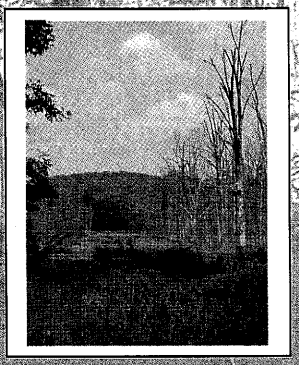
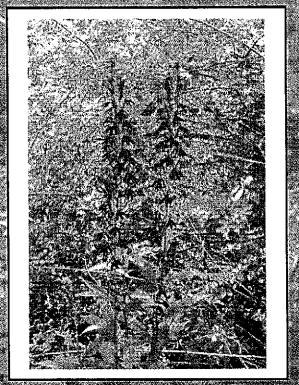
Red Stone Farm
Wetland Mitigation Bank
Banking Instrument

Baker Fork – 200201163
PIKE COUNTY, OHIO

January 2007





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BANKING INSTRUMENT
Red Stone Farm Wetland Mitigation Bank
(Baker Fork – 200201163)

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BANKING INSTRUMENT
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This Banking Instrument regarding the establishment, use, operation, and maintenance of Red Stone Farm Wetland Mitigation Bank (hereinafter, the Bank) is made and entered into by and among the Wulsin Land Partnership (WLP), the Northern Kentucky University Center for Applied Ecology (NKU-CAE), and the Northern Kentucky University Research Foundation, Inc. (NKURF) (hereinafter, the Sponsor), and the U.S. Army Corps of Engineers (Corps), the U.S Environmental Protection Agency (USEPA), the U.S. Fish and Wildlife Service (FWS), the Ohio Environmental Protection Agency (OEPA), the Ohio Department of Natural Resources (ODNR), and the Natural Resources Conservation Service (NRCS) (hereinafter, the Mitigation Banking Review Team, MBRT), with reference to the following:

I. PREAMBLE

A. Purpose: The purpose of this Banking Instrument is to establish guidelines and responsibilities for the establishment, use, operation, and maintenance of the Bank. The Bank will be used for compensatory mitigation for activities authorized under the Isolated Wetland Permit statute as well as Sections 404/401 of the Clean Water Act, provided such use has met all applicable requirements and is authorized by the appropriate authority.

B. Location and Ownership of Parcel: Whereas, Wulsin Land Partnership (Tax ID # 31-1339427) owns 1152 acres of land at 1285 Frost Road, Cynthiana, Ohio (Pike County), (Figures 1 and 2: Exhibit A), and the Sponsor has developed an ecological restoration plan to establish and maintain 317 acres of wetland habitat.

C. Project Description: Whereas, under this Banking Instrument, the Sponsor will establish and maintain 317 acres of wetland habitat in accordance with the provisions of this Banking Instrument and the Bank Development Plan (Exhibit B), and shall then maintain the Bank in such condition for 5 years in accordance with the Bank closure procedures or until all credits are sold, whichever is later. The Bank area shall be a total of approximately 480 acres and include: the restoration of approximately 276 acres of forested wetlands and 19 acres of emergent /scrub-shrub wetlands; the enhancement of 21 acres of forested wetland habitat (16 acres of existing forested wetlands and 5 acres that existed in the NRCS wetland prior to construction); and the preservation of 164 acres of additional upland buffer habitat.

D. Baseline Conditions: Whereas, the Bank area is currently comprised of approximately 230 acres of agricultural land, 16 acres of jurisdictional forested wetlands, 42 acres of previously constructed NRCS green marsh wetlands, and the remainder is a mixture of upland meadow and forest buffer. Of the land in agricultural production, about 16 acres are currently used for pasture and 214 acres of tillable ground are used for corn and beans. The existing forested wetlands in the Bank are relatively young and composed of green ash, pin oak, red maple, and swamp white oak. Through hydrology modifications and restoration of surrounding wetland habitats, as part of the overall design of this restoration project, wetland quality and function will be further enhanced in the existing wetlands. The near decade old NRCS greenmarsh wetland has experienced heavy and continued beaver activity

resulting in higher water depths than anticipated, mortality of nearly all trees within, and habitat conditions that are more pond-like than a wetland.

Within the remainder of the Wulsin property boundary, approximately 440 acres will continue to be in agricultural production. All is expected to be in pasture, with the possible exception of about 30 acres for row crops (at some time in the future). Corn and soybeans may be grown on the west side of the property until the mitigation Bank is fully developed (Figure 12).

E. Establishment and Use of Credits: Whereas, in accordance with the provisions of this Banking Instrument and upon satisfaction of the success criteria contained herein, a total of 314 credits will be available to be used as mitigation in accordance with all applicable requirements. Credits will be sold to third parties in 0.1-acre increments. There are no plans for credits to be used by the Bank sponsor.

F. Whereas, the Mitigation Banking Review Team (MBRT) consists of:

1. U.S. Army Corps of Engineers, Huntington District (Corps), Chair.
2. U.S. Environmental Protection Agency, Region 5 (EPA).
3. U.S. Fish and Wildlife Service, Ohio Field Office (FWS).
4. Ohio Environmental Protection Agency (OEPA)
5. Ohio Department of Natural Resources (ODNR)
6. Natural Resources Conservation Service, Ohio District (NRCS)

G. Disclaimer: Whereas, this Banking Instrument does not in any manner affect statutory authorities and responsibilities of the signatory parties.

H. Exhibits: Whereas, the following Exhibits are incorporated as appendices to this Banking Instrument:

1. "EXHIBIT A", BANK LOCATION AND SERVICE AREA
2. "EXHIBIT B", BANK DEVELOPMENT PLAN
3. "EXHIBIT C", CREDITING AND DEBITING PROCEDURE FOR THE BANK
4. "EXHIBIT D", DELINEATION REPORT
5. "EXHIBIT E", REAL-ESTATE PROVISIONS
6. "EXHIBIT F", FINANCIAL ASSURANCE
7. "EXHIBIT G", WETLANDS MITIGATION AGREEMENT
8. "EXHIBIT H", WETLANDS CREDIT ACCOUNTING FORM

II. AUTHORITIES

The establishment, use, operation and maintenance of the Bank is carried out in accordance with the following authorities:

A. Federal:

1. Clean Water Act (33 USC 1251 et seq.)
2. Rivers and Harbors Act (33 USC 403)
3. Fish and Wildlife Coordination Act (16 USC 661 et seq.)
4. Regulatory Programs of the Corps of Engineers, Final Rule (33 CFR Parts 320-330)

5. Guidelines for Specification of Disposal Sites for Dredged and Fill Material (40 CFR Part 230)
6. Memorandum of Agreement between the Environmental Protection Agency and the Department of the Army concerning the Determination of Mitigation Under the Clean Water Act, Section 404 (b)(1) Guidelines (February 6, 1990)
7. Federal Guidance for the Establishment, Use, Operation of Mitigation Banks (60 F.R. 58605 et seq.)

NOW, THEREFORE, the parties agree to the following:

III. ESTABLISHMENT OF THE BANK

A. The Sponsor agrees to perform all necessary work, in accordance with the provisions of this Banking Instrument, to establish and/or maintain 317 acres of wetland habitat, as shown in Exhibit B, until it is demonstrated to the satisfaction of the agencies represented on the MBRT (acting through the Chair) that the project complies with all conditions contained herein, or until all credits are sold, whichever is later. Work shall include implementing the Bank Development Plan (Exhibit B).

B. The Sponsor will obtain all appropriate environmental documentation, permits or other authorizations needed to establish and maintain the Bank. This Banking Instrument does not fulfill or substitute for such authorization.

C. Establishment of the Bank will be performed in a phased manner as described in the Bank Development Plan (Exhibit B), and the credits will become available in accordance with the schedule specified in Part IV, Sections D through G of this Banking Instrument. In the event the Sponsor determines that modifications must be made in the Bank Development Plan to ensure successful establishment of habitat within the Bank, the Sponsor shall submit a written request for such modification to the MBRT, through the Chair, for approval. Documentation of implemented modifications shall be made consistent with Part III, Section F.

D. Financial Assurance Requirements: The Sponsor will provide a performance bond as financial assurance for each phase of wetland restoration described in this Banking Instrument. The performance bond will guarantee the satisfactory completion of each phase of restoration initiated. Performance bonds for each phase of Bank construction will be acquired just prior to the start of that phase, and bonds will cover the entire cost of construction. The proposed bonding amount for Phase I is $4500 per credit-acre.

E. Real Estate Provisions: WLP shall record a conservation easement on the Bank land through the NKU Research Foundation prior to certification of any credits. The conservation easement preserves the Bank land as wetlands and buffer wildlife habitat in perpetuity. Specifically prohibited uses of the wetland Bank tract shall include, but not be limited to, timber harvests and other forestry activities, drainage of surface waters, cultivation, commercial activities, filling, grazing of domesticated animals, building of permanent structures, soil removal, and deposition of refuse, sewage, or other debris. The

Wulsin family will preserve their hunting rights. A conservation easement document is provided in Exhibit E, and copies of the recorded document shall be provided to the Corps and OEPA following filing.

Many of the Standards and Practices recommended by the Land Trust Alliance as guidelines to help manage conservation lands have been adopted in formulating this Mitigation Banking Instrument. These include:

- Examination of the Property – Red Stone Farm has been subjected to many assessments and site inspections, including a wetland delineation report;

- Conservation Easement Stewardship – An interest bearing trust fund will be set up for the long-term management of the Bank. Interest generated from the trust fund will be used to carry out bank inspections and reporting;

- Land Stewardship – Interest created from the trust fund will also be used for long-term maintenance of the Bank;

- Assurance of Sound Transactions – Technical and legal expertise have been utilized to assure the appropriateness and permanence of the conservation practices prescribed for the Bank. Legal experts to assure its potency have examined the conservation easement and it will be legally recorded at the appropriate records office according to local and state laws.

F. The Sponsor agrees to submit an as-built report for each phase of the Bank within 60 days following completion of the establishment of that phase of the Bank. The as-built report will describe in detail any deviation from that described in the Bank Development Plan (Exhibit B), and a plan showing finish grades, and surface and groundwater elevation, as appropriate.

IV. OPERATION OF THE BANK

A. Service Area: The Bank is established to provide mitigation to compensate for impacts to Waters of the United States including Category 2 wetlands within the lower Scioto River, Paint Creek, Ohio Brush Creek, and East Fork Little Miami River watersheds, and the mitigation of Category 1 wetlands within the Huntington Corps District in the state of Ohio (Figure 1; Exhibit A). On a case-by-case basis, mitigation for impacts outside the service area can be approved by the Corps and OEPA, in consultation with other members of the MBRT, if the mitigation would be environmentally beneficial or preferred over other alternatives.

B. The Sponsor will allow, or otherwise provide for, access to the site by all signatory parties, as necessary, for the purpose of inspection and compliance monitoring consistent with the terms and conditions of this Banking Instrument. Inspecting parties shall provide reasonable notice, of not less than 24 hours, to the Sponsor, prior to inspection of the Bank.

C. Projects Eligible to Use the Bank: For projects requiring authorization under Section 404, Section 10, and the Isolated Wetland Permit statute, the Corps and OEPA, in consultation with other regulatory and resource agencies, will determine the eligibility of projects to use the Bank on a case-by-case basis. Entities which propose to mitigate for wetland impacts at the Red Stone Farm Wetland Mitigation Bank shall submit a complete permit application or pre-construction notification (PCN) to the Corps and all other appropriate federal, state and/or local regulatory agencies. The permit application or PCN shall include a wetland assessment, using the Ohio Rapid Assessment Method (ORAM), or current qualitative habitat evaluation protocol, and an executed bank agreement to demonstrate that adequate mitigation credits are available. The Corps (and the OEPA in the case of an Individual Water Quality Certification or Isolated Wetland Permit), in cooperation with the appropriate resource agencies, will evaluate whether the proposed activity and proposed mitigation at the Red Stone Farm Wetland Mitigation Bank meets all relevant statutory and/or regulatory requirements. A permit applicant's participation in the Red Stone Farm Wetland Mitigation Bank does not diminish or waive a permit applicant's responsibility to meet every requirement of applicable federal, state or local law.

D. Assessment Methodology: Credits and debits will be assessed using wetland acreage calculations. Restored wetlands will receive 1.0 credit per acre, enhanced wetlands will receive 0.5 credits per acre, and 95.7 acres of forested hillside buffer in the southeastern corner of the bank (as part of Phase 1) will receive 0.1 credits per acre. Wetland credits will be sold in tenth-acre ($1/10^{th}$ acre) increments through a Wetlands Mitigation Agreement (Exhibit G), and reported to the Corps and OEPA using a Wetlands Credit Accounting Form (Exhibit H). Areas within the bank that are maintained as roads to access the site for management, monitoring, etc., shall not receive wetland credit.

E. Success Criteria: Monitoring of wetland vegetation will use the protocols outlined in the Field Manual for the Vegetation Index of Biotic Integrity for Wetlands (Mack 2004). The following Performance Standards will be used to assess wetland progress and success (restoration and monitoring details are covered in Exhibit B: Bank Development Plan):

Wetland Criteria

All credits released must eventually meet wetland criteria. Except for the first 30% of credits released, all credits must meet wetland criteria prior to being authorized for release. The initial 30% of the credits released must meet wetland criteria before any additional credits are released. All wetland areas will be delineated using the procedures for comprehensive determinations outlined in the 1987 Corps of Engineers Delineation Manual (or successor documents). The boundaries will be mapped using geographic position system (GPS) instruments. Any non-wetland areas within wetland boundaries will be mapped and will not count toward wetland credits.

Native Wetland Species Establishment

The mitigation wetland shall have greater than 75% of its total areal cover vegetated with native perennial hydrophytes (FAC [not FAC-], FACW, OBL).

Invasive Species
The mitigation wetland shall have less than 5% of its total areal cover vegetated with invasive species. For this standard the list of invasive species from Table 1 of the Ohio Rapid Assessment Method for Wetlands Version 5.0 shall be used.

Open Water
There shall be less than 10% areal coverage of unvegetated open water in any wetland or in the aggregate for all wetlands.

Restored Wetlands
Wetland credits will meet Vegetation Index of Biotic Integrity scores equivalent to natural Category 2 depressional wetlands in the Western Allegheny Plateau (51-62). Additionally, for forested credits standard forest metrics shall be recorded and it must be demonstrated that forested credits are on a trajectory to being forested prior to their release. Frequency, density, dominance and importance values as well as stems/acre will be graphed against time to demonstrate whether wetland areas are on a trajectory to being forested. Areas where it can be demonstrated, to the MBRT's satisfaction, that a trajectory to being forested, as well as all other release criteria are being met can receive forested wetland credits. Areas where it cannot be demonstrated that a trajectory to becoming forested wetland is met can still be released as non-forested wetland credits if they meet all other release criteria.

Additional Performance Standards
- 25% richness or cover of disturbance intolerant plants (COC values 6-10)
- Eight different tree species at a minimum of 200 stems per acre
- 25% of woody species comprised of disturbance intolerant trees (COC values 6-10)

Enhanced Wetlands
Most of the existing forested wetlands scored in the low range of Category 2 and a few of the wetlands scored into the middle range of Category 2 based on ORAM 5.0 evaluations. VIBI scoring of the largest wetland will occur prior to any construction on the site. This will be the baseline VIBI score. All subsequent scoring of this wetland shall show a VIBI score equivalent to natural Category 2 depressional, forested wetlands in the Western Allegheny Plateau (51-62), or an increase of 10 points over the baseline VIBI score, whichever score is greater. The enhanced forested wetlands will meet all other performance standards listed above for the restored wetlands. It will be demonstrated through photographic documentation that the enhanced forested wetlands are remaining forested over time.

F. Credit Release Schedule: Upon execution of this Agreement the Bank may sell thirty percent (30%) of the total anticipated mitigation credits of the phase or phases to be constructed. Implementation of the restoration and/or enhancement plan for each phase must take place within one full growing season from the date of the sale of the first credit. The MBRT may allow the sale of additional mitigation credits on the following basis:

1). Once the initial 30% of the total anticipated credits has been released no further releases will be made until the initial 30% meets wetland criteria and also meets all other performance standards or until the initial 30% of the credits meets wetland criteria and it can be

demonstrated to the satisfaction of the MBRT that those credits are on a trajectory to meeting all other performance standards;

2). Additional credits can be released as they meet all performance standards or as they meet wetland criteria and it can also be demonstrated to the satisfaction of the MBRT that those credits are on a trajectory to meet all other performance standards. (Forested credit should only be applied to those credits showing a strong trajectory toward being forested. This will be demonstrated by graphing standard forestry measures (i.e. relative frequency, relative density, relative dominance, importance values as well as raw measures of stems/ha. and basal area/ha) against time); and

3). Even if the entire site is meeting all performance standards earlier, at least 10% of the credits will be held back until the end of the monitoring period.

G. Conditions on Debiting: Any credits debited before achieving the success criteria, shall require posting sufficient financial assurance to cover contingency actions in the event of partial or total failure. The form and amount of the assurances shall be approved by the Corps and OEPA, in consultation with other members of the MBRT, prior to posting. Upon meeting the success criteria as determined by the Corps and OEPA, in consultation with other members of the MBRT, the bond shall be released to the Sponsor.

H. Provisions For Uses of the Mitigation Bank Area: The Sponsor shall **NOT**:

1. Grant additional easements, right of way, or any other property interest in or to the project areas without the written consent of the Corps and OEPA, in consultation with other members of the MBRT.
2. Use or authorize the areas within the Bank for any purpose that interferes with its conservation purposes.

V. MAINTENANCE AND MONITORING OF THE BANK

A. Maintenance Provisions: The Sponsor agrees to perform all necessary work to maintain the Bank consistent with the maintenance criteria established in the Bank Development Plan. The Sponsor shall continue with such maintenance activities until closure of a particular phase of the Bank. Upon closure of the Bank, the Sponsor shall implement the management requirements established in Part V, Section F. Deviation from the approved Bank Development Plan is subject to review and written approval by the Corps and OEPA, in consultation with the MBRT.

B. Monitoring Provisions: The Sponsor agrees to perform all necessary work to monitor the Bank to demonstrate compliance with the success criteria established in Part IV, Section E of this Banking Instrument. Monitoring will generally include the following (details are provided in Exhibit B: Bank Development Plan):

<u>Hydrology Monitoring</u>
Visual observations and photographs will be reported for the following:

- Plugged drainage ditch sections

- Outfalls from decommissioned tiles and water discharge
- Stream conditions such as blockages, erosion, flooding (off-site and on-site), and channel evolution stage

Quantitative measurements will be collected and reported for the following:

- Groundwater
- Standing water
- Sedimentation levels

Vegetation Monitoring

- Visual (qualitative) vegetation inspections will be regularly conducted to determine immediate management needs (e.g., need for control of invasive-exotic plants, to inspect wildlife damage on planted plants, etc).
- Quantitative monitoring of wetland vegetation will use the protocols outlined in the Field Manual for the Vegetation Index of Biotic Integrity for Wetlands (Mack 2004). Detailed vegetation data will be collected in standard 20x50m plots consisting of a 2x5 array of 10x10m modules. Detailed richness and cover data will be collected and graphically presented in reports to show the status of native, non-native, invasive, and hydrophytic vegetation (trees, shrubs, and herbs). Vegetation IBI scores will be calculated and graphically represented to show trends over time.

C. Reports: The Sponsor shall submit to the Corps and OEPA, for distribution to other members of the MBRT, reports describing the conditions of the Bank and relating those conditions to the success criteria.

Reports will be submitted using the following schedule:

- Pre-construction
- One year post-construction
- Years 3, 5, 7, 10

Reports will cover the following topics and activities during the reporting period:

- Restoration status
- Hydrology monitoring
- Vegetation monitoring
- Data analysis and interpretation
- Restoration management priorities
- Corrective actions taken/needed

The first report (post-construction report) for each phase will be submitted by December 31st of the year in which that phase was constructed. Monitoring reports will be completed and submitted by December 31st of years 1, 3, 5, 7, and 10 of each phase. Reports will contain the following:

1. A U.S. Geological Survey map showing location of the Bank,
2. A detailed narrative summarizing the condition of the Bank and all completed and required maintenance activities,

3. Appropriate topographic maps (e.g., 1-2 foot-contour intervals) showing location of sampling plots, permanent photo points, location of transects, etc.,
4. Results of hydrology survey including hydroperiod, extent of inundation and depth, groundwater monitoring data, precipitation, etc.,
5. Results of vegetation monitoring showing visual estimates of % overall cover and % cover by each vegetation layer, species diversity, % invasive vegetation in each vegetation layer, total % "facultative" and "upland" species in each vegetation layer, survival rate of planted vegetation, an estimate of natural revegetation, and plant vigor as measured by evidence of reproduction (VIBI scores will be calculated and presented for enhanced wetlands), and
6. Results of how bank acreage compares to the performance standards including the areas meeting wetland criteria, VIBI scores, % areal coverage of native perennial hydrophytes, % areal coverage of invasive species, % area of unvegetated open water, forestry measures, etc.
7. Results of other observations such as flooding, beaver activity, deer and muskrat damage, etc.

D. Accounting Procedure: Credits will be debited when a permit applicant's proposed mitigation is approved by the Corps and/or Ohio EPA and the Section 404 permit and/or Section 401 Certification, or Isolated Wetland Permit is issued. A summary of debits shall be provided to the Corps and Ohio EPA by Wulsin Land Partnership semi-annually in the form containing a minimum of information as set forth in the Wetlands Credit Accounting Form (Exhibit H).

E. Contingency Plans/Remedial Actions: In the event the Bank or a specific phase of the Bank fails to achieve the success criteria for the amount of debited acreage as specified in Part IV, Section E of this Banking Instrument, the Sponsor shall develop necessary contingency plans and implement appropriate remedial actions for the Bank or that phase in coordination with the MBRT. In the event the Sponsor fails to implement necessary remedial actions within 90 calendar days after notification by the Corps or Ohio EPA of necessary remedial actions to address any failure in meeting the wetland success criteria, the Corps and Ohio EPA will notify the Sponsor and recommend appropriate remedial actions.

If the Corps and Ohio EPA determine that the Bank is operating at a deficit, debiting of credits will immediately cease, and the Corps and Ohio EPA, in consultation with the MBRT and the Sponsor, will determine what remedial actions are necessary to correct the situation. As determined by the Corps and Ohio EPA in coordination with the MBRT and the Sponsor, if conditions at the Bank site do not improve or continue to deteriorate within a reasonable time frame from the date that the need for remediation was first identified in writing to the Sponsor by the Corps and Ohio EPA, the performance bond and long-term management funds shall be transferred to a qualified entity to undertake corrective measures.

At the request of the Sponsor, the MBRT will perform a final compliance visit to determine whether all success criteria have been satisfied. Upon satisfaction of the success criteria, any remaining contingency funds will be released to the Sponsor.

F. Long-Term Management: An interest-bearing trust fund will be established through the NKU Research Foundation whereby $500 of each wetland credit purchase will be deposited. The successful buy-out of all 314 credits will provide the trust a base principle of $157,000 for long-term monitoring and management. Interest generated by the trust will be used for routine bank inspections, management, and reporting. Only in dire emergencies, such as tornado damage, major flood damage, outbreaks of invasive non-native plants, and other Acts of God, will the principal be used to maintain the bank, and only after prior approval by the MBRT through the Chair.

The NKU Research Foundation (conservation easement holder) through MOA with the Center for Applied Ecology (habitat restoration specialists) shall be responsible to manage the Bank in perpetuity in accordance with the terms of the long-term management plans and real estate provisions. Upon signing of this Banking Instrument the NKU Research Foundation (in conjunction with the Center for Applied Ecology) concurs and it shall use the long-term management funds specified in Part III, Section D for this purpose only.

VI. RESPONSIBILITIES OF THE MBRT

A. The agencies represented on the MBRT agree to provide appropriate oversight in carrying out provisions of this Banking Instrument.

B. The agencies represented on the MBRT agree to review and provide comments on all project plans, annual monitoring reports, credit review reports, contingency plans, and necessary permits for the Bank in a timely manner. Comments on the monitoring reports and credit review reports will be generated and issued to the Sponsor by the MBRT within 60 calendar days from the date of complete submittal, except for good cause.

C. The agencies represented on the MBRT agree to review and confirm reports on evaluation of success criteria prior to making decisions on credit releases within each phase of the Bank.

D. The agencies represented on the MBRT shall conduct compliance inspections, as necessary, as determined by the Corps and OEPA in consultation with the Sponsor, to verify credits available in the mitigation Bank, recommend corrective measures (if any), until the terms and conditions of the Bank Development Plan have been determined to be fully satisfied or until all credits have been sold, whichever is later.

VII. OTHER PROVISIONS

A. Dispute Resolution: Resolution of disputes about application of this Banking Instrument shall be in accordance with those stated in the Federal Guidance for the Establishment, Use and Operation of Mitigation Banks (60 F.R. 58605 et seq., November 28, 1995). The Corps and Ohio EPA jointly will have the responsibility for making final decisions regarding terms and conditions of the banking instrument when consensus among the MBRT cannot be reached within a reasonable timeframe.

B. Validity, Modification, and Termination of the Banking Instrument: This Banking Instrument will become valid on the date of the last signatory's signature. This Banking Instrument may be amended or modified with the written approval of all signatory parties. Any of the MBRT members may terminate their participation upon written notification to all signatory parties. Participation of the MBRT members will terminate 60 days after written notification.

C. Specific Language of Banking Instrument Shall Be Controlling: To the extent that specific language in this document changes, modifies, or deletes terms and conditions contained in those documents that are incorporated into the Banking Instrument by reference, and that are not legally binding, the specific language within the Banking Instrument shall be controlling.

VIII. MISCELLANEOUS / SIGNATURES

A. Duplicate Copy: This Instrument may be executed in two or more counterparts, each of which shall be deemed to be a duplicate original, but all of which together shall constitute one and the same instrument.

B. Third Party Rights: This Instrument shall not create any rights, claims or causes of action, for any entities other than the parties hereto.

C. State of Ohio: Any obligations of the State of Ohio are subject to Ohio Revised Code Section 126.07.

SIGNATORY PAGE FOLLOWS:

SIGNATORIES
RED STONE FARM MITIGATION BANK
(Baker Fork – 200201163)

Wulsin Land Partnership

By: _____

Its _____

Date: _____

Natural Resources Conservation Service

By: _____

Its _____

Date: _____

United States Army Corps of Engineers—Huntington District

By: _____

Its _____

Date: _____

Ohio Environmental Protection Agency

By: _____

Its _____

Date: _____

United States Environmental Protection Agency

By: _____

Its _____

Date: _____

Ohio Department of Natural Resources

By: _____

Its _____

Date: _____

United States Fish and Wildlife Service

By: _____

Its _____

Date: _____

Exhibit A: Bank Location and Service Area

Exhibit B: Bank Development Plan

EXHIBIT B
Bank Development Plan
Red Stone Farm Wetland Mitigation Bank

The overall plan for wetlands restoration at the Red Stone Farm Wetland Mitigation Bank (the Bank) entails the following elements:

- Enhancement and preservation of existing forested and emergent wetlands,
- Restoration of forested and scrub-shrub/emergent wetlands at the location of the NRCS constructed wetland,
- Restoration of forested wetlands on hydric soils and soils with hydric inclusions within the wetland bank area, and
- Preservation of upland hillside buffer and small headwaters.

