts occurred in multiple watersheds. However, data for specific impacts within this HUC could not be located.

Element V

A statement of aquatic resource goals and objectives for each service area, including a description of the general amounts, types and locations of aquatic resources the program will seek to provide;

CFA will provide enhancement, establishment, restoration and/or preservation of wetlands and streams within the service areas of the ILFP as compensatory mitigation for permitted impacts to these water resources. In addition to this general goal, CFA will strive to align its activities with the objectives of existing watershed action plans and the operations of conservation organizations functioning within the service areas. Information regarding these plans and groups are provided below.

Ottawa-Stony HUC 04100001

A Watershed Action Plan has been developed for the Ottawa River (Partners for Clean Streams 2006). Although this plan is currently being updated, the objective and goals remain relevant. The CFA may incorporate the following goals with the overall goals of the CFA In-Lieu Fee Program:

Watershed Management Goals

- Remove dams and other obstructions that serve as barriers to fish movement or restrict or alter flow conditions
- Stream and wetland restoration
- Stream bank restoration
- Upland habitat restoration
- Improve and increase riparian habitat
- Aquatic habitat restoration
- Public education on water quality issues

Raisin HUC 04100002

The River Raisin Watershed Council (2009) identified goals that the CFA may incorporate with the overall goals of the CFA In-Lieu Fee Program:

Watershed Management Goals

- Reduce sediment loading and sedimentation
- Improve aquatic life habitat
- Improve and increase riparian habitat
- Maintain water quality standards in all unimpaired stream segments
- Educate the local community regarding water quality enhancement

St. Joseph HUC 04100003

The St. Joseph Watershed Initiative: Watershed Management Plan (identified goals that the CFA may incorporate with the overall goals of the CFA In-Lieu Fee Program:

Watershed Management Goals

- Reduce sediment loading
- Reduce total suspended solids
- Remove livestock from stream areas
- Improve and restore in-stream physical habitat
- Improve and increase riparian habitat
- Educate the local community regarding water quality enhancement

St. Marys HUC 04100004

The St. Marys River Watershed Management Plan (2009) identified several goals that the CFA may incorporate with the overall goals of the CFA ILFP:

Watershed Management Goals

- Reduce sediment loading
- Reduce stream bank erosion and destabilization
- Reduce the level of pathogens from livestock operations
- Restore wetlands that remove sediment
- Improve and increase riparian habitat
- Preserve and protect riparian corridors
- Educate the local community regarding water quality enhancement

Upper Maumee HUC 04100005

The Upper Maumee Watershed Assessment (2009) identified priority potential actions that the CFA may incorporate with the overall goals of the CFA ILFP:

Watershed Management Goals

- Reduce sediment loading
- Improve aquatic life habitat
- Restore and stabilize stream banks
- Improve and increase riparian habitat
- Preserve and protect riparian corridors
- Educate the local community regarding water quality enhancement

Tiffin HUC 04100006

No watershed plan has been developed within this watershed. However, based on the objectives established from surrounding watershed, the following goals may be included in the CFA ILFP:

Watershed Management Goals

- Reduce sediment loading
- Reduce total suspended solids
- Improve and restore in-stream physical habitat
- Improve aquatic life habitat
- Improve and increase riparian habitat
- Preserve and protect riparian corridors and highly erodible land
- Educate the local community regarding water quality enhancement

Auglaize HUC 04100007

No watershed plan has been developed within this watershed. However, based on the objectives established from surrounding watershed, the following goals may be included in the CFA ILFP:

Watershed Management Goals

- Reduce sediment loading
- Reduce total suspended solids
- Improve and restore in-stream physical habitat
- Improve aquatic life habitat
- Improve and increase riparian habitat
- Preserve and protect riparian corridors and highly erodible land
- Educate the local community regarding water quality enhancement

Blanchard HUC 04100008

Two Watershed Action Plans have been developed for subwatersheds within the Blanchard River primary service area. The Riley Creek Watershed Action Plan (2012) and the Outlet/Lye Creek Watershed Action Plan. CFA may incorporate these plans with the goals of the CFA ILFP:

Watershed Management Goals

- Reduce sediment loading
- Reduce total suspended solids
- Reduce the level of pathogens from livestock operations
- Improve aquatic life habitat
- Improve and increase riparian habitat
- Preserve and protect riparian corridors
- Educate the local community regarding water quality enhancement

Lower Maumee HUC 04100009

A Watershed Action Plan has been developed for the Lower Maumee (Partners for Clean Streams 2006). Although this plan is currently being updated, the objective and goals remain relevant. The CFA may incorporate the following goals with the overall goals of the CFA ILFP:

Watershed Management Goals

- Reduce sediment loading
- Improve and increase riparian habitat
- Preserve and protect riparian corridors
- Educate the local community regarding water quality enhancement

Cedar-Portage HUC 04100010

The Portage River Watershed Plan (Toledo Metropolitan Area Council of Governments 2013) identified goals that CFA may incorporate into the objectives of the CFA ILFP:

Watershed Management Goals

- Reduce sediment loading
- Reduce the level of pathogens from livestock operations
- Improve and restore in-stream physical habitat
- Improve aquatic life habitat
- Improve and increase riparian habitat
- Preserve and protect riparian corridors
- Educate the local community regarding water quality enhancement

Sandusky HUC 04100011

Watershed Action Plans have been developed for two of the watersheds within this Primary Service Area including: Sandusky River – Tiffin (2006) and Honey Creek (2006). CFA may incorporate these plans with the goals of the CFA ILFP.

