Regulatory Analysis Form

(Completed by Promulgating Agency)

IRRC

Independent Regulatory Review Commission

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SECTION I: PROFILE

(1) Agency:
Department of Environmental Protection

(2) Agency Number:

Identification Number: **7-461**

IRRC Number: **2872**

(3) Short Title:
Stream Redesignations, Fishing Creek, et al.

(4) PA Code Cite:
25 Pa. Code, Chapter 93

(5) Agency Contacts (List Telephone Number, Address, Fax Number and Email Address):

Primary Contact: Michele Tate; 717-783-8727; RCSOB, 400 Market Street, Harrisburg, PA 17105; *mtate@state.pa.us*

Secondary Contact: Patricia Allan; 717-783-8727; RCSOB, 400 Market Street, Harrisburg, PA 17105; *pmallan@state.pa.us*

(6) Primary Contact for Public Comments (List Telephone Number, Address, Fax Number and Email Address) – Complete if different from #5:

Environmental Quality Board, P.O. Box 8477, Harrisburg, PA 17105
Express Mail: Environmental Quality Board, Rachel Carson State Office Building, 16th Floor, 400 Market Street, Harrisburg, PA 17101-2301
Email: RegComments@state.pa.us

(All Comments will appear on IRRC'S website)

(7) Type of Rulemaking (check applicable box):

- ☐ Proposed Regulation
- ☑ **Final Regulation**
- ☐ Final Omitted Regulation
- ☐ Emergency Certification Regulation;
  - ☐ Certification by the Governor
  - ☐ Certification by the Attorney General

(8) Briefly explain the regulation in clear and nontechnical language. (100 words or less)

This rulemaking modifies Chapter 93 to reflect the recommended redesignation of streams shown on the attached list. The changes include streams being recommended for redesignation as High Quality (HQ) or Exceptional Value (EV) Waters. The changes provide the appropriate designated use for these streams to protect existing uses. These changes may, upon implementation, result in more stringent treatment requirements for new and/or expanded wastewater discharges to the streams in order to protect the existing and designated water uses. (see attachment)

(9) Include a schedule for review of the regulation including:

A. The date by which the agency must receive public comments: The 45 day public comment period opened with the publication of the proposed rulemaking in the Pennsylvania Bulletin on September 18, 2010 (40 Pa.B. 5337) and closed on November 2, 2010.

B. The date or dates on which public meetings or hearings will be held: It was advertised that if sufficient interest was generated, a public hearing would have been scheduled at an appropriate time and location. No public meetings or hearings were requested or scheduled.

C. The expected date of promulgation of the proposed regulation as a final-form regulation: It is anticipated that the final-form regulation will be promulgated in the spring of 2011. The publication date for the final rulemaking in the Pennsylvania Bulletin will be the effective date for the regulation and compliance with the final-form regulation will be required at that time.

D. The expected effective date of the final-form regulation: Spring of 2011 (see question #9C.)

E. The date by which compliance with the final-form regulation will be required: Spring of 2011 (see Question #9C.)

F. The date by which required permits, licenses or other approvals must be obtained: Permits or approvals that are issued or renewed after the effective date of the final-form regulation will comply with the final-form regulation.

(10) Provide the schedule for continual review of the regulation.

This regulation will be reviewed in accordance with the sunset review schedule published by the Department to determine whether the regulation effectively fulfills the goals for which it was intended.

SECTION II: STATEMENT OF NEED

(11) State the statutory authority for the regulation. Include specific statutory citation.

These amendments are made under authority of the following acts:
The Pennsylvania Clean Streams Law, Act of June 22, 1937 (P.L. 1987, No. 394) as amended, 35 P.S. § 691.1 et seq.
Section 1920-A of The Administrative Code of 1929, as amended, 71 P.S. § 510-20.
40 CFR §131.12
Section 303 of the Federal Clean Water Act, 33 U.S.C. §1313.

(12) Is the regulation mandated by any federal or state law or court order, or federal regulation? Are there any relevant state or federal court decisions? If yes, cite the specific law, case or regulation as well as, any deadlines for action.

Although this regulation is not specifically mandated by Federal or state law or regulations, Section 303 (c) of the federal Clean Water Act requires that states review their water quality standards and modify them, as appropriate, at least once every three years. This regulation is undertaken as part of the Department's ongoing review of Pennsylvania's water quality standards. There are no deadlines for action associated with the regulation. Until this regulation is adopted, however, it will be difficult to ensure that the Department is providing the appropriate designated uses of these streams. Although there are no deadlines for action, this proposed regulation should be acted on promptly to ensure an appropriate level of protection to preserve the integrity of existing and designated uses of surface waters in this Commonwealth.

(13) State why the regulation is needed. Explain the compelling public interest that justifies the regulation. Describe who will benefit from the regulation. Quantify the benefits as completely as possible and approximate the number of people who will benefit.

These regulations are needed to provide the appropriate designated use protection for the streams being revised to mirror the existing use. These amendments will minimize the potential for unwarranted additional treatment costs, or the risk of being under-protective, which could lead to jeopardizing the uses and continued availability of these aquatic resources.

(14) If scientific data, studies, references are used to justify this regulation, please submit material with the regulatory package. Please provide full citation and/or links to internet source.

Please see attached reports: *Water Quality Standards Reviews, Stream Redesignation Evaluations*

- Buck Hill Creek (Monroe Co)
- Lehigh River, upper (Lackawanna, Monroe, Wayne, & Luzerne Co)
- Little Lehigh Creek (Lehigh & Berks Co)
- Gallows Run (Bucks Co)
- French Creek & Beaver Run (Chester Co)
- Tannery Hollow Run (Cameron Co)
- Fishing Creek (Lancaster Co)
- Deer Creek & Little Falls (York Co)

(15) Describe who and how many will be adversely affected by the regulation. How are they affected?

The streams that are recommended for redesignation are already protected at their existing use, and therefore the designated use changes will have no impact on existing wastewater discharges. Persons proposing new or expanded activities or projects which result in discharges to these and/or other waters of the Commonwealth are required to provide effluent treatment and best management practices according to the water quality criteria and designated and existing uses. This regulation will be implemented through the Department's permit and approval actions.

(16) List the persons, groups or entities that will be required to comply with the regulation. Approximate the number of people who will be required to comply.

See Question #15. Persons proposing new or expanded activities or projects which result in impacts to these waters of the Commonwealth must comply with this regulation by providing the appropriate level of wastewater treatment for discharges or best management practices in these waters.

SECTION III: COST AND IMPACT ANALYSIS

(17) Provide a specific estimate of the costs and/or savings to the regulated community associated with compliance, including any legal, accounting or consulting procedures which may be required. Explain how the dollar estimates were derived.

The streams recommended for redesignation are already protected at their existing use, and therefore the designated use revision will have no impact on existing waste discharges. This regulation may, upon implementation, affect new and expanded activities associated with these streams. For example, dischargers planning to add new or expand existing discharges to streams upgraded may experience higher treatment costs. The increased costs may take the form of higher engineering, construction, or operating costs for wastewater treatment facilities. It is not possible to precisely predict the actual change in costs since these are site-specific and depend upon the size of the receiving stream and many other factors.

(18) Provide a specific estimate of the costs and/or savings to local governments associated with compliance, including any legal, accounting or consulting procedures which may be required. Explain how the dollar estimates were derived.

See Question 17.

No costs will be imposed directly upon local government by this regulation. However, there may, upon implementation, be additional indirect costs incurred by local governments that may take the form of engineering and consulting fees needed to review and possibly revise existing Act 537 sewage Facilities Plans and local ordinances.

(19) Provide a specific estimate of the costs and/or savings to state government associated with the implementation of the regulation, including any legal, accounting, or consulting procedures which may be required. Explain how the dollar estimates were derived.

See Questions 17 and 18.

This rulemaking is based on and will be implemented through existing Department programs, procedures, and policies. There are no additional implementation costs to state government associated with this regulation.

(20) In the table below, provide an estimate of the fiscal savings and costs associated with implementation and compliance for the regulated community, local government, and state government for the current year and five subsequent years.

	Current FY 2010-2011	FY +1 2011-12	FY +2 2012-13	FY +3 2013-14	FY +4 2014-15	FY +5 2015-2016
SAVINGS:	$	$	$	$	$	$
Regulated Community	Not Measurable					
Local Government	"					
State Government	"					
Total Savings	"					
COSTS:						
Regulated Community	Not Measurable					
Local Government	"					
State Government	"					
Total Costs	"					
REVENUE LOSSES:						
Regulated Community	Not Measurable					
Local Government	"					
State Government	"					
Total Revenue Losses	"					

(20a) Provide the past three year expenditure history for programs affected by the regulation.

Program	FY-3 2007-2008	FY-2 2008-2009	FY-1 2009-2010	Current FY 2010-2011
Env. Prot.Operations (160)	$98,574,000.	$98,544,000.	$84,218,000.	$79,344,000
Env. Program Mgmt. (161)	$39,685,000.	$37,664,000.	$31,100,000.	$29,357,000

(21) Explain how the benefits of the regulation outweigh any cost and adverse effects.

Although it is not possible to approximate the change in costs, the Department believes that the benefits of providing the appropriate level of designated use protection and continued maintenance and availability of the Commonwealth's aquatic resources outweigh the potential costs or adverse effects of this regulation.

(22) Describe the communications with and input from the public and any advisory council/group in the development and drafting of the regulation. List the specific persons and/or groups who were involved.

See attached.

(23) Include a description of any alternative regulatory provisions which have been considered and rejected and a statement that the least burdensome acceptable alternative has been selected.

There were no alternative regulatory schemes that could have been considered when applying the appropriate designated use in 25 Pa.Code, Chapter 93, Water Quality Standards, to mirror the existing uses of these aquatic resources.

(24) Are there any provisions that are more stringent than federal standards? If yes, identify the specific provisions and the compelling Pennsylvania interest that demands stronger regulations.

No. The recommended redesignations are not more stringent than the companion federal standards allow.

(25) How does this regulation compare with those of other states? How will this affect Pennsylvania's ability to compete with other states?

Other states are also required to maintain water quality standards that include similar minimum antidegradation requirements, and to provide additional protection for surface waters that are considered ecologically significant and/or outstanding local resource waters.

These regulations should not put Pennsylvania at a competitive disadvantage with other states. These amendments are intended to provide the appropriate level of designated use protection for the streams listed.

(26) Will the regulation affect any other regulations of the promulgating agency or other state agencies? If yes, explain and provide specific citations.

No other regulations or State Agencies are affected by this rulemaking.

(27) Submit a statement of legal, accounting or consulting procedures and additional reporting, recordkeeping or other paperwork, including copies of forms or reports, which will be required for implementation of the regulation and an explanation of measures which have been taken to minimize these requirements.

No additional reporting, record keeping, or other paperwork will be required.

(28) Please list any special provisions which have been developed to meet the particular needs of affected groups or persons including, but not limited to, minorities, elderly, small businesses, and farmers.

There are no such provisions in this regulation.

Stream Redesignations
Fishing Creek, et al.

Stream	County	Reach†	List	Present Designation*	Requested Designation*	Recommended Designation*
Buck Hill Creek	Monroe	Basin, from and including UNT 05028 to and including UNT 05026	C	HQ-CWF, MF	EV	EV
Lehigh River (upper)	Lackawanna, Monroe, Wayne, Luzerne	Basin, source to (but not including) Tobyhanna Creek.	D	HQ-CWF, MF	EV, MF	EV, MF
Little Lehigh Creek	Lehigh, Berks	Mainstem	D	HQ-CWF, MF	EV, MF	HQ-CWF, MF (no change)
Gallows Run	Bucks	Basin	E	CWF, MF	HQ-CWF, MF	CWF, MF (no change)
Beaver Run	Chester	Basin	F	HQ-TSF, MF	EV, MF	EV, MF
French Creek	Chester	Basin, from Beaver Run to junction of West Vincent, East Vincent, and East Pikeland Townships (except Birch Run basin)	F	HQ-TSF, MF	EV, MF	Mainstem, from Beaver Run to junction of West Vincent, East Vincent, and East Pikeland Townships: EV, MF
French Creek	Chester	Mainstem, from junction of West Vincent, East Vincent, and East Pikeland Townships to T522 Bridge	F	TSF, MF	- - -	EV, MF
Tannery Hollow Run	Cameron	Basin	L	CWF, MF	EV, MF	EV, MF
Fishing Creek	Lancaster	Basin, from and including UNT 07256 (near T434 bridge) to mouth	O	Entire basin: HQ-CWF, MF	Entire basin: EV, MF	Basin, from and including UNT 07256 to mouth: EV, MF
Deer Creek	York	Basin (all sections in PA)	O	CWF, MF	HQ-CWF	CWF, MF (no change)
Little Falls	York	Basin (all sections in PA)	O	WWF, MF	HQ-CWF	CWF, MF

*WWF = warm water fishes
*CWF = cold water fishes
*TSF = trout stocking
*HQ = high quality
*EV = exceptional value
*MF = migratory fishes

†UNT = unnamed tributary

Fishing Creek, et al. Stream Redesignation Package
Final Rulemaking
Regulatory Analysis Form: Attachment to Question 22

Potentially affected municipalities were notified by letter of the stream evaluations and asked to provide any readily available data. In addition, data was requested from the public through a notice in the *Pennsylvania Bulletin* and newspaper notices. Following the completion of a stream evaluation, a report is prepared. The affected municipalities were notified of the availability of the draft evaluation report for their review and comment. The draft reports were posted on the Division of Water Quality Standards web page. Following is the Public Response and Participation Summary of each of the stream reports in this final rulemaking package.

- ***Buck Hill Creek***: The Department provided public notice of this redesignation evaluation and requested any technical data from the general public through publication in the Pennsylvania Bulletin on August 13, 2005 (35 Pa.B. 4671) and a similar notice was also published in the Pocono Record on August 19, 2005. In addition, Barrett Township along with the Monroe County Planning Commission were notified of the evaluation in a letter dated July 13, 2005. No data on water chemistry, instream habitat, or the aquatic community were received in response to these notifications.

  The petitioner and local municipality and planning commission representatives were notified by a postcard mailing that the report was available on the Department's web page for review with a 30-day comment period, which closed on April 16, 2010. No comments were received in response to this notice.