The current design does not include the construction of new shallow water zones for several reasons including:

- Mitigation Bank Review Team (MBRT) concern for long-term maintenance requirements for low earthen berms needed to impound shallow water,
- MBRT preference for and regulated community need for, forested wetland mitigation,
- Public concern about creating mosquito habitat, and
- Public concern about off-site flooding.

The current design will achieve forested wetlands restoration without the construction of earthen berms. Previously constructed berms (dams) of the NRCS constructed wetland will be returned closer to original contours. Hydrology in the remainder of the bank will be restored by disrupting tile drainage and modifying surface water drainage.

The restoration plan specifies three phases of Bank development (Figure 9). Once approved, each phase will be implemented in its entirety. All phases may not be implemented if wetland credits fail to sell, or for other reasons at the discretion of the landowner. Additionally, phases may not necessarily be implemented in numeric order. Acreage and credit tabulation for each phase of the bank is summarized (Table 1: Exhibit C).

Restoration of Wetland Soils

Figures 5 and 9 illustrate areas with hydric soils (Montgomery and Peoga Soils) and areas with hydric inclusions (Markland and Otwell Soils) within the Bank. Soils in these areas developed under pre-settlement wetland conditions and exhibit properties such as slow percolation that make them amenable to forested wetlands restoration. Existing forested wetlands within the bank are generally located on the same type of soil, further confirming their suitability to support forested wetlands.

Wetlands restoration will be successfully accomplished by restoring wetlands hydrology and as much of the original grade of the landscape as possible and practical, as described below.

Restoration of Wetlands Hydrology

As illustrated in Figure 7, the current modified hydrology of the bank area includes the following elements:

- Baker Fork, a USGS-designated 2nd/3rd-order perennial stream that bisects the wetlands bank area,
- Six small tributaries to Baker Fork, plus the approximately 600-foot lower reach of Muddy Fork, a USGS-designated 3rd-order intermittent stream,
- A 42.5-acre NRCS constructed wetland built in 1995,
- Eight small drainage swales located south of the NRCS constructed wetland that are intercepted by a drainage ditch running along a farm access road,
- Field drainage tile systems that drain to streams or tributaries, and
- A perennial spring located at the edge of the wetlands bank area.

There are 10 relatively small natural wetlands existing in the Bank area that total approximately 16.2 acres. Hydrology of the existing wetlands will be enhanced as surrounding wetlands are restored.

Hydrology of the Bank area and other agricultural lands in the region was significantly modified by the conversion of land from natural wetlands to agricultural uses. The most visible modification is the straightening, deepening, and entrenchment (channelizing) of Baker Fork, Muddy Fork, and most of their tributaries. Channelization lowered the water table in the bottomlands to transmit surface water as quickly as possible from the agricultural fields. Bottomland fields in the Bank flood once or twice per year, but current flooding is of relatively short duration due to farm drainage modifications.

To further drain agricultural fields in the Bank, miles of drainage tiles have been installed throughout all of the bottomland fields and below the spring. The property owner, whose family has owned the property since 1968 and installed most of the drainage tiles and ditches, confirms that prior to installation of these features, all bottomlands and many of the slopes were consistently wet, and installation of drainage tile was necessary to grow agricultural crops like corn and soybeans. Soil borings indicate that the water table has been lowered to approximately five feet or more below the ground surface, near the elevation of the bottom of the Baker Fork stream channel.

Restoration of wetlands hydrology is required to provide sufficient soil saturation or inundation to favor the establishment of forested wetlands versus upland vegetation. The plan for restoring wetlands hydrology within the bank area includes the following elements:

Drainage Tile Decommissioning

Tiled fields and tile outfalls visible in the banks of Baker Fork and its tributaries are illustrated (Figure 7). Tiles are located in all bottomland fields, mostly on 50-ft centers, and approximately 3-ft deep.

Drainage tiles will be decommissioned within each appropriate phase of the Bank as it progresses, to raise the water table and restore hydric soil conditions. Drainage tiles will be decommissioned consistent with *NRCS Standard 657 – Wetland Restoration.* A minimum of 25 feet will be removed at the downstream portion of each tile section, and the remainder of the tile sections will be broken at 200-300 feet intervals to impede water movement and ensure a more even distribution of saturated soil within each of the tiled fields. Tile excavations will be backfilled and compacted to the density of surrounding soils.

Tributary Modifications

Figure 7 illustrates the locations of six minor tributaries to Baker Fork within the wetlands bank area. These straightened drainage channels are generally shallow (2 to 3 feet) and wide (15 to 40 feet) and naturalizing by in-filling of sediment and colonization by wetlands vegetation such as rice-cutgrass, smartweed, buttonbush, cattail and willow. The channels are well vegetated, most have shallow standing water, and flood debris and sediment deposits indicate periodic access to the floodplain/field elevation. Near the tributary confluences with Baker Fork, channel slopes transition from nearly level to steep, since the channels drop 5 to 7 feet to match the Baker Fork streambed elevation. Although these lower tributary reaches appear incised, the incisions appear to be stable (relatively well vegetated) and do not extend beyond 200 feet.

It may be desirable to increase the frequency and volume of out-of-bank flow from these tributaries and simultaneously raise the water table. If the determination is made to modify these small channels (e.g., based upon hydrology monitoring), they will be obstructed at intervals of 5 to 7 channel widths by installing rock weirs (a.k.a. constructed riffles, cross vanes) in larger channels, and either rock weirs, earth fill plugs, or large woody debris in smaller channels (Figure 8).

Rock weirs, if installed, will be generally constructed using cross vane specifications in Section 8 of *Stream Restoration: A Natural Channel Design Handbook*, prepared by the North Carolina Stream Restoration Institute (http://www.bae.ncsu.edu/programs/extension/wqg/sri/stream_rest_guidebook/sr_guidebook.pdf). At a minimum, rip rap will be sized to withstand bankfull velocities calculated for the restored channel using the Manning Equation, and using a rip rap sizing nomograph provided in Section MGWC 2.1 of *Maryland's Waterway Construction Guidelines,* prepared by the Maryland Department of the Environment (http://www.mde.state.md.us/Programs/WaterPrograms/Wetlands_Waterways/documents_information/guide.asp). If practical and cost-effective, boulders will be used in place of rip rap to provide better crevice habitat for aquatic organisms. Bankfull indicators are described in USFS General Technical Report RM-245, *Stream Channel Reference Sites: An Illustrated Guide to Field Technique* April 1994.

Earth plugs, if installed, will be constructed as specified in *NRCS Standard 657 – Wetland Restoration.* Plugs will consist of 50 to 100 feet of soils (a function of soil permeability), compacted to achieve the density of native soils, and crowned to prevent flow over the plug. If needed, woody debris jams will be constructed from existing snags (particularly along edge of NRCS constructed wetland) or trunks of undesirable trees. If necessary, the

downstream end of debris jams will be anchored using root-wads driven into the bank and bed. Vegetation in the channels between plugs and debris jams and on top of banks will be preserved to the extent practicable to mitigate against flanking erosion.

To prevent obstructions from causing off-site flooding, the most upstream obstructions will be constructed where the field elevation is at least 1 to 2 feet below the channel bottom (or culvert invert) at the upstream property or wetland bank boundary. Therefore as floodwater is backed up behind the upstream obstruction, it will be released to the adjacent field prior to raising the stream water elevation at the boundary.

Using the criteria for locating the upstream obstruction and spacing between obstructions based upon channel width, locations of obstructions (if constructed) are illustrated (Figure 8). The upstream locations will be confirmed in the field using a level/transit prior to construction.

After construction of flow obstructions, it is anticipated that the channels will continue to naturalize due to sedimentation, beaver damming, continued colonization of wetlands vegetation in the channels, and large woody debris accumulation. [A 2-foot high beaver dam is already constructed on Tributary 6 below the NRCS constructed wetland.] Additionally, the lower reaches of tributaries will be monitored to ensure that incisions are not migrating upstream, and if so, they will be stabilized with imported rock, riprap, or other suitable means. Bioengineering solutions will be used whenever practical.

Modification of NRCS Constructed Wetland

Functioning of the NRCS constructed wetland was greatly affected by heavy beaver activity (Figure 10). Beaver activity has been constant at the site since construction, and the water level is most frequently elevated as much as 18 inches above the designed maximum water level (spillway elevation). Elevated water levels are attested to by watermarks on trees within the wetland, the local NRCS technical representative, and by the farm manager tasked with removing beaver dams. (Trapping and removing beaver has proven futile.) With water depths increased just one foot by beaver dams, the total NRCS wetland acreage with less than two feet of water decreases to approximately 8 acres, versus 42 acres by design. Therefore, with the beaver, the constructed wetland has been functioning more like an open water pond, than a wetland.

The restoration plan for the NRCS wetland is to lower the berms to near original grade: this will lower water levels and maximize the wetlands rather than open-water footprint (Figure 11). (Complete removal of berms is not planned because of agency concerns about a net loss of wetland acreage and the owner's concerns about loss of aesthetic and waterfowl habitat values.)

Standing water levels will be lowered to a degree that:

- Maximizes acreage within the target depth interval (less than 2 feet for emergent wetlands),

- Maximizes the acreage of saturated soils / shallow groundwater amenable to forested wetland restoration, and
- Minimizes potential flooding from beaver activity.

Adapted from a bathymetric map developed by NRCS, Figure 11 illustrates the proposed condition where current water levels are lowered 3 feet in the western half of the constructed wetland, and 2 feet in the eastern half. Figure 11 illustrates that the total acreage of standing water is reduced to approximately 19 acres, but nearly the entire standing water acreage (96 percent) is less than 2 feet deep, and 84 percent is less than one foot deep. The areas less than 2 feet deep are anticipated to revert to emergent wetlands, whereas the "drained" areas will remain sufficiently wet to revert to forested wetlands.

Figure 13 illustrates east and west berm as-built profiles, and the level to which each will be lowered to achieve the target water levels. The east berm will be lowered 3 feet and the west berm four feet. The crests and downstream face of the lowered berms will be armored with flagstone riprap and vegetated to provide long-term stability. Beavers, based upon prior history of continuously plugging the existing spillway outlet, will likely repair erosion channels. The ability of beaver to raise water levels will be limited by the breadth of the lowered berms (east – approximately 130 feet; west – approximately 220 feet).

Prior to berm (dam) removal, standing water will be drained from the wetlands to the maximum extent practical through the water control structure and eight-inch drainage pipe installed on the Site 1 berm (Figure 13). The drainage pipe will be valved and left in place to facilitate future drainage, if necessary. After water drainage is complete, sediment in the pool area will be allowed to drain for at least 30 days. Spoils generated by berm removal will be used to construct channel obstructions (illustrated in Figure 8), and to construct a low berm connecting two nearby hummocks on the east Bank boundary in Phase 1 (illustrated in Figure 11). No spoils will be spread in the pool area or existing wetlands. All excess spoil will be disposed of in upland locations. The berm at Site 3 is located on a drainage divide and does not require removal to restore site hydrology (Figure 13). A culvert drain will be placed underneath the new berm to facilitate draining the field upgradient of the new berm. The approximate dimensions of the new berm will be 400 feet long by 15 feet wide by 4 feet high.

Restoration of Swales above NRCS Constructed Wetland

Figure 9 illustrates a farm access road located south of the NRCS wetland near the base of the hillside. A parallel ditch was constructed along the uphill side of the road to divert water from the road to Tributary 1 and Tributary 6 (Figure 8). This diversion is contributing to incision of Tributary 6 upstream of the constructed wetland and is also depriving the bottomlands south of the NRCS wetlands with hydrology that would contribute to reversion of this fringe area to forested wetlands.

In order to restore hydrology to this area, a total of 8 swales currently being diverted will be restored to their natural drainage (Figure 8). Where practicable, the road will cross the swales using a ford constructed in accordance with *NRCS Standard Practice Code 576 –*

Stream Crossing. If a ford is not deemed to be practicable, a minimum 24-inch CMP culvert will be used.

Hydrology Monitoring

Visual observations and photographs will be reported for the following:

- Plugged drainage ditch sections
- Outfalls from decommissioned tiles and water discharge
- Stream conditions such as blockages, erosion, flooding (off-site and on-site), and channel evolution stage

Quantitative measurements will be reported for the following:

- Groundwater
- Standing water
- Sedimentation levels

A long-term hydrology monitoring program will be established to follow water movement throughout the wetland restoration area. Approximately 50 sampling stations (roughly one piezometer for every 10 acres) will be located throughout the Bank to document hydrology. One-inch diameter, slotted-screen PVC piezometers will be installed in borings made with a bucket auger. Piezometers will be positioned such that each will be screened across the topsoil / clay layer interface. The area around the screen will be backfilled with coarse sand and/or fine pea gravel. The remainder of the boring will be filled with compacted native soil, or bentonite, if needed.

Precautions will be taken to prevent surface water and precipitation from entering directly into the boring. Monitoring of groundwater depths will be recorded weekly during the growing season and bimonthly or monthly during the dormant season. Piezometers with a sufficient "stick-up" above ground surface will be used to measure groundwater levels, sedimentation/erosion (if present) and standing water levels (if present).

Erosion Protection

Hydric soils are susceptible to erosion as are all fine-grained soils. A limited thickness of fine sediment is expected at the bottom of the NRCS wetland, which was constructed in 1995. Measures will be taken throughout the project to mitigate against both short- and long-term soil erosion. During and after earthwork (ditch plugging, dam removal and regrading), exposed soil will be stabilized with straw cover and seeded with rapidly establishing annual cover grasses. More vulnerable areas such as stream banks will be protected with biodegradable vegetation reinforcement matting, to the extent necessary.

Long-term erosion protection will be provided primarily with a mixture of shallow and deep-rooted native vegetation, most of which is anticipated to be present in the native seed bank or naturally colonized. Little or no rip-rap or similar hard armoring materials are anticipated to be used, except to armor the lowered berms of the NRCS constructed wetland.

Log Jam Removal

Disturbance in association with access to the stream to remove debris/log jams shall be allowed on an as needed basis. Disturbance to the stream buffer during debris removal shall be minimized as much as practicable and the stream banks shall be restored to predisturbance conditions following removal activities. Stream banks shall not be maintained and shall be left in their natural state in perpetuity.

Restoration of Wetland Vegetation

The overall wetland restoration strategy will be to accelerate wetland plant establishment and succession by:

- Planting hydrophytic trees and shrubs
- Seeding with a diverse mix of perennial hydrophytes
- Eliminating competition by controlling invasive plants, and
- Encouraging the natural wetland seedbank of the area to reestablish

Trees and shrubs will be planted to accelerate forest succession and better guarantee the Bank is on a sufficient forest trajectory at the end of the 5-year monitoring period for the release of the final 10% of credits. A planting plan indicating tree species and numbers to be planted will be submitted to the Corps and Ohio EPA, in consultation with other members of the MBRT, for review before initiating tree planting.

Glyphosate-based herbicides (EPA-approved for wetlands) will be used to eradicate invasive non-native plants within the bank area prior to decommissioning of drainage tiles. Fields will be disced perpendicular to the direction of drainage to further slow water and prepare ground for seeding and planting. Annual cover grasses will be well established during the winter months to reduce erosion and colonization by invasive plants. Open upland buffer fields will be seeded with native warm season grasses (e.g., big bluestem, Indian grass, and little bluestem).

Developing wetland habitats will be managed to:

- Immediately control the establishment of invasive non-native plants before they proliferate and form dense, competing populations;
- Maintain a vegetative cover sufficient to prevent soil erosion, rill development, and the germination of undesirable weeds, and;
- Facilitate the growth and reproduction of planted and desirable native plants to maximize native seed production, dispersal, germination, and continued establishment.

Special attention will be given to prevent soil erosion during the entire restoration process. Annual wheat and rye (or other suitable annual) will be applied to all bare soil areas to quickly provide temporary plant cover and soil stabilization while native plants are establishing.

Early detection of invasive non-native weeds is essential to effective weed control and successful habitat restoration. Preventing the seeding and spread of invasive plants in the developing wetlands will be a priority throughout the restoration process. Once initiated, Bank phases will be routinely inspected and immediately managed to control highly invasive, non-native vegetation. The total overall cover of invasive plants will be kept below 5 percent. Weed management will involve an integrated approach utilizing mechanical methods including cutting of plants, flower heads, and seed heads, and utilizing chemical methods including spot application of EPA-approved wetland herbicides.

Initially, the restoration area will resemble an emergent wetland or wetland meadow, scattered with small trees and shrubs. Developing wetland habitats will appear open and will be dominated by native wetland grasses, sedges, and forbs in the first 2 years. Within 2-5 years, as ecological succession progresses, the restored wetlands will appear as a mix of emergent and low-stature, scrub-shrub wetlands. As hydrophytic trees grow and shade the ground, open wetland areas will grade into forested wetland habitats.

Vegetation Monitoring

Visual vegetation inspections will be conducted regularly during the growing season to determine immediate management needs, particularly the need to control invasive plants and have continuous soil cover.

Quantitative vegetation measures will be collected in Summer using the protocols outlined in the Field Manual for the Vegetation Index of Biotic Integrity for Wetlands (Mack 2004). Detailed vegetation data will be collected in standard 20x50m plots consisting of a 2x5 array of 10x10m modules. Overall richness and cover values will be calculated for native and non-native vegetation, invasive non-native vegetation, and hydrophytic vegetation. Results will be graphically presented in annual reports to copare wetland establishment from year to year.

Two fixed plots and approximately 25 random plots will be used for Phase 1 vegetation monitoring. The Bank will use this level of effort for each of the subsequent phases, which are more homogeneous than Phase 1. The Bank will handle the existing wetlands separately by establishing a fixed plot in the largest area, and sampling random plots in the other existing areas (one plot may suffice in very small wetland areas).

Performance Standards

Wetland Criteria

All credits released must eventually meet wetland criteria. Except for the first 30% of credits released, all credits must meet wetland criteria prior to being authorized for release. The initial 30% of the credits released must meet wetland criteria before any additional credits are released. All wetland areas will be delineated using the procedures for comprehensive determinations outlined in the 1987 Corps of Engineers Delineation Manual (or successor documents). The boundaries will be mapped using geographic position system (GPS) instruments. Any non-wetland areas within wetland boundaries will be mapped and will not count toward wetland credits.

Native Wetland Species Establishment
The mitigation wetland shall have greater than 75% of its total areal cover vegetated with native, perennial hydrophytes (FAC [not FAC-], FACW, OBL).

Invasive Species
The mitigation wetland shall have less than 5% of its total areal cover vegetated with invasive species. For this standard the list of invasive species from Table 1 of the Ohio Rapid Assessment Method for Wetlands Version 5.0 shall be used.

Open Water
There shall be less than 10% areal coverage of unvegetated open water in any wetland or in the aggregate for all wetlands.

Restored Wetlands
Wetland credits will meet Vegetation Index of Biotic Integrity scores equivalent to natural Category 2 depressional wetlands in the Western Allegheny Plateau (51-62). Additionally, for forested credits standard forest metrics shall be recorded and it must be demonstrated that forested credits are on a trajectory to being forested prior to their release. Frequency, density, dominance and important values as well as stems/acre will be graphed against time to demonstrate whether wetland areas are on a trajectory to being forested. Areas where it can be demonstrated, to the MBRT's satisfaction, that a trajectory to being forested, as well as all other release criteria are being met can receive forested wetland credits. Areas where it cannot be demonstrated that a trajectory to becoming forested wetland is met can still be released as non-forested wetland credits if they meet all other release criteria.

Additional Performance Standards
- 25% richness or cover of disturbance intolerant plants (COC values 6-10)
- Eight different tree species at a minimum of 200 stems per acre
- 25% of woody species comprised of disturbance intolerant trees (COC values 6-10)

Enhanced Wetlands
Most of the existing forested wetlands scored in the low range of Category 2 and a few of the wetlands scored into the middle range of Category 2 based on ORAM 5.0 evaluations. VIBI scoring of the largest wetland will occur prior to any construction on the site. This will be the baseline VIBI score. All subsequent scoring of this wetland shall show a VIBI score equivalent to natural Category 2 depressional wetlands in the Western Allegheny Plateau (51-62), or an increase of 10 points over the baseline VIBI score, whichever score is greater. The enhanced forested wetlands will meet all other performance standards listed above for the restored wetlands. It will be demonstrated through photographic documentation that the enhanced forested wetlands are remaining forested over time.

Monitoring

Mapping
Restored wetland areas will be delineated using the procedures for comprehensive determinations outlined in the 1987 Corps of Engineers Delineation Manual (or successor

documents). The boundaries will be mapped using geographic position system (GPS) instruments. Any upland areas within wetland boundaries will be mapped and will not count toward wetland credits. Acreage for access roads through wetlands have been calculated and deducted from wetland credit potential.

Vegetation Monitoring / Vegetation Plots
Monitoring of wetland vegetation will use the protocols outlined in the Field Manual for the Vegetation Index of Biotic Integrity for Wetlands (Mack 2004).

NRCS Restoration Area
The NRCS area is 42.5 acres and will have one fixed plot and 10 random plots. The fixed plot will be located in the part of the area most representative of the whole. Data from this area will be presented separately from the rest of Phase 1.

Enhanced Wetlands
One fixed plot will be set-up in Wetland 8, and one random plot will be set-up in each of the other existing wetlands that are large enough (approximately 0.25 acre). VIBI scores from these plots and the measures of most other performance standards from these wetlands will serve as an indicator of the condition of the enhanced wetlands overall. Invasive species will be maintained at or below 5% overall cover.

Remainder of Phase 1 Restoration Area
The remainder of the potential wetland areas outside the NRCS restoration area and the enhanced wetlands are relatively small. Since the area is fairly homogeneous in the type of wetland targeted for development, approximately 5 random plots will be sampled.

Soil sampling
A soil sample will be collected from the center of each fixed and random vegetation plot. Samples will be taken to a depth of approximately 10 cm from the soil surface layer. Soil samples will be placed into clean plastic bags, labeled with site name and date and packed in ice. Sample preparation should follow NCR-13 (NCR 1998). Samples should be analyzed for pH, Bray2 extractable phosphorus, exchangeable ions (calcium, magnesium, potassium), and cation exchange capacity using standard agronomic soil testing methods (NCR 1998) and also for total organic carbon (TOC), total nitrogen, and total solids. Soil analysis results will be provided in summary form in annual reports.

Water sampling
A grab sample of surface water will be collected at three sites across the wetland mitigation bank during May. There are no specific performance standards, however, results will be presented in the annual monitoring report. This information can then be used for comparisons to other sites and as a diagnostic tool if needed. Samples should be preserved in the field and held at 4°C until analysis for the following parameters: pH, ammonia-N, total Kjeldhal N, Nitrate-Nitrite-N, total phosphorus, total organic carbon, total suspended solids, totals solids, chloride, iron, magnesium, and potassium.

Monitoring Reports

Fundamental to evaluating the success (or failure) of a wetland mitigation bank is a clear presentation and analysis of the data collected over the term of the monitoring period. General data analysis, summary, and presentation procedures are as follows.

General Data Analysis

Descriptive and Graphical Methods

Standard exploratory data analysis methods will be used to analyze and present all data collected including standard descriptive statistics (mean, median, quartiles, minimum/maximum values, etc.) and graphical evaluation techniques such as histograms, boxplots, and scatterplots to identify outliers, trends in the data, skewness, curvilinear relationships, linear relationships.

Control Charts, Performance Curves and Regression Analysis

Given the collection of monitoring data over time, the use of control charts and performance curves will be presented in monitoring reports. This approach is common in industrial settings where quality control is critical and has been recommended for addressing ecological performance of wetland mitigation for over a decade (Kentula et al. 1992). Performance curves for mitigation monitoring data will be constructed by plotting monitoring data versus time. This allows trends over time to be easily observed and also the fitting of regression lines to the data.

Data Presentation/Summary Tables

Summary tables, which include all data collected over the monitoring period, will be presented in annual reports. Raw data used to calculate indices or average values will be included in the Appendices. Since multiple mitigation sites will be included in the same report, data will be summarized in an expanded table to show data from multiple plots. In addition to tabular presentation of data, performance curves of biological and chemical data used in determining performance (e.g. IBI scores, Coefficients of Conservatism, soil organic carbon) will be presented to observe trends over time. Where appropriate, regression lines will be fitted to these data and p-values, R2 values, F statistics, degrees of freedom, and regression equation results reported.

Photographs

Representative photographic points will be selected that best capture the character of the wetland mitigation bank and shall be permanently marked. Photographs, panoramics stitched together if possible, from these representative points will be included with each monitoring report. Pictures will be taken during the growing season each year, concurrent with conducting the vegetation surveys.

Credit Release Schedule

Upon execution of this Agreement the Bank may sell thirty percent (30%) of the total anticipated mitigation credits of the phase or phases to be constructed. Implementation of the restoration and/or enhancement plan for each phase must take place within one full growing

season from the date of the sale of the first credit. The MBRT may allow the sale of additional mitigation credits on the following basis:

1). Once the initial 30% of the total anticipated credits has been released no further releases will be made until the initial 30% meets wetland criteria and also meets all other performance standards or until the initial 30% of the credits meets wetland criteria and it can be demonstrated to the satisfaction of the MBRT that those credits are on a trajectory to meeting all other performance standards;

2). Additional credits can be released as they meet all performance standards or as they meet wetland criteria and it can also be demonstrated to the satisfaction of the MBRT that those credits are on a trajectory to meet all other performance standards. (Forested credit should only be applied to those credits showing a strong trajectory toward being forested. This will be demonstrated by graphing standard forestry measures (i.e. relative frequency, relative density, relative dominance, importance values as well as raw measures of stems/ha. and basal area/ha) against time); and

3). Even if the entire site is meeting all performance standards earlier, at least 10% of the credits will be held back until the end of the monitoring period.

Upland Buffers

All upland buffers in the bank will be protected in their natural state and will not be used for the production of hay or agricultural crops (Figures 9 and 12). Existing forests in the buffer zone will be allowed to mature and will be protected for perpetuity as stated in the Conservation Easement (Exhibit E).

Upland buffer areas that are currently open fields or fescue will be enhanced with native grasses and slowly allowed to revert to upland forest over time. Along the way they will progress through plant communities that resemble native meadow, tall grass prairie, and woodland savanna. Initially, invasive species in the fields will be treated and controlled. Native warm season grasses will be seeded and established along with volunteer native perennial forbs, trees, and shrubs. No mowing will occur in these areas once established.

The upland forested hillside and stream (southeastern corner, immediately up-gradient of the constructed wetland) that feeds the hydrology to nearly two-thirds (approximately 200 acres) of the Bank is offered as a significant contribution to the project to permanently protect the headwaters area. All 95.7 acres of the hillside are densely forested, and several naturally occurring butternut or white walnut trees (*Juglans cinerea*) have been found here, indicating the potential for this forest to harbor species of relatively high ecological quality (Coefficient of Conservatism for white walnut is 8, out of a possible 10). Hydrologically, this area not only provides water directly to the proposed bank through a stream and direct surface runoff, but also through three seeps at the base of the hillside that surface in Wetland #9. This flows directly into the existing constructed wetland area. The bank will receive credit for this headwaters hillside at a 10:1 ratio, providing 9.6 credits. The forest will be protected for perpetuity as indicated in the Conservation Easement (Exhibit E).

Wetland areas will be buffered by upland buffers as illustrated (Figure 12). Upland buffers will provide a number of benefits to the wetland bank including greater diversity of native vegetation and habitat values, improved water quality (e.g., lower pathogens and sediment), increased stormwater retention, and increased groundwater baseflow.