Watershed Management Goals

- Reconnect floodplains to streams
- Reduce sediment loading
- Reduce total suspended solids
- Reduce the level of pathogens from livestock operations
- Improve and restore in-stream physical habitat
- Improve aquatic life habitat
- Improve and increase riparian habitat
- Preserve and protect riparian corridors
- Increase wetland development
- Remove dams and other obstructions that serve as barriers to fish movement or restrict or alter flow conditions
- Educate the local community regarding water quality enhancement

Huron and Vermilion HUC 04100012

The Old Woman Creek Watershed Action Plan (2009) identifies goals that CFA may incorporate into the objectives of the CFA ILFP:

Watershed Management Goals

- Reduce sediment loading
- Reduce total suspended solids
- Reduce the level of pathogens from livestock operations
- Improve and restore in-stream physical habitat
- Improve aquatic life habitat
- Improve and increase riparian habitat
- Preserve and protect riparian corridors
- Educate the local community regarding water quality enhancement

Black-Rocky HUC 04110001

The Rocky River Watershed Action Plan (2006) and the Black River Watershed Action Plan (2011) identify objectives that CFA may incorporate with the overall goals of the CFA ILFP:

Watershed Management Goals

- Reduce sediment loading
- Reduce total suspended solids
- Reduce the level of pathogens from livestock operations
- Improve and restore in-stream physical habitat
- Improve aquatic life habitat
- Remove non-essential dams
- Invasive removal
- Public acquisition of streamside land
- Improve and increase riparian habitat
- Preserve and protect riparian corridors
- Educate the local community regarding water quality enhancement

Cuyahoga HUC 04110002

Several watershed action plans have been developed for waterways within the Cuyahoga River watershed, including: the Middle Cuyahoga Watershed River Watershed Action Plan (2012), the Tinkers Creek Watershed Action Plan (2010), the West Creek Watershed Action Plan (2005), the Euclid Creek Watershed Action Plan (2006), and the Doan Brook Watershed Action Plan (2013). CFA may incorporate objectives from these plans in the overall goals of the CFA ILFP:

Watershed Management Goals

- Reduce sediment loading
- Reduce total suspended solids
- Improve and restore in-stream physical habitat
- Improve aquatic life habitat

- Stabilize stream banks
- Preserve habitat and sensitive areas
- Improve and increase riparian habitat
- Preserve and protect riparian corridors
- Control invasive plant species
- Educate the local community regarding water quality enhancement

Ashtabula-Chagrin HUC 04110003

Watershed Action Plans have been developed for several of the watersheds within this Primary Service Area including: Chagrin River (2006), Mentor Marsh (2006) and Arcola Creek (2013). CFA may incorporate these plans with the goals of the CFA ILFP:

Watershed Management Goals

- Reduce sediment loading
- Reduce total suspended solids
- Reduce the level of pathogens from livestock operations
- Improve and restore in-stream physical habitat
- Improve aquatic life habitat
- Restore wetlands
- Restore modified streams
- Reconnect streams to floodplains
- Preserve and restore riparian corridors
- Educate the local community regarding water quality enhancement

Grand HUC 04110004

Watershed Action Plans have been developed for two of the watersheds within this Primary Service Area including: Lower Grand River (2006), Upper Grand River (2012). CFA may incorporate these plans with the goals of the CFA ILFP:

Watershed Management Goals

- Reduce sediment loading
- Reduce total suspended solids
- Reduce the level of pathogens from livestock operations
- Improve and restore in-stream physical habitat
- Improve aquatic life habitat
- Improve and increase riparian habitat
- Preserve and protect riparian corridors
- Maintain water quality standards in all unimpaired stream segments
- Educate the local community regarding water quality enhancement

Chautauqua-Conneaut

The Pennsylvania Lake Erie Watershed Conservation Plan (2008) includes Conneaut Creek in its plan. The CFA may incorporate the following goals with the overall goals of the CFA ILFP:

Watershed Management Goals

- Preserve and protect riparian corridors and highly erodible land
- Maintain water quality standards in all unimpaired stream segments
- Educate the local community regarding water quality enhancement

Upper Ohio HUC 05030101

Watershed Action Plans have been developed for two of the watersheds within this Primary Service Area including: Little Beaver (2012) and Yellow Creek (2009). The CFA may incorporate the following goals with the overall objectives of the CFA In-Lieu Fee Program:

Watershed Management Goals

- Reduce sediment loading
- Reduce total suspended solids
- Reduce the level of pathogens from livestock operations
- Stabilize streambanks
- Improve and increase riparian habitat
- Preserve and protect riparian corridors
- Educate the local community regarding water quality enhancement

Shenango HUC 05030102

Western Pennsylvania Conservancy (2005) identified watershed goals that the CFA may incorporate with the overall objectives of the CFA In-Lieu Fee Program:

Watershed Management Goals

- Reduce sediment loading
- Reduce total suspended solids
- Improve and restore in-stream physical habitat
- Improve aquatic life habitat
- Identify and protect environmentally sensitive areas and areas of high biodiversity
- Identify and eradicate invasive species
- Establish and protect riparian corridors
- Increase groundwater recharge
- Protect and restore wetland habitats
- Establish greenway corridors and trails along waterways
- Educate the local community regarding water quality enhancement

Mahoning 05030103

Watershed plans for Mill Creek (2007) and Mahoning River (2004) have identified goals that the CFA may incorporate with the overall objectives of the CFA In-Lieu Fee Program:

Watershed Management Goals

- Remove dams and other obstructions that serve as barriers to fish movement or restrict or alter flow conditions
- Reduce sediment loading
- Reduce total suspended solids
- Reduce the level of pathogens from livestock operations
- Improve and restore in-stream physical habitat through natural channel design
- Enhance the aesthetic quality, wildlife habitat, and sustainability of river corridor
- Establish passive recreation facilities
- Improve flood plain connectivity and sinuosity
- Improve and increase riparian habitat
- Preserve and protect riparian corridors
- Establish wetlands
- Educate the local community regarding water quality enhancement

Upper Ohio-Wheeling 05030106

The Captina Creek Watershed Action Plan that the identified several goals that the CFA may incorporate with the overall objectives of the CFA In-Lieu Fee Program:

Watershed Management Goals

- Reduce sediment loading
- Reduce total suspended solids
- Reduce the level of pathogens from livestock operations
- Improve and increase riparian habitat
- Preserve and protect riparian corridors
- Remove dams and other obstructions that serve as barriers to fish movement or restrict or alter flow conditions

Little Muskingum HUC 05030201

The Duck Creek Watershed Management Plan developed for Little Muskingum service area has identified goals that the CFA may incorporate with the overall goals of the CFA In-Lieu Fee Program:

Watershed Management Goals

- Reduce sediment loading
- Reduce total suspended solids
- Reduce the level of pathogens from livestock operations

- Improve and increase riparian habitat
- Preserve and protect riparian corridors
- Educate the local community regarding water quality enhancement

Upper Ohio-Shade HUC 05030202

A watershed plan has been developed for the Leading Creek subwatershed within the Upper Ohio-Shade service area. CFA may incorporate the goals of this plan within the overall goals of the CFA In-Lieu Fee Program:

Watershed Management Goals

- Reduce sediment loading
- Reduce total suspended solids
- Reduce the level of pathogens from livestock operations
- Improve and restore in-stream physical habitat
- Improve aquatic life habitat
- Improve and increase riparian habitat
- Preserve and protect riparian corridors
- Preserve and enhance wetlands
- Educate the local community regarding water quality enhancement

Hocking HUC 05030204

Several watershed plans have been developed for this Primary Service Area including Monday Creek, Sunday Creek, and Federal Valley. CFA may incorporate the goals identified in these plans with the overall goals of the CFA In-Lieu Fee Program:

Watershed Management Goals

- Reduce sediment loading
- Reduce total suspended solids
- Reduce the level of pathogens from livestock operations
- Improve and increase riparian habitat
- Preserve and protect riparian corridors
- Educate the local community regarding water quality enhancement

Tuscarawas HUC 05040001

The Nimishillen Creek and Huff Run Watershed Action Plans identified several goals that the CFA may incorporate with the overall goals of the CFA In-Lieu Fee Program:

Watershed Management Goals

- Reduce sediment loading
- Reduce total suspended solids
- Reduce the level of pathogens from livestock operations
- Improve and restore in-stream physical habitat
- Improve aquatic life habitat
- Improve and increase riparian habitat

- Preserve and enhance wetland habitat
- Preserve and protect riparian corridors and highly erodible land
- Educate the local community regarding water quality enhancement

Mohican HUC 05040002

No watershed plan has been developed within this watershed. However, based on the objectives established from surrounding watershed, the following goals may be included in the CFA In-Lieu Fee Program:

Watershed Management Goals

- Reduce sediment loading
- Reduce total suspended solids
- Livestock exclusion fencing
- Improve and increase riparian habitat
- Preserve and protect riparian corridors
- Remove dams and other obstructions that serve as barriers to fish movement or restrict or alter flow conditions
- Educate the local community regarding water quality enhancement

Walhonding HUC 05040003

A Watershed Action Plan has been developed for Kokosing River, a subwatershed within this Primary Service Area. The CFA may incorporate the goals identified in this plan with the overall goals of the CFA In-Lieu Fee Program:

Watershed Management Goals

- Reduce sediment loading
- livestock exclusion fencing along streams
- Improve and increase riparian habitat
- Preserve and protect riparian corridors
- Protect and restore wetland habitats
- Provide outdoor recreation opportunities to waterways
- Increase groundwater recharge
- Educate the local community regarding water quality enhancement

Muskingum HUC 05040004

Several watershed plans have been developed for this Primary Service Area including Wolf Creek, Meigs Creek, and Salt Creek. The CFA may incorporate the goals identified in these plans with the overall goals of the CFA In-Lieu Fee Program:

Watershed Management Goals

- Reduce sediment loading
- Provide livestock exclusion fencing along streams
- Improve aquatic life habitat
- Perform streambank stabilization

- Improve and increase riparian habitat
- Preserve and protect riparian corridors and highly erodible land
- Educate the local community regarding water quality enhancement

Wills HUC 05040005

No watershed plan has been developed within this watershed. However, based on the objectives established from surrounding watershed, the following goals may be included in the CFA In-Lieu Fee Program:

Watershed Management Goals

- Reduce sediment loading
- Reduce total suspended solids
- Exclusion fencing for livestock operations
- Improve and restore in-stream physical habitat
- Improve aquatic life habitat
- Improve and increase riparian habitat
- Preserve and protect riparian corridors and highly erodible land
- Educate the local community regarding water quality enhancement

Licking HUC 05040006

No watershed plan has been developed within this watershed. However, based on the objectives established from surrounding watershed, the following goals may be included in the CFA In-Lieu Fee Program:

Watershed Management Goals

- Reduce sediment loading
- Reduce total suspended solids
- Exclusion fencing for livestock operations
- Improve and restore in-stream physical habitat
- Improve aquatic life habitat
- Improve and increase riparian habitat
- Preserve and protect riparian corridors and highly erodible land
- Maintain water quality standards in all unimpaired stream segments
- Remove dams and other obstructions that serve as barriers to fish movement or restrict or alter flow conditions
- Educate the local community regarding water quality enhancement

Upper Scioto River HUC 05060001

Watershed Action Plans have been developed for several of the watersheds within this Primary Service Area including: Upper Scioto, Upper Olantangy, Bokes and Mill Creek, Lower Alum Creek, Rocky Fork, and Lower Big Walnut. The CFA may incorporate the goals identified in these plans with the overall goals of the CFA In-Lieu Fee Program:

Watershed Management Goals

- Reduce sediment loading
- Reduce total suspended solids
- Reduce the level of pathogens from livestock operations
- Improve and restore in-stream physical habitat
- Improve aquatic life habitat
- Improve and increase riparian habitat
- Preserve and protect riparian corridors and highly erodible land
- Increase groundwater recharge
- Maintain water quality standards in all unimpaired stream segments

Lower Scioto HUC 05040002

No watershed plan has been developed within this watershed. However, based on the objectives established from surrounding watershed, the following goals may be included in the CFA In-Lieu Fee Program:

Watershed Management Goals

- Reconnect floodplains to streams
- Reduce sediment loading
- Reduce total suspended solids
- Expand exclusion fencing for livestock operations
- Improve and restore in-stream physical habitat
- Improve aquatic life habitat
- Improve and increase riparian habitat
- Preserve and protect riparian corridors
- Increase wetland development Remove dams and other obstructions that serve as barriers to fish movement or restrict or alter flow conditions
- Educate the local community regarding water quality enhancement

Paint HUC 05040003

The Paint Watershed Acton plan (2002) has been developed for this service area. The CFA may incorporate goals identified in this plan with the overall goals of the CFA In-Lieu Fee Program:

Watershed Management Goals

- Reconnect floodplains to streams
- Reduce sediment loading
- Reduce total suspended solids

- Provide increased recreational access to the streams
- Implement ecological flow restoration
- Educate the local community regarding water quality enhancement

Upper Great Miami HUC 05080001

Several watershed action plans have been developed for waterways within the Upper Great Miami watershed, including: Lower Mad River, Honey Creek, and Stillwater. These identify objectives that CFA may incorporate with the overall goals of the CFA In-Lieu Fee Program include:

Watershed Management Goals

- Reconnect floodplains to streams
- Reduce sediment loading
- Reduce total suspended solids
- Reduce the level of pathogens from livestock operations
- Improve and restore in-stream physical habitat
- Improve aquatic life habitat
- Improve and increase riparian habitat
- Preserve and protect riparian corridors
- Increase wetland development
- Educate the local community regarding water quality enhancement

Lower Great Miami HUC 05080002

A Watershed Action Plan has been developed for one of the watersheds within this Primary Service Area. The goals for the Twin Creek (2010) Watershed Action Plan that might be supported by the overall goals of the CFA In-Lieu Fee Program:

Watershed Management Goals

- Reconnect floodplains to streams
- Reduce sediment loading
- Reduce total suspended solids
- Increase livestock exclusion fencing along streams
- Improve and restore in-stream natural channels
- Improve aquatic life habitat and QHEI scores
- Improve and increase riparian habitat
- Preserve and protect riparian corridors
- Increase wetland development
- Educate the local community regarding water quality enhancement