- ***Lehigh River, upper:*** The Department provided public notice of this stream redesignation evaluation and requested any technical data from the general public through publication in the Pennsylvania Bulletin on June 8, 2002 (32 Pa.B 2162). A similar notice was published in the Pocono Record and the Scranton Times on June 7, 2002. In addition, Clifton, Covington, Thornhurst, Buck, Coolbaugh, Tobyhanna, Lehigh and Sterling Townships and the Lackawanna (Regional), Luzerne, Monroe, and Wayne County Planning Commissions were notified of the redesignation evaluation in a letter dated June 7, 2002. Data on water chemistry, instream habitat, and the aquatic community were received from the Monroe County Planning Commission in response to these notices. Letters supporting this proposed redesignation were received from Thornhurst and Buck Townships, Lackawanna County and the Monroe County Conservation District. Letters in opposition to this proposed redesignation were received from Clifton Township, Lackawanna County and the developers of Big Bass Lake, Gouldsboro, PA.

  Subsequent to receiving the support letters noted above, DEP received a letter of support from the Monroe County Conservation District in July 2009. In addition,

Tobyhanna Township submitted a letter in opposition to an EV redesignation in which they state that the current HQ designation provides adequate protection.

The petitioner and local municipality and planning commission representatives were notified by a postcard mailing that the report was available on the Department's web page for review with a 30-day comment period, which closed on April 16, 2010. In response, letters were received from the Lackawanna, Luzerne, and Wayne Conservation Districts; the Pennsylvania Council of Trout Unlimited; the local Brodhead and Stanley Cooper Sr. Chapters of Trout Unlimited; the Lehigh Coldwater Fishery Alliance; Wildlands Conservancy; Riverside Estates Community Association; and Thornhurst Township indicating their support of the EV recommendations. These supportive letters were provided by Barbara Smith who represents the petitioners (North Pocono CARE). Letters were submitted by Tobyhanna Township to restate their original opposition to the EV recommendation. Further, they infer that the petition marginally meets the EV Criteria and does not meet EV chemistry criteria. However, the Department's report clearly demonstrates overwhelming qualification of the Upper Lehigh River as EV waters under numerous EV criteria and it must be noted that there is no chemistry criterion that needs to be met for EV consideration.

- ***Little Lehigh Creek:*** The Department provided public notice of this redesignation evaluation and requested technical data from the general public through publication in the Pennsylvania Bulletin on June 21, 2003 (33 Pa.B 2933). A similar notice was also published in The Morning Call newspaper (Allentown, PA) on June 20, 2003. In addition, Longswamp Township, Berks County; Lower Macungie, Salisbury Townships, Borough of Emmaus, and the City of Allentown, Lehigh County were notified of the redesignation evaluation in a letter dated June 19, 2003. Long-term water quality data were received as a result of these requests from the City of Allentown, Bureau of Water Resources. Letters in support of the redesignation evaluation were received from Lower Macungie Township, Lehigh County Fish and Game Protective Association, Partners for Community Preservation, 25 students from Salisbury High School, and two members of the public.

  The petitioner and local municipality and planning commission representatives were notified by a postcard mailing that the report was available on the Department's web page for review with a 30-day comment period, which closed on April 16, 2010. No comments were received in response to this notice.

- ***Gallows Run:*** The Department provided public notice of this designation evaluation and requested any technical data from the general public through publication in the Pennsylvania Bulletin on June 24, 2006 (36 Pa.B 3167). In addition, the Bucks County Planning Commission and Nockamixon, Durham, and Springfield Townships were notified of the redesignation evaluation in a letter dated June 21, 2006. The Gallows Run Watershed Association provided the Department with the Gallows Run Watershed Restoration and Protection Plan.

The Bucks County Planning Commission referred the Department to the Gallows Run Watershed Restoration and Protection Plan, the Heritage Conservancy's Middle Delaware River Conservation Plan, and the Bucks County Planning Commission's Delaware River (North) Act 167 Stormwater Management Plan. No other data were received resulting from the public notice.

The petitioner and local municipality and planning commission representatives were notified by a postcard mailing that the report was available on the Department's web page for review with a 30-day comment period, which closed on April 16, 2010. No comments were received in response to this notice.

- ***French Creek & Beaver Run:*** The Department provided public notice of this redesignation evaluation and requested technical data from the general public through publication in the Pennsylvania Bulletin on March 13, 2004 (34 Pa.B 1520). A similar notice was also published in The Mercury newspaper (Pottstown, PA) on March 12, 2004. In addition, East Nantmeal, East Pikeland, East Vincent, South Coventry, and West Vincent Townships and the Chester County Planning Commission were notified of the redesignation evaluation in a letter dated February 24, 2004. Water quality and benthic macroinvertebrate data were received from the Delaware Riverkeeper Network as a result of these requests. In addition, the petitioner provided data from Stroud Water Research Center, The Academy of Natural Sciences Patrick Center for Environmental Research and US Geological Survey. The data provided by the petitioner was used as documentation and support for acceptance of the French Creek and Beaver Run petition for redesignation. The data submitted by the Delaware Riverkeeper Network was used as supporting documentation of the excellent water quality of the mainstem of French Creek in conjunction with the findings of the Department's survey on April 27-30, 2004.

  The petitioner and local municipality and planning commission representatives were notified by a postcard mailing that the report was available on the Department's web page for review with a 30-day comment period, which closed on April 16, 2010. In response, DEP received comments from the petitioner, Green Valleys Association, the Delaware Riverkeeper, and the Valley Forge Chapter of Trout Unlimited. These commentors are in support of the EV redesignation recommendations, but noted that tributaries to the French Creek mainstem were not included in the EV redesignation recommendations and raised concerns that their exclusion would expose them to potential degradation. In addition, DEP received an inquiry from the Honorable Curt Schroder, State Representative for the 155th Legislative District that raised these same concerns. While it is preferred to have included the unnamed tributaries as part of the EV recommendation, DEP's evaluation of these streams indicated they did not meet the biological qualifying EV criterion and therefore could not be included in the EV recommendation. It is further noted that since these tributaries are currently HQ, an EV mainstem designation adds an even higher level of protective review because if any wastewater discharges are proposed for these unnamed tributaries,

they would not only need to meet more stringent HQ-based permit limits but must also then need to meet the more protective EV requirements at the point of confluence with the French Creek mainstem.

- ***Tannery Hollow Run:*** The Department provided public notice of this redesignation evaluation and requested any technical data from the general public through publication in the Pennsylvania Bulletin on August 19, 2006 (36 Pa.B 4665). A similar notice was also sent to Benezette, Gibson, Lumber, and Shippen Townships along with the Cameron and Elk County Planning Commissions and the North Central Regional Planning and Development Commission on July 21, 2006 to notify them of this evaluation. In response to these notifications, GeoTech Engineering, Inc submitted a report on behalf of their client Allegheny Enterprises, Inc. This report contains water chemistry data on the small surface mine discharge in the headwaters of Tannery Hollow Run in addition to sample points on the stream above and below this discharge. It contends that the candidate stream is degraded by this discharge. The data collected by DEP and the Cameron County Conservation District show that this discharge does not significantly degrade the water quality of Tannery Hollow Run. Water chemistry samples from a location 900 meters below this discharge (Appendix 1) and Station 2TR (Table 2) do not indicate any significant elevation in TDS or conductivity or a decrease in pH which would be expected if this discharge was degrading the water quality of Tannery Hollow Run. Also the macroinvertebrate community shows no evidence of degradation due to AMD such as a reduction in the number and diversity of the mayfly community.

  The petitioner and local municipality and planning commission representatives were notified by a postcard mailing that the report was available on the Department's web page for review with a 30-day comment period, which closed on April 16, 2010. No comments were received in response to this notice.

- ***Fishing Creek:*** The Department provided public notice of this redesignation evaluation and requested any technical data from the general public through publication in the Pennsylvania Bulletin on February 26, 2005 (35 Pa.B 1477). A similar notice was also published in the Intelligencer Journal on February 18, 2005. In addition, Drumore and Providence Townships along with the Lancaster County Planning Commission were all notified of the evaluation in a letter dated February 7, 2005. No data on water chemistry, instream habitat, or the aquatic community were received in response to these notifications. In 2005, RETTEW Associates, Inc. collected benthic macroinvertebrates and did a fish species survey that was funded in part by a Growing Greener grant to the Lancaster Conservancy. No data from this survey were submitted to DEP during the public comment period.

  The petitioner and local municipality and planning commission representatives were notified by a postcard mailing that the report was available on the Department's web page for review with a 30-day comment period, which closed

on April 16, 2010. In response, the Lancaster County Conservancy expressed support of the recommendations and requested review and reconsideration of the stream segments not being proposed for EV redesignation at a future date.

- ***Deer Creek & Little Falls:*** The Department provided public notice of this redesignation evaluation and requested technical data from the general public through publication in the Pennsylvania Bulletin on November 27, 2004 (34 Pa.B 6368). A similar notice was also published in The Daily Record newspaper (York, PA) on November 20, 2004. In addition, Shrewsbury, New Freedom, Stewartstown and Fawn Grove Boroughs and Shrewsbury, Hopewell, and Fawn Townships and the York County Planning Commission were notified of the redesignation evaluation in a letter dated November 19, 2004. Fisheries data for Little Falls Creek was received from Joe Berg in response to these requests. The Stewartstown Borough Authority sent a letter in opposition to the requested redesignation but without any supporting technical data. In addition, The Honorable Shari Wilson, Secretary of the Maryland Department of the Environment (MDE) and Matthew Rowe of MDE's Science Services Administration sent a letters expressing strong support for redesignation of the Pennsylvania portions of these two watersheds to EV to afford protection of Maryland's downstream designated use.

  The petitioner and local municipality and planning commission representatives were notified by a postcard mailing that the report was available on the Department's web page for review with a 30-day comment period, which closed on April 16, 2010. In response, the Shrewsbury Township Board of Supervisors expressed concern that DEP did not recommend High Quality protection to both waters. The raised concerns addressed the number of field sample sites and their locations, tributaries that were not sampled, the choice of a "pristine" reference, and not supporting the higher downstream designations in Maryland. The Department's field surveys and resulting report have properly addressed these issues. The sample site coverage yielded representative data, which properly reflects the varied land-uses in the basin. Selection of an EV reference stream is a requisite of DEP's stream redesignation process. Currently, there are no regulatory avenues for DEP to consider downstream, out-of-state designated uses. Therefore, DEP's redesignation review can only apply to waters within the Commonwealth.

All data and comments received in response to these notifications were considered in the determination of the Department's recommendations which were included in the proposed rulemaking. The EQB approved the proposed rulemaking for the Fishing Creek, et al. package at its July 13, 2010 meeting. The proposed rulemaking was published in the *Pennsylvania Bulletin* on September 18, 2010 (40 Pa.B. 5337) with provision for a 45-day public comment period that closed on November 2, 2010. A list of the individual commentators along with a detailed summary of their comments and the Department's responses to their comments is included with the regulatory documents that comprise the Fishing Creek, et al. Stream Redesignations

Final Rulemaking Package (see the *Report to the Environmental Quality Board: Response to Comments*). Following is a summary of the comments generated in response to the proposed rulemaking public comment period.

- Supportive comments were received from one hundred sixty-two commentators who favored the redesignation of portions of the French Creek basin to exceptional value. Commentators listed many reasons for their support of the redesignation of the French Creek basin including the natural beauty of the basin, the recreational opportunities it provides, the importance of protecting aquatic life and wildlife, the importance to the spiritual and emotional well-being of people, flood control and clean water for people, the health of local communities, and the importance to preserve the basin for future generations. Additionally, the U.S. Environmental Protection Agency (EPA) Region 3 commended DEP on its continuing effort to upgrade streams into its highest level of the Special Protection Waters Program. EPA also noted that, if finalized, this package will redesignate 251.35 stream miles in the Commonwealth to Exceptional Value status. EPA otherwise had no comments. No opposing comments were received during the comment period.

- Additional remarks were received from the Chester County Water Resources Authority and the Chester County Board of Commissioners. Both indicated strong support of the redesignation of French Creek and Beaver Run to EV, MF and urged the Independent Regulatory Review Commission (IRRC) to approve the upgrade of French Creek and Beaver Run as recommended by the EQB and the Department. This redesignation is consistent with and will help implement "*Watersheds – An Integrated Water Resources Management Plan for Chester County and its Watersheds*" and "*Landscapes2*". "*Watersheds*" is the water resources component of Chester County's comprehensive plan "*Landscapes2*"

On August 31, 2010, the Department submitted a copy of the proposed rulemaking to the IRRC and to the Chairpersons of the Senate and House Environmental Resources and Energy Committees for review and comment in accordance with Section 5(a) of the Regulatory Review Act (71 P.S. § 745.5(a)). IRRC did not raise any comments, recommendations, or objections to any portion of the proposed rulemaking, and no changes were made from the proposed rulemaking to this final-form regulation; therefore under Section 5(g) of Regulatory Review Act, the final rulemaking will be deemed approved by IRRC.

CDL-1

FACE SHEET
FOR FILING DOCUMENTS
WITH THE LEGISLATIVE REFERENCE BUREAU

(Pursuant to Commonwealth Documents Law)

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DO NOT WRITE IN THIS SPACE

Copy below is hereby approved as to form and legality.
Attorney General

By:
(Deputy Attorney General)

DATE OF APPROVAL

☐ Check if applicable
Copy not approved. Objections attached.

Copy below is hereby certified to be true and correct copy of a document issued, prescribed or promulgated by:

DEPARTMENT OF ENVIRONMENTAL PROTECTION
ENVIRONMENTAL QUALITY BOARD

(AGENCY)

DOCUMENT/FISCAL NOTE NO. 7-461

DATE OF ADOPTION MAY 18, 2011

BY

TITLE MICHAEL KRANCER
CHAIRMAN

EXECUTIVE OFFICER CHAIRMAN OR SECRETARY

Copy below is hereby approved as to form and legality
Executive or Independent Agencies.

BY Andrew C. Clark

DATE OF APPROVAL JUN - 8 2011

(Deputy General Counsel)
~~(Chief Counsel - Independent Agency)~~
(~~Strike inapplicable~~ title)

☐ Check if applicable. No Attorney General Approval or objection within 30 days after submission.

NOTICE OF FINAL RULEMAKING

DEPARTMENT OF ENVIRONMENTAL PROTECTION
ENVIRONMENTAL QUALITY BOARD

FISHING CREEK, ET AL STREAM REDESIGNATIONS

25 *Pa. Code,* Chapter 93

NOTICE OF FINAL RULEMAKING
DEPARTMENT OF ENVIRONMENTAL PROTECTION
ENVIRONMENTAL QUALITY BOARD
25 Pa. Code, Chapter 93
Stream Redesignations (Fishing Creek, *et al.*)

Order

The Environmental Quality Board (Board) by this order amends 25 Pa. Code §§93.9c, 93.9d, 93.9f, 93.9l, and 93.9o to read as set forth in Annex A.