WLP will provide a minimum 100-ft buffer around all wetland areas (Figure 12) and will maintain or erect fencing between wetlands and all agricultural areas. The perimeter of the Bank will be clearly marked with tree paint and with boundary signs that indicate the land restrictions. Although the intention is to maximize wetland areas to the extent practical, portions on the hydric inclusion soil within the bank may not revert to wetland and in places would provide additional upland (mesic) buffer, particularly in the northwestern section (Figure 2, 3, and 9). Upland fields will be planted with warm season grasses and allowed to slowly revert to forest. All buffer areas will be protected in perpetuity. Those species removed are limited to invasive, non-native species.

Bank Closure Plan—Long-term Monitoring and Management

The Center for Applied Ecology of Northern Kentucky University (or a comparable entity) will be responsible for the successful development of the wetland bank including construction, monitoring, maintenance, and reporting to the agencies until the Bank is completed (all credits sold and all sections restored and monitored for the mandatory 5-year monitoring period). Success of the site will be determined by the Corps and Ohio EPA, in consultation with other members of the MBRT, through a final site inspection at the end of the monitoring period. All wetlands within the bank will be recognized as jurisdictional Waters of the United States and will be protected in perpetuity, as will upland buffer lands.

The WLP will retain ownership of the property for the foreseeable future, with conservation covenants incorporated into the property deed to ensure the bank is preserved in perpetuity. The NKU Research Foundation will hold the conservation easement (Exhibit E), and the Center for Applied Ecology through an MOA, will be contracted to provide routine inspections and technical reports to the WLP, Corps, Ohio EPA and other MBRT agencies, as appropriate. Specifically prohibited uses of the bank shall include, but not be limited to:

- Timber harvests and other forestry activities (non-native species excluded),
- Drainage of surface waters,
- Cultivation,
- Filling,
- Grazing of domesticated animals,
- Building of permanent structures,
- Soil removal, and
- Deposition of refuse, sewage, or other debris.

The Wulsin family preserves hunting rights that are transferrable upon transfer of property ownership. The NKU Research Foundation will be the legal holder of the conservation easement and trust fund for the Bank. However, roll-over of both the easement and trust fund to an appropriate state agency (e.g. Ohio Department of Natural Resources, Division of Wildlife, etc.) or non-profit conservation organization (e.g. The Nature Conservancy, Ducks

Unlimited, etc.) approved by the Corps and Ohio EPA, in consultation with other members of the MBRT, is possible. Likewise, a change in oversight and management of the Bank by the Center for Applied Ecology to another entity would need approval by the Corps and Ohio EPA, in consultation with other members of the MBRT.

Relative to potential nuisance wildlife species:

- If deemed to be necessary (e.g., due to extreme damage to tree seedlings), nuisance deer populations will be addressed by private or public hunting.
- Attempts to manage the beaver population by trapping (for management of the existing NRCS wetland) have met with only temporary success. Therefore control of beaver is believed to be both impractical and counterproductive for the long-term. In the current design, beaver will play a beneficial role by plugging drainages and increasing water retention. The Wulsin family retains the right to trap and hunt beaver as necessary to maintain their agricultural operation that exists on the remainder of their property.

Relative to waterways management, debris jams in Baker or Muddy Fork or their tributaries will be removed expeditiously if they are exacerbating flooding of upstream properties. The contribution of the jam to upstream flooding can be verified by comparing the field elevation of the jam to the upstream field elevation. If the field elevation at the jam is significantly below the upstream field elevation (e.g., two feet lower), the jam will not contribute to upstream flooding because backed-up water will be released to the (wetland) fields adjacent to the jam.

Relative to the use of herbicides:

- Rodeo (with a formula approved by EPA in wetlands) will be utilized in wetland restoration and enhancement areas.
- Roundup will be utilized in upland areas.
- A suitable surfactant will be used to reduce drip and cling to foliage better.
- Foliar application will be at approximately 2-3% depending on the recommended level for the target species.
- Stump application for woody invasive exotic plants, if needed, will be applied at a rate of 20% to effectively control rooting and stump sprouting.
- Weeds and exotic plants in former agricultural fields will likely be treated using a boom-sprayer (repeat application may be necessary in certain tracts).
- Following implementation, spot-treatments (backpack or small towing tank) will be conducted as needed during the growing season to keep invasive plants at <5% overall cover.
- Mechanical means (mowing, pulling, etc.) will be employed whenever practicable and economically feasible.

Exhibit C: Crediting and Debiting Procedure

EXHIBIT C
Crediting and Debiting Procedure
Red Stone Farm Wetland Mitigation Bank

Methods for Determining Credits and Debits

Mitigation ratios for wetland impacts will be determined by the regulatory process for each individual who seeks to propose wetland mitigation at the bank site. Wetland credits will be sold in tenth-acre ($1/10^{th}$ acre) increments and will be issued at the following ratios:

- Restored wetlands – one acre of wetland restored will be sold as one acre credit (1:1)
- Enhanced wetlands – two acres of wetland enhanced will be sold as one acre credit (2:1)
- Upland hillside buffer – ten acres of hillside watershed buffer will be sold as one acre credit (10:1)

Table 1 (Exhibit C) provides a summary of wetland acreage and credit that is projected for each phase and for the total Bank area. Acreage for existing wetlands is based upon field points established around each wetland using a handheld Global Positioning System (GPS) unit. Acreage for projected wetlands restoration on hydric soils and hydric inclusions (excluding existing wetlands) is estimated from the Pike County Soil Series and 1-foot coutour maps (Figures 5-9). For purposes of credit projection, it is assumed that all of the hydric soil acreage, and half of the hydric inclusion soil acreage will be restored to wetlands. Actual wetland acreage calculations will be accurately determined by GPS as wetlands are fully develop within the Bank.

All wetland areas will be delineated using the procedures for comprehensive determinations outlined in the 1987 Corps of Engineers Delineation Manual (or successor documents). The boundaries will be mapped using geographic position system (GPS) instruments. Any non-wetland areas within wetland boundaries will be mapped and will not count toward wetland credits. Likewise, acreages for access roads through wetlands (currently approximated at 1.6 acres, Table 1) will not count toward wetland credits.

Credit Release Schedule

Upon execution of this Agreement the Bank may sell thirty percent (30%) of the total anticipated mitigation credits of the phase or phases to be constructed. Implementation of the restoration and/or enhancement plan for each phase must take place within one full growing season from the date of the sale of the first credit. The MBRT may allow the sale of additional mitigation credits on the following basis:

1). Once the initial 30% of the total anticipated credits has been released no further releases will be made until the initial 30% meets wetland criteria and also meets all other performance standards or until the initial 30% of the credits meets wetland criteria and it can be demonstrated to the satisfaction of the MBRT that those credits are on a trajectory to meeting all other performance standards;

2). Additional credits can be released as they meet all performance standards or as they meet wetland criteria and it can also be demonstrated to the satisfaction of the MBRT that those credits are on a trajectory to meet all other performance standards. (Forested credit should only be applied to those credits showing a strong trajectory toward being forested. This will be demonstrated by graphing standard forestry measures (i.e. relative frequency, relative density, relative dominance, importance values as well as raw measures of stems/ha. and basal area/ha) against time); and

3). Even if the entire site is meeting all performance standards earlier, at least 10% of the credits will be held back until the end of the monitoring period.

Table 1: Acreage and Credit Tabulation

Red Stone Farm Wetland Mitigation Bank - Pike County, Ohio

Area	Category	Credit Ratio	Phase 1 Acres	Phase 1 Credits	Phase 2 Acres	Phase 2 Credits	Phase 3 Acres	Phase 3 Credits	Total Acres	Total Credits
Existing Natural Wetlands	Enhancement	2:1	11.7	5.9	4.5	2.3	0.0	0.0	16.2	8.1
NRCS Constructed Wetland										
Prior Wetland	Enhancement	2:1	5.0	2.5	0.0	0.0	0.0	0.0	5.0	2.5
Prior Agricultural	Restoration	1:1	37.5	37.5	0.0	0.0	0.0	0.0	37.5	37.5
Hydric Soils - Other	Restoration	1:1	20.2	20.2	87.8	87.8	83.1	83.1	191.1	191.1
Hydric Inclusion Soils - One-half	Restoration	1:1	17.4	17.4	27.0	27.0	22.5	22.5	66.8	66.8
Hydric Inclusion Soils - One-half	Buffer	0:1	17.4	0.0	27.0	0.0	22.5	0.0	66.8	0.0
Uplands	Buffer	0:1	86.9	0.0	4.5	0.0	5.7	0.0	97.1	0.0
TOTAL			196.0	83.4	150.7	117.0	133.8	105.6	480.5	306.0
March 2006 Revisions to Credit Calculations										
Hillside - Southeast Corner	Buffer	10:1	95.7	9.6	0.0	0.0	0.0	0.0	95.7	9.6
Access Roads	Deduction	1:1	0.5	-0.5	0.8	-0.8	0.3	-0.3	1.6	-1.6
				92.5		116.2		105.3		314.0

Exhibit D: Wetland Delineation Report

EXHIBIT D
Wetland Delineation Report
Red Stone Farm Wetland Mitigation Bank

Wetland Delineation Summary

Wetlands within the Bank boundary were initially delineated in May and July 2002. Wetland boundaries were re-delineated in August 2004 using GPS technology and more accurately mapped using GIS software (Figure 6). Ten relatively small wetlands totaling 16.2 acres are delineated within the Bank. They range in size from 0.1 to 4.6 acres. Eight wetlands are located in close proximity to the NRCS constructed wetland. Approximately 9 acres of existing wetland occurs south and up gradient of the constructed wetland, and roughly 3 acres occur north and down gradient. Classification wise, 8 wetlands are forested wetlands, 2 are early successional forested wetlands, 1 is scrub-shrub, and 1 is emergent wetland.

None of the 10 existing wetlands will be negatively impacted by bank construction: all will become part of a larger forested wetland ecosystem.

A brief description and ORAM score of each wetland is given below:

Wetland 1: ORAM Score = 35

Wetland 1 is a 0.3-acre Forested Wetland located at the confluence of Muddy and Baker Fork. Dominant species in the canopy include *Populus deltoides* (cottonwood), *Fraxinus pennsylvanica* (green ash), and *Acer negundo* (boxelder). The most abundant herbs observed were *Aster lateriflorus* (goblet aster), *Lysimachia nummularia* (creeping moneywort), and *Carex hystericina* (sedge).

The soil in the wetland is identified as a Peoga silt loam (Pe) in the Soil Survey, which is a hydric soil. In the field, the soil in the wetland had a low matrix chroma (10YR 4/1). Hydrologic indicators were inundation, saturation in the upper 12 inches, water marks, drainage patterns, and water-stained leaves.

Wetland 2: ORAM Score = 36

Wetland 2 is an Emergent Wetland located at the confluence of Muddy and Baker Fork. The wetland is 0.1 acres in size and is approximately 50 feet south of Baker Fork. Dominant herbs observed in the wetland include *Elymus virginicus* (Virginia wild rye), *Carex hystericina*, *Lysimachia nummularia*, and *Impatiens capensis* (orange touch-me-not).

The soil in the wetland is identified as a Peoga silt loam (Pe) in the Soil Survey, which is a hydric soil. In the field, the soil in the wetland had a low matrix chroma (10YR 4/1). Hydrologic indicators were inundation, saturation in the upper 12 inches, water marks, drainage patterns, and water-stained leaves.

Wetland 3: ORAM Score = 39

Wetland 3 is a small Forested Wetland approximately 0.1 acres in size. It is located on the west side of the eastern drainage of the NRCS constructed wetland. Dominant trees in the forest include *Fraxinus pennsylvanica*, *Platanus occidentalis* (Sycamore), and *Acer negundo*. The dominant herbs observed in the wetland were *Carex hystericina*, *Aster lateriflorus*, and *Elymus virginicus*.

The soil in the wetland is identified as a Peoga silt loam (Pe) in the Soil Survey, which is a hydric soil. In the field, the soil in the wetland had a low matrix chroma (10YR 4/1) with mottles (7.5 YR 5/6). Hydrologic indicators were, saturation in the upper 12 inches, water marks, drainage patterns, and water-stained leaves.

Wetland 4: ORAM Score = 35

Wetland 4 is a small Forested Wetland approximately 0.15 acres in size and is located just north of the eastern dam created for the NRCS constructed wetland. The dominant tree observed in this forest is *Fraxinaus pennsylvanica*, while the most abundant shrubs are *Rosa palustris* (swamp rose), and *Viburnum dentatum* (arrow-wood).

The soil in the wetland is identified as a Peoga silt loam (Pe) in the Soil Survey, which is a hydric soil. In the field, the soil in the wetland had a low matrix chroma (10YR 4/1) with mottles (7.5 YR 5/6). Hydrologic indicators were, saturation in the upper 12 inches, water marks, drainage patterns, and water-stained leaves.

Wetland 5: ORAM Score = 38

Wetland 5 is a Forested Wetland that is approximately 2.3 acres in size and is located just north of the eastern dam created for the NRCS constructed wetland. Dominant trees observed in the wetland are *Fraxinus pennsylvanica* and *Quercus palustris* (pin oak), while the most abundant shrubs are *Rosa palustris* and *Viburnum dentatum*. The dominant herbs are *Aster lateriflorus*, *Toxicodendron radicans* (poison ivy), *Carex grayi* (Gray's sedge), and *Cinna arundinacea* (common woodreed).

The soil in the wetland is identified as a Peoga silt loam (Pe) in the Soil Survey, which is a hydric soil. In the field, the soil in the wetland had a low matrix chroma (10YR 4/1) with mottles (7.5 YR 5/6). Hydrologic indicators were, saturation in the upper 12 inches, water marks, sediment deposits, drainage patterns, and water-stained leaves.

Wetland 6: ORAM Score = 45

Wetland 6 is a 2.1 acre Forested Wetland located on the western edge of the Red Stone Farm property. The wetland actually extends onto neighboring property and is approximately 17 acres in total size. The majority of the larger trees in this wetland are approximately 9-12 inches dbh. The most abundant trees are *Fraxinus pennsylvanica*, *Acer rubrum* (red maple), *Quercus palustris*, and swamp white oak (*Quercus bicolor*). The shrub layer is sparse with the most abundant species being *Fraxinus pennsylvanica*, *Acer rubrum*, and boxelder. The dominant species in the herb layer include *Toxicodenron radicans*, *Boehmeria cylindrica*

(false nettle), *Carex grayi*, *Glyceria striata* (fowl-managrass), *Carex muskingumensis* (Muskingum sedge), and *Pilea pumila* (Canada clearweed).

The soil in this wetland is identified as a Peoga silt loam (Pe) in the Pike County, Ohio Soil Survey, which is a hydric soil. In additon, the soil observed during the field survey had a low matrix chroma (10YR 4/1). Hydrologic indicators were inundation, saturation in the upper 12 inches, water marks, drift lines, drainage patterns in the wetland, and water-stained leaves.

Wetland 7: ORAM Score = 39

Wetland 7 is a Scrub-shrub Wetland (or very young Forested Wetland) that is approximately 2.4 acres in size and is located between Wetland 6 and the NRCS constructed wetland. Dominant species observed in the shrub layer were *Fraxinus pennsylvanica*, *Salix exigua* (sandbar willow), *Rosa palustris*, and *Salix eriocephala* (diamond willow). The tallest individuals in the shrub layer were 10-15 feet tall. Eventually this Scrub-shrub Wetland will become a Forested Wetlands dominated by *Fraxinus pennsylvanica*. The herb is dominated by *Agrimonia parviflora* (Southern agrimony), *Toxicodendron radicans*, *Mimulus ringens* (Allegheny monkey-flower), and *Scirpus atrovirens* (black bulrush).

The soil in the wetland is identified as a Peoga silt loam (Pe) in the Soil Survey, which is a hydric soil. In the field, the soil in the wetland had a low matrix chroma (10YR 4/1). Hydrologic indicators were inundation, saturation in the upper 12 inches, water marks, drainage patterns, and water-stained leaves.

Wetland 8: ORAM Score = 40

Wetland 8 is a 4.6-acre Forested Wetland located immediately southwest of the NRCS constructed wetland. The majority of the larger trees in this wetland are approximately 9-12 inches dbh. The dominant trees in this wetland are *Fraxinus pennsylvanica*, *Quercus palustris*, *Acer rubrum*, *Ulmus Americana* (American elm), and *Platanus occidentalis*. The most abundant shrubs observed in the area are *Rosa multiflora* (multiflora rose), *Lindera benzoin* (spicebush), and *Viburnum dentatum*. The most common herbs in the area are *Toxicodendron radicans*, *Boehmeria cylindrica*, *Glycera striata*, *Carex grayi*, *Pilea pumila* (Canada clearweed), and *Onoclea sensibilis* (sensitive fern).

The soil in the wetland is identified as Peoga silt loam (Pe) in the Soil Survey, which is described as a hydric soil. In the field the soil in the wetland had a low matrix chroma (10YR 4/1). Hydrologic indicators were saturation in the upper 12 inches, water marks, drift lines, drainage patterns in the wetland, and water-stained leaves.

Wetland 9: ORAM Score = 44

Wetland 9 is a 1.6-acre Forested Wetland located immediately south of the NRCS constructed wetland. Dominant trees in this wetland include *Fraxinus pennsylvanica*, *Quercus palustris*, and *Acer rubrum*. The most abundant shrubs observed in the area are *Rosa multiflora*, *Lindera benzoin*, and *Viburnum dentatum*. The most common herbs in the area are *Toxicodendron radicans*, *Boehmeria cylindrica*, *Glycera striata*, *Pilea pumila*, and *Onoclea sensibilis*.

The soil in the wetland is identified as Peoga silt loam (Pe) in the Soil Survey, which is described as a hydric soil. In the field the soil in the wetland had a low matrix chroma (10YR 4/1). Hydrologic indicators were saturation in the upper 12 inches, water marks, drift lines, drainage patterns in the wetland, and water-stained leaves.

Wetland 10: ORAM Score = 47

Wetland 10 is a 2.6-acre Forested Wetland located immediately south of the NRCS constructed wetland on both sides of an incoming tributary. Dominant trees in this wetland include *Fraxinus pennsylvanica*, *Quercus palustris*, and *Acer rubrum*. The most abundant shrubs observed in the area are *Rosa multiflora*, *Rosa palustris*, *Lindera benzoin*, and *Viburnum dentatum*. The most common herbs in the area are *Lysimachia nummularia*, *Boehmeria cylindrica*, *Glycera striata*, *Pilea pumila*, and *Onoclea sensibilis*.

The soil in the wetland is identified as Peoga silt loam (Pe) in the Soil Survey, which is described as a hydric soil. In the field the soil in the wetland had a low matrix chroma (10YR 4/1). Hydrologic indicators were saturation in the upper 12 inches, water marks, drift lines, drainage patterns in the wetland, and water-stained leaves.

ORAM v. 5.0 Field Form Quantitative Rating

Site: Rod Stone Farm	Rater(s): L. Brewer, B. Dalton	Date: 8/10/04

Forested Wetland Wetland 1 page 1

Metric 1. Wetland Area (size).

max 6 pts. | subtotal: 2

Select one size class and assign score.

- [ ] >50 acres (>20.2ha) (6 pts)
- [ ] 25 to <50 acres (10.1 to <20.2ha) (5 pts)
- [ ] 10 to <25 acres (4 to <10.1ha) (4 pts)
- [ ] 3 to <10 acres (1.2 to <4ha) (3 pts)
- [2] 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
- [ ] 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- [ ] <0.1 acres (0.04ha) (0 pts)

Metric 2. Upland buffers and surrounding land use.

max 14 pts. | subtotal: 7

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- [ ] WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
- [4] MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
- [ ] NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- [ ] VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- [ ] VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- [5] LOW. Old field (>10 years), shrubland, young second growth forest. (5)
- [ ] MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- [ ] HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

2+6 = 3

Metric 3. Hydrology.

max 30 pts. | subtotal: 13

3a. Sources of Water. Score all that apply.

- [ ] High pH groundwater (5)
- [ ] Other groundwater (3)
- [1] Precipitation (1)
- [3] Seasonal/Intermittent surface water (3)
- [ ] Perennial surface water (lake or stream) (5)

3b. Connectivity. Score all that apply.

- [1] 100 year floodplain (1)
- [ ] Between stream/lake and other human use (1)
- [1] Part of wetland/upland (e.g. forest), complex (1)
- [1] Part of riparian or upland corridor (1)

3c. Maximum water depth. Select only one and assign score.

- [ ] >0.7 (27.6in) (3)
- [ ] 0.4 to 0.7m (15.7 to 27.6in) (2)
- [1] <0.4m (<15.7in) (1)

3d. Duration inundation/saturation. Score one or dbl check.

- [ ] Semi- to permanently inundated/saturated (4)
- [ ] Regularly inundated/saturated (3)
- [2] Seasonally inundated (2)
- [ ] Seasonally saturated in upper 30cm (12in) (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- [ ] None or none apparent (12)
- [ ] Recovered (7)
- [3] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] ditch — nearby
- [ ] tile
- [ ] dike
- [ ] weir
- [ ] stormwater input
- [ ] point source (nonstormwater)
- [ ] filling/grading
- [ ] road bed/RR track
- [ ] dredging
- [ ] other_____

Metric 4. Habitat Alteration and Development.

max 20 pts. | subtotal: 8

4a. Substrate disturbance. Score one or double check and average.

- [ ] None or none apparent (4)
- [ ] Recovered (3)
- [2] Recovering (2)
- [ ] Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- [ ] Excellent (7)
- [ ] Very good (6)
- [ ] Good (5)
- [ ] Moderately good (4)
- [3] Fair (3)
- [ ] Poor to fair (2)
- [ ] Poor (1)

4c. Habitat alteration. Score one or double check and average.

- [ ] None or none apparent (9)
- [ ] Recovered (6)
- [3] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] mowing
- [ ] grazing
- [✓] clearcutting
- [✓] selective cutting
- [✓] woody debris removal
- [ ] toxic pollutants
- [ ] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [ ] sedimentation
- [ ] dredging
- [ ] farming
- [ ] nutrient enrichment

30 subtotal this page

Site: Red Stone Farm	Rater(s): L. Brewer	Date: 8/10/04

Forested Wetland Wetland 1 page 2

30
subtotal first page

Metric 5. Special Wetlands.

max 10 pts. | 0 subtotal

Check all that apply and score as indicated.

- [ ] Bog (10)
- [ ] Fen (10)
- [ ] Old growth forest (10)
- [ ] Mature forested wetland (5)
- [ ] Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
- [ ] Lake Erie coastal/tributary wetland-restricted hydrology (5)
- [ ] Lake Plain Sand Prairies (Oak Openings) (10)
- [ ] Relict Wet Prairies (10)
- [ ] Known occurrence state/federal threatened or endangered species (10)
- [ ] Significant migratory songbird/water fowl habitat or usage (10)
- [ ] Category 1 Wetland. See Question 1 Qualitative Rating (-10)

Metric 6. Plant communities, interspersion, microtopography.

max 20 pts. | 5 subtotal

6a. Wetland Vegetation Communities.
Score all present using 0 to 3 scale.

- [ ] Aquatic bed
- [ ] Emergent
- [ ] Shrub
- [1] Forest
- [ ] Mudflats
- [ ] Open water
- [ ] Other_____

6b. horizontal (plan view) Interspersion.
Select only one.

- [ ] High (5)
- [ ] Moderately high(4)
- [ ] Moderate (3)
- [ ] Moderately low (2)
- [1] Low (1)
- [ ] None (0)

6c. Coverage of Invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage

- [ ] Extensive >75% cover (-5)
- [ ] Moderate 25-75% cover (-3)
- [ ] Sparse 5-25% cover (-1)
- [0] Nearly absent <5% cover (0)
- [ ] Absent (1)

6d. Microtopography.
Score all present using 0 to 3 scale.

- [ ] Vegetated hummucks/tussucks
- [1] Coarse woody debris >15cm (6in)
- [1] Standing dead >25cm (10in) dbh
- [1] Amphibian breeding pools

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
mod	Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp
high	A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

0	Absent <0.1ha (0.247 acres)
1	Low 0.1 to <1ha (0.247 to 2.47
2	Moderate 1 to <4ha (2.47 to
3	High 4ha (9.88 acres) or more

Microtopography Cover Scale

0	Absent
1	Present very small amounts or if more common of marginal quality
2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of highest quality

35 **GRAND TOTAL (max 100 pts)**

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories at the following address: http://www.epa.state.oh.us/dsw/401/401.html

last revised 1 February 2001 jjm

ORAM v. 5.0 Field Form Quantitative Rating

Site: Red Stone Farm	Rater(s): L. Brewer	Date: 8/10/04

Emergent Wetland Wetland 2 page 1

Metric 1. Wetland Area (size).

max 6 pts. | subtotal: 2

Select one size class and assign score.

- [ ] >50 acres (>20.2ha) (6 pts)
- [ ] 25 to <50 acres (10.1 to <20.2ha) (5 pts)
- [ ] 10 to <25 acres (4 to <10.1ha) (4 pts)
- [ ] 3 to <10 acres (1.2 to <4ha) (3 pts)
- [2] 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
- [ ] 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- [ ] <0.1 acres (0.04ha) (0 pts)

Metric 2. Upland buffers and surrounding land use.

max 14 pts. | subtotal: 9

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- [ ] WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
- [4] MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
- [ ] NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- [ ] VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- [ ] VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- [5] LOW. Old field (>10 years), shrubland, young second growth forest. (5)
- [ ] MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- [ ] HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

Metric 3. Hydrology.

max 30 pts. | subtotal: 12

3a. Sources of Water. Score all that apply.

- [ ] High pH groundwater (5)
- [ ] Other groundwater (3)
- [1] Precipitation (1)
- [3] Seasonal/intermittent surface water (3)
- [ ] Perennial surface water (lake or stream) (5)

3b. Connectivity. Score all that apply.

- [1] 100 year floodplain (1)
- [ ] Between stream/lake and other human use (1)
- [1] Part of wetland/upland (e.g. forest), complex (1)
- [1] Part of riparian or upland corridor (1)

3c. Maximum water depth. Select only one and assign score.

- [ ] >0.7 (27.6in) (3)
- [ ] 0.4 to 0.7m (15.7 to 27.6in) (2)
- [1] <0.4m (<15.7in) (1)

3d. Duration inundation/saturation. Score one or dbl check.

- [ ] Semi- to permanently inundated/saturated (4)
- [ ] Regularly inundated/saturated (3)
- [2] Seasonally inundated (2)
- [ ] Seasonally saturated in upper 30cm (12in) (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- [ ] None or none apparent (12)
- [ ] Recovered (7)
- [3] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] ditch near by
- [ ] tile
- [ ] dike
- [ ] weir
- [ ] stormwater input
- [ ] point source (nonstormwater)
- [ ] filling/grading
- [ ] road bed/RR track
- [ ] dredging
- [ ] other_____

Metric 4. Habitat Alteration and Development.

max 20 pts. | subtotal: 8

4a. Substrate disturbance. Score one or double check and average.

- [ ] None or none apparent (4)
- [ ] Recovered (3)
- [2] Recovering (2)
- [ ] Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- [ ] Excellent (7)
- [ ] Very good (6)
- [ ] Good (5)
- [ ] Moderately good (4)
- [3] Fair (3)
- [ ] Poor to fair (2)
- [ ] Poor (1)

4c. Habitat alteration. Score one or double check and average.