Whitewater HUC 05080003

The Whitewater River Watershed Action Plan has been developed for a Indiana portion of the Whitewater River. CFA may incorporate the objectives of this plan with the goals of the CFA In-Lieu Fee Program:

Watershed Management Goals

- Reduce sediment loading
- Reduce total suspended solids
- Increase livestock exclusion fencing for streams
- Provide streambank stabilization
- Improve and increase riparian habitat
- Preserve and protect riparian corridors
- Increase forest cover in the watershed
- Increase wetland development
- Educate the local community regarding water quality enhancement

Raccoon HUC 05090101

Watershed plans have been developed for two of the watersheds within this service area including: Raccoon Creek Headwaters (2007). Goals for these Watershed Action Plans that the CFA may incorporate with the CFA In-Lieu Fee Program include:

Watershed Management Goals

- Reconnect floodplains to streams
- Reduce sediment loading
- Reduce total suspended solids
- Improve and increase riparian habitat
- Preserve and protect riparian corridors
- Stabilize streambanks
- Increase wetland development
- Educate the local community regarding water quality enhancement

Little Scioto-Tygarts HUC 05090103

No watershed plan has been developed within this watershed. However, based on the objectives established from surrounding watershed, the following goals may be included in the CFA In-Lieu Fee Program:

Watershed Management Goals

- Reduce sediment loading
- Reduce total suspended solids
- Improve and increase riparian habitat
- Preserve and protect riparian corridors Remove dams and other obstructions that serve as barriers to fish movement or restrict or alter flow conditions
- Educate the local community regarding water quality enhancement

Ohio Brush-Whiteoak HUC 05090201

The White Oak Creek Watershed Action (2004) identifies goals that CFA may incorporate with the goals of the CFA In-Lieu Fee Program:

Watershed Management Goals

- Reconnect floodplains to streams
- Reduce sediment loading
- Increase exclusion fencing for livestock operations
- Improve aquatic life habitat
- Improve and increase riparian habitat
- Preserve and protect riparian corridors
- Educate the local community regarding water quality enhancement

Little Miami HUC 05090202

Watershed Action Plans have been developed for six of the subwatersheds within this Primary Service Area including: Headwaters (2006), Stonelick Creek (2009), Middle East Fork (2009), Lower East Fork (2003), and East Fork Lake Tributaries (2006) Watershed. The CFA may incorporate some of these goals in the CFA In-Lieu Fee Program:

Management Goals

- Reconnect floodplains to streams
- Reduce sediment loading
- Reduce total suspended solids
- Increase livestock exclusion fencing for streams
- Improve and restore in-stream physical habitat
- Stabilize streambanks
- Improve and increase riparian habitat
- Preserve and protect riparian corridors
- Implement advanced mitigation projects
- Educate the local community regarding water quality enhancement

Middle Ohio-Laughery HUC 05090203

The upper Mill Creek Watershed Management Plan developed for a subwatershed in this service area identifies goals that CFA may incorporate with the goals of the CFA In-Lieu Fee Program:

Watershed Management Goals

- Reduce sediment loading
- Stabilize eroding streambanks
- Improve aquatic life habitat
- Improve and increase riparian habitat
- Preserve and protect riparian corridors
- Increase wetland development
- Educate the local community regarding water quality enhancement

Upper Wabash HUC 05120101

A Watershed Management Plan has been developed for the Grand Lake St. Marys/Wabash River (2008). These plans identified goals that CFA may incorporate with the goals of the CFA In-Lieu Fee Program:

Watershed Management Goals

- Reduce sediment loading
- Stabilize streambank erosion
- Reduce the level of pathogens from livestock operations
- Improve and increase riparian habitat
- Preserve and protect riparian corridors
- Increase wetland development
- Educate the local community regarding water quality enhancement

Mississinewa HUC 05120103

The Mississinewa River (2001) Watershed Plan was developed in Indiana and identifies objectives that the CFA may incorporate with the goals of the CFA In-Lieu Fee Program:

Watershed Management Goals

- Reduce sediment loading
- Reduce total suspended solids
- Stabilize eroding streambanks
- Educate the local community regarding water quality enhancement

Element VI

A prioritization strategy for selecting and implementing compensatory mitigation activities;

Potential sites for CFA mitigation projects will target priority conservation habitats best suited to replace lost wetland and stream functions. The search for mitigation sites will seek input from existing watershed coordinators, Soil and Water Conservation Districts, other watershed-based groups and NGO's, permit applicants, communities, counties, ecological consultants, and other state and federal resource agencies. Additionally, geographic spatial data resources will be reviewed (such as National Wetland Inventory Maps, National Resource Conservation Service Web Soil Surveys, U.S. Geological Service StreamStats, and aerial imagery) to help identify and review each potential mitigation site.