This order was adopted by the Board at its meeting of May 18, 2011.

A. Effective Date

These amendments are effective upon publication in the *Pennsylvania Bulletin* as final-form rulemaking.

B. Contact Persons

For further information, contact Rodney A. Kime, Chief, Division of Water Quality Standards, Bureau of Water Standards and Facility Regulation, 11th Floor, Rachel Carson State Office Building, P.O. Box 8467, 400 Market Street, Harrisburg, PA 17105-8467, 717-787-9637 or Michelle Moses, Assistant Counsel, Bureau of Regulatory Counsel, 9th Floor, Rachel Carson State Office Building, P.O. Box 8464, Harrisburg, PA 17105-8464, 717-787-7060. Persons with a disability may use the AT&T Relay Service by calling 1-800-654-5984 (TDD-users) or 1-800-654-5988 (voice users). This proposal is available electronically through the Department of Environmental Protection (Department) web site (http://www.depweb.state.pa.us).

C. Statutory and Regulatory Authority

This final-form rulemaking is being made under the authority of Sections 5(b)(1) and 402 of The Clean Streams Law (35 P.S. §§ 691.5 (b)(1) and 691.402), which authorizes the Board to develop and adopt rules and regulations to implement the provisions of The Clean Streams Law, and Section 1920-A of The Administrative Code of 1929 (71 P.S. § 510-20), which grants to the Board the power and duty to formulate, adopt, and promulgate rules and regulations for the proper performance of the work of the Department. In addition, Section 303 of the Federal Clean Water Act (33 U.S.C. § 1313) sets forth requirements for water quality standards.

D. Background of the Proposed Amendments

Water quality standards are in-stream water quality goals that are implemented by imposing specific regulatory requirements (such as treatment requirements, effluent limits and best management practices) on individual sources of pollution.

The Department may identify candidates for redesignation during routine waterbody investigations. Requests for consideration may also be initiated by other agencies. Organizations, businesses, or individuals may submit a rulemaking petition to the Board.

The Department considers candidates for High Quality (HQ) or Exceptional Value (EV) Waters and all other designations in its ongoing review of water quality standards. In general, HQ and EV waters must be maintained at their existing quality and permitted activities shall ensure the protection of designated and existing uses.

Existing use protection is provided when the Department determines, based on its evaluation of the best available scientific information, that a surface water attains water uses identified in regulations at 25 Pa. Code sections 93.3 and 93.4. Examples of water uses protected include the following: Cold Water Fishes (CWF), Warm Water Fishes (WWF), HQ and EV. A final existing use determination is made on a surface water at the time the Department takes a permit or approval action on a request to conduct an activity that may impact surface water. If the determination demonstrates that the existing use is different than the designated use, the water body will immediately receive the best protection identified by either the attained uses or the designated uses. A stream will then be "redesignated" through the rulemaking process to match the existing uses with the designated uses. For example, if the designated use of a stream is listed as protecting WWF but the redesignation evaluation demonstrates that the water attains the use of CWF, the stream would immediately be protected for CWF, prior to a rulemaking. Once the Department determines the water uses attained by a surface water, the Department will recommend to the Board that the existing uses be made "designated" uses, through rulemaking, and be added to the list of uses identified in the regulation at 25 Pa. Code section 93.9.

The streams in this rulemaking were all evaluated in response to petitions as follows:

Stream	County	Petitioner
Buck Hill Creek	Monroe	Buck Hill Conservation Foundation
Lehigh River (upper)	Lackawanna, Monroe, Wayne, Luzerne	North Pocono Citizens Alert Regarding the Environment (CARE)
Little Lehigh Creek	Lehigh, Berks	Mid-Atlantic Environmental Law Center
Gallows Run	Bucks	Gallows Run Watershed Association
French Creek & Beaver Run	Chester	Green Valleys Association
Tannery Hollow Run	Cameron	Cameron County Conservation District
Fishing Creek	Lancaster	Patrick McClure
Deer Creek & Little Falls	York	Shrewsbury Township

These regulatory changes were developed as a result of aquatic studies conducted by the Bureau of Water Standards and Facility Regulation. The physical, chemical, and biological characteristics and other information on these waterbodies were evaluated to determine the appropriateness of the current and requested designations using applicable regulatory criteria and definitions. In reviewing whether waterbodies qualify as HQ or EV waters, the Department considers the criteria in § 93.4b (relating to qualifying as High Quality or Exceptional Value Waters). Based upon the data and information collected on these waterbodies, the Board has made the designations in Annex A.

E. Summary of Comments and Responses on the Proposed Rulemaking

The Board approved the proposed rulemaking for the Fishing Creek, et al. package at its July 13, 2010 meeting. The proposed rulemaking was published in the *Pennsylvania Bulletin* on September 18, 2010 (40 Pa.B. 5337) with provision for a 45-day public comment period that closed on November 2, 2010. Supportive comments were received from one hundred sixty-two commentators who favored the redesignation of portions of the French Creek basin to exceptional value. Commentators listed many reasons for their support of the redesignation of the French Creek basin including the natural beauty of the basin, the recreational opportunities it provides, the importance of protecting aquatic life and wildlife, the importance to the spiritual and emotional well-being of people, flood control and clean water for people, the health of local communities, and the importance to preserve the basin for future generations. Additionally, the U.S. Environmental Protection Agency (EPA) Region 3 commended the Department on its continuing effort to upgrade streams into its highest level of the Special Protection Waters Program. EPA also noted that, if finalized, this package will redesignate 251.35 stream miles in the Commonwealth to Exceptional Value status. EPA otherwise had no comments. No opposing comments were received during the comment period. Additional remarks were received from the Chester County Water Resources Authority and the Chester County Board of Commissioners. Both indicated strong support of the redesignation of French Creek and Beaver Run to EV, MF and urged the Independent Regulatory Review Commission (IRRC) to approve the upgrade of French Creek and Beaver Run as recommended by the Board and the Department. This redesignation is consistent with and will help implement "*Watersheds – An Integrated Water Resources Management Plan for Chester County and its Watersheds*" and "*Landscapes2*". "*Watersheds*" is the water resources component of Chester County's comprehensive plan "*Landscapes2*".

On August 31, 2010, the Department submitted a copy of the proposed rulemaking to the IRRC and to the Chairpersons of the Senate and House Environmental Resources and Energy Committees for review and comment in accordance with Section 5(a) of the Regulatory Review Act (71 P.S. § 745.5(a)). IRRC did not raise any comments, recommendations, or objections to any portion of the proposed rulemaking, and no changes were made from the proposed rulemaking to this final-form regulation; therefore under Section 5(g) of Regulatory Review Act, the final rulemaking will be deemed approved by IRRC.

F. Summary of Changes to the Proposed Rulemaking

No changes were made to the redesignations recommended in the proposed rulemaking.

G. Benefits, Costs and Compliance

1. **Benefits** – Overall, the Commonwealth, its citizens and natural resources will benefit from these changes because they provide the appropriate level of protection in order to preserve the integrity of existing and designated uses of surface waters in this Commonwealth. Protecting water quality provides economic value to present and future generations in the form of clean water for drinking, recreational opportunities, and aquatic life protection. It is important to realize these benefits to ensure opportunity and development continue in a manner that is environmentally, socially and

economically sound. Maintenance of water quality ensures its future availability for all uses.

2. **Compliance Costs** – The streams recommended for redesignation are already protected at their existing use, and therefore the designated use revision will not impose increased compliance costs on the regulated community.

   Persons conducting or proposing activities or projects must comply with the regulatory requirements relating to designated and existing uses. Persons expanding a discharge or adding a new discharge point to a stream could be adversely affected if they need to provide a higher level of treatment or best management practices to meet the designated and existing uses of the stream. For example, these increased costs may take the form of higher engineering, construction or operating cost for point source discharges. Treatment costs and best management practices are site-specific and depend upon the size of the discharge in relation to the size of the stream and many other factors. It is therefore not possible to precisely predict the actual change in costs. Economic impacts would primarily involve the potential for higher treatment costs for new or expanded discharges to streams that are redesignated. The initial costs resulting from the installation of technologically advanced wastewater treatment processes and best management practices may be offset by potential savings from and increased value of improved water quality through more cost-effective and efficient treatment over time.

3. **Compliance Assistance Plan** - The regulatory revisions have been developed as part of an established program that has been implemented by the Department since the early 1980s. The revisions are consistent with and based on existing Department regulations. The revisions extend additional protection to selected waterbodies that exhibit exceptional water quality and are consistent with antidegradation requirements established by the Federal Clean Water Act and Pennsylvania Clean Streams Law. All surface waters in this Commonwealth are afforded a minimum level of protection through compliance with the water quality standards, which prevent pollution and protect existing water uses.

   The redesignations will be implemented through the Department's permit and approval actions. For example, the National Pollutant Discharge Elimination System (NPDES) permitting program bases effluent limitations on the use designation of the stream. These permit conditions are established to assure water quality criteria are achieved and designated and existing uses are protected. New and expanded dischargers with water quality based effluent limitations are required to provide effluent treatment according to the water quality criteria associated with existing uses and revised designated water uses.

4. **Paperwork Requirements** - The regulatory revisions should have no direct paperwork impact on the Commonwealth, local governments and political subdivisions, or the private sector. These regulatory revisions are based on existing Department regulations and simply mirror the existing use protection that is already in place for these streams. There may be some indirect paperwork requirements for new or expanding dischargers to streams upgraded to HQ or EV. For example,

NPDES general permits are not currently available for new or expanded discharges to these streams. Thus an individual permit, and its associated paperwork, would be required. Additionally, paperwork associated with demonstrating social and economic justification (SEJ) may be required for new or expanded discharges to certain HQ Waters, and consideration of nondischarge alternatives is required for all new or expanded discharges to EV and HQ Waters.

H. Pollution Prevention

The water quality standards and antidegradation program are major pollution prevention tools because the objective is to prevent degradation by maintaining and protecting existing water quality and existing uses. Although the antidegradation program does not prohibit new or expanded wastewater discharges, nondischarge alternatives are encouraged, and required when environmentally sound and cost effective. Nondischarge alternatives, when implemented, remove impacts to surface water and reduce the overall level of pollution to the environment by remediation of the effluent through the soil.

I. Sunset Review

These amendments will be reviewed in accordance with the sunset review schedule published by the Department to determine whether the regulations effectively fulfill the goals for which they were intended.

J. Regulatory Review

Under Section 5(a) of the Regulatory Review Act (71 P.S. § 745.5(a)), on August 31, 2010, the Department submitted a copy of the proposed rulemaking to the Independent Regulatory Review Commission (IRRC) and to the Chairpersons of the Senate and House Environmental Resources and Energy Committees for review and comment.

Under Section 5(c) of the Regulatory Review Act, the Department provided IRRC and the Committees with copies of the comments received, as well as other documentation. The Department has considered all public comments in preparing this final-form regulation. No comments were received on the proposed rulemaking from IRRC or the Committees.

Under Section 5.1(j.2) of the Regulatory Review Act (71 P.S. § 745.5a(j.2)), this final-form regulation was deemed approved by the House and Senate Committees on _____. Under Section 5.1(e) of the Regulatory Review Act, IRRC met on _____ and approved the final-form regulation.

K. Findings

The Board finds that:

(1) Public notice of proposed rulemaking was given under Sections 201 and 202 of the Act of July 31, 1968 (P.L. 769, No. 240) (45 P.S. §§1201 and 1202) and regulations promulgated thereunder, 1 *Pa. Code* §§7.1 and 7.2.

(2) A public comment period was provided as required by law, and all comments were considered.

(3) This final-form regulation does not enlarge the purpose of the proposal published at 40 Pa.B. 5337 (September 18, 2010).

(4) This final-form regulation is necessary and appropriate for administration and enforcement of the authorizing acts identified in Section C of this Order.

(5) This final-form regulation does not contain standards or requirements that exceed requirements of the companion federal regulations.

L. Order

The Board, acting under the authorizing statutes, orders that:

(a) The regulations of the Department, 25 *Pa. Code* Chapter 93, are amended by amending §§93.9c, 93.9d, 93.9f, 93.9l and 93.9o to read as set forth in Annex A.

(b) The Chairperson of the Board shall submit this order and Annex A to the Office of General Counsel and the Office of Attorney General for approval and review as to legality and form, as required by law.

(c) The Chairperson shall submit this order and Annex A to IRRC and the Senate and House Environmental Resources and Energy Committees, as required by the Regulatory Review Act.

(d) The Chairperson shall certify this order and Annex A and deposit them with the Legislative Reference Bureau, as required by law.