- [ ] None or none apparent (9)
- [ ] Recovered (6)
- [3] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] mowing
- [ ] grazing
- [✓] clearcutting
- [✓] selective cutting
- [✓] woody debris removal
- [ ] toxic pollutants
- [ ] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [ ] sedimentation
- [ ] dredging
- [ ] farming
- [ ] nutrient enrichment

31
subtotal this page

Site: Red Stone Farm	Rater(s): L. Brewer	Date: 8/10/04

Emergent Wetland Wetland 2 Page

31 subtotal first page

0 max 10 pts. subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

- [ ] Bog (10)
- [ ] Fen (10)
- [ ] Old growth forest (10)
- [ ] Mature forested wetland (5)
- [ ] Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
- [ ] Lake Erie coastal/tributary wetland-restricted hydrology (5)
- [ ] Lake Plain Sand Prairies (Oak Openings) (10)
- [ ] Relict Wet Prairies (10)
- [ ] Known occurrence state/federal threatened or endangered species (10)
- [ ] Significant migratory songbird/water fowl habitat or usage (10)
- [ ] Category 1 Wetland. See Question 1 Qualitative Rating (-10)

5 max 20 pts. subtotal

Metric 6. Plant communities, interspersion, microtopography.

6a. Wetland Vegetation Communities.
Score all present using 0 to 3 scale.

- [ ] Aquatic bed
- [2] Emergent
- [ ] Shrub
- [ ] Forest
- [ ] Mudflats
- [ ] Open water
- [ ] Other_____

6b. horizontal (plan view) interspersion.
Select only one.

- [ ] High (5)
- [ ] Moderately high(4)
- [ ] Moderate (3)
- [ ] Moderately low (2)
- [1] Low (1)
- [ ] None (0)

6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage

- [ ] Extensive >75% cover (-5)
- [ ] Moderate 25-75% cover (-3)
- [ ] Sparse 5-25% cover (-1)
- [0] Nearly absent <5% cover (0)
- [ ] Absent (1)

6d. Microtopography.
Score all present using 0 to 3 scale.

- [ ] Vegetated hummucks/tussucks
- [1] Coarse woody debris >15cm (6in)
- [ ] Standing dead >25cm (10in) dbh
- [1] Amphibian breeding pools

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
mod	Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp
high	A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

0	Absent <0.1ha (0.247 acres)
1	Low 0.1 to <1ha (0.247 to 2.47
2	Moderate 1 to <4ha (2.47 to
3	High 4ha (9.88 acres) or more

Microtopography Cover Scale

0	Absent
1	Present very small amounts or if more common of marginal quality
2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of highest quality

36 **GRAND TOTAL (max 100 pts)**

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories at the following address: http://www.epa.state.oh.us/dsw/401/401.html

last revised 1 February 2001 jjm

Site: Red Stone Farm	Rater(s): L. Brewer	Date: 8/10/04

Forested Wetland Wetland 3 page 1

Metric 1. Wetland Area (size).

max 6 pts. | subtotal: 1

Select one size class and assign score.

- [ ] >50 acres (>20.2ha) (6 pts)
- [ ] 25 to <50 acres (10.1 to <20.2ha) (5 pts)
- [ ] 10 to <25 acres (4 to <10.1ha) (4 pts)
- [ ] 3 to <10 acres (1.2 to <4ha) (3 pts)
- [ ] 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
- [x] 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- [ ] <0.1 acres (0.04ha) (0 pts)

Metric 2. Upland buffers and surrounding land use.

max 14 pts. | subtotal: 9

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- [ ] WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
- [x] MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
- [ ] NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- [ ] VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- [ ] VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- [5] LOW. Old field (>10 years), shrubland, young second growth forest. (5)
- [ ] MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- [ ] HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

Metric 3. Hydrology.

max 30 pts. | subtotal: 13

3a. Sources of Water. Score all that apply.

- [ ] High pH groundwater (5)
- [ ] Other groundwater (3)
- [1] Precipitation (1)
- [3] Seasonal/Intermittent surface water (3)
- [ ] Perennial surface water (lake or stream) (5)

3b. Connectivity. Score all that apply.

- [1] 100 year floodplain (1)
- [ ] Between stream/lake and other human use (1)
- [1] Part of wetland/upland (e.g. forest), complex (1)
- [1] Part of riparian or upland corridor (1)

3c. Maximum water depth. Select only one and assign score.

- [ ] >0.7 (27.6in) (3)
- [ ] 0.4 to 0.7m (15.7 to 27.6in) (2)
- [1] <0.4m (<15.7in) (1)

3d. Duration inundation/saturation. Score one or dbl check.

- [ ] Semi- to permanently inundated/saturated (4)
- [ ] Regularly inundated/saturated (3)
- [2] Seasonally inundated (2)
- [ ] Seasonally saturated in upper 30cm (12in) (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- [ ] None or none apparent (12)
- [ ] Recovered (7)
- [3] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] ditch
- [ ] tile
- [ ] dike
- [ ] weir
- [ ] stormwater input
- [ ] point source (nonstormwater)
- [ ] filling/grading
- [ ] road bed/RR track
- [ ] dredging
- [ ] other_____

Probably affected by ditched out drainageway to the east

Metric 4. Habitat Alteration and Development.

max 20 pts. | subtotal: 8

4a. Substrate disturbance. Score one or double check and average.

- [ ] None or none apparent (4)
- [ ] Recovered (3)
- [2] Recovering (2)
- [ ] Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- [ ] Excellent (7)
- [ ] Very good (6)
- [ ] Good (5)
- [ ] Moderately good (4)
- [3] Fair (3)
- [ ] Poor to fair (2)
- [ ] Poor (1)

4c. Habitat alteration. Score one or double check and average.

- [ ] None or none apparent (9)
- [ ] Recovered (6)
- [3] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] mowing
- [ ] grazing
- [1] clearcutting
- [✓] selective cutting
- [ ] woody debris removal
- [ ] toxic pollutants
- [ ] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [ ] sedimentation
- [ ] dredging
- [ ] farming
- [ ] nutrient enrichment

31
subtotal this page

Site: Red Stone Farm	Rater(s): L. Brewer	Date: 8/10/04

Forested Wetland Wetland 3

31 subtotal first page

max 10 pts.	0 subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

- [ ] Bog (10)
- [ ] Fen (10)
- [ ] Old growth forest (10)
- [ ] Mature forested wetland (5)
- [ ] Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
- [ ] Lake Erie coastal/tributary wetland-restricted hydrology (5)
- [ ] Lake Plain Sand Prairies (Oak Openings) (10)
- [ ] Relict Wet Prairies (10)
- [ ] Known occurrence state/federal threatened or endangered species (10)
- [ ] Significant migratory songbird/water fowl habitat or usage (10)
- [ ] Category 1 Wetland. See Question 1 Qualitative Rating (-10)

max 20 pts.	8 subtotal

Metric 6. Plant communities, interspersion, microtopography.

6a. Wetland Vegetation Communities.
Score all present using 0 to 3 scale.

- [ ] Aquatic bed
- [ ] Emergent
- [ ] Shrub
- [2] Forest
- [ ] Mudflats
- [ ] Open water
- [ ] Other_____

6b. horizontal (plan view) Interspersion.
Select only one.

- [ ] High (5)
- [ ] Moderately high(4)
- [ ] Moderate (3)
- [ ] Moderately low (2)
- [1] Low (1)
- [ ] None (0)

6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage

- [ ] Extensive >75% cover (-5)
- [ ] Moderate 25-75% cover (-3)
- [ ] Sparse 5-25% cover (-1)
- [0] Nearly absent <5% cover (0)
- [ ] Absent (1)

6d. Microtopography.
Score all present using 0 to 3 scale.

- [ ] Vegetated hummucks/tussucks
- [2] Coarse woody debris >15cm (6in)
- [2] Standing dead >25cm (10in) dbh
- [1] Amphibian breeding pools

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
mod	Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp
high	A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

0	Absent <0.1ha (0.247 acres)
1	Low 0.1 to <1ha (0.247 to 2.47
2	Moderate 1 to <4ha (2.47 to
3	High 4ha (9.88 acres) or more

Microtopography Cover Scale

0	Absent
1	Present very small amounts or if more common of marginal quality
2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of highest quality

39 **GRAND TOTAL (max 100 pts)**

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories at the following address: http://www.epa.state.oh.us/dsw/401/401.html

last revised 1 February 2001 jjm

Site: Red Stone Farm	Rater(s): L. Brewer	Date: 8/10/04

Forested Wetland Wetland 4 page 1

Metric 1. Wetland Area (size).

max 6 pts. | subtotal: 1

Select one size class and assign score.

- [ ] >50 acres (>20.2ha) (6 pts)
- [ ] 25 to <50 acres (10.1 to <20.2ha) (5 pts)
- [ ] 10 to <25 acres (4 to <10.1ha) (4 pts)
- [ ] 3 to <10 acres (1.2 to <4ha) (3 pts)
- [ ] 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
- [1] 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- [ ] <0.1 acres (0.04ha) (0 pts)

Metric 2. Upland buffers and surrounding land use.

max 14 pts. | subtotal: 4

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- [ ] WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
- [ ] MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
- [1] NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- [ ] VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- [ ] VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- [ ] LOW. Old field (>10 years), shrubland, young second growth forest. (5)
- [ ] MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- [ ] HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

2 3/6

Metric 3. Hydrology.

max 30 pts. | subtotal: 13

3a. Sources of Water. Score all that apply.

- [ ] High pH groundwater (5)
- [ ] Other groundwater (3)
- [1] Precipitation (1)
- [3] Seasonal/intermittent surface water (3)
- [ ] Perennial surface water (lake or stream) (5)

3b. Connectivity. Score all that apply.

- [1] 100 year floodplain (1)
- [ ] Between stream/lake and other human use (1)
- [1] Part of wetland/upland (e.g. forest), complex (1)
- [1] Part of riparian or upland corridor (1)

3c. Maximum water depth. Select only one and assign score.

- [ ] >0.7 (27.6in) (3)
- [ ] 0.4 to 0.7m (15.7 to 27.6in) (2)
- [1] <0.4m (<15.7in) (1)

3d. Duration inundation/saturation. Score one or dbl check.

- [ ] Semi- to permanently inundated/saturated (4)
- [ ] Regularly inundated/saturated (3)
- [2] Seasonally inundated (2)
- [ ] Seasonally saturated in upper 30cm (12in) (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- [ ] None or none apparent (12)
- [ ] Recovered (7)
- [3] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] ditch
- [ ] tile
- [ ] dike
- [ ] weir
- [ ] stormwater input
- [ ] point source (nonstormwater)
- [ ] filling/grading
- [ ] road bed/RR track
- [ ] dredging
- [ ] other_____

Metric 4. Habitat Alteration and Development.

max 20 pts. | subtotal: 8

4a. Substrate disturbance. Score one or double check and average.

- [ ] None or none apparent (4)
- [ ] Recovered (3)
- [2] Recovering (2)
- [ ] Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- [ ] Excellent (7)
- [ ] Very good (6)
- [ ] Good (5)
- [ ] Moderately good (4)
- [3] Fair (3)
- [ ] Poor to fair (2)
- [ ] Poor (1)

4c. Habitat alteration. Score one or double check and average.

- [ ] None or none apparent (9)
- [ ] Recovered (6)
- [3] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] mowing
- [ ] grazing
- [✓] clearcutting
- [✓] selective cutting
- [✓] woody debris removal
- [ ] toxic pollutants
- [ ] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [ ] sedimentation
- [ ] dredging
- [ ] farming
- [ ] nutrient enrichment

27
subtotal this page

Site: Red Stone Farm	Rater(s): L. Brewer	Date: 8/10/04

Forested Wetland Wetland 4 page 2

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subtotal first page

Metric 5. Special Wetlands.

max 10 pts. | 28 subtotal

Check all that apply and score as indicated.

- [ ] Bog (10)
- [ ] Fen (10)
- [ ] Old growth forest (10)
- [ ] Mature forested wetland (5)
- [ ] Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
- [ ] Lake Erie coastal/tributary wetland-restricted hydrology (5)
- [ ] Lake Plain Sand Prairies (Oak Openings) (10)
- [ ] Relict Wet Prairies (10)
- [ ] Known occurrence state/federal threatened or endangered species (10)
- [ ] Significant migratory songbird/water fowl habitat or usage (10)
- [ ] Category 1 Wetland. See Question 1 Qualitative Rating (-10)

Metric 6. Plant communities, interspersion, microtopography.

max 20 pts. | 8 subtotal

6a. Wetland Vegetation Communities.
Score all present using 0 to 3 scale.

- [ ] Aquatic bed
- [ ] Emergent
- [ ] Shrub
- [2] Forest
- [ ] Mudflats
- [ ] Open water
- [ ] Other_____

6b. horizontal (plan view) Interspersion.
Select only one.

- [ ] High (5)
- [ ] Moderately high(4)
- [ ] Moderate (3)
- [ ] Moderately low (2)
- [1] Low (1)
- [ ] None (0)

6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage

- [ ] Extensive >75% cover (-5)
- [ ] Moderate 25-75% cover (-3)
- [ ] Sparse 5-25% cover (-1)
- [0] Nearly absent <5% cover (0)
- [ ] Absent (1)

6d. Microtopography.
Score all present using 0 to 3 scale.

- [ ] Vegetated hummucks/tussucks
- [2] Coarse woody debris >15cm (6in)
- [2] Standing dead >25cm (10in) dbh
- [1] Amphibian breeding pools

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
mod	Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp
high	A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

0	Absent <0.1ha (0.247 acres)
1	Low 0.1 to <1ha (0.247 to 2.47
2	Moderate 1 to <4ha (2.47 to
3	High 4ha (9.88 acres) or more

Microtopography Cover Scale

0	Absent
1	Present very small amounts or if more common of marginal quality
2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of highest quality

35 **GRAND TOTAL (max 100 pts)**

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories at the following address: http://www.epa.state.oh.us/dsw/401/401.html

last revised 1 February 2001 jjm

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ORAM v. 5.0 Field Form Quantitative Rating

Site: Red Stone Farm	Rater(s): L. Brewer, B. Dalton	Date: 8/10/04

Forested Wetland Wetland 5 page #1

Metric 1. Wetland Area (size).

max 6 pts. | subtotal: 2

Select one size class and assign score.

- [ ] >50 acres (>20.2ha) (6 pts)
- [ ] 25 to <50 acres (10.1 to <20.2ha) (5 pts)
- [ ] 10 to <25 acres (4 to <10.1ha) (4 pts)
- [ ] 3 to <10 acres (1.2 to <4ha) (3 pts)
- [2] 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
- [ ] 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- [ ] <0.1 acres (0.04ha) (0 pts)

Metric 2. Upland buffers and surrounding land use.

max 14 pts. | subtotal: 4

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- [ ] WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
- [ ] MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
- [1] NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- [ ] VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- [ ] VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- [5] LOW. Old field (>10 years), shrubland, young second growth forest. (5)
- [ ] MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- [ ] HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

2 1/6 → 3

Metric 3. Hydrology.

max 30 pts. | subtotal: 14

3a. Sources of Water. Score all that apply.

- [ ] High pH groundwater (5)
- [ ] Other groundwater (3)
- [1] Precipitation (1)
- [3] Seasonal/Intermittent surface water (3)
- [ ] Perennial surface water (lake or stream) (5)

3b. Connectivity. Score all that apply.

- [1] 100 year floodplain (1)
- [ ] Between stream/lake and other human use (1)
- [1] Part of wetland/upland (e.g. forest), complex (1)
- [1] Part of riparian or upland corridor (1)

3c. Maximum water depth. Select only one and assign score.

- [ ] >0.7 (27.6in) (3)
- [ ] 0.4 to 0.7m (15.7 to 27.6in) (2)
- [1] <0.4m (<15.7in) (1)

3d. Duration inundation/saturation. Score one or dbl check.

- [ ] Semi- to permanently inundated/saturated (4)
- [3] Regularly inundated/saturated (3)
- [ ] Seasonally inundated (2)
- [ ] Seasonally saturated in upper 30cm (12in) (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- [ ] None or none apparent (12)
- [ ] Recovered (7)
- [3] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [✓] ditch
- [ ] tile
- [ ] dike
- [ ] weir
- [ ] stormwater input
- [ ] point source (nonstormwater)
- [ ] filling/grading
- [ ] road bed/RR track
- [✓] dredging
- [ ] other _____

ditch produced soil to west but soil from ditch placed next to wetland inhibiting drainage back down to ditch.

Metric 4. Habitat Alteration and Development.

max 20 pts. | subtotal: 9

4a. Substrate disturbance. Score one or double check and average.

- [ ] None or none apparent (4)
- [ ] Recovered (3)
- [2] Recovering (2)
- [ ] Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- [ ] Excellent (7)
- [ ] Very good (6)
- [ ] Good (5)
- [4] Moderately good (4)
- [ ] Fair (3)
- [ ] Poor to fair (2)
- [ ] Poor (1)

4c. Habitat alteration. Score one or double check and average.

- [ ] None or none apparent (9)
- [ ] Recovered (6)
- [3] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] mowing
- [ ] grazing
- [✓] clearcutting
- [✓] selective cutting
- [✓] woody debris removal
- [ ] toxic pollutants
- [ ] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [ ] sedimentation
- [ ] dredging
- [ ] farming
- [ ] nutrient enrichment

29 subtotal this page

Site: Red Stone Farm	Rater(s): L. Brewer, B. Dalton	Date: 8/10/04

Forested Wetland Wetland 5 page2

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subtotal first page

Metric 5. Special Wetlands.

max 10 pts. | 0 subtotal

Check all that apply and score as indicated.

- [ ] Bog (10)
- [ ] Fen (10)
- [ ] Old growth forest (10)
- [ ] Mature forested wetland (5)
- [ ] Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
- [ ] Lake Erie coastal/tributary wetland-restricted hydrology (5)
- [ ] Lake Plain Sand Prairies (Oak Openings) (10)
- [ ] Relict Wet Prairies (10)
- [ ] Known occurrence state/federal threatened or endangered species (10)
- [ ] Significant migratory songbird/water fowl habitat or usage (10)
- [ ] Category 1 Wetland. See Question 1 Qualitative Rating (-10)

Metric 6. Plant communities, interspersion, microtopography.

max 20 pts. | 9 subtotal

6a. Wetland Vegetation Communities.
Score all present using 0 to 3 scale.

- [ ] Aquatic bed
- [ ] Emergent
- [ ] Shrub
- [2] Forest
- [ ] Mudflats
- [ ] Open water
- [ ] Other_____

6b. horizontal (plan view) Interspersion.
Select only one.

- [ ] High (5)
- [ ] Moderately high(4)
- [ ] Moderate (3)
- [ ] Moderately low (2)
- [1] Low (1)
- [ ] None (0)

6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage

- [ ] Extensive >75% cover (-5)
- [ ] Moderate 25-75% cover (-3)
- [ ] Sparse 5-25% cover (-1)
- [0] Nearly absent <5% cover (0)
- [ ] Absent (1)

6d. Microtopography.
Score all present using 0 to 3 scale.

- [ ] Vegetated hummucks/tussucks
- [2] Coarse woody debris >15cm (6in)
- [2] Standing dead >25cm (10in) dbh
- [2] Amphibian breeding pools

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
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Narrative Description of Vegetation Quality

low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
mod	Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp
high	A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

0	Absent <0.1ha (0.247 acres)
1	Low 0.1 to <1ha (0.247 to 2.47
2	Moderate 1 to <4ha (2.47 to
3	High 4ha (9.88 acres) or more

Microtopography Cover Scale

0	Absent
1	Present very small amounts or if more common of marginal quality
2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of highest quality

38 **GRAND TOTAL (max 100 pts)**

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last revised 1 February 2001 jjm

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Site: Red Stone Farm	Rater(s): B. Dalton & L. Brewer	Date: 8/10/04

Forested Wetland — Wetland 6 — Page 1

Metric 1. Wetland Area (size).

max 6 pts. | subtotal: 2 pts

Select one size class and assign score.

- [ ] >50 acres (>20.2ha) (6 pts)
- [ ] 25 to <50 acres (10.1 to <20.2ha) (5 pts)
- [ ] 10 to <25 acres (4 to <10.1ha) (4 pts)
- [ ] 3 to <10 acres (1.2 to <4ha) (3 pts)
- [2] 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
- [ ] 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- [ ] <0.1 acres (0.04ha) (0 pts)

Metric 2. Upland buffers and surrounding land use.

max 14 pts. | subtotal: 1pt

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- [ ] WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
- [ ] MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
- [ ] NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- [✓] VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- [ ] VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- [ ] LOW. Old field (>10 years), shrubland, young second growth forest. (5)
- [ ] MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- [✓] HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

Metric 3. Hydrology.

max 30 pts. | subtotal: 2 1pt

3a. Sources of Water. Score all that apply.

- [ ] High pH groundwater (5)
- [ ] Other groundwater (3)
- [1] Precipitation (1)
- [3] Seasonal/Intermittent surface water (3)
- [ ] Perennial surface water (lake or stream) (5)

3b. Connectivity. Score all that apply.

- [1] 100 year floodplain (1)
- [ ] Between stream/lake and other human use (1)
- [ ] Part of wetland/upland (e.g. forest), complex (1)
- [1] Part of riparian or upland corridor (1)

3c. Maximum water depth. Select only one and assign score.

- [ ] >0.7 (27.6in) (3)
- [ ] 0.4 to 0.7m (15.7 to 27.6in) (2)
- [1] <0.4m (<15.7in) (1)

3d. Duration inundation/saturation. Score one or dbl check.

- [ ] Semi- to permanently inundated/saturated (4)
- [ ] Regularly inundated/saturated (3)
- [2] Seasonally inundated (2)
- [ ] Seasonally saturated in upper 30cm (12in) (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- [12] None or none apparent (12)
- [ ] Recovered (7)
- [ ] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] ditch
- [ ] tile
- [ ] dike
- [ ] weir
- [ ] stormwater input
- [ ] point source (nonstormwater)
- [ ] filling/grading
- [ ] road bed/RR track
- [ ] dredging
- [ ] other_____

Metric 4. Habitat Alteration and Development.

max 20 pts. | subtotal: 12

4a. Substrate disturbance. Score one or double check and average.

- [4] None or none apparent (4)
- [ ] Recovered (3)
- [ ] Recovering (2)
- [ ] Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- [ ] Excellent (7)
- [ ] Very good (6)
- [5] Good (5)
- [ ] Moderately good (4)
- [ ] Fair (3)
- [ ] Poor to fair (2)
- [ ] Poor (1)

4c. Habitat alteration. Score one or double check and average.

- [ ] None or none apparent (9)
- [ ] Recovered (6)
- [3] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] mowing
- [ ] grazing
- [ ] clearcutting
- [✓] selective cutting
- [ ] woody debris removal
- [ ] toxic pollutants
- [ ] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [ ] sedimentation
- [✓] dredging
- [ ] farming
- [ ] nutrient enrichment ?

30 pt
subtotal this page

Site: Red Stone Farm	Rater(s): B. Dalton, L. Brewer	Date: 8/10/04

Forested Wetland — Wetland 6

36 pts
subtotal first page

max 10 pts | 0 subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

- [ ] Bog (10)
- [ ] Fen (10)
- [ ] Old growth forest (10)
- [ ] Mature forested wetland (5)
- [ ] Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
- [ ] Lake Erie coastal/tributary wetland-restricted hydrology (5)
- [ ] Lake Plain Sand Prairies (Oak Openings) (10)
- [ ] Relict Wet Prairies (10)
- [ ] Known occurrence state/federal threatened or endangered species (10)
- [ ] Significant migratory songbird/water fowl habitat or usage (10)
- [ ] Category 1 Wetland. See Question 1 Qualitative Rating (-10)

max 20 pts | 9 subtotal

Metric 6. Plant communities, interspersion, microtopography.

6a. Wetland Vegetation Communities.
Score all present using 0 to 3 scale.

- [ ] Aquatic bed
- [ ] Emergent
- [ ] Shrub
- [2] Forest
- [1] Mudflats
- [ ] Open water
- [ ] Other_____

6b. horizontal (plan view) Interspersion.
Select only one.

- [ ] High (5)
- [ ] Moderately high(4)
- [ ] Moderate (3)
- [ ] Moderately low (2)
- [1] Low (1)
- [ ] None (0)

6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage

- [ ] Extensive >75% cover (-5)
- [ ] Moderate 25-75% cover (-3)
- [ ] Sparse 5-25% cover (-1)
- [0] Nearly absent <5% cover (0)
- [ ] Absent (1)

6d. Microtopography.
Score all present using 0 to 3 scale.

- [ ] Vegetated hummucks/tussucks
- [2] Coarse woody debris >15cm (6in)
- [1] Standing dead >25cm (10in) dbh
- [2] Amphibian breeding pools

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
mod	Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp
high	A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

0	Absent <0.1ha (0.247 acres)
1	Low 0.1 to <1ha (0.247 to 2.47
2	Moderate 1 to <4ha (2.47 to
3	High 4ha (9.88 acres) or more

Microtopography Cover Scale

0	Absent
1	Present very small amounts or if more common of marginal quality
2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of highest quality

45 **GRAND TOTAL (max 100 pts)**

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories at the following address: http://www.epa.state.oh.us/dsw/401/401.html

last revised 1 February 2001 jjm

Site: Red Stone Farm	Rater(s): L. Brewer	Date: 8/10/04

Scrub Shrub Wetland Wetland 7 Page 1

Metric 1. Wetland Area (size).

max 6 pts. | subtotal: 3

Select one size class and assign score.

- [ ] >50 acres (>20.2ha) (6 pts)
- [ ] 25 to <50 acres (10.1 to <20.2ha) (5 pts)
- [ ] 10 to <25 acres (4 to <10.1ha) (4 pts)
- [3] 3 to <10 acres (1.2 to <4ha) (3 pts)
- [ ] 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
- [ ] 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- [ ] <0.1 acres (0.04ha) (0 pts)

Metric 2. Upland buffers and surrounding land use.

max 14 pts. | subtotal: 1

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- [ ] WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
- [ ] MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
- [ ] NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- [✓] VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- [ ] VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- [ ] LOW. Old field (>10 years), shrubland, young second growth forest. (5)
- [ ] MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- [1] HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

Metric 3. Hydrology.

max 30 pts. | subtotal: 18

3a. Sources of Water. Score all that apply.

- [ ] High pH groundwater (5)
- [3] Other groundwater (3)
- [1] Precipitation (1)
- [3] Seasonal/intermittent surface water (3)
- [ ] Perennial surface water (lake or stream) (5)

3b. Connectivity. Score all that apply.

- [1] 100 year floodplain (1)
- [ ] Between stream/lake and other human use (1)
- [ ] Part of wetland/upland (e.g. forest), complex (1)
- [ ] Part of riparian or upland corridor (1)

3c. Maximum water depth. Select only one and assign score.

- [ ] >0.7 (27.6in) (3)
- [ ] 0.4 to 0.7m (15.7 to 27.6in) (2)
- [1] <0.4m (<15.7in) (1)

3d. Duration inundation/saturation. Score one or dbl check.

- [ ] Semi- to permanently inundated/saturated (4)
- [ ] Regularly inundated/saturated (3)
- [2] Seasonally inundated (2)
- [ ] Seasonally saturated in upper 30cm (12in) (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- [ ] None or none apparent (12)
- [7] Recovered (7)
- [ ] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] ditch
- [✓] tile
- [ ] dike
- [ ] weir
- [ ] stormwater input
- [ ] point source (nonstormwater)
- [ ] filling/grading
- [ ] road bed/RR track
- [ ] dredging
- [ ] other_____

Metric 4. Habitat Alteration and Development.

max 20 pts. | subtotal: 10

4a. Substrate disturbance. Score one or double check and average.