Emphasis will be placed on identifying sites that are locally and regionally significant in terms of their contribution or potential contribution to provide key wildlife habitat; reduce sediment and/or nutrient loading, provide public access for recreation and education; and are owned by entities willing to participate in the ILFP.

Element VII

An explanation of how any preservation objectives identified in element 5 and addressed in the prioritization strategy in element 6 satisfy the criteria for use of preservation;

33 CFR 332.3(h) states that preservation must protect resources that provide important physical, chemical or biological functions.

These resources must be under threat of destruction or adverse modification. Preserved sites must be permanently protected through an appropriate real estate or legal instrument.

Under the CFA ILFP, preservation projects will incorporate objectives identified within the watershed approach to protecting aquatic habitat and functions. These projects may include preservation of high quality wetlands and streams, protecting areas of critical habitat for threatened or endangered species, or conserving important natural areas. These areas may include sites identified in regional watershed action plans, or conservation plans developed by U.S. Fish and Wildlife Service, or Ohio Department of Natural Resources, Division of Wildlife.

In accordance with the federal mitigation rule, preservation-only projects may be used to provide compensatory mitigation when the following criteria are met:

- The resources to be preserved provide important physical, chemical, or biological functions for the watershed;
- The resources to be preserved contribute significantly to the ecological sustainability of the watershed;
- Preservation is determined by the District Engineer to be appropriate and practicable;
- The resources are under threat of destruction or adverse modification;
- The preserved site will be permanently protected through an appropriate real estate or other legal instrument.

Element VIII

A description of any public and private stakeholder involvement in plan development and implementation, including coordination with federal, state, tribal and local aquatic resource management and regulatory authorities;

As the ILFP sponsor, CFA will work closely with federal and state agencies, other conservation partners, and private landowners to identify projects that take into account local knowledge and planning efforts. CFA has worked extensively with a wide variety of government agencies, NGOs, and county and local administrators in the past. CFA will work collaboratively with partners in Ohio to evaluate wetland and stream mitigation opportunities, and to develop mitigation plans and assessment strategies. Projects will be evaluated using standard quantitative assessment methodologies pre- and post-project implementation to help determine the effect of the restoration activities on the aquatic ecosystem. Use of standard assessment methodologies will allow for the performance of CFA ILF projects to be compared against other restoration activities.

In addition to the expertise and experience of the program sponsor, CFA regularly collaborates with environmental consultants that provide additional knowledge and technical proficiency to help identify, implement, and evaluate the performance of a mitigation project. CFA will work closely with volunteers and local partners to create projects that maximize conservation potential and target water quality improvements.

CFA will strive to create strong relationships and partnerships with conservation groups and private landowners that share common restoration and preservation goals and strategies. These bonds will allow CFA to further target and prioritize projects with the maximum potential for improving the aquatic ecosystem, protecting important wildlife habitat, and enhancing existing conservation strategies and goals.

CFA will continue to foster relationships with partners from federal, state, local, academic, industry, and private entities to ensure that successful conservation and restoration projects are completed.

Potential partners and stakeholders include:

- **Federal Government Agencies**
 - U.S. Army Corps of Engineers
 - U.S. Fish and Wildlife Service
 - Natural Resource Conservation Service
 - U.S. Environmental Protection Agency
 - National Park Service
 - National Oceanic and Atmospheric Administration
- **State Agencies**
 - Ohio Environmental Protection Agency
 - Ohio Department of Natural Resources
 - Ohio Historic Preservation Office
- **Other**
 - Conservation organizations
 - Watershed action groups
 - Soil and Water Conservation Districts
 - Land trusts
 - Private landowners
 - Industry groups
 - Environmental consultants

These partners can assist with a variety of tasks related to the ILF program, including identifying potential mitigation projects, holding easements or environmental covenants, assisting with the development and implementation of monitoring programs, and providing long-term management and resource protection.

Element IX

A description of the long-term protection and management strategies for activities conducted by the in-lieu fee program sponsor;

CFA will be responsible for developing and implementing a long-term protection and management plan for each CFA ILF project. On privately-owned property, including property held by CFA or other conservation organizations, real estate instruments will be developed and recorded to provide legal mechanisms to protect aquatic resources 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.

To the maximum extent practicable, CFA ILF projects will be designed to require little or no long-term management efforts once performance standards have been achieved. CFA will be responsible for maintaining CFA ILF program projects consistent with the mitigation plan to ensure long-term viability as functional aquatic resources. CFA shall retain responsibility unless the long-term management responsibility is formally transferred to a USACE approved long-term manager. The long-term management plan developed for each CFA 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 management and protection CFA will request that USACE issue written “closure certification” in coordination with the IRT.

Element X

A strategy for periodic evaluation and reporting on the progress of the program in achieving the goals and objectives above, including a process for revising the planning framework as necessary.

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

CFA will periodically provide an evaluation report documenting performance and success of the CFA ILFP as established in the Instrument and Compensation Planning Framework. This evaluation report will identify programs strengths, and any perceived weaknesses in implementation of the program’s projects. Finally, these reports will provide documentation of any proposed changes to the Compensation Planning Framework.