(e) This order shall take effect immediately upon publication in the *Pennsylvania Bulletin.*

MICHAEL KRANCER,
Chairman

ANNEX A

TITLE 25. ENVIRONMENTAL PROTECTION
PART I. DEPARTMENT OF ENVIRONMENTAL PROTECTION
Subpart C. PROTECTION OF NATURAL RESOURCES
ARTICLE II. WATER RESOURCES

CHAPTER 93. WATER QUALITY STANDARDS

§93.9c. Drainage List C

Delaware River Basin in Pennsylvania
Delaware River

Stream	Zone	County	Water Uses Protected	Exceptions to Specific Criteria
	* * * * * *			
1—Delaware River	Main Stem, Tocks Island to Lehigh River	Northampton	WWF, MF	See DRBC regulations—Water Quality Zone 1D
2—**[Unnamed Tributaries]** **UNTs** to Delaware River	Basins, Tocks Island to Brodhead Creek	Monroe	HQ-CWF, MF	None
[2—Brodhead Creek	**Main Stem, Source to LR 45060 (SR 2022) Bridge**	**Monroe**	**HQ-CWF, MF**	**None**
3—Unnamed Tributaries to Brodhead Creek	**Basins, Source to LR 45060 Bridge**	**Monroe**	**HQ-CWF, MF**	**None**
3—Spruce Mountain Run	**Basin**	**Monroe**	**HQ-CWF, MF**	**None**
3—Leavitt Branch	**Basin**	**Monroe**	**HQ-CWF, MF**	**None**
3—Buck Hill Creek	**Basin, Source to Unnamed Tributary (UNT) 05028 (RM 2.16)**	**Monroe**	**EV, MF**	**None**
4—Unnamed Tributary 05028 to Buck Hill Creek	**Basin**	**Monroe**	**HQ-CWF, MF**	**None**
3—Buck Hill Creek	**Basin, UNT 05028 to UNT 05026 (RM 1.88)**	**Monroe**	**HQ-CWF, MF**	**None**
4—Unnamed Tributary 05026 to Buck Hill Creek	**Basin**	**Monroe**	**HQ-CWF, MF**	**None]**
2—Brodhead Creek				

3—Middle Branch Brodhead Creek	**Basin, source to confluence with Buck Hill Creek**	**Monroe**	**HQ-CWF, MF**	**None**
3—Buck Hill Creek	Basin, **[UNT 05026] Source** to Griscom Creek	Monroe	EV**[, MF]**	None
4—Griscom Creek	Basin	Monroe	HQ-CWF **[, MF]**	None
3—Buck Hill Creek	Basin, Griscom Creek to Buck Hill Falls	Monroe	HQ-CWF **[, MF]**	None
3—Buck Hill Creek	Basin, Buck Hill Falls to **[Mouth] confluence with Middle Branch Brodhead Creek**	Monroe	HQ-CWF, MF	None
2—Brodhead Creek	**Mainstem, confluence of Middle Branch Brodhead Creek and Buck Hill Creek to LR 45060 (SR 2022) Bridge**	**Monroe**	**HQ-CWF, MF**	**None**
3—UNTs to Brodhead Creek	**Basins, confluence of Middle Branch Brodhead Creek and Buck Hill Creek to LR 45060 Bridge**	**Monroe**	**HQ-CWF, MF**	**None**
3—Goose Pond Run	Basin	Monroe	HQ-CWF, MF	None

* * * * * *

§93.9d. Drainage List D

Delaware River Basin in Pennsylvania
Lehigh River

Stream	**Zone**	**County**	**Water Uses Protected**	**Exceptions to Specific Criteria**
1—Delaware River				
2—Lehigh River	Basin, Source to Tobyhanna Creek	Luzerne-Monroe-Carbon	**[HQ-CWF] EV**, MF	None
3—Tobyhanna Creek	Main Stem	Monroe-Carbon	HQ-CWF, MF	None

* * * * * *

§93.9f. Drainage List F

Delaware River Basin in Pennsylvania
Schuylkill River

Stream	Zone	County	Water Uses Protected	Exceptions to Specific Criteria
	* * * * * *			
3—Mingo Creek	Basin	Montgomery	WWF, MF	None
3—Stony Run	Basin	Chester	HQ-TSF, MF	None
3—French Creek	Basin, Source to **and including** Beaver Run	Chester	EV, MF	None
[4—Beaver Run	**Basin**	**Chester**	**HQ-TSF, MF**	**None**
3—French Creek	**Basin, Beaver Run to Birch Run**	**Chester**	**HQ-TSF, MF**	**None]**
3—French Creek	**Mainstem, Beaver Run to Birch Run**	**Chester**	**EV, MF**	**None**
4—Tributaries to French Creek	**Basins, Beaver Run to Birch Run**	**Chester**	**HQ-TSF, MF**	**None**
4—Birch Run	Basin	Chester	EV, MF	None
[3—French Creek	**Basin, Birch Run to the Junction of West Vincent, East Vincent and East Pikeland Township Borders**	**Chester**	**HQ-TSF, MF**	**None**
3—French Creek	**Basin, Junction of West Vincent, East Vincent and East Pikeland Township Borders to Mouth**	**Chester**	**TSF, MF**	**None]**
3—French Creek	**Mainstem, Birch Run to T522 bridge (Kennedy Covered Bridge)**	**Chester**	**EV, MF**	**None**
4—Tributaries to French Creek	**Basins, Birch Run to the Junction of West Vincent, East Vincent and East Pikeland Township Borders**	**Chester**	**HQ-TSF, MF**	**None**
4—Tributaries to French Creek	**Basins, Junction of West Vincent, East Vincent and East Pikeland Township Borders to T522 bridge (Kennedy Covered Bridge)**	**Chester**	**TSF, MF**	**None**
3—French Creek	**Basin, T522 bridge (Kennedy Covered Bridge) to Mouth**	**Chester**	**TSF, MF**	**None**
3—Pickering Creek	Basin, Source to Philadelphia Suburban Water Company Dam	Chester	HQ-TSF, MF	None
3—Pickering Creek	Basin, Philadelphia Suburban Water Company Dam to Mouth	Chester	WWF, MF	None
	* * * * * *			

§93.9l. Drainage List L

Susquehanna River Basin in Pennsylvania
West Branch Susquehanna River

Stream	Zone	County	Water Uses Protected	Exceptions to Specific Criteria
	* * * * * *			
5—Sterling Run	Basin, Confluence of Portable Run and Finley Run to **[Mouth]** **Tannery Hollow Run**	Cameron	CWF, MF	None
6—Tannery Hollow Run	**Basin**	**Cameron**	**EV, MF**	**None**
5—Sterling Run	**Basin, Tannery Hollow Run to Mouth**	**Cameron**	**CWF, MF**	**None**
5—Mason Grove Run	Basin	Cameron	HQ-CWF, MF	None
	* * * * * *			

§93.9o. Drainage List O

Susquehanna River Basin in Pennsylvania
Susquehanna River

Stream	Zone	County	Water Uses Protected	Exceptions to Specific Criteria
	* * * * * *			
2—Muddy Creek	Basin (all sections of PA), Confluence of North and South Branches to Mouth	York	TSF, MF	None
2—Fishing Creek	Basin**, source to UNT 07256 (near T434 Bridge)**	Lancaster	HQ-CWF, MF	None
3—UNT 07256 to Fishing Creek (RM 3.95)	**Basin**	**Lancaster**	**EV, MF**	**None**
2—Fishing Creek	**Basin, UNT 07256 (near T434 Bridge) to Mouth**	**Lancaster**	**EV, MF**	**None**
2—Robinson Run	Basin	York	WWF, MF	None
	* * * * * *			
1—Chesapeake Bay (MD)				
2—Gunpowder Falls	Basin**, source to Little Falls** (all sections in PA)	York	WWF, MF	None
3—Little Falls	**Basin, (all sections in PA)**	**York**	**CWF, MF**	**None**
2—Northeast Creek	Main Stem, Source to PA-MD State Border	Chester	WWF, MF	None
	* * * * * *			

REPORT TO THE ENVIRONMENTAL QUALITY BOARD
RESPONSE TO COMMENTS
PROPOSED STREAM REDESIGNATIONS

Fishing Creek, et al.

The Environmental Quality Board approved the proposed rulemaking for the Fishing Creek, et al. package at its July 13, 2010 meeting. The proposed rulemaking was published in the *Pennsylvania Bulletin* on September 18, 2010 (40 Pa.B. 5337) with provision for a 45-day public comment period that closed on November 2, 2010. Comments were received from 163 commentators.

On August 31, 2010, the Department submitted a copy of the proposed rulemaking to the Independent Regulatory Review Commission (IRRC) and to the Chairpersons of the Senate and House Environmental Resources and Energy Committees for review and comment in accordance with Section 5(a) of the Regulatory Review Act (71 P.S. § 745.5(a)). IRRC did not raise any comments, recommendations, or objections to any portion of the proposed rulemaking, and no changes were made from the proposed rulemaking to this final-form regulation; therefore under Section 5(g) of Regulatory Review Act, the final rulemaking will be deemed approved by IRRC.

Entire Package - Supportive Comment

Comment: U.S. EPA Region 3 has no comments on the proposed redesignations, but does offer its commendation to DEP in its continuing effort to upgrade streams into its highest level of the Special Protection Waters Program. EPA notes that, if finalized, this package will redesignate 251.35 stream miles in the Commonwealth to exceptional value status. (163)

Response: The Department appreciates this supportive comment on the proposed redesignations.

French Creek & Beaver Run – Supportive Comments

Comment: The Department has received 162 comments indicating strong support for the redesignation of portions of French Creek and its tributary Beaver Run to exceptional value. (1-162)

- ***Natural Beauty:*** We recognize the importance of the beauty of this natural resource. Redesignation to EV will help to maintain this natural beauty (1-13, 15, 20-161)
- ***Recreational Opportunities:*** This redesignation will protect the many important recreational opportunities in French Creek and Beaver Run. (13, 15, 16, 20-132, 134-162)

- ***Aquatic Life and Wildlife:*** This watershed is important to the propagation of many aquatic life species and other wildlife species and we believe that this redesignation will provide additional protection for aquatic life and other wildlife. (13, 16, 18, 162)
- ***Spiritual and Emotional Well-Being:*** French Creek and Beaver Run should be redesignated as this will ensure that the wondrous qualities of this watershed that we find to be so restorative to our spiritual and emotional well-being shall be preserved. (13, 14, 133)
- ***Flood Protection and Clean Water for People:*** French Creek and Beaver Run should be redesignated to maintain the inherent hydrological ability of this watershed to mitigate the downstream impacts of flood events. Additionally these waters ought to be protected as a source of clean water for people. (16)
- ***Future Generations:*** This redesignation will help to protect French Creek and Beaver Run for future generations. (20-132, 134-161)
- ***Multiple Uses:*** French Creek and Beaver Run are precious natural resources that serve our community in many ways and deserve the protection afforded by EV status. (1-12, 17)
- ***Environmentally Pro-Active Stewardship:*** The protection of French Creek and Beaver Run watershed is important to the entire larger watershed. As riparian property owners, we are committed to be pro-active in safeguarding the waters and we have implemented best management practices on our properties. This stewardship is important at the municipal and county levels. West Vincent Township and the Federation of Northern Chester County Communities serve as examples of this pro-active attitude. During the last six years since this petition was filed, the Department has conducted a thorough analysis of French Creek and Beaver Run and we support the Department's determination that portions of the French Creek basin should be designated as exceptional value waters. (18)
- ***Community Health:*** My community's health absolutely depends on the clarity and flowing beauty of the waters here. (162)

Response: The Department appreciates these supportive comments on the proposed redesignations. The Department is encouraged by this tremendous local support and likewise, the Department would like to further encourage this local support, stewardship, sense of ownership and responsibility expressed in these comments. These environmentally supportive attitudes coupled with local efforts in the watershed are more efficacious in protecting and promoting the stream quality and habitat than redesignating the stream with a more restrictive use.

Following is a list of corporations, organizations and interested individuals from whom the Environmental Quality Board has received comments regarding the above referenced regulation.

ID	Name/Address	Submitted one page Summary for distribution to EQB	Provided Testimony	Requested Final Rulemaking following EQB Action
1	Ms. Kerry McShane-Kay 14 Seabury Lane Downingtown, PA 19335 mcshanekay@gmail.com	NO	N/A	NO
2	Mr. James F. F. Scharnberg 20 Beatty Lane Malvern, PA 19355-8616 houndesign@aol.com	NO	N/A	NO
3	Mr. Greg Leinweber 16 Webb Road Downingtown, PA 19335 Greg.Leinweber@xlgroup.com	NO	N/A	NO
4	Ms. Martha Meadows 151 Barton Drive Spring City, PA 19475 Marty.Meadows@xlgroup.com	NO	N/A	NO
5	Ms. Lisa Tull 146 Jeffords Court Phoenixville, PA 19460 tull.lisa12@gmail.com	NO	N/A	NO
6	Mr. Caroline W. W. Amidon 784 Nantmeal Road Glenmoore, PA 19343 camidon232@aol.com	NO	N/A	NO
7	Ms. Cynthia New Mastrangelo 29 Ludwig's Crossing Lane Glenmoore, PA 19343 cnew@lcltribe.com	NO	N/A	NO
8	Ms. Sara Shick PO Box 276 Birchrunville, PA 19421-0276 sara@clearspringinc.com	NO	N/A	NO

9	Ms. Colleen Meehan 1633 Webster St. Philadelphia, PA 19146 cllnmeehan@gmail.com	NO	N/A	NO
10	Mr. Keith Darlington 44 Glenloch Way Malvern, PA 19355 kdarlington@yahoo.com	NO	N/A	NO
11	Ms. Donna A. A. Delany, DMD 2147 Beaver Hill Rd. Chester Springs, PA 19425 d.delany@comcast.net	NO	N/A	NO
12	Mr. Jim Moore PO Box 274 2862 Crest Terrace Worcester, PA 19490 jom@marshlands.org	NO	N/A	NO
13	Mr. and Mrs. John Krause 1833 Pottstown Pike Glenmoore, PA 19343 JohnSkipKrause@aol.com	NO	N/A	NO
14	Ms. Betty Madden e.madden88@yahoo.com	NO	N/A	NO
15	Dr. Richard G. G. Fried richardfried304@hotmail.com	NO	N/A	NO
16	Mr. Lawrence Stone PO Box 128 Birchrunville, PA 19421 stone@metsci.com	NO	N/A	NO
17	Mr. Jay Erb 1153 Temple Rd. Pottstown, PA 19465 jayerb@yahoo.com	NO	N/A	NO
18	Ms. Diedra Heitzman PO Box 1045 Kimberton, PA 19442 diedra@camphillkimberton.org	NO	N/A	NO
19	Ms. Margaret Perina 1908 Art School Rd. Chester Springs, PA 19425 fwpmdp@verizon.net	NO	N/A	NO
20	Mr. Michael Gordon 1122 Edge Hill Rd. Abington, PA 19001-3624 mikegordon557@gmail.com	NO	N/A	NO

21	Ms. Elizabeth McCarthy 318 Chester Rd. Devon, PA 19333-1629 ecm017@bucknell.edu	NO	N/A	NO
22	Ms. Marilyn Maurer 538 Ballytore Rd. Wynnewood, PA 19096-2208 merberm55@hotmail.com	NO	N/A	NO
23	Ms. Lisa Bain 40 Savits Dr. Elverson, PA 19520-8962 lisa.bain@gmail.com	NO	N/A	NO
24	Mr. Robert Broderick 818 Queen Dr. West Chester, PA 19380-1442 robpaulbrod@aol.com	NO	N/A	NO
25	Mr. Ivan Fox 242 Beechwood Ave. Trenton, NJ 08618-3406 ifox@ets.org	NO	N/A	NO
26	Mr. Sean Comfort 833 Rose Ln. Hatfield, PA 19440-3149 seanc@closetcity.com	NO	N/A	NO
27	Ms. Alexandra O'Neill 1001 City Ave. Wynnewood, PA 19096-3902 xandra719@aol.com	NO	N/A	NO
28	Ms. Jeannette Ponder 49 Broadwater Ln. Phoenixville, PA 19460-2951 ponder@theartofhealth.us	NO	N/A	NO
29	Ms. Alison Towers 96 Lutz Rd. Boyertown, PA 19512-8322 alisonjohnjean@aol.com	NO	N/A	NO
30	Mr. Lawrence Coburn 115 Saint Paul's Rd. Ardmore, PA 19003-2810 coburnl@post.harvard.edu	NO	N/A	NO
31	Ms. Anna Hutt 214 Hillside Dr. Exton, PA 19341-2414 annamay.hutt@crl.com	NO	N/A	NO