- [ ] None or none apparent (4)
- [ ] Recovered (3)
- [2] Recovering (2)
- [ ] Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- [ ] Excellent (7)
- [ ] Very good (6)
- [5] Good (5)
- [ ] Moderately good (4)
- [ ] Fair (3)
- [ ] Poor to fair (2)
- [ ] Poor (1)

4c. Habitat alteration. Score one or double check and average.

- [ ] None or none apparent (9)
- [ ] Recovered (6)
- [3] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] mowing
- [ ] grazing
- [✓] clearcutting
- [ ] selective cutting
- [ ] woody debris removal
- [ ] toxic pollutants
- [ ] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [ ] sedimentation
- [ ] dredging
- [✓] farming
- [ ] nutrient enrichment

32
subtotal this page

Site: Red Stone Farm	Rater(s): L. Brewer	Date: 8/10/04

Scrub shrub Wetland Wetland 7 page 2

32
subtotal first page

Metric 5. Special Wetlands.

max 10 pts. | 0 subtotal

Check all that apply and score as indicated.

- [ ] Bog (10)
- [ ] Fen (10)
- [ ] Old growth forest (10)
- [ ] Mature forested wetland (5)
- [ ] Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
- [ ] Lake Erie coastal/tributary wetland-restricted hydrology (5)
- [ ] Lake Plain Sand Prairies (Oak Openings) (10)
- [ ] Relict Wet Prairies (10)
- [ ] Known occurrence state/federal threatened or endangered species (10)
- [ ] Significant migratory songbird/water fowl habitat or usage (10)
- [ ] Category 1 Wetland. See Question 1 Qualitative Rating (-10)

Metric 6. Plant communities, interspersion, microtopography.

max 20 pts. | 7 subtotal

6a. Wetland Vegetation Communities. Score all present using 0 to 3 scale.

- [ ] Aquatic bed
- [ ] Emergent
- [2] Shrub
- [ ] Forest
- [ ] Mudflats
- [ ] Open water
- [ ] Other_____

6b. horizontal (plan view) Interspersion. Select only one.

- [ ] High (5)
- [ ] Moderately high(4)
- [ ] Moderate (3)
- [2] Moderately low (2)
- [ ] Low (1)
- [ ] None (0)

6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage

- [ ] Extensive >75% cover (-5)
- [ ] Moderate 25-75% cover (-3)
- [ ] Sparse 5-25% cover (-1)
- [0] Nearly absent <5% cover (0)
- [ ] Absent (1)

6d. Microtopography. Score all present using 0 to 3 scale.

- [ ] Vegetated hummucks/tussucks
- [1] Coarse woody debris >15cm (6in)
- [1] Standing dead >25cm (10in) dbh
- [1] Amphibian breeding pools

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
mod	Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp
high	A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

0	Absent <0.1ha (0.247 acres)
1	Low 0.1 to <1ha (0.247 to 2.47
2	Moderate 1 to <4ha (2.47 to
3	High 4ha (9.88 acres) or more

Microtopography Cover Scale

0	Absent
1	Present very small amounts or if more common of marginal quality
2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of highest quality

39 **GRAND TOTAL (max 100 pts)**

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories at the following address: http://www.epa.state.oh.us/dsw/401/401.html

last revised 1 February 2001 jjm

ORAM v. 5.0 Field Form Quantitative Rating

Site: Red Stone Farm	Rater(s): L. Brewer	Date: 8/14/04

Wetland 8
(CB-west)

Metric 1. Wetland Area (size).

max 6 pts. | subtotal: 3

Select one size class and assign score.

- [ ] >50 acres (>20.2ha) (6 pts)
- [ ] 25 to <50 acres (10.1 to <20.2ha) (5 pts)
- [ ] 10 to <25 acres (4 to <10.1ha) (4 pts)
- [3] 3 to <10 acres (1.2 to <4ha) (3 pts)
- [ ] 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
- [ ] 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- [ ] <0.1 acres (0.04ha) (0 pts)

Metric 2. Upland buffers and surrounding land use.

max 14 pts. | subtotal: 9

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- [ ] WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
- [4] MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
- [ ] NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- [ ] VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- [ ] VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- [ ] LOW. Old field (>10 years), shrubland, young second growth forest. (5)
- [ ] MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- [ ] HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

Metric 3. Hydrology.

max 30 pts. | subtotal: 12

3a. Sources of Water. Score all that apply.

- [ ] High pH groundwater (5)
- [ ] Other groundwater (3)
- [1] Precipitation (1)
- [2] Seasonal/Intermittent surface water (3)
- [ ] Perennial surface water (lake or stream) (5)

3b. Connectivity. Score all that apply.

- [ ] 100 year floodplain (1)
- [ ] Between stream/lake and other human use (1)
- [1] Part of wetland/upland (e.g. forest), complex (1)
- [1] Part of riparian or upland corridor (1)

3c. Maximum water depth. Select only one and assign score.

- [ ] >0.7 (27.6in) (3)
- [ ] 0.4 to 0.7m (15.7 to 27.6in) (2)
- [1] <0.4m (<15.7in) (1)

3d. Duration inundation/saturation. Score one or dbl check.

- [ ] Semi- to permanently inundated/saturated (4)
- [ ] Regularly inundated/saturated (3)
- [2] Seasonally inundated (2)
- [ ] Seasonally saturated in upper 30cm (12in) (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- [ ] None or none apparent (12)
- [ ] Recovered (7)
- [3] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] ditch
- [ ] tile
- [ ] dike
- [ ] weir
- [ ] stormwater input
- [ ] point source (nonstormwater)
- [ ] filling/grading
- [ ] road bed/RR track
- [ ] dredging
- [ ] other man made flooding

Metric 4. Habitat Alteration and Development.

max 20 pts. | subtotal: 10

4a. Substrate disturbance. Score one or double check and average.

- [ ] None or none apparent (4)
- [ ] Recovered (3)
- [2] Recovering (2)
- [ ] Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- [ ] Excellent (7)
- [ ] Very good (6)
- [5] Good (5)
- [ ] Moderately good (4)
- [ ] Fair (3)
- [ ] Poor to fair (2)
- [ ] Poor (1)

4c. Habitat alteration. Score one or double check and average.

- [ ] None or none apparent (9)
- [ ] Recovered (6)
- [3] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] mowing
- [ ] grazing
- [✓] clearcutting
- [✓] selective cutting
- [ ] woody debris removal
- [ ] toxic pollutants
- [ ] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [ ] sedimentation
- [ ] dredging
- [ ] farming
- [ ] nutrient enrichment

34
subtotal this page

Site: Wulsin Farm	Rater(s): L. Brewer, B. Dalton	Date: 8/3/04

Wetland 8 (B-west)

34 subtotal first page

Metric 5. Special Wetlands.

max 10 pts. | 0 subtotal

Check all that apply and score as indicated.

- [ ] Bog (10)
- [ ] Fen (10)
- [ ] Old growth forest (10)
- [ ] Mature forested wetland (5)
- [ ] Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
- [ ] Lake Erie coastal/tributary wetland-restricted hydrology (5)
- [ ] Lake Plain Sand Prairies (Oak Openings) (10)
- [ ] Relict Wet Prairies (10)
- [ ] Known occurrence state/federal threatened or endangered species (10)
- [ ] Significant migratory songbird/water fowl habitat or usage (10)
- [ ] Category 1 Wetland. See Question 1 Qualitative Rating (-10)

Metric 6. Plant communities, interspersion, microtopography.

max 20 pts. | 6 subtotal

6a. Wetland Vegetation Communities.
Score all present using 0 to 3 scale.

- [ ] Aquatic bed
- [ ] Emergent
- [ ] Shrub
- [2] Forest
- [ ] Mudflats
- [ ] Open water
- [ ] Other_____

6b. horizontal (plan view) Interspersion.
Select only one.

- [ ] High (5)
- [ ] Moderately high(4)
- [ ] Moderate (3)
- [ ] Moderately low (2)
- [ ] Low (1)
- [0] None (0)

6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage

- [ ] Extensive >75% cover (-5)
- [ ] Moderate 25-75% cover (-3)
- [-1] Sparse 5-25% cover (-1)
- [ ] Nearly absent <5% cover (0)
- [ ] Absent (1)

6d. Microtopography.
Score all present using 0 to 3 scale.

- [ ] Vegetated hummucks/tussucks
- [2] Coarse woody debris >15cm (6in)
- [2] Standing dead >25cm (10in) dbh
- [1] Amphibian breeding pools

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
mod	Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp
high	A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

0	Absent <0.1ha (0.247 acres)
1	Low 0.1 to <1ha (0.247 to 2.47
2	Moderate 1 to <4ha (2.47 to
3	High 4ha (9.88 acres) or more

Microtopography Cover Scale

0	Absent
1	Present very small amounts or if more common of marginal quality
2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of highest quality

40 **GRAND TOTAL (max 100 pts)**

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories at the following address: http://www.epa.state.oh.us/dsw/401/401.html

last revised 1 February 2001 jjm

ORAM v. 5.0 Field Form Quantitative Rating

Site: Red Stone Farm	Rater(s): L. Brewer B. Dalton	Date: 8/3/04

Wetland 9 (B middle) Page 1

Metric 1. Wetland Area (size).

max 6 pts. | subtotal: 2

Select one size class and assign score.

- [ ] >50 acres (>20.2ha) (6 pts)
- [ ] 25 to <50 acres (10.1 to <20.2ha) (5 pts)
- [ ] 10 to <25 acres (4 to <10.1ha) (4 pts)
- [ ] 3 to <10 acres (1.2 to <4ha) (3 pts)
- [2] 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
- [ ] 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- [ ] <0.1 acres (0.04ha) (0 pts)

Metric 2. Upland buffers and surrounding land use.

max 14 pts. | subtotal: 12

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- [7] WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
- [ ] MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
- [ ] NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- [ ] VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- [ ] VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- [5] LOW. Old field (>10 years), shrubland, young second growth forest. (5)
- [ ] MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- [ ] HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

Metric 3. Hydrology.

max 30 pts. | subtotal: 17

3a. Sources of Water. Score all that apply.

- [ ] High pH groundwater (5)
- [ ] Other groundwater (3)
- [1] Precipitation (1)
- [3] Seasonal/intermittent surface water (3)
- [5] Perennial surface water (lake or stream) (5)

3b. Connectivity. Score all that apply.

- [ ] 100 year floodplain (1)
- [1] Between stream/lake and other human use (1)
- [1] Part of wetland/upland (e.g. forest), complex (1)
- [1] Part of riparian or upland corridor (1)

3c. Maximum water depth. Select only one and assign score.

- [ ] >0.7 (27.6in) (3)
- [ ] 0.4 to 0.7m (15.7 to 27.6in) (2)
- [1] <0.4m (<15.7in) (1)

3d. Duration inundation/saturation. Score one or dbl check.

- [ ] Semi- to permanently inundated/saturated (4)
- [3] Regularly inundated/saturated (3)
- [ ] Seasonally inundated (2)
- [ ] Seasonally saturated in upper 30cm (12in) (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- [ ] None or none apparent (12)
- [ ] Recovered (7)
- [3] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] ditch
- [ ] tile
- [ ] dike
- [ ] weir
- [ ] stormwater input
- [ ] point source (nonstormwater)
- [ ] filling/grading
- [ ] road bed/RR track
- [ ] dredging
- [ ] other Man made flooding

Metric 4. Habitat Alteration and Development.

max 20 pts. | subtotal: 8

4a. Substrate disturbance. Score one or double check and average.

- [ ] None or none apparent (4)
- [ ] Recovered (3)
- [2] Recovering (2)
- [ ] Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- [ ] Excellent (7)
- [ ] Very good (6)
- [ ] Good (5)
- [4] Moderately good (4)
- [ ] Fair (3)
- [ ] Poor to fair (2)
- [ ] Poor (1)

4c. Habitat alteration. Score one or double check and average.

- [ ] None or none apparent (9)
- [ ] Recovered (6)
- [3] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] mowing
- [ ] grazing
- [✓] clearcutting
- [✓] selective cutting
- [ ] woody debris removal
- [ ] toxic pollutants
- [ ] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [ ] sedimentation
- [ ] dredging
- [ ] farming
- [ ] nutrient enrichment

39 subtotal this page

Site: Red Stone Farm	Rater(s): L. Brewer, B. Dalton	Date: 8/3/04

Wetland 9
Page 2
(B middle)

39
subtotal first page

Metric 5. Special Wetlands.

max 10 pts. | 0 subtotal

Check all that apply and score as indicated.

- [ ] Bog (10)
- [ ] Fen (10)
- [ ] Old growth forest (10)
- [ ] Mature forested wetland (5)
- [ ] Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
- [ ] Lake Erie coastal/tributary wetland-restricted hydrology (5)
- [ ] Lake Plain Sand Prairies (Oak Openings) (10)
- [ ] Relict Wet Prairies (10)
- [ ] Known occurrence state/federal threatened or endangered species (10)
- [ ] Significant migratory songbird/water fowl habitat or usage (10)
- [ ] Category 1 Wetland. See Question 1 Qualitative Rating (-10)

Butternut (Juglans cinerea) was found - but it is only Potentially Threatened - so no score

Metric 6. Plant communities, interspersion, microtopography.

max 20 pts. | 5 subtotal

6a. Wetland Vegetation Communities.
Score all present using 0 to 3 scale.

- [ ] Aquatic bed
- [ ] Emergent
- [ ] Shrub
- [2] Forest
- [ ] Mudflats
- [ ] Open water
- [ ] Other_____

6b. horizontal (plan view) interspersion.
Select only one.

- [ ] High (5)
- [ ] Moderately high(4)
- [ ] Moderate (3)
- [ ] Moderately low (2)
- [1] Low (1)
- [ ] None (0)

6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage

- [ ] Extensive >75% cover (-5)
- [-3] Moderate 25-75% cover (-3)
- [ ] Sparse 5-25% cover (-1)
- [ ] Nearly absent <5% cover (0)
- [ ] Absent (1)

6d. Microtopography.
Score all present using 0 to 3 scale.

- [ ] Vegetated hummucks/tussucks
- [2] Coarse woody debris >15cm (6in)
- [2] Standing dead >25cm (10in) dbh
- [1] Amphibian breeding pools

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
mod	Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp
high	A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

0	Absent <0.1ha (0.247 acres)
1	Low 0.1 to <1ha (0.247 to 2.47
2	Moderate 1 to <4ha (2.47 to
3	High 4ha (9.88 acres) or more

Microtopography Cover Scale

0	Absent
1	Present very small amounts or if more common of marginal quality
2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of highest quality

44 **GRAND TOTAL (max 100 pts)**

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories at the following address: http://www.epa.state.oh.us/dsw/401/401.html

last revised 1 February 2001 jjm

ORAM v. 5.0 Field Form Quantitative Rating

Site: Red Stone Farm	Rater(s): L. Brewer, B. Dalton	Date: 8/3/04

Wetland 10 (B-east)

Metric 1. Wetland Area (size).

max 6 pts. | subtotal: 2

Select one size class and assign score.

- [ ] >50 acres (>20.2ha) (6 pts)
- [ ] 25 to <50 acres (10.1 to <20.2ha) (5 pts)
- [ ] 10 to <25 acres (4 to <10.1ha) (4 pts)
- [ ] 3 to <10 acres (1.2 to <4ha) (3 pts)
- [2] 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
- [ ] 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- [ ] <0.1 acres (0.04ha) (0 pts)

Metric 2. Upland buffers and surrounding land use.

max 14 pts. | subtotal: 12

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- [7] WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
- [ ] MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
- [ ] NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- [ ] VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- [ ] VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- [5] LOW. Old field (>10 years), shrubland, young second growth forest. (5)
- [ ] MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- [ ] HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

Metric 3. Hydrology.

max 30 pts. | subtotal: 16

3a. Sources of Water. Score all that apply.

- [ ] High pH groundwater (5)
- [ ] Other groundwater (3)
- [1] Precipitation (1)
- [3] Seasonal/Intermittent surface water (3)
- [5] Perennial surface water (lake or stream) (5)

3b. Connectivity. Score all that apply.

- [ ] 100 year floodplain (1)
- [1] Between stream/lake and other human use (1)
- [1] Part of wetland/upland (e.g. forest), complex (1)
- [1] Part of riparian or upland corridor (1)

3c. Maximum water depth. Select only one and assign score.

- [ ] >0.7 (27.6in) (3)
- [ ] 0.4 to 0.7m (15.7 to 27.6in) (2)
- [1] <0.4m (<15.7in) (1)

3d. Duration inundation/saturation. Score one or dbl check.

- [ ] Semi- to permanently inundated/saturated (4)
- [3] Regularly inundated/saturated (3)
- [ ] Seasonally inundated (2)
- [ ] Seasonally saturated in upper 30cm (12in) (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- [ ] None or none apparent (12)
- [ ] Recovered (7)
- [ ] Recovering (3)
- [1] Recent or no recovery (1)

Check all disturbances observed

- [✓] ditch
- [ ] tile
- [ ] dike
- [ ] weir
- [ ] stormwater input
- [ ] point source (nonstormwater)
- [ ] filling/grading
- [ ] road bed/RR track
- [ ] dredging
- [ ] other man made flooding

Metric 4. Habitat Alteration and Development.

max 20 pts. | subtotal: 8

4a. Substrate disturbance. Score one or double check and average.

- [ ] None or none apparent (4)
- [ ] Recovered (3)
- [2] Recovering (2)
- [ ] Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- [ ] Excellent (7)
- [ ] Very good (6)
- [5] Good (5)
- [ ] Moderately good (4)
- [ ] Fair (3)
- [ ] Poor to fair (2)
- [ ] Poor (1)

4c. Habitat alteration. Score one or double check and average.

- [ ] None or none apparent (9)
- [ ] Recovered (6)
- [ ] Recovering (3)
- [1] Recent or no recovery (1)

Check all disturbances observed

- [ ] mowing
- [ ] grazing
- [✓] clearcutting
- [✓] selective cutting
- [ ] woody debris removal
- [ ] toxic pollutants
- [ ] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [ ] sedimentation
- [ ] dredging
- [ ] farming
- [ ] nutrient enrichment

38 subtotal this page

Site: Red Stone Farm	Rater(s): L. Brewer, B. Dalton	Date: 8/3/04

Wetland 10 (East)

38 subtotal first page

Metric 5. Special Wetlands.

max 10 pts. | 0 subtotal

Check all that apply and score as indicated.

- [ ] Bog (10)
- [ ] Fen (10)
- [ ] Old growth forest (10)
- [ ] Mature forested wetland (5)
- [ ] Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
- [ ] Lake Erie coastal/tributary wetland-restricted hydrology (5)
- [ ] Lake Plain Sand Prairies (Oak Openings) (10)
- [ ] Relict Wet Prairies (10)
- [ ] Known occurrence state/federal threatened or endangered species (10)
- [ ] Significant migratory songbird/water fowl habitat or usage (10)
- [ ] Category 1 Wetland. See Question 1 Qualitative Rating (-10)

Metric 6. Plant communities, interspersion, microtopography.

max 20 pts. | 9 subtotal

6a. Wetland Vegetation Communities.
Score all present using 0 to 3 scale.

- [ ] Aquatic bed
- [1] Emergent
- [ ] Shrub
- [2] Forest
- [ ] Mudflats
- [ ] Open water
- [ ] Other_____

6b. horizontal (plan view) Interspersion.
Select only one.

- [ ] High (5)
- [ ] Moderately high(4)
- [ ] Moderate (3)
- [ ] Moderately low (2)
- [1] Low (1)
- [ ] None (0)

6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage

- [ ] Extensive >75% cover (-5)
- [ ] Moderate 25-75% cover (-3)
- [-1] Sparse 5-25% cover (-1)
- [ ] Nearly absent <5% cover (0)
- [ ] Absent (1)

6d. Microtopography.
Score all present using 0 to 3 scale.

- [ ] Vegetated hummucks/tussucks
- [2] Coarse woody debris >15cm (6in)
- [2] Standing dead >25cm (10in) dbh
- [2] Amphibian breeding pools

Vegetation Community Cover Scale

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Mudflat and Open Water Class Quality

0	Absent <0.1ha (0.247 acres)
1	Low 0.1 to <1ha (0.247 to 2.47
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3	High 4ha (9.88 acres) or more

Microtopography Cover Scale

0	Absent
1	Present very small amounts or if more common of marginal quality
2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of highest quality

47 **GRAND TOTAL (max 100 pts)**

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories at the following address: http://www.epa.state.oh.us/dsw/401/401.html

last revised 1 February 2001 jjm

Exhibit E: Real-Estate Provisions

EXHIBIT E
Conservation Easement
Red Stone Farm Wetland Mitigation Bank

DEED OF CONSERVATION EASEMENT

THIS DEED AND AGREEMENT OF CONSERVATION EASEMENT is made this _____, 2006, by and between Wulsin Land Partnership (the "Grantor"), having an address at 8375 Spooky Hollow Road, Cincinnati, Ohio 45242, and The Northern Kentucky University Research Foundation, Inc. ("Grantee"), having an address at Lucas Administrative Center, Suite #221, Nunn Drive, Highland Heights, Kentucky 41099.

WHEREAS, Grantor is the sole owner in fee simple of an approximately 1152 acre property know as Red Stone Farm located at 1526 St. Rt. 41, Cynthiana, Pike County, Ohio (Auditor's Parcel Nos. #19-049300 (Vol. 81, Page 195), #19-049400 (Vol. 95, Page 286), and #19-04900, #19-048700, #19-048900 (Deed Book 122, Page 87)), which is more particularly described in Exhibit A hereto (the "Property"), and

WHEREAS, The Grantee is a non-profit corporation, not legally affiliated with Northern Kentucky University (NKU), with a stated purpose of accepting land conservation easements, and

WHEREAS, Grantee is a publicly supported, tax-exempt nonprofit organization as referred to in Section 5301.69(B) of the Ohio Revised Code and Section 501 (c)(3) and 170(h), respectively of the Internal Revenue Code ("Revenue Code"); and

WHEREAS, Grantee is a "qualified conservation organization", as that term is defined in Section 170(h)(3) of the Revenue Code, as amended, and the regulations thereunder whose primary purpose is the preservation of land and water resources; and

WHEREAS, The Grantee has, at the recommendation of the NKU Center for Applied Ecology, determined that stream and/or wetlands enhancement and restoration should occur on portions of the Grantor's parcel to promote and protect environmental and ecological quality; and

WHEREAS, the Grantor has proposed to construct a certain project on the Property, which project may have environmental impacts to certain surface water bodies located on the Property and which will require the Grantor to obtain a Section 404 Clean Water Act permit and a 401 water quality certification from the Ohio Environmental Protection Agency; and

WHEREAS, in order to protect the quality of the surface waters located on the Property, the Mitigation Banking Review Team (chaired by the US Army Corps of Engineers, Huntington District) has required that Grantor, as a condition of approving the banking instrument, grant a conservation easement in and to a portion of the Property, which is more specifically identified on Exhibit B attached hereto (the "Conservation Area"); and

WHEREAS, by granting to Grantee the right to preserve and protect the Conservation Values (as hereafter defined) in perpetuity, Grantor intends that the Conservation Values of the Conservation Area be preserved maintained and enhanced in perpetuity; and

WHEREAS, Grantee agrees by accepting this grant to honor the intentions of Grantor stated herein and to preserve and protect the Conservation Values of the Conservation Area for the benefit of this generation and generations to come:

NOW, THEREFORE, in consideration of ONE DOLLAR ($1.00) and the mutual promises and covenants contained herein the parties hereto agree as follows:

1. **Grant of Easement:** The Grantor does hereby grant and convey in perpetuity to the Grantee and its assigns a Conservation Easement over that portion of the Property designated as the Conservation Area on the terms and conditions set forth herein to have and to hold forever. Grantee hereby accepts the grant and conveyance of this Conservation Easement by Grantor. **The parties intend that this Easement be a "Conservation Easement" under Sections 5301.67 to 5301.70 of the Ohio Revised Code, and be a "qualified conservation contribution" under 26 U.S.C. 170.**

2. **Conservation Values:** The Conservation Area possesses substantial value in conserving and protecting the physical, biological and chemical integrity of the Baker Fork tributary stream and is important in the protection of the existing or designated use of the waters of the state pursuant to §303 of the Clean Water Act, 33 U.S.C. §1313 and §6111.041 of the Ohio Water Pollution Control Act. The specific Conservation Values of the Property have been documented in a natural resource inventory signed by the Grantor and the Grantee. This "Baseline Summary", attached hereto as Exhibit C and incorporated by reference herein, consists of descriptions and a map of prominent vegetation, land use, and the distinct natural features characterizing the Conservation Area at the time of the grant and is intended to serve as an objective information baseline for monitoring compliance with the terms of this grant. The parties acknowledge that this Baseline Summary is an accurate representation of the Conservation Area at the time of this grant.

3. Prohibited Actions: Any activity on or use of the Conservation Area inconsistent with the purposes of this Conservation Easement or detrimental to the Conservation Values expressed herein is expressly prohibited. By way of example, and not of limitation, the following activities and uses are explicitly prohibited:

a. **Division:** Any division or subdivision of the Conservation Area is prohibited;

b. **Commercial Activities:** Commercial development or industrial activity is prohibited including the construction of billboards or other advertising, or removal of trees or other vegetation for commercial purposes;

c. **Construction:** The placement or construction of any man-made modification such as buildings, structures, fences, roads and parking lots is prohibited;

d. **Cutting Vegetation:** Any cutting of native trees, ground cover or vegetation, or destroying by means of herbicides or pesticides is prohibited;

e. **Land Surface Alteration:** The removal of soil, sand, gravel, rock, minerals or other materials from the Conservation Area, or doing any act that would alter the topography of the Conservation Area shall be prohibited;

f. **Dumping:** Waste, garbage and unsightly or offensive materials are not permitted and may not be accumulated on the Conservation Area;

g. **Water courses:** Natural and other water courses and streams and adjacent riparian buffers may not be dredged, straightened, filled, channelized, impeded, diverted or otherwise altered with the exception of the removal of logjams;

h. **Grazing of Domestic Animals:** Grazing of domestic animals excluding the temporary escapement of animals owned by adjacent landowners is prohibited;

i. **Drainage:** The draining of wetlands, marshes, bogs, or surface waters is prohibited;

j. **Vehicles:** Use of any off-road motorized vehicles for recreational purposes on the Conservation Area is prohibited;

k. **Other Activities:** Each and every other activity or construction project that is detrimental or adverse to soil and water conservation, wildlife conservation, or natural scenic, biological, or ecological integrity of the Conservation Area shall be prohibited.