Annual mitigation monitoring reports will be submitted to USACE for each CFA ILF project. These reports will document the current status of the water resources on the mitigation sites, and will provide details regarding the trajectory of the site to meet established performance standards.

Appendix C References

- Bauers, Cynthia, watershed coordinator. 2005. *A Comprehensive Management Plan for the Leading Creek Watershed*. Meigs Soil and Water Conservation District. Pomeroy, Ohio.
- Belmont County Soil and Water Conservation District. 2010. *Captina Creek Watershed Action Plan*. St. Clairsville, Ohio.
- Chagrin River Watershed Partners. 2006. *Chagrin River Watershed Action Plan*. Willoughby, Ohio.
- Clark Soil & Water Conservation District. 2006. *Lower Mad River Protection Project Watershed Action Plan*. Springfield, Ohio.
- Dahl, T. 2011. *Status and trends of wetlands in the conterminous United States 2004 to 2009*. U.S. Department of the Interior, Fish and Wildlife Service, Washington. D.C.
- Dahl, T. and G. Allord. 1996. "History of Wetlands in the Conterminous United States". *National Water Summary on Wetland Resources, Water Supply Paper 2425*. U.S. Geological Survey, Washington D. C.
- Delaware Soil and Water Conservation District. *Upper Scioto River Watershed Action Plan*
- Doan Brook Watershed Partnership. 2013. *Doan Brook Watershed Action Plan*. Cleveland, Ohio.
- Domonkos, V. 2006. *Lower Grand River Watershed Plan*. Grand River Partners, Inc., Painesville, Ohio.
- Dragoo, Melody L., watershed coordinator. 2004. *White Oak Creek Watershed Action Plan & Inventory*. White Oak Creek Advisory Board. Georgetown, Ohio.
- Edgar, C. 2006. Draft Mentor Marsh Watershed Action Plan. *Lake County Soil and Water Conservation District*, Painesville, Ohio.
- East Fork Watershed Collaborative. 2009. *Stonelick Creek Watershed Action Plan*.
- East Fork Watershed Collaborative. (2006). *East Fork Lake Tributaries Watershed Management Plan*. Owensville, Ohio.
- East Fork Watershed Collaborative. 2006. *East Fork Headwaters Watershed Management Plan*. Owensville, Ohio.
- Ellwood, Nancy, executive director. 2005. *Upper Mill Creek Watershed Management Plan*. Mill Creek Watershed Council of Communities. Cincinnati, Ohio.
- Euclid Creek Watershed Council. 2006. *Euclid Creek Watershed Action Plan*. South Euclid, Ohio.
- Friends of Alum Creek Tributaries. 2005. *Lower Alum Creek Watershed Action Plan*
- Friend of Big Walnut Creek. 2006. *Lower Big Walnut Creek Watershed Action Plan and Inventory*
- Friends of Big Walnut Creek & Tributaries and Mid-Ohio Regional Planning Commission. 2009. *Rocky Fork Watershed Action Plan & Inventory*.

- Grand Lake/Wabash Watershed Alliance. 2008. *Grand Lake St. Marys/Wabash River Watershed Action Plan*. Celina, Ohio.
- Hohman, B. 2009. *Old Woman Creek Watershed Action Plan*. Sandusky, Ohio.
- Institute for Local Government Administration and Rural Development, 2005. *Lower Muskingum River Watershed Management Plan: Meigs Creek Subwatershed*. Ohio University.
- King, Lisa, watershed coordinator. 2006. *Federal Valley Watershed Action Plan*. Federal Valley Watershed Group. Trimble, Ohio.
- Lake Erie Region Conservancy. 2008. *Pennsylvania Lake Erie Watershed Conservation Plan*. Erie, Pennsylvania.
- Leasure-Earnhardt, Amber, watershed coordinator. 2010. *A Comprehensive Watershed Management Plan for the Sunday Creek Watershed*. Sunday Creek Watershed Group. Glouster, Ohio.
- Little Beaver Creek Land Foundation. 2012. *Management Plan for the Little Beaver Creek Watershed*. Lisbon, Ohio
- Loftus, T., Baker, D., Setzler, J. and J. Crumrine. 2006. *Honey Creek Watershed Action Plan*. Fremont, Ohio.
- Martin, B. 2012. *Riley Creek Watershed Action Plan*. Findlay, Ohio.
- Martin, B. 2010. *The Outlet/Lye Creek Watershed Action Plan*. Findlay, Ohio.
- Martin, Scott C. 2004. *Mahoning River Watershed Action Plan*. Youngstown State University.
- McNutt, M., Zawiski, B., Vild, C., Gourley, T., and J. Bowman. 2010. *Tinkers Creek Watershed Action Plan*. Parma, Ohio.
- McCament, Ben, Raccoon Creek Watershed Coordinator. 2007. *Raccoon Creek Headwaters (2007)*.
- Northeast Ohio Areawide Coordinating Agency. 2006. *Rocky River Watershed Action Plan*. Cleveland, Ohio.
- OEPA.1994. Biological and Water Quality Study of Mill Creek and Tributaries. Div. Surface Waters, Ecological Assessment Section, Columbus, Ohio.
- OEPA.2005. Biological and Water Quality Study of Salt Creek Watershed (Scioto River). Div. Surface Water, Columbus, Ohio.
- OEPA.2008. Biological and Water Quality Study of Yellow Creek and Selected Tributaries, 2005-2006. Div. Surface Water, Columbus, Ohio.
- Ohio Environmental Protection Agency. 2015. *Ohio EPA Map Portal* <<http://www.wapp.epa.ohio.gov/gis/mappointal/IR2014.html>> Accessed on March 17, 2015.