32	Mr. Denis Asselin 1352 College Hill Rd. Cheyney, PA 19319-1014 denis.asselin@verizon.net	NO	N/A	NO
33	Ms. Ruth A. A. Rin PO Box 443 Wynnewood, PA 19096-0443 ruthrin@yahoo.com	NO	N/A	NO
34	Ms. Wendy Stoner 414 Berkley Rd. Haverford, PA 19041-1509 wstonerhubbard@aol.com	NO	N/A	NO
35	Ms. Gwyn Linsalata 710 Preston Rd. Glenside, PA 19038-7327 whimsey@mac.com	NO	N/A	NO
36	Mr. Howard Rife 2509 Park St. Reading, PA 19606-1639 hrife35@msn.com	NO	N/A	NO
37	Mr. William Kulik 8580 Meetinghouse Rd. Ambler, PA 19002-3911 wkulik@temple.edu	NO	N/A	NO
38	Mr. Michael Drake 8339 Thomson Rd. Elkins Park, PA 19027-1730 drakee52@gmail.com	NO	N/A	NO
39	Mr. Will Doak 606 Aurora Ln. Downingtown, PA 19335-4814 will.doak@gmail.com	NO	N/A	NO
40	Ms. Peg Kucek 1531 N. Keim St. Pottstown, PA 19464-2539 pegkucek@gmail.com	NO	N/A	NO
41	Ms. Michelle Robinson 23 Kerry Ln. Malvern, PA 19355-2160 robinson@stanfordalumni.org	NO	N/A	NO
42	Ms. Liz Morris 221 W. 1st Ave. Malvern, PA 19355-2606 emorris@brynmawr.edu	NO	N/A	NO

43	Ms. Caroline O'Connell 431 Creekside Dr. Downingtown, PA 19335-4711 cwoc431@aol.com	NO	N/A	NO
44	Mr. Troy High 836 Possum Ln. Reading, PA 19606-1148 troy.high@alvernia.edu	NO	N/A	NO
45	Mr. Robert McCarthy 653 Valley Rd. Blue Bell, PA 19422-2050 rmccarthy@seic.com	NO	N/A	NO
46	Ms. Dianne Dillman 117 Glenwood Rd. Merion Station, PA 19066-1305 demo117@msn.com	NO	N/A	NO
47	Ms. Lana Fishkin 171 Gramercy Rd. Bala Cynwyd, PA 19004-2904 lanafishkinmd@gmail.com	NO	N/A	NO
48	Ms. Ruth Gent 3673 New Holland Rd. Mohnton, PA 19540-8625 d2882@1usa.com	NO	N/A	NO
49	Ms. Hillary Borzillo 193 Country Ridge Dr. Royersford, PA 19468-3156 hborzillo@comcast.net	NO	N/A	NO
50	Ms. Rhoni Groff 46 Levering Cir. Bala Cynwyd, PA 19004-2610 rhoni@giftoftheflowers.com	NO	N/A	NO
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52	Ms. Joanne Rile 1474 Autumn Rd. Rydal, PA 19046-2311 joanner@rilearts.com	NO	N/A	NO
53	Mr. Sam Hughes 210 Chestnut Ave. Narberth, PA 19072-2406 hughes@upenn.edu	NO	N/A	NO

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58	Ms. Amy Guskin 49 Bryan Ave. Malvern, PA 19355-3007 muse@fjordstone.com	NO	N/A	NO
59	Mr. and Mrs. Lee Roper 334 Dean St. West Chester, PA 19382-3321 ropers@photomd.net	NO	N/A	NO
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61	Mr. Kevin Shaw 925 E. Southampton Ave. Wyndmoor, PA 19038-7934 kjshaw238@hotmail.com	NO	N/A	NO
62	Mr. Chris Aspite 123 W. Union St. West Chester, PA 19382-3324 lehoof@aol.com	NO	N/A	NO
63	Ms. Kelly Thompson 1027 Colin Dr. Royersford, PA 19468-3135 klthompson79@aol.com	NO	N/A	NO
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68	Mr. Harry J. J. Tucci, Jr. 72 Pebble Beach Dr. Linfield, PA 19468-1042 katahdin07@yahoo.com	NO	N/A	NO
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70	Mr. Richard Holland 4747 S. Broad St. Philadelphia, PA 19112-1301 holland@vitetta.com	NO	N/A	NO
71	Ms. Barbara Blynn 2545 White Horse Rd. Berwyn, PA 19312-2133 bcblynn@gmail.com	NO	N/A	NO
72	Ms. Kathryn Keegan PO Box 12 Birchrunville, PA 19421-0012 kathryn@camphillkimberton.org	NO	N/A	NO
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79	Mr. Rockwell Hoffman 600 Edge Hill Rd. Glenside, PA 19038-3818 rockster8845@yahoo.com	NO	N/A	NO
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81	Mr. Patrick Zbyszewski 1042 Almond Dr. Phoenixville, PA 19460-3590 patricksimon_z@yahoo.com	NO	N/A	NO
82	Ms. Peggy Spinozzi 235 W. 7th Ave. Collegeville, PA 19426-2111 nutripeg@aol.com	NO	N/A	NO
83	Ms. Lauren Jonik 1114 Dogwood Ct. Pottstown, PA 19465-7330 laureleaf7@aol.com	NO	N/A	NO
84	Ms. Elizabeth Shipley 805 Hagys Ford Rd. Penn Valley, PA 19072-1418 liz@psych.upenn.edu	NO	N/A	NO
85	Ms. Donna Meyers 142 Jay St. Stowe, PA 19464-3716 dlmccob17@aol.com	NO	N/A	NO
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155	Ms. Trinity Dixon 47 Trent Rd. Wynnewood, PA 19096-3834 peacefulplanet@comcast.net	NO	N/A	NO
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157	Ms. Diana Rudloff 1607 Lloyd Ln. Pennsburg, PA 18073-1724 diana@rudloff.org	NO	N/A	NO
158	Ms. Donna Corazza 775 Country Club Rd. Phoenixville, PA 19460-2725 cchrist374@verizon.net	NO	N/A	NO
159	Mr. Winfield W. W. Howe 7 Surrey Lane Downingtown, PA 19335-1507 wahowe@verizon.net	NO	N/A	NO
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BUCK HILL CREEK
MONROE COUNTY

WATER QUALITY STANDARDS REVIEW
STREAM REDESIGNATION EVALUATION REPORT

SEGMENT: BASIN

STREAM CODE: 05023

DRAINAGE LIST: C

WATER QUALITY MONITORING SECTION (DSB)
DIVISION OF WATER QUALITY STANDARDS
BUREAU OF WATER STANDARDS AND FACILITY REGULATION
DEPARTMENT OF ENVIRONMENTAL PROTECTION

MAY 2010

INTRODUCTION

Buck Hill Creek basin from the source to Griscom Creek (05024), except for UNT 05028 and UNT 05027 and a 0.36-mile segment of the mainstem, has a designated use of Exceptional Value (EV) in Chapter 93 of the Pennsylvania Code. This also includes a Migratory Fishes (MF) designation for the basin below Buck Hill Falls. The basin of the 0.36-mile segment retained the High Quality-Cold Water Fishes (HQ-CWF) designation when the rest of the basin was upgraded to EV in June 2000. This designation was based on a November 1996 stream survey and subsequent 1997 Stream Redesignation Evaluation Report, as a result of a petition submitted to the Environmental Quality Board (EQB) by the Buck Hill Conservation Foundation in August 1995. The HQ-CWF segment was the result of the Biological Condition Score (BCS) at one station falling 5 percentage points below the 92% threshold for qualification for EV.

The Buck Hill Consevation Foundation submitted a second petition to the EQB requesting that the basin of the 0.36-mile HQ-CWF segment be evaluated for redesignation as EV. This petition was accepted for further study by the EQB on April 19, 2005. The petitioners explained that because the Buck Hill Creek basin upstream and downstream of this segment has an EV designation and there are no obvious sources of impairment that would account for a degradation in water quality they reasoned that the lower BCS was probably the result of natural variability of the macroinvertebrate community. This report is based on a field survey conducted by Aquatic Resource Consulting (ARC) in April 2004 and reviewed by the Department for accuracy and completeness. ARC's report was carefully studied to make sure that the methodology used for macroinvertebrate sample collection and processing conformed to the Department's Antidegradation Implementation Guidance.

GENERAL WATERSHED DESCRIPTION

Buck Hill Creek is a tributary to Brodhead Creek in the Delaware River basin. This basin covers an area of 8.8 square miles and contains 16.0 stream miles. It is located in Coolbaugh and Barrett Townships, Monroe County. The candidate basin is in Barrett Township. State Route 191 crosses this basin and the eastern edge contains a golf course, otherwise the land use is almost entirely mixed hardwood forest. This is a freestone stream with a moderate to high gradient throughout its length. Two stations were sampled as part of this survey (Figure 1 and Table 1).

WATER QUALITY AND USES

Surface Water:

No long-term water quality data were available to allow a direct comparison to water quality criteria. The 1996 DEP survey indicated that water quality was generally good at Station 1BHC (Table 2). Since the instantaneous nature of grab samples precludes comparison to applicable water quality criteria, the indigenous aquatic community is a better indicator of long-term conditions and is used as a measure of ecological significance.

There are no surface water withdrawals for public water supply or NPDES permitted discharges located in the candidate basin. The only potential source of nonpoint source discharge (NPS) is the crossing of SR 191 about ¾ miles upstream of the candidate segment.

Aquatic Biota:
Habitat assessments and biological samplings were conducted at 2 stations (1 candidate and 1 reference) during the ARC April 2004 survey. The physical habitat assessments revealed that conditions at Station 1BHC and Reference Station R1 scored in the Optimal range for benthic macroinvertebrates and fish (Table 3). Condition of Banks is the only habitat parameter at Station 1BHC that scored lower than the Optimal range. The overall habitat scores of 223 and 220 for candidate and reference stations respectively were very high and indicate excellent instream and riparian habitat.

Benthic macroinvertebrate samples were collected using the Department's Antidegradation protocol (adapted from Plafkin's 1989 and Barbour's 1999 Rapid Bioassessment Protocols manuals). Taxonomic diversity was high at both stations with a predominance of individuals from taxa that are sensitive to water quality degradation (e.g. *Ephemerella, Epeorus*, *Cinygmula*, *Tallaperla*, and *Rhyacophila*).

BIOLOGICAL USE QUALIFICATIONS

The biological use qualifying criteria applied to Buck Hill Creek was the integrated benthic macroinvertebrate score test described at § 93.4b(a)(2)(i)(A) and § 93.4b(b)(1)(v). This score is calculated from the macroinvertebrate samples referenced above. Following the Department's Antidegradation protocol, a 200 (+/- 20%) count subsample was randomly selected from the total sample and enumerated (Table 4). Selected benthic macroinvertebrate community metrics were generated from these subsamples (Table 5). Candidate station metrics were compared to a reference station on Buck Hill Creek downstream from the candidate basin. The designated use of Buck Hill Creek at the location of this reference station is EV and this station meets all of the other qualifications, outlined in the Department's Antidegradation Implementation Guidance document, for acceptable reference stations. All sampling was conducted on the same day to minimize the effects of seasonal variation. This comparison was done using the following metrics which were selected as being indicative of community health: taxa richness; modified EPT index (total number of intolerant Ephemeroptera, Plecoptera, and Trichoptera taxa); modified Hilsenhoff Biotic Index; percent dominant taxon; and percent modified mayflies.

Based on these five metrics, Station 1BHC had a biological condition score of 100% of the reference station score. This score surpasses the threshold of 92% that would qualify for an EV designation under the Department's regulatory criterion (§ 93.4b(b)(1)(v)).

PUBLIC RESPONSE AND PARTICIPATION SUMMARY

The Department provided public notice of this redesignation evaluation and requested any technical data from the general public through publication in the Pennsylvania Bulletin on August 13, 2005 (35 Pa.B. 4671) and a similar notice was also published in the Pocono Record on August 19, 2005. In addition, Barrett Township along with the Monroe County Planning Commission was all notified of the evaluation in a letter dated July 13, 2005. No data on water chemistry, instream habitat, or the aquatic community were received in response to these notifications.

The petitioner and local municipality and planning commission representatives were notified by a postcard mailing that the report was available on the Department's web page for review with a 30-day comment period, which closed on April 16, 2010. No comments were received in response to this notice.

RECOMMENDATIONS

Based on applicable regulatory definitions and requirements of § 93.4b, the Department recommends that the protected use designation of Buck Hill Creek (05023) basin from and including UNT 05028 to UNT 05026 be changed from the current HQ-CWF to EV based on biological condition scores greater than 92% of the reference station score (§93.4b(b)(1)(v)). This recommendation affects a 0.36-mile segment of the main stem and 2.03 total stream miles.

REFERENCES

Muhkergee, JJ. 1997. Buck Hill Creek Special Protection Evaluation Report. DEP Internal Document

Buck Hill Conservation Foundation. 1995. Petition to Redesignate the Protected Water Use for Buck Hill Creek. Buck Hill Creek petition file.

Plafkin, JL, MT Barbour, KD Porter, SK Gross, & RM Hughes. 1989. Rapid Bioassessment Protocols for Use in Streams and Rivers: Benthic Macroinvertebrates and Fish. United States Environmental Protection Agency. EPA/444/4-89-001

Barbour, MT, J. Gerritsen, BT Snyder, and JB Stribling. 1999. Rapid Bioassessment Protocols for Use in Streams and Wadeable Rivers: Periphyton, Benthic Macroinvertebrates, and Fish, Second Edition. United States Environmental Protection Agency. EPA/841/B-99-002.