4. **Rights of Grantee:** The Grantor confers the following rights upon the Grantee to perpetually maintain the Conservation Values of the Conservation Area:

a. Grantor shall allow the NKU Center for Applied Ecology and its subcontractors or assigns and such other persons as may be designated by Grantee access to Phase I of the Conservation Area in order to perform stream and/or wetlands enhancement, restoration, and preservation activities. These activities may include drainage tile decommissioning; berm construction, removal or modification; stream or channel stabilization or modification; aquatic and riparian habitat improvement;

native vegetation planting; invasive-exotic vegetation removal; waste material removal; and maintenance and monitoring, and shall only include those activities approved by the MBRT in the approved Banking Instrument for the bank.

b. Grantor shall allow staff members of the agencies of the Mitigation Bank Review Team access to the Conservation Area in order to perform inspections necessary for the construction, operation, and maintenance and monitoring of stream and/or wetlands restoration.

c. After the completion of stream and/or wetland restoration activities, the Conservation Area shall be kept in its natural state, except for potential stream restoration projects that may be planned in the future to further enhance the natural state of the property and the activities associated with such projects, including drainage tile decommissioning; berm construction removal or modification; stream or channel stabilizing or modification; aquatic and riparian habitat improvement; native vegetation planting; invasive-exotic vegetation removal; waste material removal; and maintenance and monitoring. No additional activities beyond those permitted in the approved banking instrument may occur without first receiving written approval from the MBRT. As herein used, the term "natural state" is intended to mean that there shall be no roads, buildings, or other structures of any kind either temporary or permanent, placed or erected in the Conservation Area; no dumping, filling, excavating, removal of top soil or other materials; no timber harvests or other forestry activities; no drainage of surface waters, cultivation, or grazing of domesticated animals; no vegetation removal, mowing, or spraying with herbicides or pesticides; no deposition of refuse, sewage, or other debris; nor change in the topography of the land in any manner in the Conservation Area, other than that caused by the forces of nature or after prior express written approval by the Grantee.

d. **Right to Enter:** The Grantee and members of the MBRT have the right to enter the Property at all reasonable times to monitor or to enforce compliance with this Conservation Easement; provided that such entry shall be upon prior reasonable notice to Grantor. The Grantee may not, however, unreasonably interfere with the Grantor's use and quiet enjoyment of the Property. The Grantee has no right to permit others to enter the Property, including the Conservation Area, except as expressly set forth herein. The general public is not granted access to the Property, including the Conservation Area, under this Conservation Easement.

e. **Right to Preserve:** The Grantee has the right to prevent any activity on or use of the Conservation Area that is inconsistent with the terms or purposes of this Conservation Easement.

f. **Right to Require Restoration:** The Grantee shall have the right to require the restoration of the areas or features of the Conservation Area which are damaged by any activity inconsistent with this Conservation Easement.

g. **Signs:** The Grantee shall have the right to place signs on the Conservation Area which identify the land as being protected by this Conservation Easement. The number and content of any such signs are subject to the Grantor's prior approval.

5. **Grantor's Reserved Rights:** Grantor reserves to itself and to its personal representatives, heirs, successors and assigns, all rights accruing from its ownership of the Property, including the right to engage in or permit or invite others to engage in all uses of the Property that are not expressly prohibited herein and are not inconsistent with the purposes of this Conservation Easement. Without limiting the generality of the foregoing, the following rights are expressly reserved:

l. **Right to Convey:** The Grantor retains the right to sell, mortgage, bequeath, donate or otherwise convey the Property. Any conveyance shall remain subject to the terms and conditions of this Conservation Easement and the subsequent interest holder shall be bound by the terms and conditions hereof.

m. **Right to Maintain:** The Grantor retains the right to maintain, renovate, and replace any existing structure(s), if any, on the Property as noted in the Baseline Documentation Report, in substantially the same location and size. Any expansion or replacement may not substantially alter the character or function of the structure, and requires the Grantee's prior written approval.

n. **Right to Access:** The Grantor shall retain the right of unimpeded access to the Property.

6. **Grantee's Remedies:** In the event of a breach of this Conservation Easement, the Grantee shall have the following remedies and shall be subject to the following limitations:

o. **Delay in Enforcement:** A delay in enforcement shall not be construed as a waiver of the Grantee's right to enforce the terms of this Conservation Easement.

p. **Acts Beyond Grantor's Control:** The Grantee may not bring an action against the Grantor for modifications occurring to the Conservation Area, which result from causes beyond the Grantor's control. Examples include, without limitation: unintentional fires, storms, natural earth movement, trespassers or the Grantor's well-intentioned actions in response to an

emergency which result in changes to the Conservation Area. The Grantor has no responsibility under this Conservation Easement for such unintended modifications. The Grantee may, however, bring an action against another party for modifications that impair the Conservation Values identified in this Conservation Easement.

q. **Notice and Demand:** If the Grantee determines that the Grantor is in violation of this Conservation Easement, or that a violation is threatened, the Grantee shall provide written notice to the Grantor unless the violation constitutes immediate and irreparable harm. The written notice shall identify the violation and request corrective action to cure the violation or restore the Conservation Area.

r. **Failure to Act:** If, for a twenty-eight (28) day period after the date of written notice provided pursuant to subparagraph c., above, the Grantor continues violating this Conservation Easement, or if the Grantor does not abate the violation and begin to implement corrective measure within the foregoing twenty-eight (28) day period requested by the Grantee, or fails to continue diligently to cure such violation until finally cured, the Grantee may bring an action in law or in equity to enforce the terms of the Conservation Easement and recover any damages for the loss of the Conservation Values protected hereunder. The Grantee is also entitled to enjoin the violation through injunctive relief, seek specific performance, declaratory relief, restitution, reimbursement of expenses or an order compelling restoration of the Conservation Area. If a court determines that the Grantor has failed to comply with this Conservation Easement, then the Grantor also agrees to reimburse all reasonable costs and attorney's fees incurred by the Grantee in compelling such compliance.

s. **Grantor's Absence:** If the Grantee determines that this Conservation Easement is, or is expected to be, violated the Grantee will make a good faith effort to notify the Grantor. If, through reasonable efforts, the Grantor cannot be notified, and if the Grantee determines that circumstances justify prompt action to mitigate or prevent impairment of the Conservation Easement, then the Grantee may pursue its lawful remedies without prior notice and without awaiting the Grantor's opportunity to cure.

t. **Actual or Threatened Non-Compliance:** Grantor acknowledges that actual or threatened events of non-compliance under this Conservation Easement constitute immediate and irreparable harm. The Grantor acknowledges that Grantee's remedies at law for any violation of the terms hereof are inadequate and Grantee is entitled to injunctive relief, both prohibitive and mandatory, in addition to such other relief to which Grantee may be entitled, including specific performance of the terms of

this Conservation Easement, without the necessity of proving either actual damages or inadequacy of otherwise available legal remedies.

u. **Cumulative Remedies:** The preceding remedies of the Grantee are cumulative. Any, or all, of the remedies may be invoked by the Grantee if there is an actual or threatened violation of this Conservation Easement.

2. Ownership Costs and Liabilities: In accepting this Conservation Easement, the Grantee shall have no liability or other obligation for costs, liabilities, taxes or insurance of any kind related to the Property. The Grantee and its trustees, officers, employees, agents and members have no liability arising from injury or death to any person or from physical damage to any other property located on the Property or otherwise. The Grantor agrees to defend the Grantee against such claims and to indemnify the Grantee against all costs and liabilities relating to such claims during the tenure of the Grantor's ownership of the Property. The Grantor is responsible for posting the Conservation Area's boundaries and for discouraging any form of trespass that may occur.

3. Cessation of Existence: If the Grantee shall cease to be authorized to acquire and hold conservation easements, then this Conservation Easement shall become vested in another qualified entity that is eligible to acquire and hold a conservation easement under Ohio law, upon the mutual consent of Grantor and members of the MBRT.

4. Termination: This Conservation Easement may be extinguished only by an unexpected change in condition, which causes it to be impossible to fulfill the Conservation Easement's purposes or by exercise of eminent domain.

a. **Unexpected Change in Conditions:** If subsequent circumstances render the purposes of this Conservation Easement impossible to fulfill then this Conservation Easement may be partially or entirely terminated only by judicial proceedings. The Grantee will then be entitled to compensation in accordance with applicable laws and in proportion to the Grantee's interest in the Property at the effective date of this Conservation Easement.

b. Eminent Domain: If the Property is taken, in whole or in part, by power of eminent domain, then the Grantee will be entitled to compensation in accordance with applicable laws and in proportion to the Grantee's interest in the Property at the effective date of this Conservation Easement.

5. Recordation: Grantee shall record this instrument in a timely fashion in the official records of Pike County, Ohio and may re-record it at any time as may be required to preserve its rights in this Easement.

6. Assignment: This Conservation Easement is transferable, but Grantee may assign its rights and obligations hereunder only to an organization or entity that is qualified to hold conservation easements under Ohio law, and any applicable federal tax law, at the time

of transfer. As a condition of such transfer, the Grantee shall require that the conservation purposes that this grant is intended to advance continue to be carried out.

7. Liberal Construction: This Conservation Easement shall be liberally construed in favor of maintaining the Conservation Values of the Conservation Area. The section headings and subheadings identified herein are for reference purposes only and shall not be used to interpret the meaning of any provision hereof.

8. Notices: For purposes of this Conservation Easement, notices may be provided to either party, by personal delivery or by mailing a written notice to that party at the address shown at the outset of this agreement, or at the last known address of a party, by first class mail, postage prepaid. Delivery will be complete upon depositing the properly addressed notice with the U.S. Postal Service.

9. Severability: If any portion of this Conservation Easement is determined to be invalid or unenforceable, the remaining provisions of this agreement will remain in full force and effect.

10. Subsequent Transfers: This Conservation Easement shall be a covenant running with the land and shall constitute a burden on the Property and shall run to the benefit of the parties hereto and their successors in interest. All subsequent owners of the Property shall be bound to all provisions of this Conservation Easement to the same extent as the current parties. Grantor shall incorporate the terms of this Conservation Easement in any deed or other legal instrument by which they divest themselves of any interest in all or a portion of the Property, including, without limitation, a leasehold interest. Grantor further agrees to give written notice to Grantee of the transfer of any interest at least thirty (30) days prior to the date of such transfer.

11. Termination of Rights and Obligations: A party's future rights and obligations under this Conservation Easement shall terminate upon the transfer of that party's interest in the Property. Liability for acts or omissions occurring prior to transfer shall survive any such transfer.

12. Applicable Law: This agreement shall be governed by, and construed in accordance with the substantive law of the State of Ohio.

13. Entire Agreement: This Conservation Easement, together with the Baseline Documentation Report, sets forth the entire agreement of the parties and supersedes all prior discussions and understandings.

IN WITNESS WHEREOF, the Grantor and Grantee have set their hands on the day and year first written above.

WITNESSES:
(print/type names under signature)

_____

_____

_____

_____

GRANTOR:

_____

GRANTEE:

_____

STATE OF OHIO)
COUNTY OF _____)

Acknowledged before me by _____ this _____ day of _____, 2006.

_____
Notary Public

STATE OF OHIO)
COUNTY OF _____)

Acknowledged before me by _____ this _____ day of _____, 2006.

_____
Notary Public

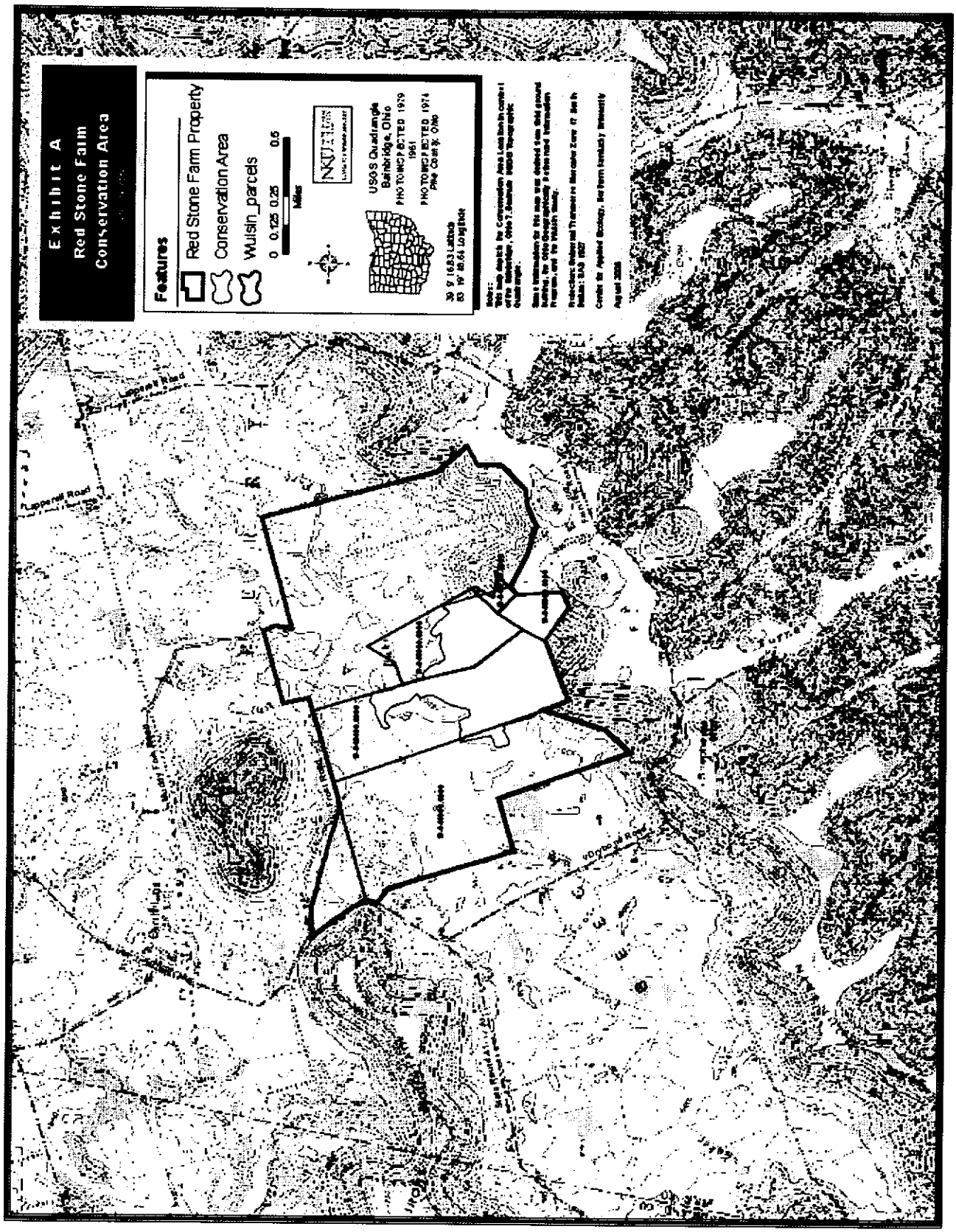
Exhibit A
Red Stone Farm
Conservation Area
Features
Red Stone Farm Property
Conservation Area
Wulsin_parcels
0 0.125 0.25 0.5
Miles
USGS Quadrangle
Bainbridge, Ohio
PHOTOINSPECTED 1939
1961
PHOTOINSPECTED 1974
Pike County, Ohio
39° 1'53.1" Latitude
83° 19' 45.64" Longitude
Note:
This map depicts the Conservation Area Lands in relation to
Projection: Universal Transverse Mercator Zone 17 North
Datum: NAD 1927
Center for Applied Ecology, Northern Kentucky University
August 2006

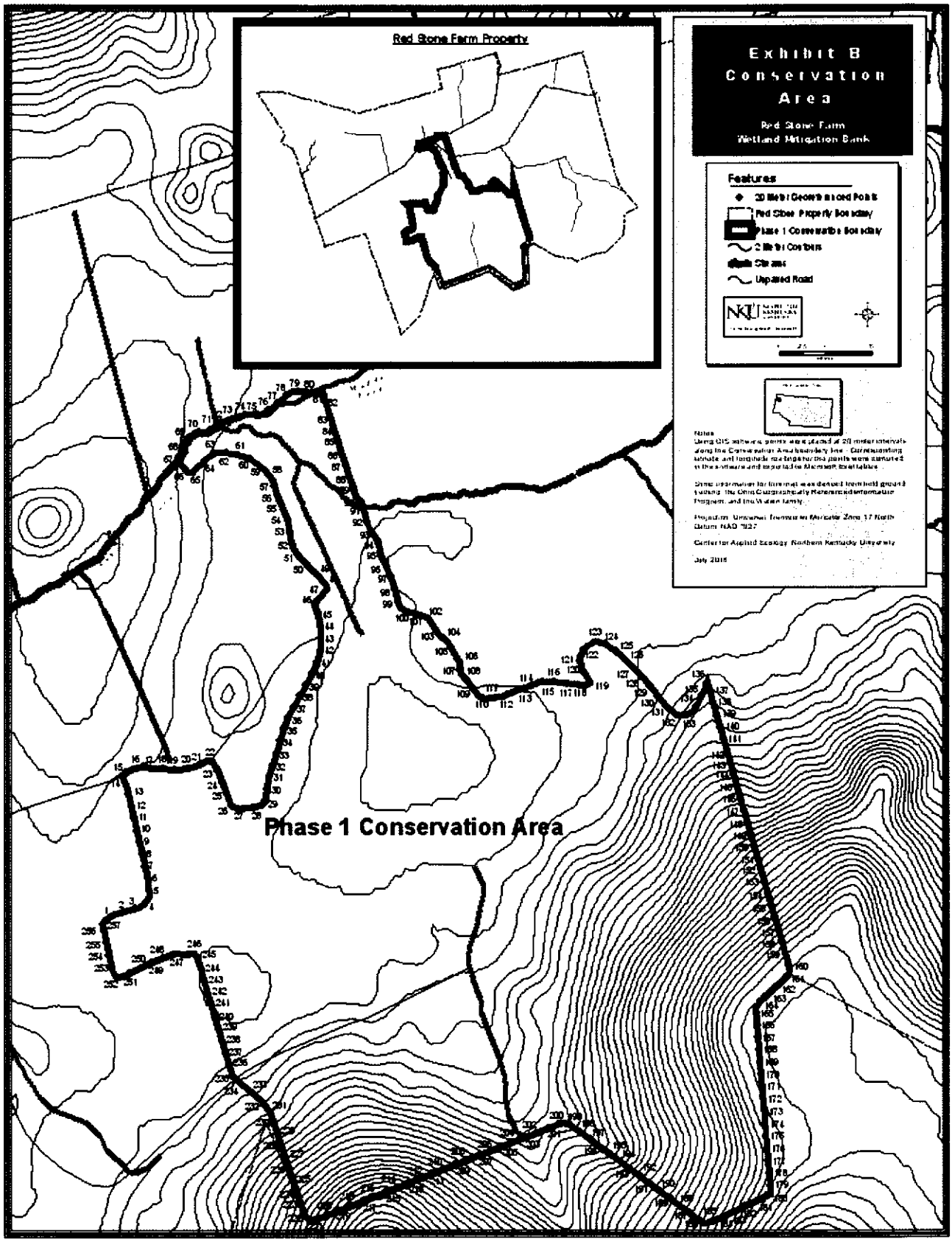
Red Stone Farm Property
Exhibit B
Conservation
Area
Red Stone Farm
Wetland Mitigation Bank
Features
Red Stone Property Boundary
Phase 1 Conservation Boundary
Unpaved Road
Phase 1 Conservation Area

Exhibit C
Baseline Summary

The Conservation Area, as subject to this conservation easement, is the first phase of the Red Stone Farm Wetland Mitigation Bank (hereinafter, the Bank). The Bank will be used for compensatory mitigation for unavoidable impacts to Waters of the United States including wetlands, isolated and non-isolated, which result from activities authorized under Section 404 of the Clean Water Act

The Conservation Area is 196 acres currently comprised of approximately 11.7 acres of jurisdictional forested wetlands, 42 acres of previously constructed NRCS green marsh wetlands, 7 acres of upland meadow, and a mixture of upland and bottomland forests (Map 3). The existing forested wetlands in the Conservation Area are relatively young and composed of green ash (*Fraxinus pennsylvanica*), pin oak (*Quercus palustris*), red maple (*Acer rubrum*), and swamp white oak (*Quercus bicolor*), whereas the understory is largely composed of multiflora rose (*Rosa multiflora*) an invasive exotic shrub that tends to out-compete native plants. The near decade old Natural Resources Conservation Service greenmarsh wetland has experienced heavy and continued beaver activity resulting in higher water depths than anticipated, mortality of nearly all trees within, and habitat conditions that are more pond-like than a wetland. The upland forest is largely found on the north-facing hillside on the southern end of the Conservation Area. The upland forested hillside feeds the hydrology to nearly two-thirds (approximately 200 acres) of the Bank and is included in the phase one Conservation Area to permanently protect the headwaters area. The entire 95.7 acres of hillside are densely forested, and several naturally occurring butternut or white walnut trees (*Juglans cinerea*) have been found there, indicating the potential for the forest to harbor species of relatively high ecological quality. Also, two unpaved roads provide access to the Conservation Area. One is just north of the NRCS wetland and the other is at the base of the steep hillside in the southern portion of the Conservation Area.

As part of the Bank's operation there will be considerable changes to the baseline vegetation. Through hydrology modifications and restoration of surrounding wetland habitats, wetland quality and function will be further enhanced in the existing wetlands. The restoration plan for the NRCS wetland is to lower its berms to near original grade, which will lower water levels and maximize the wetlands rather than the current open-water footprint. The upland forest and forested wetlands will be enhanced through the control of the invasive exotic plants. Also, the upland meadows will be planted with warm season grasses and allowed to slowly revert to forest. The upland forests will provide a number of benefits to the wetlands including greater diversity of native vegetation and habitat values, improved water quality (e.g., lower pathogens and sediment), increased stormwater retention, and increased groundwater baseflow.

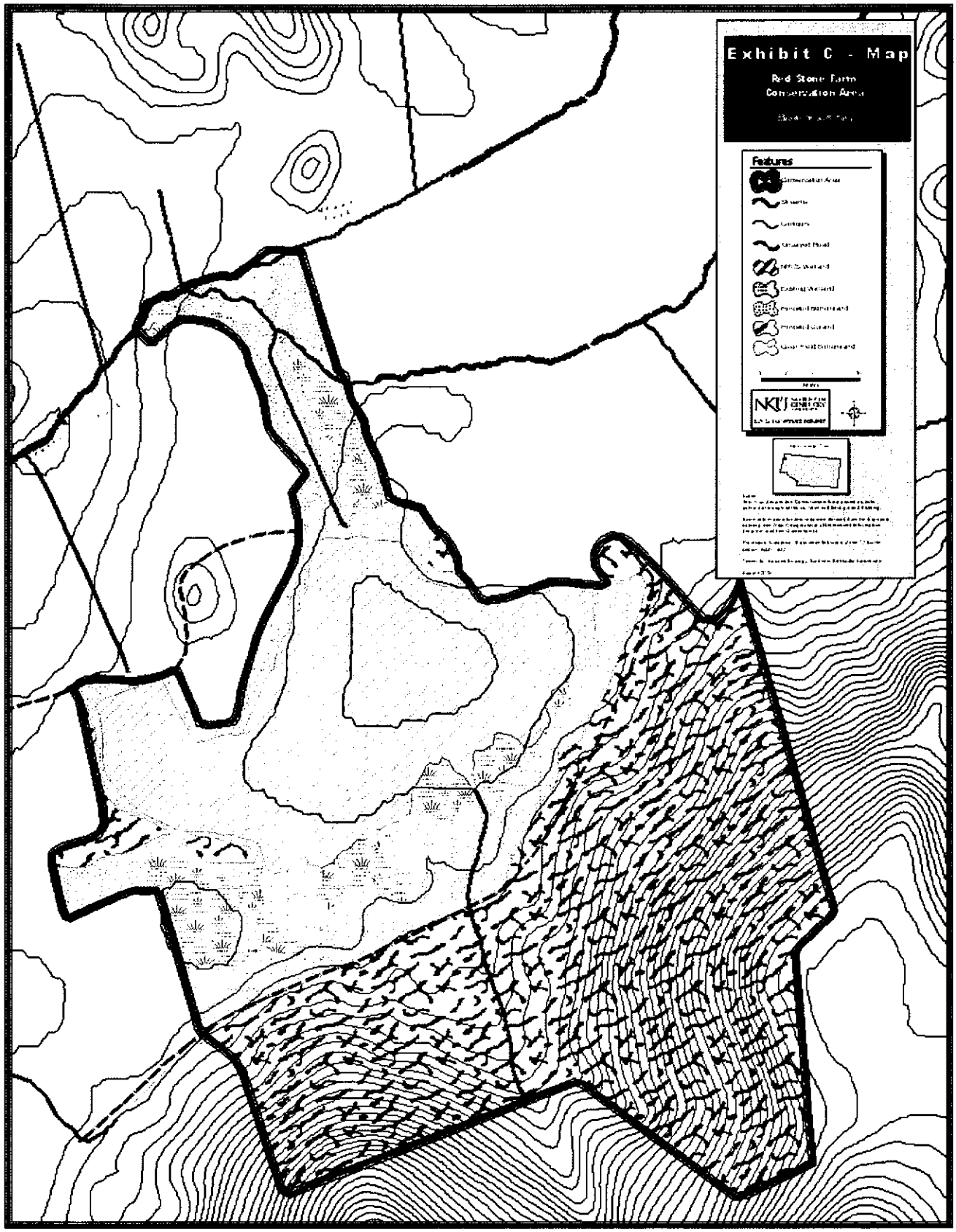
Exhibit C - Map
Red Stone Farm
Conservation Area
Features

Exhibit F: Financial Assurance

EXHIBIT F

Financial Assurance Plan
Red Stone Farm Wetland Mitigation Bank

The Sponsor will provide a performance bond as financial assurance for each phase of wetland restoration described in this Banking Instrument. The performance bond will guarantee the satisfactory completion of each phase of restoration initiated. Performance bonds for each phase of Bank construction will be acquired just prior to the start of that phase, and bonds will cover the entire cost of construction. The proposed bonding amount is $4500 per credit-acre.

Exhibit G: Wetlands Mitigation Agreement

EXHIBIT G

Wetland Mitigation Agreement

Wulsin Land Partnership
Red Stone Farm Wetland Mitigation Bank

This agreement between Wulsin Land Partnership (WLP) and _____ (Client) conveys from WLP to Client, _____ acres of wetland credits pursuant to Sections 404/401 of the Clean Water Act, 33 U.S.C. § 1344, and the Isolated Wetland Permit statute. This agreement is made this ____ day of _____ 2007.

Obligations of WLP

WLP has applied to, and received, approval from the United States Army Corps of Engineers (Corps), the Ohio Environmental Protection Agency (OEPA) and Mitigation Banking Review Team (MBRT) to preserve, restore and enhance wetland ecosystems at its Red Stone Farm Mitigation Bank, located in Pike County, Ohio (see attached mitigation bank review team agreement). WLP will at its cost design, build and maintain wetland habitat in accordance with the Final Mitigation Plan as approved by the Corps, OEPA and MBRT. All risks financial, regulatory and otherwise associated with the Red Stone Farm Mitigation Bank are the responsibility of WLP.

WLP will supply the Corps and OEPA, for distribution to other members of the MBRT, monitoring reports for ten (10) years and provide confirmation that wetlands restoration, enhancement, and/or preservation was completed on behalf of Client.

WLP will convey to Client the necessary credits to satisfy mitigation requirements as detailed in the Ohio Wetland Water Quality Standards (Ohio Administrative Code 3745-1) as well as any specific mitigation requirements outlined by the Corps and/or Ohio EPA.

Obligations of Client

Client is required under Sections 404 of the Clean Water Act, and the Isolated Wetland Permit statute, to mitigate wetland impacts at its _____ development site located in _____ County, Ohio.

Client will provide copies of the granted Sections 404 permit from Corps, the granted Section 401 Water Quality Certification from OEPA (if needed), or the Isolated Wetland Permit from OEPA (if needed) to WLP upon receipt to demonstrate regulatory approval of the Red Stone Farm Mitigation Bank to meet wetland mitigation requirements on the _____ development site.