- Ohio Environmental Protection Agency. 2014a. *Isolated Wetland Permits and 401 Water Quality Certifications State Fiscal Year 2014*. Division of Surface Water, 401/IWP/Mitigation Compliance Section, Columbus, Ohio.
- Ohio Environmental Protection Agency. 2014b. *Ohio 2014 Integrated Water Quality Monitoring and Assessment Report*. Division of Surface Water, Columbus, Ohio.
- Ohio Department of Natural Resources Division of Natural Areas & Preserves. 2004. *Koskosing Scenic River Watershed Plan*.
- Ohio Interagency Review Team. 2014. *Guidelines for Stream Mitigation Banking and In-Lieu Fee Programs in Ohio V. 1.0*. Columbus, Ohio.
- Ohio Interagency Review Team. 2011. *Guidelines for Wetland Mitigation Banking in Ohio*. Columbus, Ohio.
- Olantangy Watershed Alliance. 2006. *Upper Olantangy Watershed Management and Action Plan*.
- Orndorff, M. 2013. *Arcola Creek Watershed Action Plan*. Lake County Soil and Water Conservation District, Painesville, Ohio.
- Partners for Clean Streams. 2006. *Maumee Area of Concern Stage 2 Watershed Restoration Plan*. Toledo, Ohio.
- Peck, M. 2012. *Middle Cuyahoga River Watershed Action Plan*. Northeast Ohio Four County Regional Planning and Development Organization, Akron, Ohio.
- Pinizzotto, Nick, et.al. Senior Director. 2005. *Shenango River Watershed Conservation Plan*. Western Pennsylvania Conservancy. Blairsville, Pennsylvania.
- Riddle, C. 2006. *Sandusky River – Tiffin Watershed Action Plan*. Fremont, Ohio.
- River Raisin Watershed Council. 2009, *River Raisin Watershed Management Plan*. Adrian, Michigan.
- Solomon, Hilary, Paint Creek Management Plan Coordinator. 2002. *Paint Creek Watershed Management Plan*.
- Steinmaus, Mike, and Rebecca Black, watershed coordinators. 2006. *Monday Creek Watershed Management Plan. Monday Creek Restoration Project*. New Straitsville, Ohio.
- St. Joseph River Watershed Initiative. 2006. *St. Joseph River Watershed Management Plan*. Fort Wayne, Indiana.
- St. Marys River Watershed Project. 2009. *St. Marys River Watershed Management Plan*. Fort Wayne, Indiana.
- Stone, Wes. Project manager. 2001. *Mississinewa River Watershed Restoration Action Strategy*. Indiana Department of Environmental Management.
- The Duck Creek Watershed Partnership. 2005. *A Comprehensive Watershed Management Plan for the Duck Creek Watershed*. Marietta, Ohio.
- The Institute of Environmental Science Miami University. 2010. *Twin Creek Watershed Action Plan*.

- The Nimishillen Creek Watershed Partners. 2007. *Nimishillen Creek Watershed Action Plan*. Stark County and Summit County, Ohio.
- Toledo Metropolitan Area Council of Governments. 2013. *Portage River Watershed Plan*. Toledo, Ohio.
- Union Soil and Water Conservation District. 2008. *Bokes Creek and Mill Creek Watershed Inventory and Watershed Action Plan*
- Upper Maumee River Watershed Partnership. *Upper Maumee River Watershed Management Plan*. Fort Wayne, Indiana.
- West Creek Preservation Committee. 2005. *West Creek Watershed Action Plan*. Parma, Ohio.
- Western Reserve Land Conservancy. 2012. *Upper Grand River Watershed Action Plan*. Moreland Hills, Ohio.
- Wiggins, Erika, Stillwater Watershed Coordinator. 2006. *Stillwater River Watershed Action Plan and Inventory*.
- Wise, Maureen, watershed coordinator, and Kleski Environmental Consulting. *Huff Run Watershed Plan*. Huff Run Watershed Restoration Partnership. Mineral City, Ohio.
- Wolf Creek Watershed Partners. 2005. *A Comprehensive Watershed Management Plan for the Wolf Creek Watershed*. Morgan and Washington Soil and Water Conservation.
- Znidarsic, C. and Coldwater Consulting, LLC. 2011. *Black River Watershed Action Plan*. Lorain, Ohio.