FIGURE 1.
STATION LOCATIONS
BUCK HILL CREEK

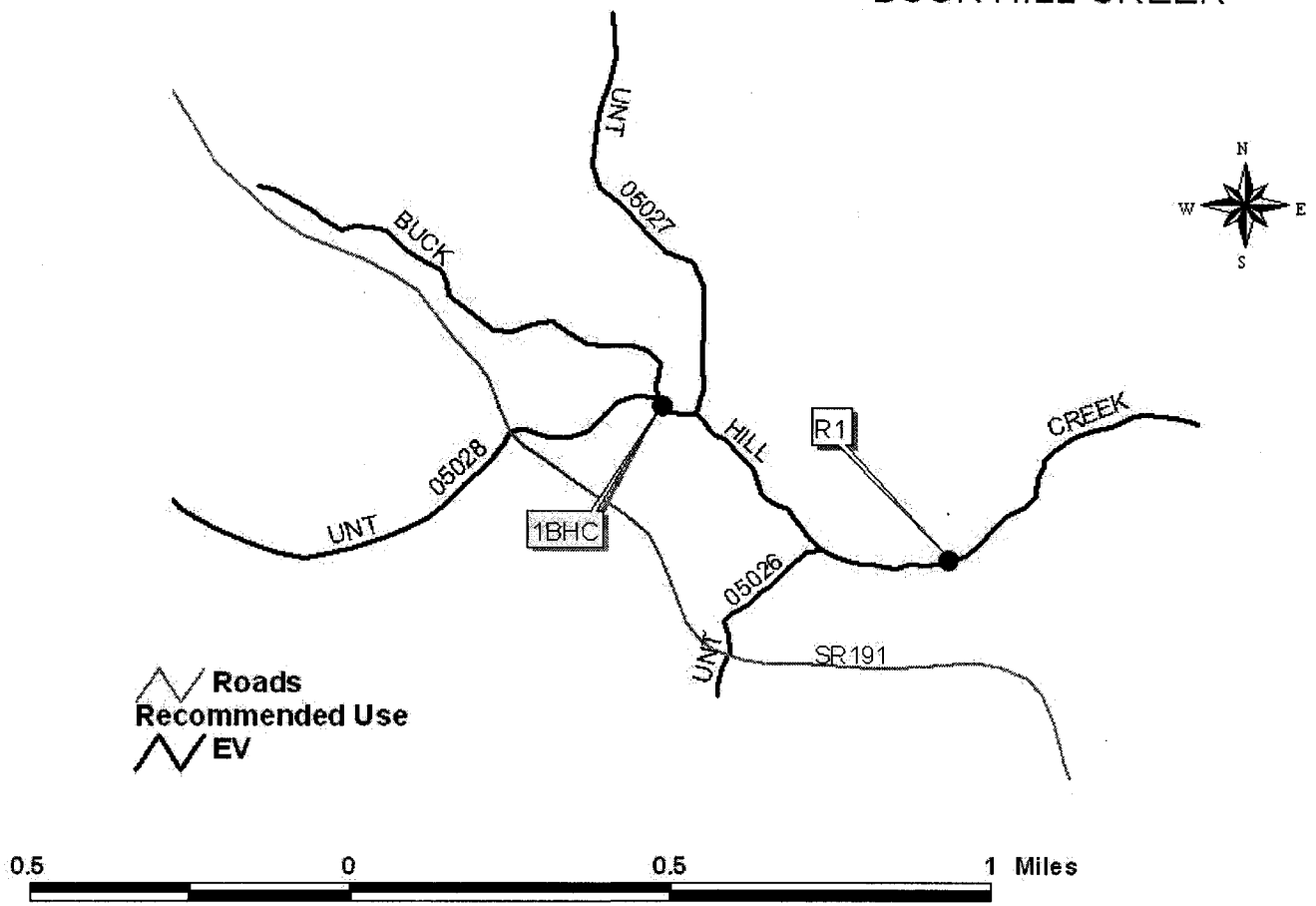

TABLE 1
STATION LOCATIONS
BUCK HILL CREEK
MONROE COUNTY

STATION	LOCATION
1BHC	Buck Hill Creek (05023); approximately 50 meters downtream of the mouth of UNT 05028. Barrett Township, Monroe County. Lat: 41 11 45 Long: 75 17 34 RM: 2.22
R1	Buck Hill Creek; approximately 50 meters downtream of the mouth of UNT 05026. Barrett Township, Monroe County. Lat: 41 11 31 Long: 75 17 08 RM: 1.68

TABLE 2

WATER CHEMISTRY[1]
BUCK HILL CREEK
MONROE COUNTY
OCTOBER 29, 1996

STATION	1BHC
Field Parameters	
Temp (°C)	9.1
Cond (µmhos)	30.5
DO (mg/l)	8.9
Laboratory Parameters	
pH	6.3
Alkalinity	6.4
Acidity	0
Hardness	<10
T Diss. Sol.	16
Susp.Sol.	<2
NH_3-N	<0.02
NO_2-N	<0.01
NO_3-N	0.07
Total P	<0.02
Ca	2.32
Mg	0.61
Cl	2
SO_4	<10
As*	< 4.0
As Diss	< 4.0
Cd*	< 0.2
Cd Diss	< 0.2
hex Cr*	<10
Cr*	<50
Cu*	< 10.0
Cu Diss	< 10.0
Fe*	22
Pb*	< 1.0
Pb Diss	< 1.0
Mn*	< 10.0
Ni*	< 25.0
Ni Diss	< 25.0
Zn*	< 10.0
Zn Diss	< 10.0
Al*	<135
fecal coliforms	<10

[1] - Except for pH & conductance and indicated otherwise, all values are total concentrations in mg/l

* - Total concentrations in µg/l

TABLE 3
HABITAT ASSESSMENT
SUMMARY
BUCK HILL CREEK
MONROE COUNTY
APRIL 25, 2004

HABITAT PARAMETER	STATIONS[1]	
	1BHC	R1
1. instream cover	19	20
2. epifaunal substrate	18	16
3. embeddedness	19	19
4. velocity/depth	17	19
5. channel alterations	20	20
6. sediment deposition	19	19
7. riffle frequency	20	20
8. channel flow status	18	16
9. bank condition	15	14
10. bank vegetation protection	18	17
11. grazing/disruptive pressures	20	20
12. riparian vegetation zone width	20	20
Total Score	223	220
Rating[2]	OPT	OPT

[1] Refer to Figure 1 and Table 1 for station locations.

[2] OPT = Optimal

TABLE 4
SEMI QUANTITATIVE BENTHIC MACROINVERTEBRATE DATA
BUCK HILL CREEK
APRIL 25, 2004

TAXA	STATION	
	1BHC	R1
Ephemeroptera (mayflies)		
Baetidae; *Baetis*	30	35
Ephemerellidae; *Ephemerella*	29	31
Drunella	9	9
Heptageniidae; *Cinygmula*	26	26
Epeorus	64	56
Stenonema	1	
Leptophlebiidae; *Paraleptophlebia*	1	8
Plecoptera (stoneflies)		
Chloroperlidae sp.	12	5
Leuctridae; *Leuctra*	4	5
Nemouridae; *Amphinemura*		5
Peltoperlidae; *Tallaperla*	8	13
Perlidae; *Agnetina*	1	
Perlodidae sp.		5
Isoperla	2	
Yugus	2	
Pteronarcyidae; *Pteronarcys*	1	3
Tricoptera (caddisflies)		
Hydropsychidae; *Diplectrona*	1	2
Rhyacophilidae; *Rhyacophila*	8	8
Diptera (true flies)		
Athericidae; Atherix		1
Simuliidae; *Prosimulium*		4
Simulium	3	1
Tipulidae; *Dicranota*	1	1
Hexatoma	1	5
Chironomidae	6	5
Odonata (dragon-, damselflies)		
Gomphidae; *Lanthus*		2
Coleoptera (aquatic beetles)		
Elmidae; *Stenelmis*		1
Total number in subsample	210	231

TABLE 5
RBP METRIC COMPARISON
BUCK HILL CREEK, MONROE COUNTY

METRIC	STATIONS	
	1BHC	R1
1. TAXA RICHNESS	20	22
Cand/Ref (%)	91	XXX
Biol. Cond. Score	8	8
2. MOD. EPT INDEX	15	13
Cand/Ref (%)	115	XXX
Biol. Cond. Score	8	8
3. MOD. HBI	1.55	1.69
Cand-Ref	-0.14	XXX
Biol. Cond. Score	8	8
4. % DOMINANT TAXA	30	24
Cand-Ref	6	XXX
Biol. Cond. Score	8	8
5. % MOD. MAYFLIES	62	56
Ref-Cand	-6	XXX
Biol. Cond. Score	8	8
TOTAL BIOLOGICAL CONDITION SCORE	40	40
% COMPARABILITY TO REFERENCE	100	

DEER AND LITTLE FALLS CREEKS

YORK COUNTY

WATER QUALITY STANDARDS REVIEW

STREAM REDESIGNATION EVALUATION REPORT

Segment: Basin
Stream Code: 06761, 06859
Drainage List: O

WATER QUALITY MONITORING SECTION (GLW)
DIVISION OF WATER QUALITY STANDARDS
BUREAU OF WATER STANDARDS AND FACILITY REGULATION
DEPARTMENT OF ENVIRONMENTAL PROTECTION

MAY 2010

INTRODUCTION

The Department conducted evaluations on portions of Deer Creek and Little Falls Creek basins located in Pennsylvania in response to petitions submitted by the Shrewsbury Township Board of Supervisors (York County) and accepted by the Environmental Quality Board (EQB) on October 19, 2004. The petitioner requests these basins be redesignated to High Quality-Cold Water Fishes (HQ-CWF) in order to provide water quality protection comparable to the highest level of water quality protection (Maryland's "Use III Designation") afforded to those portions of these basins downstream in Maryland. The Deer Creek and Little Falls Creek basins are currently designated Cold Water Fishes, Migratory Fishes (CWF, MF) and Warm Water Fishes (WWF), MF, respectively. The evaluations in this report are based on a field survey conducted May 5 and 6 and August 17, 2005.

GENERAL WATERSHED DESCRIPTION

Deer Creek and Little Falls Creek are freestone streams that are tributaries to the Susquehanna River and the Gunpowder River in Maryland, respectively. The candidate basins are located in Shrewsbury, New Freedom, Stewartstown and Fawn Grove Boroughs and Shrewsbury, Hopewell, and Fawn Townships, York County (Figure 1). The Deer Creek basin, which includes Ebaughs Creek as a major subbasin, has a drainage area of 25.3 square miles and 42.3 total stream miles in Pennsylvania. The Little Falls Creek basin has a drainage area of 4.2 square miles and consists of 5.7 total stream miles in Pennsylvania. The majority of both basins are within the state of Maryland. The surrounding area is characterized by relatively flat topography with some gently rolling hills of low relief.

The current land use in these watersheds consists mostly of farms, single-family residential and open fields. Land use in the Deer Creek basin is a mixture of cropland (62%), pasture (18%), forest (15%), and residential (5%), whereas the Little Falls Creek basin is cropland (85%), residential (14%) and forest (1%). One major population center, Stewartstown Borough lies within the eastern edge of the Deer Creek basin.

WATER QUALITY AND USES

Surface Water

No Long-term water quality chemistry data were available to allow a direct comparison to water quality criteria. Instead, biological data was collected to evaluate water quality conditions in Deer Creek and Little Falls Creek, since the indigenous aquatic community is a better indicator of both long-term water quality and ecological significance. Field alkalinity measurements collected from the petitioned areas on May 5 and 6, 2005 ranged from 32 – 44 mg/L for Deer Creek and 32-76 mg/L for Little Falls Creek. These alkalinity values indicate that these basins have moderately well buffering capacity.

There are eight NPDES permits issued for treated wastewater (5 waste water treatment plants {one publicly owned, three privately owned}, and three pump stations) in the Deer Creek basin and one NPDES permit (a pump station) for the Little Falls Creek basin. One of the privately owned waste water treatment plants in the Deer Creek basin has been constructed but is not being operated as of this report date. Regarding Pennsylvania's portions of these two basins, there is one surface water withdrawal from the Deer Creek basin and none from the Little Falls Creek basin.

Aquatic Biota

Department staff collected habitat and benthic macroinvertebrate data at eight locations on Deer Creek and Little Falls Creek on May 5 and 6, 2005, and from one station on Rock Run (small EV reference stream) on May 11, 2005 (Figure 1, Table 1). In addition, fish data was collected from one station on Beetree Run and an unnamed tributary to Little Falls Creek on August 17, 2005.

Habitat. Instream habitat was assessed at each station on Deer Creek and Little Falls Creek, and Rock Run. Overall, habitat scores (Table 2) were better in the Deer Creek basin where they indicated high suboptimal to optimal conditions, ranging from 182 to 202 (out of a possible maximum of 240). In contrast, Little Falls Creek habitat scores were fair reflecting lower suboptimal conditions with scores of 151 and 155. Lower scoring parameters usually indicate moderate to severe vegetative disruptive pressure, moderately eroded banks, and a lack of adequate riparian buffering at some stations (Table 2).

Benthos. Benthic macroinvertebrate samples were collected at all eight stations (Table 3) using the PA-DEP RBP benthic sampling techniques. Taxonomic diversity in the Deer Creek basin was fair to very good overall and ranged from a low of 12 at 5EC to a high of 27 at 3DC. Taxonomic diversity in the Little Falls Creek basin was generally good with 17 taxa at 1LFC and 16 taxa at 2BR. Taxa sensitive to water quality degradation were present at all stations in both basins, except at 1LFC and 5EC where they were nearly absent. The relatively high abundances of tolerant taxa at these two stations reflect the cumulative impacts of human activity to these streams. In addition, the conditions at 5EC were reflective of operational problems at the Stewartstown Borough Authority sewage treatment plant. The Stewartstown Borough Authority was in the process of upgrading the treatment facility at the time of the survey and has since completed construction. Four stations in the Deer Creek basin (1DC, 2UNT, 3DC and 4EC) had very good to excellent taxa richness and were dominated by taxa sensitive to pollution, indicating minimal impacts from human activity.

Fish. Fish data were collected from two stations in the Little Falls Creek basin, one on an unnamed tributary and the other on Beetree Run on August 17, 2005 (Table 4). At each station, approximately 50 meters of stream were electrofished to determine what taxa were present. An inquiry with the Pennsylvania Fish and Boat Commission (PFBC) indicated that fisheries data were available for Beetree Run and Deer Creek (included in Table 4). Fish collected from the unnamed tributary to Little Falls Creek (1LFC) included a mix of species indicative of cold water conditions and included one wild adult brown trout. Beetree Run collections included both adult and juvenile brown trout as well as a mix of species commonly

found in cold water habitat. Juvenile brown trout were relatively numerous (15 individuals) indicating wild reproduction. The PFBC survey at this same Beetree Run station in 1999 produced only 2 species of fish, blacknose dace and creek chub. This low number of taxa and the lack of brown trout may have been in response to severe drought conditions. In Maryland, Beetree Run supports the state's best wild brown trout fishery and is protected by their highest water quality designation, Use Designation III. PFBC fishery data from 4 Deer Creek stations in 1996 included brown trout (both of wild and hatchery origin) at all stations sampled, which indicated a stable, reproducing wild trout fishery.