Client must purchase credits in one-tenth (0.1) acre increments and WLP reserves the right to apply Client's payment to enhancement, restoration or preservation of wetlands or upland buffer. The Client agrees to purchase credits as listed below:

Credit and Cost Calculation Tables

Credit Purchase Table

Impacted Wetland Category	**Acres Impacted** *Completed by Client*	**Mitigation Ratio**	**Credits Required** (Round to next tenth) *Completed by Client*	**Credit Category** *Completed by WLP*
1 non-forested/ forested		x 1.5		
2 non-forested		x 2.0		
2 forested		x 2.5		
3 non-forested		x 2.5		
3 forested		x 3.0		

Client agrees to pay $_____ per one-tenth acre credit up to 3 acres and $_____ per one-tenth acre credit for additional credits in excess of 3 acres per development site. A breakdown of the credit costs is indicated below.

Credit Cost Table

Credits	**Credit Price**	**Total**
Number of credits purchased up to 3 acres (one-tenth increments): _____	$_____/ one-tenth acre	
Number of credits purchased over 3 acres (one-tenth increments): _____	$_____/ one-tenth acre	
	Total	$

Agreement and Signatures

In consideration of utilizing mitigation credits from WLP's Red Stone Farm Mitigation Bank, Client agrees to pay WLP $_____ for credits purchased as outlined above, in recognition of WLP's restoration, enhancement and/or preservation at its Red Stone Farm Mitigation Bank site. A nonrefundable deposit of ten (10) percent of the total payment is due upon signing of this agreement. The remaining ninety (90) percent is due within thirty (30) days of receipt of the Section 404 permit from the Corps. If Client does not receive regulatory approval or withdraws from its project for any reason, the ten (10) percent payment will be kept by WLP, and the Client will not be obligated to pay the additional ninety (90) percent.

Wulsin Land Partnership

By: _____

Print: _____

Date: _____

Client

By: _____

Print: _____

Date: _____

Company Name: _____

Address: _____

_____

Phone: _____

Fax: _____

Exhibit H: Wetlands Credit Accounting Form

EXHIBIT H

WETLANDS CREDIT ACCOUNTING FORM

Red Stone Farm Wetland Mitigation Bank

Client	Agreement Date	Permit Date	Permit Number	Impacted Acres	Credits Purchased	Running Total

Michigan

Ohio

Indiana

West Virginia

Kentucky

Huntington
District

Red Stone Farm

FIGURE 1

Red Stone Farm Wetland Mitigation Bank

Site Location and Priority Watersheds

Features

- Little Miami Subbasin 05090202
- Lower Scioto Subbasin 05060002
- Paint Creek Subbasin 05060003
- Ohio Brush-Whiteoak Subbasin 05090201
- Approximate Huntington/Louisville District Boundary (Ohio)
- Ohio Boundary
- State Boundary

30 15 0 30

Miles

N W E S

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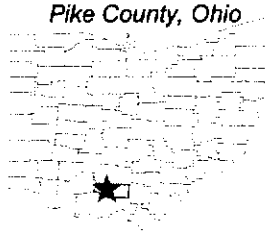
Pike County, Ohio



Notes:
This map depicts the bank location, priority watersheds, and service area within the approximate Huntington District and Louisville Districts areas. (Ohio only).

Some information for this map was derived from field ground truthing, the Ohio Geographically Referenced Information Program, and the Wulsin family.

Projection: Universal Transverse Mercator Zone 17 North
Datum: NAD 1927

Center for Applied Ecology, Northern Kentucky University

March 2006

FIGURE 2

Red Stone Farm Wetland Mitigation Bank

Site Location and Site Watershed

Features

- Baker Fork Watershed (Above Red Stone Farm)
- Red Stone Farm
- Wetland Mitigation Bank Area

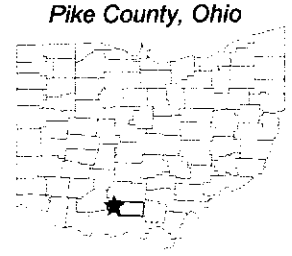
790 395 0 790
Meters

0 0.25 0.5 1
Miles

NKU Northern Kentucky University
Center for Applied Ecology

USGS Quadrangle
Bainbridge, Ohio
PHOTOINSPECTED 1979
1961
PHOTOINSPECTED 1974

Pike County, Ohio



39° 9' 16.83 Latitude
83° 19' 48.64 Longitude

Notes:
This map depicts the Wetland Mitigation Bank Location in context of the Bainbridge, Ohio 7.5-minute USGS Topographic Quadrangle.

Some information for this map was derived from field ground truthing, the Ohio Geographically Referenced Information Program, and the Wulsin family.

Projection: Universal Transverse Mercator Zone 17 North
Datum: NAD 1927

Center for Applied Ecology, Northern Kentucky University

March 2006

FIGURE 3

Red Stone Farm
Wetland Mitigation Bank

Orthophoto (1994) and Property Boundary

Features

- Approximate Property Boundary
- Wetland Mitigation Bank Area
- Access Roads

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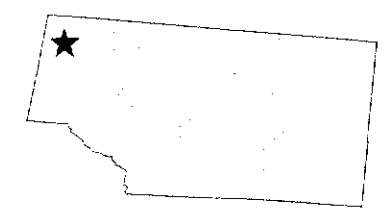
N
W E
S

500 250 0 500
Feet

250 125 0 250
Meters

Pike County, Ohio



Notes:
This map depicts the approximate location of the Wulsin property boundary with a digital orthophotograph (1994) of the area.

Some information for this map was derived from field ground truthing, the Ohio Geographically Referenced Information Program, and the Wulsin family.

Projection: Universal Transverse Mercator Zone 17 North
Datum: NAD 1927

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March 2006

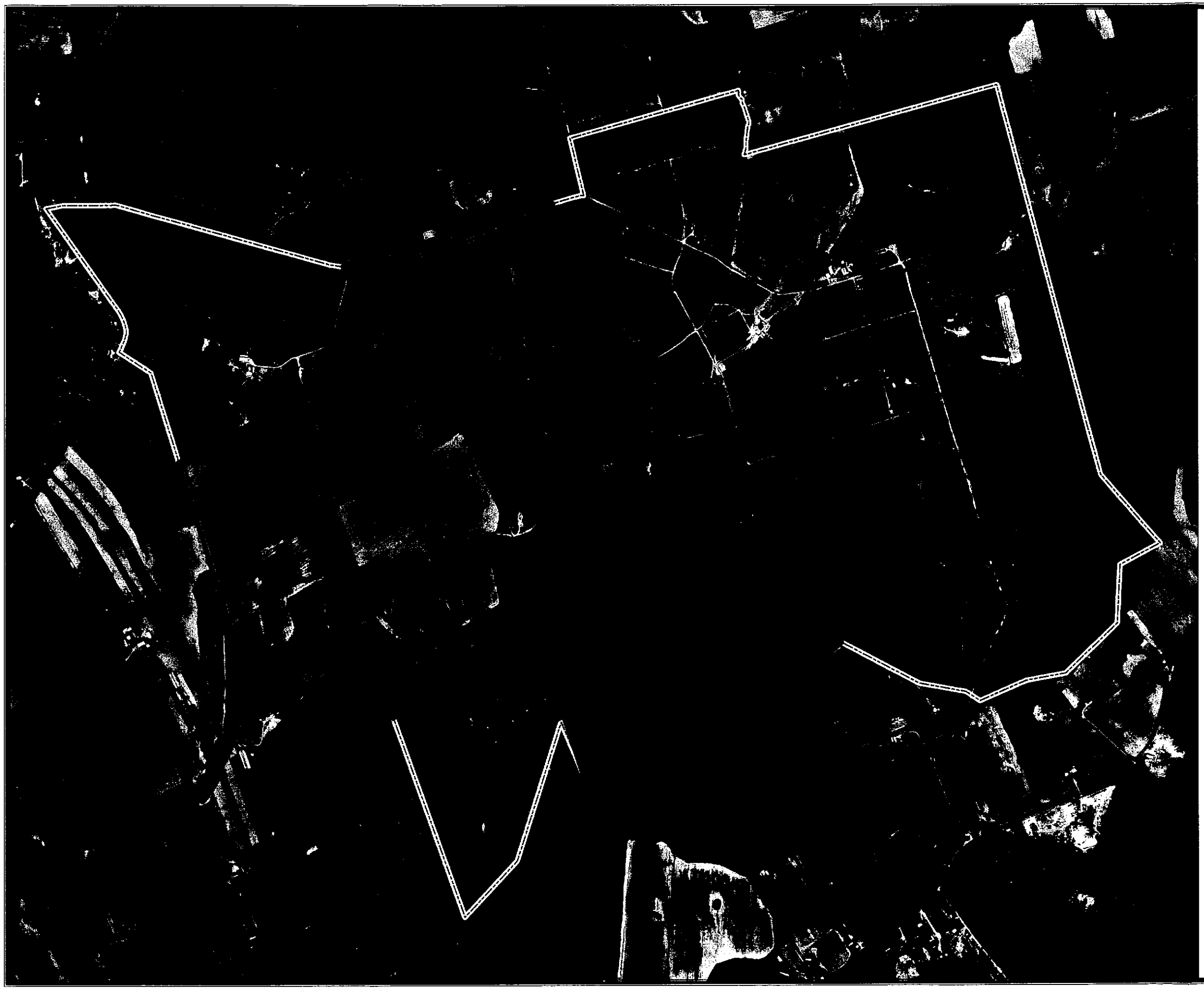

FIGURE 3

Red Stone Farm Wetland Mitigation Bank

Orthophoto (1994) and Property Boundary

Features

Approximate Property Boundary

Wetland Mitigation Bank Area

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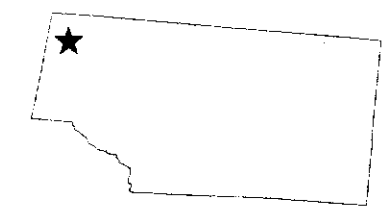
N
W E
S

500 250 0 500
Feet

250 125 0 250
Meters

Pike County, Ohio



Notes:
This map depicts the approximate location of the Wulsin property boundary with a digital orthophotograph (1994) of the area.

Some information for this map was derived from field ground truthing, the Ohio Geographically Referenced Information Program, and the Wulsin family.

Projection: Universal Transverse Mercator Zone 17 North
Datum: NAD 1927

Center for Applied Ecology, Northern Kentucky University

March 2006

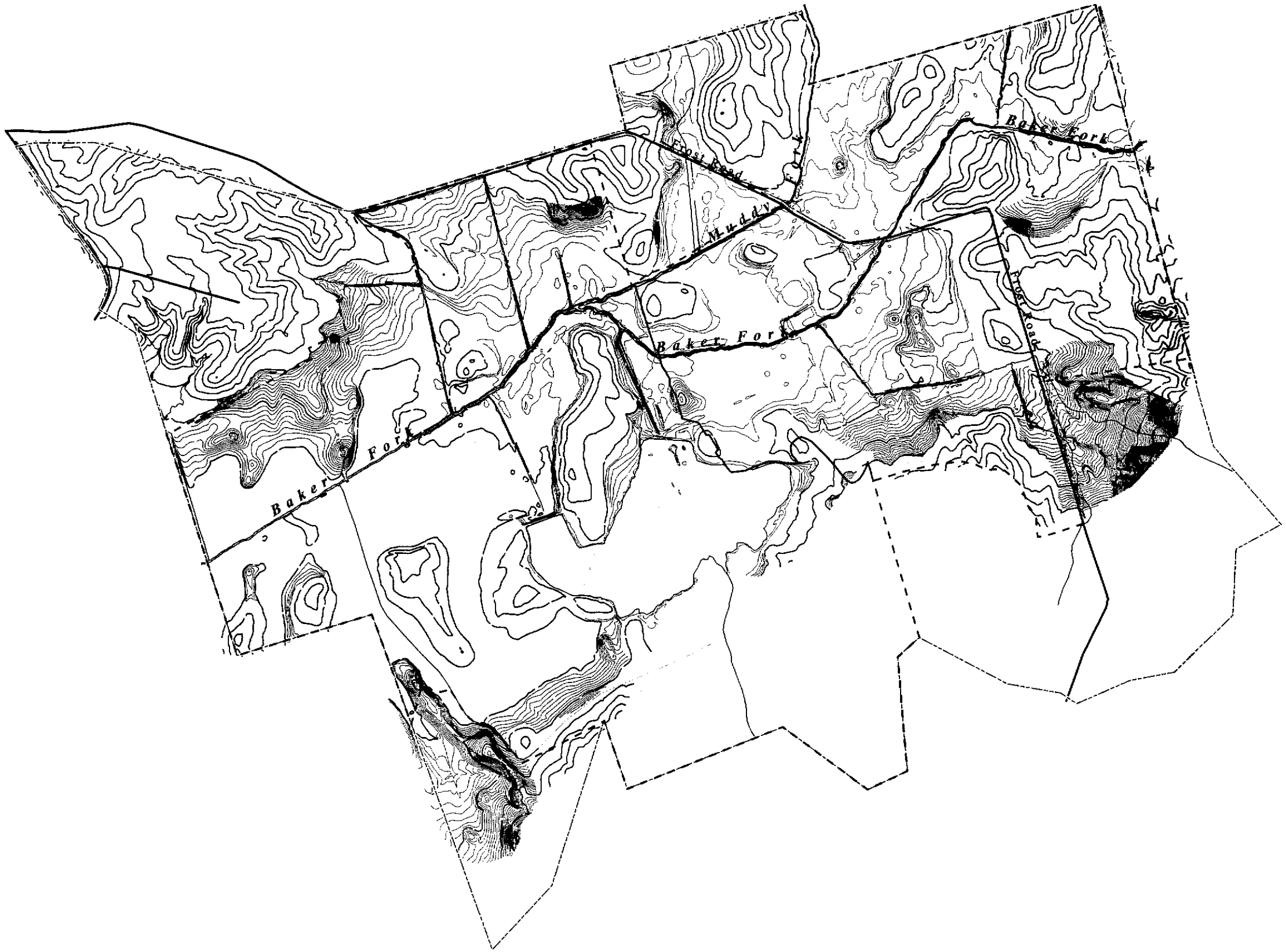


FIGURE 4

Red Stone Farm Wetland Mitigation Bank

Site Map

Features

- Spring
- Approximate Property Boundary
- Wetland Mitigation Bank Area
- 10' Contours
- 1' Contours
- Streams/Channels
- Ditch
- Roads

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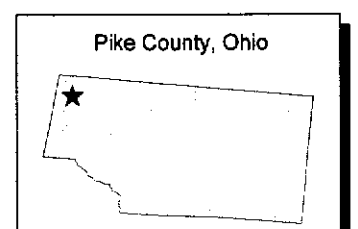
CENTER FOR **APPLIED ECOLOGY**

250 125 0 250
Meters

Pike County, Ohio



Notes:
This map depicts the site topography, buildings, streams, and paved roads.

Some information for this map was derived from field ground truthing, the Ohio Geographically Referenced Information Program, and the Wulsin family.

Projection: Universal Transverse Mercator Zone 17 North
Datum: NAD 1927

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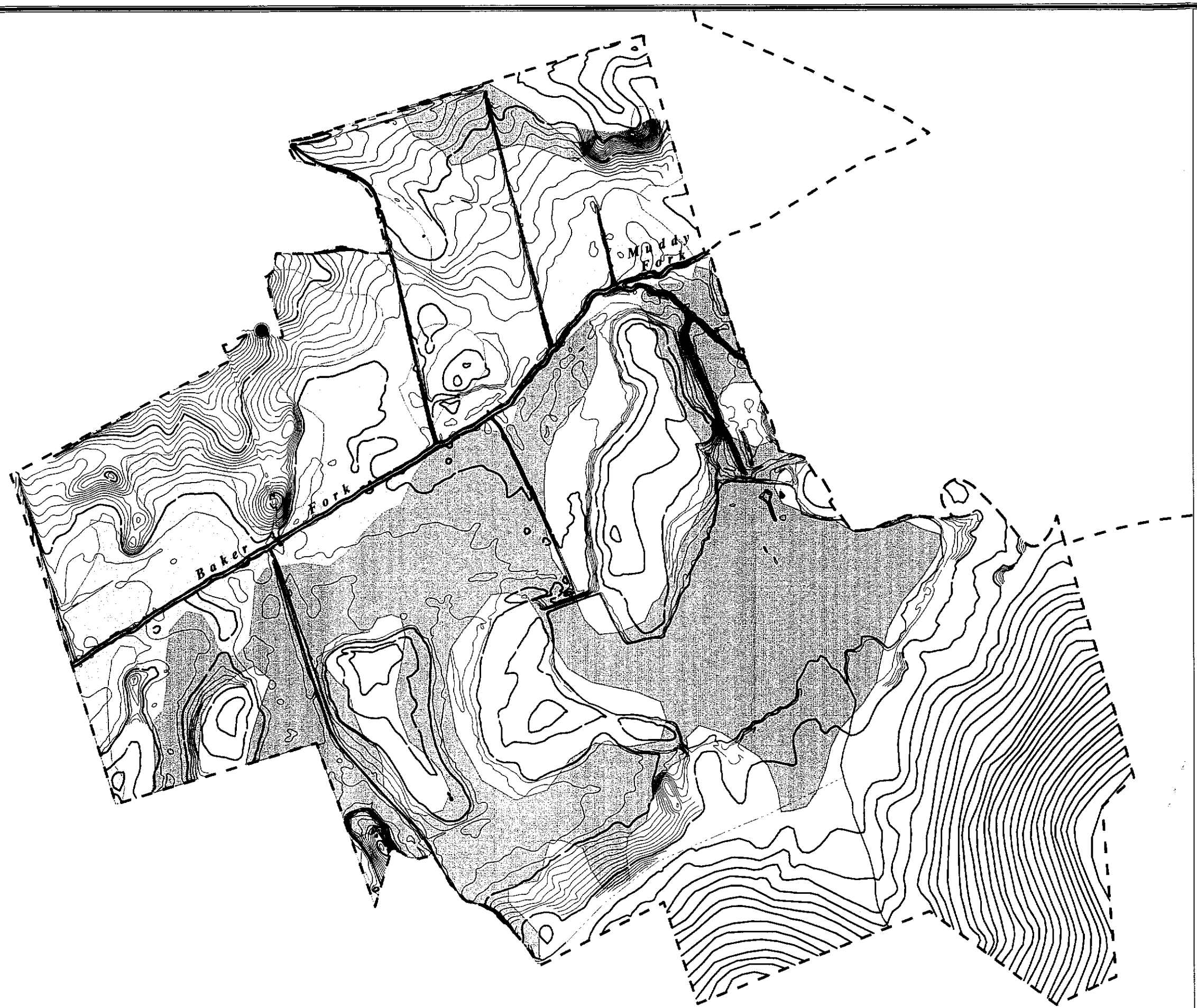
March 2006

FIGURE 5

Red Stone Farm
Wetland Mitigation Bank

Hydric Soils



Hydric Soils

- Montgomery (Mr)
- Peoga (Pe)
- Spring
- Wetland Mitigation Bank Area
- 10' Contours
- 1' Contours
- Streams/Channels
- Ditch

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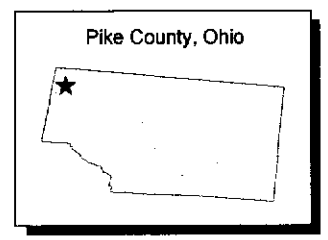
CENTER FOR APPLIED ECOLOGY

150 75 0 150
Meters

Pike County, Ohio



Notes:
This map depicts hydric soils in and around the Wulsin property.

Some information for this map was derived from field ground truthing, the Ohio Geographically Referenced Information Program, and the Wulsin family.

Projection: Universal Transverse Mercator Zone 17 North
Datum: NAD 1927

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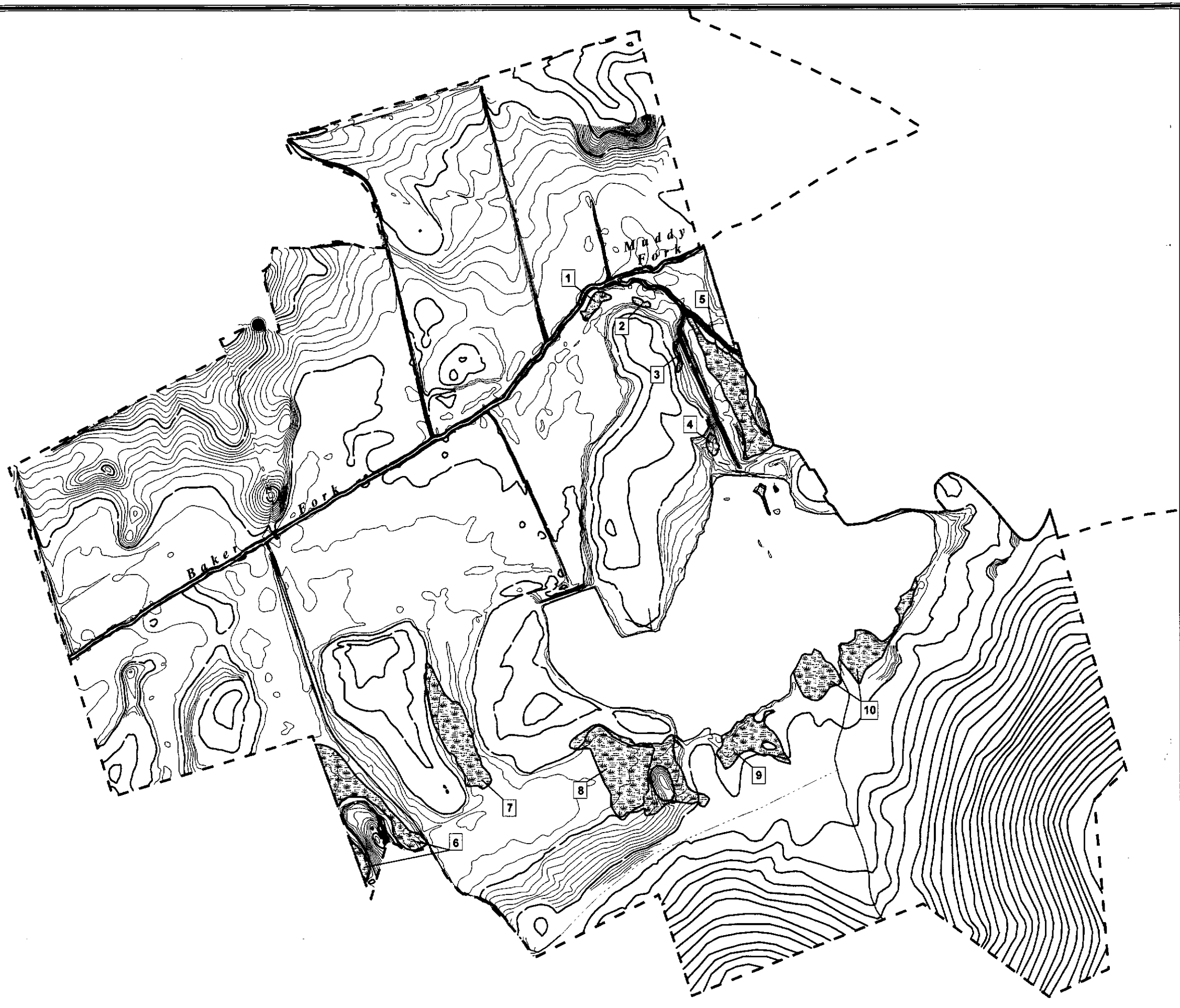
March 2006

FIGURE 6

Red Stone Farm Wetland Mitigation Bank

Existing Wetlands



Wetlands

- Existing Wetlands
- Spring
- Wetland Mitigation Bank Area
- 10' Contours
- 1' Contours
- Streams/Channels
- Ditch

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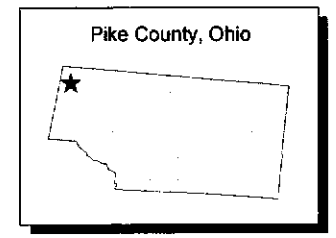
CENTER FOR **APPLIED ECOLOGY**

150 75 0 150
Meters



Notes:
This map depicts existing wetlands (10 areas) identified by professional botanists and mapped using Garmin GPS technology at the Center for Applied Ecology, NKU.

Some information for this map was derived from field ground truthing, the Ohio Geographically Referenced Information Program, and the Wutsin family.

Projection: Universal Transverse Mercator Zone 17 North
Datum: NAD 1927

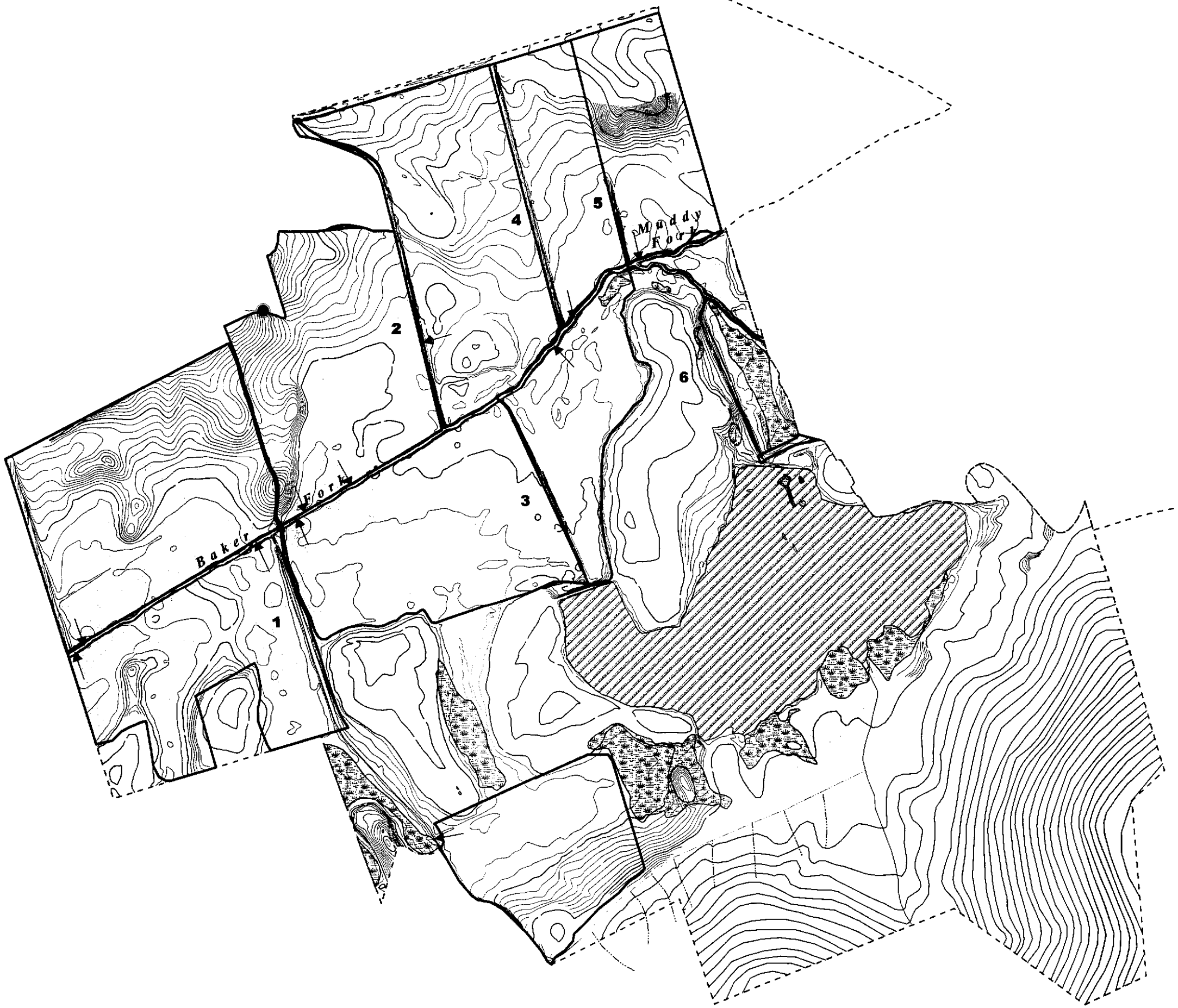
Center for Applied Ecology, Northern Kentucky University

March 2006

FIGURE 7

Red Stone Farm Wetland Mitigation Bank

Site Hydrology

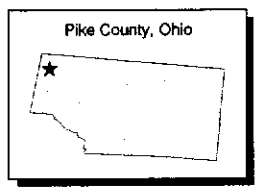


Hydrology Features

- Spring
- Drainage Tile Outfalls
- Hydric Soils (Wetland Bank Area)
- NRCS Wetland
- Existing Natural Wetlands
- Tiled Fields
- Wetland Mitigation Bank Area
- 10' Contours
- 1' Contours
- Streams/Channels
- Upstream Swales
- Ditch

NKU NORTHERN KENTUCKY UNIVERSITY
CENTER FOR APPLIED ECOLOGY

150 75 0 150
Meters



Notes:
This map depicts the hydrologic features on the Wulsin property, based on the USGS 7.5-minute Bainbridge, Ohio topographic quadrangle, as well as field surveys and ground truthing.

Other base data for this map were derived from Henderson Aerial Surveys, the Natural Resource Conservation Service, the Ohio Geographically Referenced Information Program, and the Wulsin family.

Projection: Universal Transverse Mercator Zone 17 North
Datum: NAD 1927

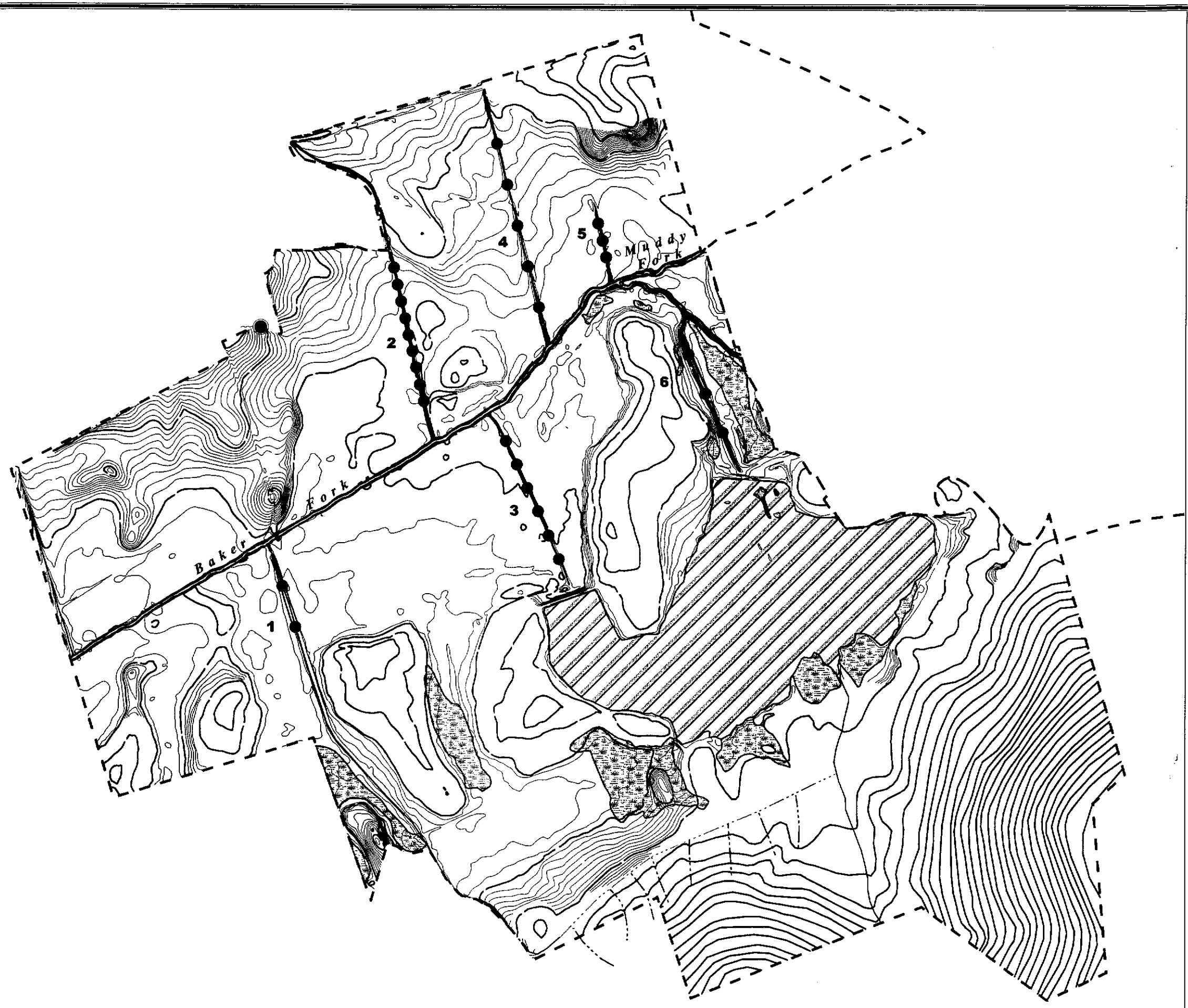
Center for Applied Ecology, Northern Kentucky University

March 2006

FIGURE 8

Red Stone Farm Wetland Mitigation Bank

Hydrologic Modifications

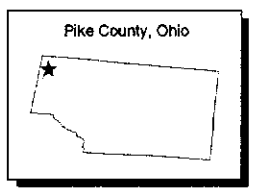


Features

- Channel Obstructions (woody debris and earth fill)
- Spring
- Hydric Soils
- NRCS Wetland
- Existing Wetland
- Wetland Mitigation Bank Area
- 10' Contours
- 1' Contours
- Streams/Channels
- Upstream Swales
- Ditch

NKU NORTHERN KENTUCKY UNIVERSITY
CENTER FOR APPLIED ECOLOGY

150 75 0 150
Meters



Notes:
This map depicts hydrologic modification features assessed in the field by a staff environmental engineer at the Center for Applied Ecology, NKU. Assessed tributaries of Baker Fork are numbered and labeled on the map, 1 to 6.

Some information for this map was derived from field ground truthing, the Ohio Geographically Referenced Information Program, and the Wulsin family.

Projection: Universal Transverse Mercator Zone 17 North
Datum: NAD 1927

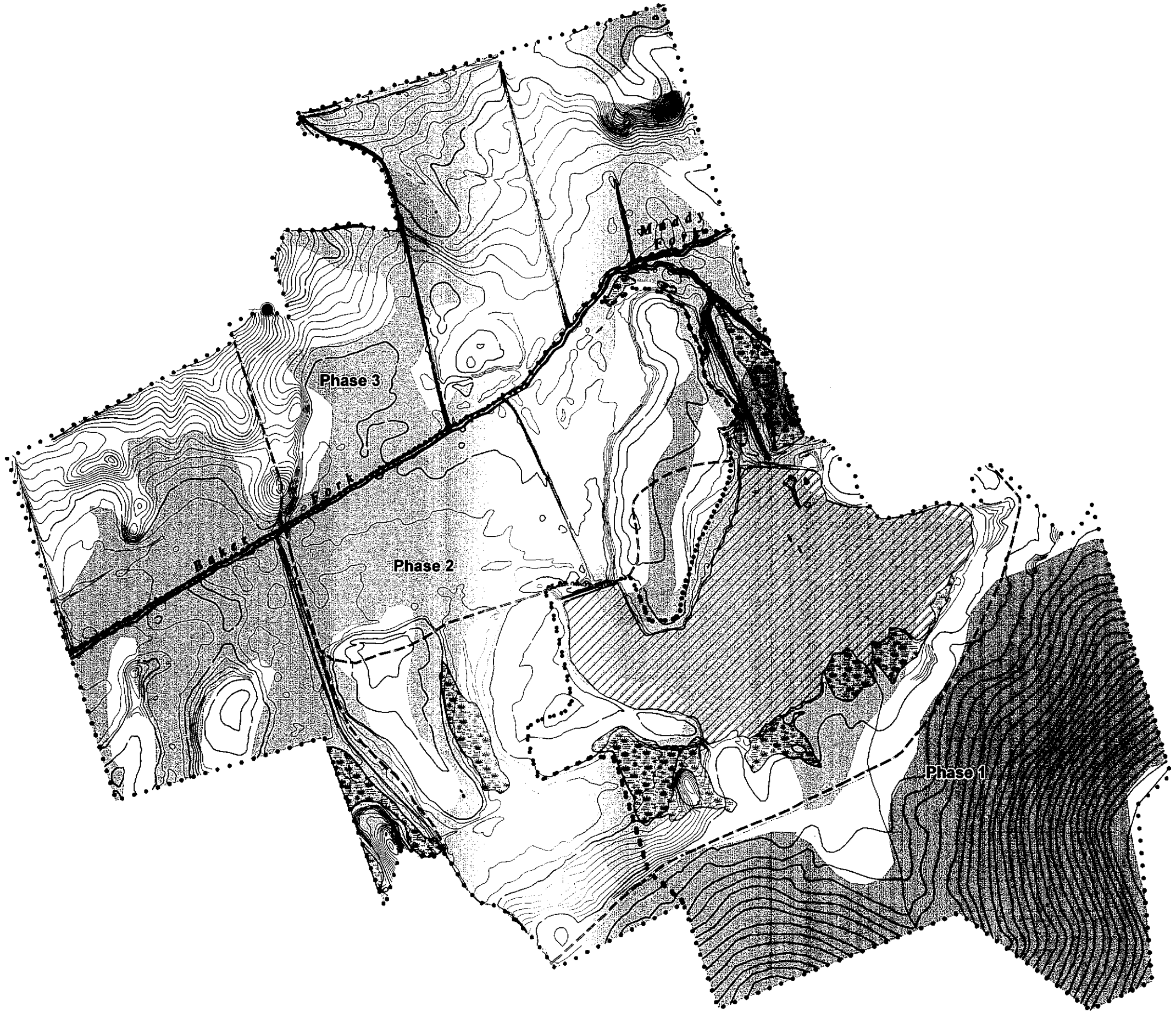
Center for Applied Ecology, Northern Kentucky University

August 2004

FIGURE 9

Red Stone Farm Wetland Mitigation Bank

Phases of Wetland Bank Development



Phase Features

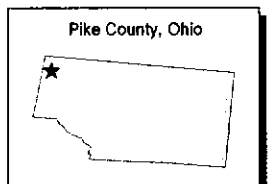
- Hydric Soils
- Hydric Inclusion Soils
- Upland Soils
- NRCS Wetland
- Existing Natural Wetlands
- Spring
- Phase Boundary
- Wetland Mitigation Bank Area
- Access Road
- 10' Contours
- 1' Contours
- Streams/Channels
- Ditch

NKU NORTHERN KENTUCKY UNIVERSITY
CENTER FOR APPLIED ECOLOGY

N W E S

150 75 0 150
Meters

Pike County, Ohio



Notes:
This map depicts the phases of wetland development based on data gathered through aerial surveys and field ground truthing.

Some information for this map was derived from field ground truthing, the Ohio Geographically Referenced Information Program, and the Wulsin family.

Projection: Universal Transverse Mercator Zone 17 North
Datum: NAD 1927

Center for Applied Ecology, Northern Kentucky University

March 2006

FIGURE 10

Red Stone Farm Wetland Mitigation Bank

NRCS Constructed Wetland Current Conditions (No Beaver Dam)

NRCS Wetland Survey

Elevation (ft)	Water Depth (ft)	Acres
100 - 101	NI*	—
99 - 100	0 - 1'	4.2
98 - 99	1 - 2'	11.6
97 - 98	2 - 3'	19.3
96 - 97	3 - 4'	5.5
95 - 96	4 - 5'	1.9
< 95	> 5'	0.7
		Total 43.2

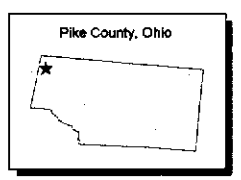
* *Not Inundated*

10' Contours
1' Contours
Streams/Channels
Ditch

50 25 0 50
Meters

N
W E
S

NKU NORTHERN KENTUCKY UNIVERSITY
CENTER FOR APPLIED ECOLOGY



Notes:
This map depicts the NRCS wetland and corresponding inundated areas. The contours within the wetland were digitized from a georeferenced, scanned survey map (with arbitrary datum) conducted by the U.S. Department of Agriculture, NRCS in July 1995.

Contours outside the watershed were derived from Henderson Aerial Surveys, the Ohio Geographically Referenced Information Program, and the Wulsin family.

Projection: Universal Transverse Mercator Zone 17 North
Datum: NAD 1927

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March 2006

FIGURE 11

Red Stone Farm Wetland Mitigation Bank

NRCS Constructed Wetland
Lowered Water Levels:
West 3' and East 2'

NRCS Wetland Survey

Elevation (ft)	*Water Depth (ft)*	*Acres*
100 - 101	NI*	—
99 - 100	NI*	—
98 - 99	NI*	—
97 - 98	West: NI* East: 0 - 1'	9.1
96 - 97	West: 0 - 1' East: 1 - 2'	7.1 0.5
95 - 96	West: 1 - 2'	1.9
< 95	West: > 2'	0.7
		Total 19.3

** Not Inundated*

10' Contours
1' Contours
Streams/Channels
Ditch
Soil Disposal Berms

50 25 0 50
Meters

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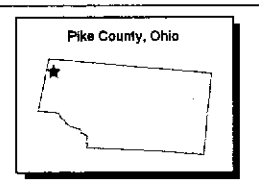

Notes:
This map depicts the NRCS wetland and corresponding inundated areas. The contours within the wetland were digitized from a georeferenced, scanned survey map (with arbitrary datum) conducted by the U.S. Department of Agriculture, NRCS in July 1995.

Contours outside the watershed were derived from Henderson Aerial Surveys, the Ohio Geographically Referenced Information Program, and the Wulsin family.

Projection: Universal Transverse Mercator Zone 17 North
Datum: NAD 1927

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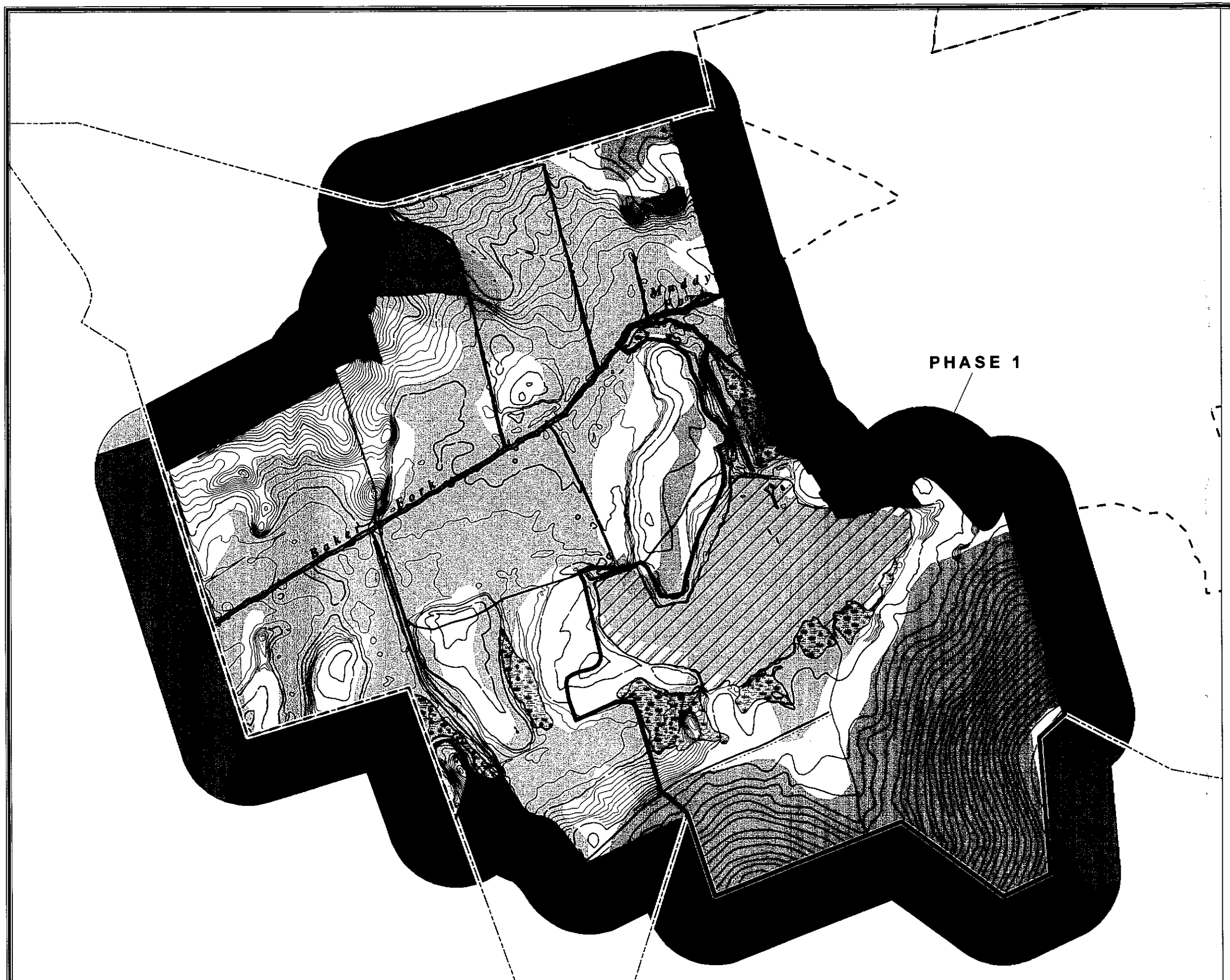
FIGURE 12

Red Stone Farm Wetland Mitigation Bank

Land Use/Land Cover Types Adjacent to Wetland Bank

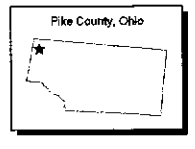


Features

- Spring
- Hydric Soils
- Hydric Inclusion Soils
- Upland Soils
- NRCS Wetland
- Existing Natural Wetlands
- Forest
- Old Field/Fescue Field/Lawn
- Pasture Field
- Residential
- Row Crop Field
- Phase 1 Boundary
- Wetland Bank Boundary
- Approximate Property Boundary
- Building
- 10' Contours
- 1' Contours
- Streams/Channels
- Ditch
- Roads

200 100 0 200

Meters



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Notes:
This map depicts the site land use/land cover immediately surrounding the proposed wetland bank boundary.

Some information for this map was derived from field ground truthing, the Ohio Geographically Referenced Information Program, and the Wulsin family.

Projection: Universal Transverse Mercator Zone 17 North
Datum: NAD 1927

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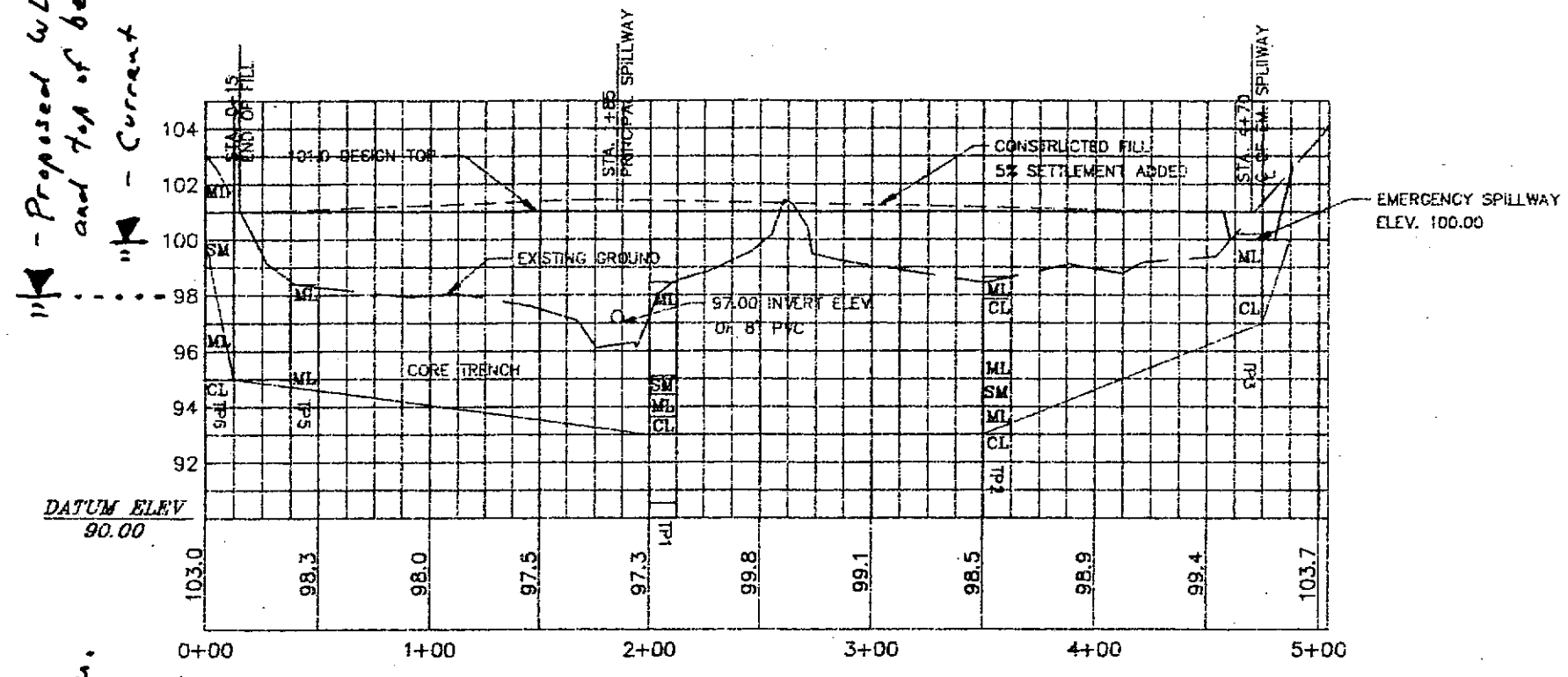
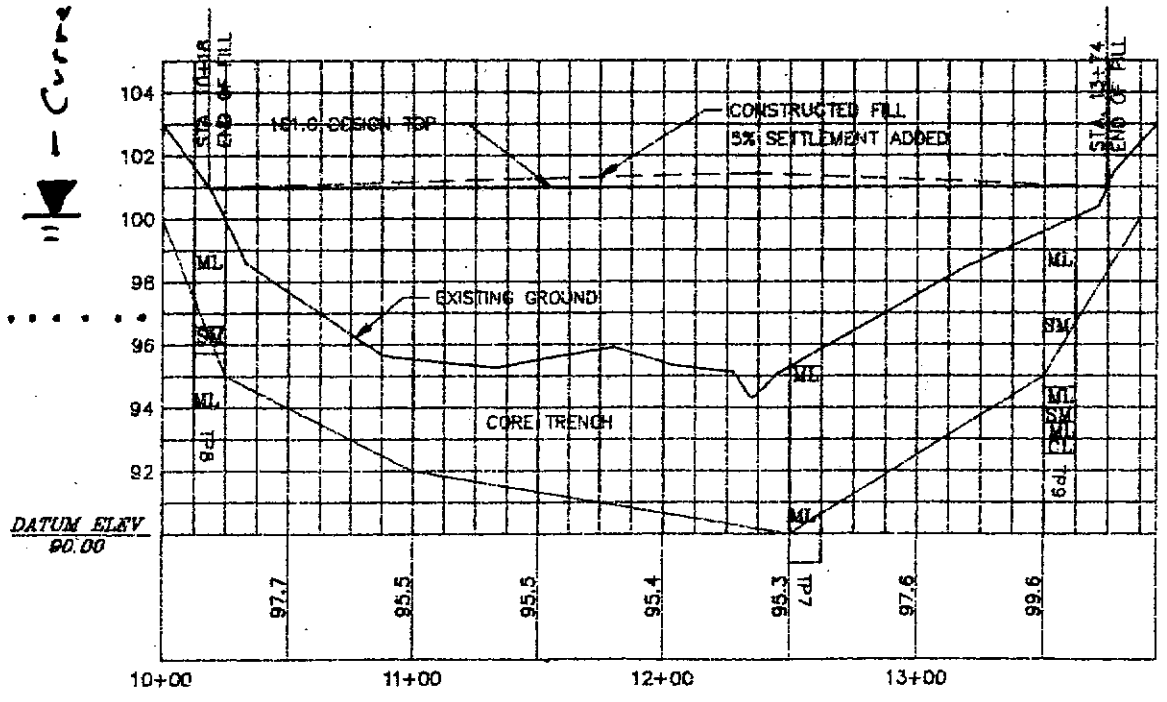
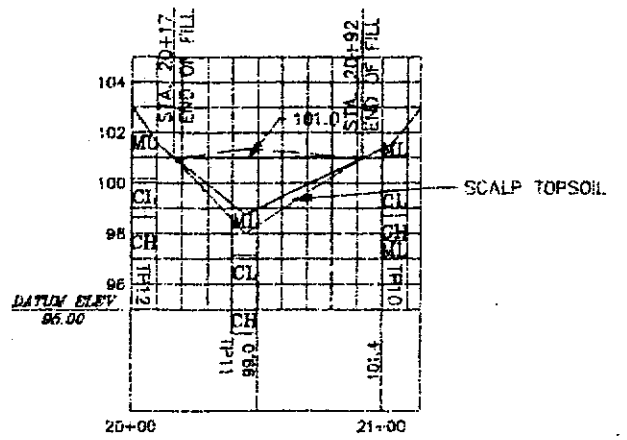
Figure 13:
Current and Proposed NRCS Wetland Berm Profiles



PROFILE OF FILL SITE 1 (East Berm)



PROFILE OF FILL SITE 2 (West Berm)



PROFILE OF FILL SITE 3

COMPACTION REQUIREMENTS

The placing and spreading of the fill material shall begin at the lowest point in the foundation area and shall be placed in horizontal lifts with a maximum thickness of 6 inches prior to compaction. Each lift will be compacted with at least 4 passes of a sheepsfoot roller (200 psi minimum rating).

NOTE: Core Trench Depth and Suitability of Compacted Fill Material to be determined by NRCS Representative on site.

DRAWSON WULSIN
WETLAND
PERRY TWP. PIKE CO. OH.

U.S. DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

		DATE		
DESIGNED	D. FAUBER	7/95	APPROVED BY	DATE
DRAWN	D. FAUBER	7/95	TITLE	
TRACED			CONST. APPROVAL	
CHECKED		7-95	TITLE	
			SHEET No. 5 OF 7	