BIOLOGICAL USE QUALIFICATIONS

The biological use qualifying criteria applied to Deer Creek and Little Falls Creek was the DEP integrated benthic macroinvertebrate test described at § 93.4b(a)(2)(i)(A) and § 93.4b(b)(1)(v). Selected benthic macroinvertebrate community metrics from Deer Creek and Little Falls Creek (Table 5) were compared to those from a reference stream with a comparable drainage area. All stations in both basins were compared to an EV reference station on Rock Run (1RR), a freestone tributary to French Creek. Rock Run was used as a reference because of similar drainage area to the candidate basins and geologic setting as the candidate basins. In addition, Rock Run has served as an EV reference stream in several other Departmental surveys. Sampling of all stations within the candidate basins occurred on back-to-back days, and collection of the reference station data was conducted within one week of the candidate stations to minimize seasonal variation. The comparisons were done using the following metrics that were selected as being indicative of community health: taxa richness, modified EPT index, modified Hilsenhoff Biotic Index, percent dominant taxon, and percent modified mayflies.

Based on these five metrics, none of the stations in either of the candidate basin had Biological Condition Scores (BCS) that were greater than 80% of the reference station (Table 5). As a result, none of the candidate stations meet the 83% comparison standard required to qualify as High Quality Waters (§ 93.4b(a)(2)(i)(A)). None of the other antidegradation requirements listed in § 93.4b, pertaining to High Quality or Exceptional Value waters, apply to these stations.

In addition to applying the above antidegradation scoring test, the Department's benthic metric Index of Biotic Integrity (IBI) was also employed. The Department's IBI for benthic macroinvertebrates in wadeable freestone riffle-run streams (Chalfant, 2007; modified in 2008) is calculated as the arithmetic mean of six adjusted, standardized metric scores: Beck's index (a tolerance value-weighted richness metric based on the most sensitive taxa defined as having Hilsenhoff tolerance values of 2 or less); sensitive (having Hilsenhoff tolerance values of 4 or less) EPT taxa richness; total taxa richness; Shannon Diversity; Hilsenhoff Biotic Index; and percent individuals of sensitive (having Hilsenhoff tolerance values of 3 or less) taxa in a 200 (+/- 20%) count sub-sample. The six raw metric scores are standardized to reference values, which results in standardized metric scores adjusted to a scale of 0 to 100. These six adjusted standardized scores are averaged to calculate the total IBI score. IBI scores closer to 100 represent reference-quality conditions and scores closer to 0 represent more impacted

conditions. The low IBI score (26.9) at station 5EC was a result of discharge from the Stewartstown Borough Authority's wastewater treatment plant that was out of compliance. This discharge problem has since been corrected and is now in compliance with the facility's permit limits. As a result of the low IBI score (39.1) at station 1LFC, the affected portion of this Little Falls Creek tributary will be listed on Pennsylvania's 2010 303(d) list of impaired waters.

PUBLIC RESPONSE AND PARTICIPATION SUMMARY

The Department provided public notice of this redesignation evaluation and requested technical data from the general public through publication in the Pennsylvania Bulletin on November 27, 2004 (34 Pa.B 6368). A similar notice was also published in The Daily Record newspaper (York, PA) on November 20, 2004. In addition, Shrewsbury, New Freedom, Stewartstown and Fawn Grove Boroughs and Shrewsbury, Hopewell, and Fawn Townships and the York County Planning Commission were notified of the redesignation evaluation in a letter dated November 19, 2004. Fisheries data for Little Falls Creek was received from Joe Berg in response to these requests. The Stewartstown Borough Authority sent a letter in opposition to the requested redesignation but without any supporting technical data. In addition, The Honorable Shari Wilson, Secretary of the Maryland Department of the Environment (MDE) and Matthew Rowe of MDE's Science Services Administration sent a letters expressing strong support for redesignation of the Pennsylvania portions of these two watersheds to EV to afford protection of Maryland's downstream designated use.

The petitioner and local municipality and planning commission representatives were notified by a postcard mailing that the report was available on the Department's web page for review with a 30-day comment period, which closed on April 16, 2010. In response, the Shrewsbury Township Board of Supervisors expressed concern that DEP did not recommend High Quality protection to both waters. The raised concerns addressed the number of field sample sites and their locations, tributaries that were not sampled, the choice of a "pristine" reference, and not supporting the higher downstream designations in Maryland. The Department's field surveys and resulting report have properly addressed these issues. The sample site coverage yielded representative data, which properly reflects the varied land-uses in the basin. Selection of an EV reference stream is a requisite of DEP's stream redesignation process. With regard to the protection of Maryland's downstream designated use, Pennsylvania is prohibited from issuing an NPDES permit when the imposition of conditions cannot ensure compliance with the water quality requirements of Maryland.

RECOMMENDATION

Based on applicable regulatory definitions and requirements of § 93.4b, the Department recommends that the Deer Creek basin retain its current Cold Water Fishes, Migratory Fishes (CWF, MF) designation. As indicated by the available physical, benthic macroinvertebrate and fish data, the aquatic habitat found in the Little Falls Creek basin supports a cold water fishery. Little Falls Creek basin should be redesignated Cold Water Fishes (CWF), MF to reflect the current aquatic life use. This recommendation adds approximately 5.7 stream miles of CWF

waters to Chapter 93. A total of 42.3 stream miles will retain their current designation. This recommendation does not reflect the HQ-CWF designation sought in the petition.

REFERENCES

Plafkin, JL, MT Barbour, KD Porter, SK Gross, & RM Hughes. 1989. Rapid Bioassessment Protocols for use in streams and rivers: Benthic Macroinvertebrates and Fish. United States Environmental Protection Agency. EPA/444/4-89-001.

Barbour, Michael T., Jeroen Gerritsen, Blaine D. Snyder, James B Stribling. 1999. Rapid Bioassessment Protocols For Use in Streams and Wadeable Rivers: Periphyton, Benthic Macroinvertebrates, and Fish. Second Edition. United States Environment Protection Agency. EPA 841-B-99-002

Pennsylvania Fish & Boat Commission. 1996. Deer Creek (607I) Fisheries Management Report. File Information.

_____. 1999. Beetree Run (607I) Fisheries Management Report. File Information.

Figure 1
Deer and Little Falls Creeks
York County

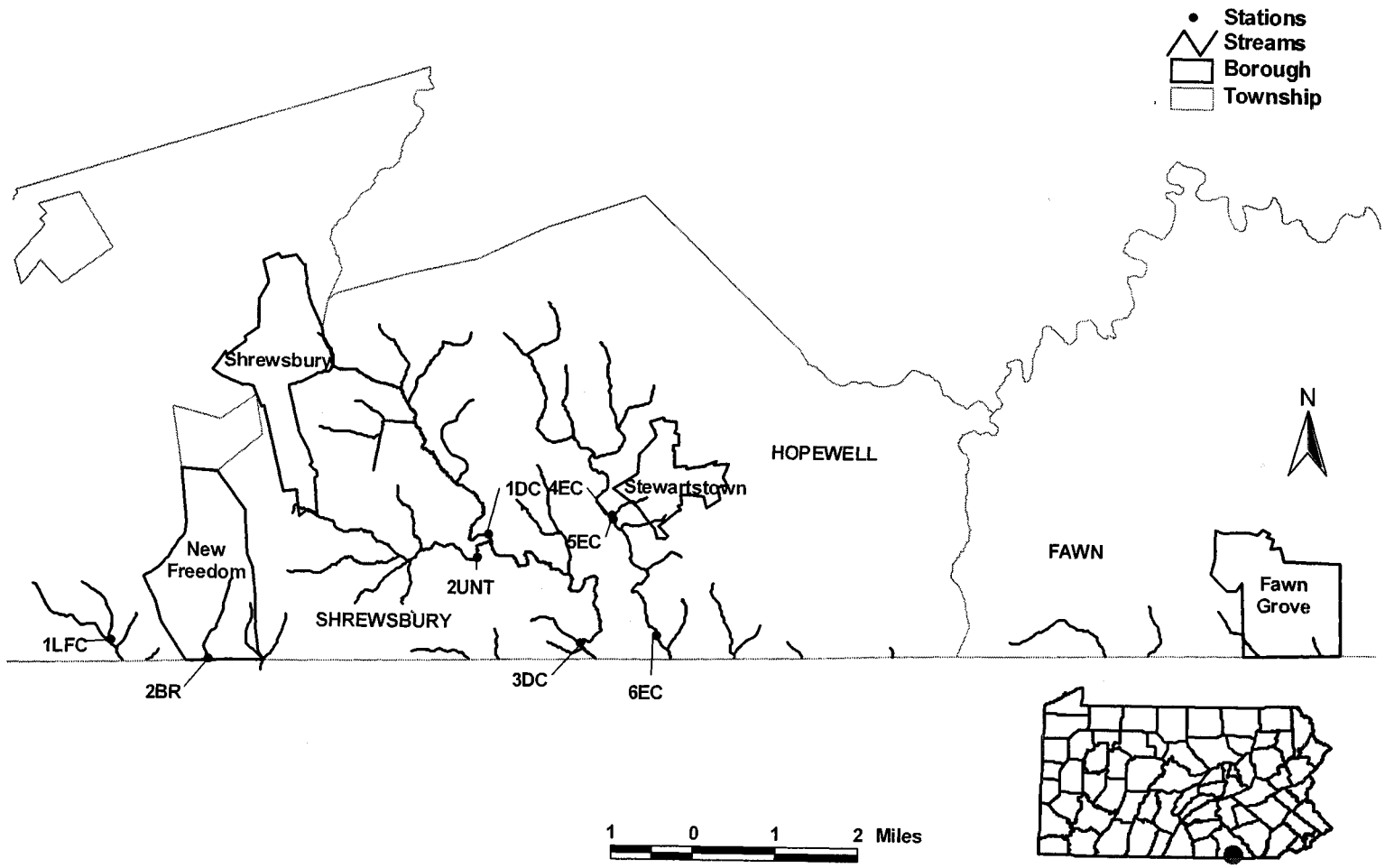

TABLE 1
STATION LOCATIONS
DEER CREEK AND LITTLE FALLS CREEK
YORK COUNTY

STATION	LOCATION
1LFC	Unnamed tributary to Little Falls Creek (06882) approximately 70 meters downstream of Steltz Road (SR851). Shrewsbury Township, York County Lat: 39° 43' 28" Long: 76° 43' 11" RMI: 0.30
2BR	Beetree Run (06860) approximately 50 meters downstream of Orwig Road. New Freedom Borough, York County Lat: 39° 43' 16" Long: 76° 41' 52" RMI: 0.01
1DC	Deer Creek (06761) approximately 40 meters upstream of Gemmill Road (T429). Shrewsbury Township, York County Lat: 39° 44' 34" Long: 76° 38' 2" RMI: 3.31
2UNT	Unnamed Tributary to Deer Creek (06829) approximately 20 meters downstream of Gemmill Road (T542). Shrewsbury Township, York County Lat: 39° 44' 19" Long: 76° 38' 11" RMI: 0.33
3DC	Deer Creek (06761) approximately 40 meters downstream of unnamed tributary adjacent to Dutton Road (T542) near PA/MD state line. Shrewsbury Township, York County Lat: 39° 43' 25" Long: 76° 36' 46" RMI: 0.08
4EC	Ebaughs Creek (06810) approximately 25 meters upstream of Stewartstown Road (SR21030). Hopewell Township, York County Lat: 39° 44' 45" Long: 76° 36' 20" RMI: 2.25
5EC	Ebaughs Creek (06810) approximately 60 meters downstream of Stewartstown Road (SR21030) and discharge from Stewartstown Borough STP. Hopewell Township, York County Lat: 39° 44' 43" Long: 76° 36' 19" RMI: 2.21
6EC	Ebaughs Creek (06810) approximately 20 meters upstream of Blevins Road (T548) near PA/MD state line. Hopewell Townships, York County Lat: 39° 43' 30" Long: 76° 35' 44" RMI: 0.35

TABLE 2
HABITAT ASSESSMENT RESULTS
DEER CREEK AND LITTLE FALLS CREEK
YORK COUNTY
MAY 5 AND 6, 2005

PARAMETER	STATION[1]								
	1LFC	2BR	1DC	2UNT	3DC	4EC	5EC	6EC	1RR[3]
1. instream cover	13	15	16	17	16	15	16	15	16
2. epifaunal substrate	15	16	17	18	17	18	18	16	16
3. embeddedness	15	14	15	16	16	14	14	11	15
4. velocity/depth regimes	12	10	16	18	17	15	15	19	15
5. channel alteration	15	16	17	18	18	18	18	18	18
6. sediment deposition	16	12	15	15	12	16	15	12	16
7. frequency of riffles	17	18	17	17	18	18	18	18	17
8. channel flow status	16	15	19	17	19	20	20	20	18
9. condition of banks	5	9	13	15	13	16	16	15	15
10. bank vegetative protection	5	10	13	16	13	17	16	16	18
11. disruptive pressure	13	11	16	17	15	15	15	16	17
12. riparian zone width	13	5	16	18	8	15	15	16	17
Total Score	155	151	190	202	182	197	196	192	198
Rating[2]	SUB	SUB	SUB	OPT	SUB	OPT	OPT	OPT	OPT

[1] Refer to Figure 1 and Table 1 for station locations
[2] OPT=Optimal (≥192); SUB=Suboptimal (132-180)
[3] Rock Run, Chester County, May 11, 2005

TABLE 3
SEMI-QUANTITATIVE BENTHIC MACROINVERTEBRATE DATA
DEER CREEK AND LITTLE FALLS CREEK, YORK COUNTY
MAY 5 AND 6, 2005

TAXA	STATION[1]								
	1LFC	2BR	1DC	2UNT	3DC	4EC	5EC	6EC	1RR[2]
Ephemeroptera (mayflies)									
Baetidae; ***Acentrella***			32	8	12	22		10	
Baetis		2							4
Plauditus					4				1
Ephemerellidae; ***Drunella***			7	1	2	4			1
Ephemerella	5	2	80	20	69	42	2	53	23
Eurylophella	1					1			
Serratella				2	4				
Timpanoga				3					
Heptageniidae; ***Cinygmula***									2
Epeorus				1	1			1	19
Leucrocuta						1			
Stenacron					1	1			
Stenonema	1		4	13	5	3		4	
Isonychiidae; ***Isonychia***			2	6	3			1	1
Leptophlebiidae;									5
Paraleptophlebia	1	5							
Plecoptera (stoneflies)									
Chloroperlidae; ***Alloperla***					1	1			
Haploperla									10
Leuctridae; ***Leuctra***	8	17	4	1	4	8			18
Nemouridae; ***Amphinemura***		2	3	1		2			1
Prostoia						1			
Peltoperlidae; ***Tallaperla***									1
Perlidae; ***Acroneuria***			5	1	3	1	1	2	2
Agnetina					1				
Perlesta			2	1		6			
Perlodidae; ***Isoperla***									1

TAXA	STATION[1]								
	1LFC	2BR	1DC	2UNT	3DC	4EC	5EC	6EC	1RR[2]
Trichoptera (caddisflies)									
Hydropsychidae; ***Cheumatopsyche***	2		3	5	12	4	2	2	
Diplectrona		2	1		1				2
Dolophilodes	5	71	8	11	19	20		34	73
Hydropsyche	6	1	11	40	15	9	2	9	
Limnephilidae; ***Pycnopsyche***									
Philopotamidae; ***Chimarra***	3		1	5	1				
Polycentropidae; ***Polycentropus***			1			1		1	
Psychomyiidae; ***Psychomyia***						2			
Rhyacophilidae; ***Rhyacophila***			2	2					2
Uenoidae; ***Neophylax***									1
Other Insect Taxa									
DIPTERA (true flies)									
Chironomidae	173	78	144	77	17	42	74	80	16
Empididae; ***Clinocera***							1		
Hemerodromia				6	2	4	1		
Simuliidae; ***Prosimulium***	6								1
Simulium	6	2	1	2	7	6	74	3	6
Tipulidae; ***Antocha***	2	3	2	4	2	4	6	1	1
Hexatoma									3
MEGALOPTERA (hellgrammites, dobson flies)									
Corydalidae; ***Nigronia***			1	2					
ODONATA (dragon-, damselflies)									
Gomphidae;									1
COLEOPTERA (aquatic beetles)									
Elmidae; ***Optioservus***	16	19	13	3	2	11	2	7	
Oulimnius			11	2	2	6			8
Promoresia									1
Stenelmis	3	4	6	21	16			1	1
Psephenidae; ***Psephenus***	1	1	6	1	1				1
HEMIPTERA; Gerridae	1								
OLIGOCHEATA		8	1	1		4	3		
AMPHIPODA									

TAXA	STATION[1]								
	1LFC	2BR	1DC	2UNT	3DC	4EC	5EC	6EC	1RR[2]
Crangonyctidae; ***Crangonyx***		4							
DECOPODA									
Cambaridae; ***Orconectes***	1								
ISOPODA									
Asellidae; ***Caecidotea***							1		
ARACHNIDA; Hydracarina						1			
Number of taxa in total sample	17	16	25	27	26	26	12	15	28

[1] Refer to Figure 1 for station location

[2] Rock Run, Chester County, May 11, 2005

TABLE 4
FISHES
LITTLE FALLS CREEK
YORK COUNTY
DEP; AUGUST 17, 2005

SPECIES NAME	STATION[1,2]						
	1LFC	2BR		Deer Creek (PFBC[3])			
	DEP 2005	PFBC 1999	DEP 2005	0101 1996	0201 1996	0202 1996	0301 1996
Brown Trout, ***Salmo trutta*** (adult)	1		1	P	P	R	R
Brown Trout, ***S. trutta*** (juvenile)			15				
White Sucker, ***Catastomus commersoni***	X		X	P	C	A	C
Northern Hog Sucker, ***Hypentelium nigricans***				C	C	P	P
Central Stoneroller, ***Campostoma anomalum***						R	
Cutlips Minnow, ***Exoglossum maxillingua***				C	P	P	C
Common Shiner, ***Luxilus cornutus***				A		A	P
River Chub, ***Nocomis micropogon***							R
Creek Chub, ***Semotilus atromaculatus***	X	X	X	P	C	P	
Fall Fish, ***S. corporalis***				C		C	C
Blacknose Dace, ***Rhinichthys atratulus***	X	X	X	C	A	A	P
Longnose Dace, ***R. cataractae***	X		X	P	P	P	R
Rosyside Dace, ***Clinostomus funduloides***	X		X	A	A	C	A
Margined Madtom, ***Noturus insignis***				P			P
American Eel, ***Anguilla rostrata***				C	C	C	C
Redbreast Sunfish, ***Lepomis auritus***							P
Pumpkinseed, ***L. gibbosus***						P	P
Tessellated Darter, ***Etheostoma olmstedi***			X	P	C	A	C
TOTAL TAXA	6	2	7	13	10	14	15

[1] Refer to Figure 1 and Table 1 for station locations
[2] X = Present but abundance not recorded
[3]PFBC 1996 Subjective Abundance Index (based on 300 m long station)
A = Abundant (>100); C = Common (26-100); P = Present (3-25); R = Rare (<3)

TABLE 5
RBP METRIC COMPARISON
DEER CREEK AND LITTLE FALLS CREEK
YORK COUNTY
MAY 5 AND 6, 2005

METRIC	STATION								
	1LFC	2BR	1DC	2UNT	3DC	4EC	5EC	6EC	1RR[1]
1. TAXA RICHNESS	17	16	25	27	27	26	12	15	28
Cand/Ref (%)	60.71	57.14	89.29	96.43	96.43	92.86	42.86	53.57	
Biol. Cond. Score	1	0	8	8	8	8	0	0	8
2. MOD. EPT INDEX	7	6	13	15	16	15	2	7	17
Cand/Ref (%)	41.18	35.29	76.47	88.24	94.12	88.24	11.76	41.18	
Biol. Cond. Score	0	0	7	8	8	8	0	0	8
3. MOD. HBI	5.22	3.24	2.73	4.36	2.84	3.42	5.83	3.39	1.38
Cand-Ref	3.84	1.85	1.35	2.98	1.46	2.04	4.45	2.01	
Biol. Cond. Score	0	0	0	0	0	0	0	0	8
4. % DOMINANT TAXA	72.08	35.29	36.20	32.08	33.33	20.3	43.79	38.46	35.4
Cand-Ref	36.64	-0.14	0.76	-3.35	-2.10	-14.15	8.35	3.02	
Biol. Cond. Score	0	8	8	8	8	8	8	8	8
5. % MOD. MAYFLIES	3.33	3.17	56.56	22.5	48.79	35.75	1.18	33.17	25.2
Cand-Ref	21.9	22.1	-31.31	2.74	-23.55	-10.51	24.06	-7.93	
Biol. Cond. Score	5	5	8	8	8	8	4	8	8
TOTAL BIOLOGICAL CONDITION SCORE	6	13	31	32	32	32	12	16	**40**
% COMPARABILITY TO REFERENCE	15.0	32.5	77.5	80.0	80.0	80.0	30.0	40.0	
DEP IBI Score	39.1	52.6	71.8	66.7	77.7	72.1	26.9	51.3	

[1] Rock Run, Chester County, May 11, 2005

FISHING CREEK
LANCASTER COUNTY

WATER QUALITY STANDARDS REVIEW
STREAM REDESIGNATION EVALUATION REPORT

SEGMENT: BASIN

STREAM CODE: 07253

DRAINAGE LIST: O

WATER QUALITY MONITORING SECTION (DSB)
DIVISION OF WATER QUALITY STANDARDS
BUREAU OF WATER STANDARDS AND FACILITY REGULATION
DEPARTMENT OF ENVIRONMENTAL PROTECTION

MAY 2010

INTRODUCTION

Fishing Creek has a designated use of High Quality-Cold Water Fishes, Migratory Fishes (HQ-CWF, MF) in Chapter 93 of the Pennsylvania Code. As a result of a petition submitted by Mr. Patrick McClure and accepted by the Environmental Quality Board (EQB) for further study on January 18, 2005, this basin was evaluated for redesignation as Exceptional Value, Migratory Fishes (EV, MF). This report is based on a field survey conducted by the Department in April of 2005.

GENERAL WATERSHED DESCRIPTION

Fishing Creek is a tributary to the Susquehanna River (Figure 1). This basin covers an area of 14.2 square miles and contains 29.0 stream miles. It is located in Drumore and Providence Townships, Lancaster County. Land use in this basin is mostly forested slopes with some low-density residential housing along the paved roads in the lower 2/3 of the basin. The upper 1/3 is mostly agriculture in the form of crops and cow pastures but forested woodlots and low-density residential housing are also present. As a result, this area is less shaded and shows more evidence of erosion than the rest of the stream. Fishing Creek basin ranges in elevation from 900 feet in the north at the source to 200 feet at the mouth. This is a freestone stream with a moderate gradient throughout its length. Three stations were sampled as part of this survey (Figure 1 and Table 1).

WATER QUALITY AND USES

Surface Water:

No long-term water quality data were available to allow a direct comparison to water quality criteria. A report by the Pennsylvania Fish and Boat Commission (PFBC), based on an August 1993 survey, indicated that the water quality of Fishing Creek was generally good (Table 2). Since the instantaneous nature of grab samples precludes comparison to applicable water quality criteria, the indigenous aquatic community is a better indicator of long-term conditions and is used as a measure of ecological significance.

There are no surface water withdrawals for public water supply in this basin. The Buck Company Foundry has an NPDES permit (PAS203501) for several stormwater discharges into an UNT Fishing Creek in Providence Township.

The agricultural areas in the upper portion of the basin have the potential for nonpoint source pollution. That potential is greatly reduced in the lower portion of the basin because of wide forested buffer zones along the stream.

Aquatic Biota:

Habitat assessments and biological samplings were conducted at 4 stations (3 candidate and 1 reference) during the April 2005 survey. The physical habitat assessments revealed that conditions at Station 1FC, 2FC, 3FC and Reference Station R1 scored in the Optimal range for

benthic macroinvertebrates and fish (Table 3). Overall, habitat scores for the Fishing Creek stations ranged from 189 to 201 out of a possible 240.

Benthic macroinvertebrate samples were collected using the Department's Antidegradation protocol (adapted from Plafkin's 1989 and Barbour's 1999 Rapid Bioassessment Protocols manuals). Taxonomic diversity was high at all stations with a mixture of individuals from taxa that are sensitive to water quality degradation (e.g. *Ephemerella, Haploperla*, and *Diplectrona*) and taxa that are more tolerant of such pollution (e.g. *Baetis, Hydropsyche, Stenelmis,* and Chironomidae). The numbers of tolerant individuals outnumbered the intolerant ones at all stations. Stations 1FC and 3FC had numbers of Chironomidae that made up 30% and 37% of the subsample respectively. This along with the numbers of the other tolerant taxa listed above would indicate that this stream may be receiving a significant amount of nutrient enrichment probably from the agriculture in the upper portion of the basin.

The Pennsylvania Fish and Boat Commission (PFBC) surveyed the candidate stream in August 1993. They found 11 fish species in the sampled reach located near Station 2FC and 21 fish species at Station 3FC, located 250 meters upstream from the mouth (Table 4). They also found a small population of wild brown trout throughout the basin but concluded that poor instream habitat and summer water temperatures limited trout numbers. Rosyside Dace, a minnow with a very restricted range in Pennsylvania, was abundant throughout the basin except near the mouth.

A fish species that was abundant at Station 3FC was the Chesapeake Logperch (*Percina bimaculata)*. These darters are part of a disjunct population of the Logperch (*Percina caprodes*) that was historically considered a subspecies (*Percina caprodes semifasciata*). Recent work by Near (2008) and Near and Benard (2004) has shown that this population deserves to be elevated from a subspecies to a true species. The current known range of the Chesapeake Logperch is the lower reaches of the Susquehanna River from Holtwood Dam in PA to the Chesapeake Bay in MD along with the lower reaches of 8 Susquehanna River tributaries, 5 in MD and 3 in PA. Since the evidence that shows this population deserves species status is so recent, the PFBC and the Fishes Technical Committee (FTC) of the PA Biological Survey (PABS) have not had time to review the status of this species for inclusion on PA's List of Threatened and Endangered Species. Since the population of Chesapeake Logperch in Fishing Creek represents a significant portion of the total global population of this species the Department concludes that this stream qualifies as a surface water of exceptional ecological significance based on § 93.4b(b)(2).

BIOLOGICAL USE QUALIFICATIONS

The biological use qualifying criteria applied to Fishing Creek was the integrated benthic macroinvertebrate score test described at § 93.4b(a)(2)(i)(A) and § 93.4b(b)(1)(v). This score is calculated from the macroinvertebrate samples referenced above. Following the Department's Antidegradation protocol, a 200 (+/- 20%) count subsample was randomly selected from each total sample and enumerated (Table 5). Selected benthic macroinvertebrate community metrics were generated from these subsamples. Candidate station metrics were compared to Rock Run (01591), a reference stream with a comparable drainage area (Table 6). This reference stream has a protected use designation of EV and is a tributary to French Creek (01548) located in

Chester County. All sampling was conducted on the same day to minimize the effects of seasonal variation. This comparison was done using the following metrics, which were selected as being indicative of community health: taxa richness; modified EPT index (total number of intolerant Ephemeroptera, Plecoptera, and Trichoptera taxa); modified Hilsenhoff Biotic Index; percent dominant taxon; and percent modified mayflies.

Based on these five metrics, Stations 1FC, 2FC, and 3FC had biological condition scores of 60%, 85%, and 60% respectively of the reference station score. None of these scores met the threshold of 92% that would qualify them for an EV designation under the Department's regulatory criterion (§ 93.4b(b)(1)(v)).

PUBLIC RESPONSE AND PARTICIPATION SUMMARY

The Department provided public notice of this redesignation evaluation and requested any technical data from the general public through publication in the Pennsylvania Bulletin on February 26, 2005 (35 Pa.B 1477). A similar notice was also published in the Intelligencer Journal on February 18, 2005. In addition, Drumore and Providence Townships along with the Lancaster County Planning Commission were all notified of the evaluation in a letter dated February 7, 2005. No data on water chemistry, instream habitat, or the aquatic community were received in response to these notifications. In 2005, RETTEW Associates, Inc. collected benthic macroinvertebrates and did a fish species survey that was funded in part by a Growing Greener grant to the Lancaster Conservancy. No data from this survey were submitted to DEP during the public comment period.

The petitioner and local municipality and planning commission representatives were notified by a postcard mailing that the report was available on the Department's web page for review with a 30-day comment period, which closed on April 16, 2010. In response, the Lancaster County Conservancy expressed support of the below recommendations and requested review and reconsideration of the stream segments not being proposed for EV redesignation at a future date.

RECOMMENDATIONS

Based on applicable regulatory definitions and requirements of § 93.4b, the Department recommends that the protected use designation of Fishing Creek basin (07253) from the source to UNT 07256 (near T434 bridge) retain the current HQ-CWF, MF designation, and the Fishing Creek basin from and including UNT 07256 to the mouth be upgraded to EV, MF based on § 93.4b(b)(2), surface waters of exceptional ecological significance. This EV designation affects 7.27 stream miles.

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FIGURE 1
STATION LOCATIONS
FISHING CREEK

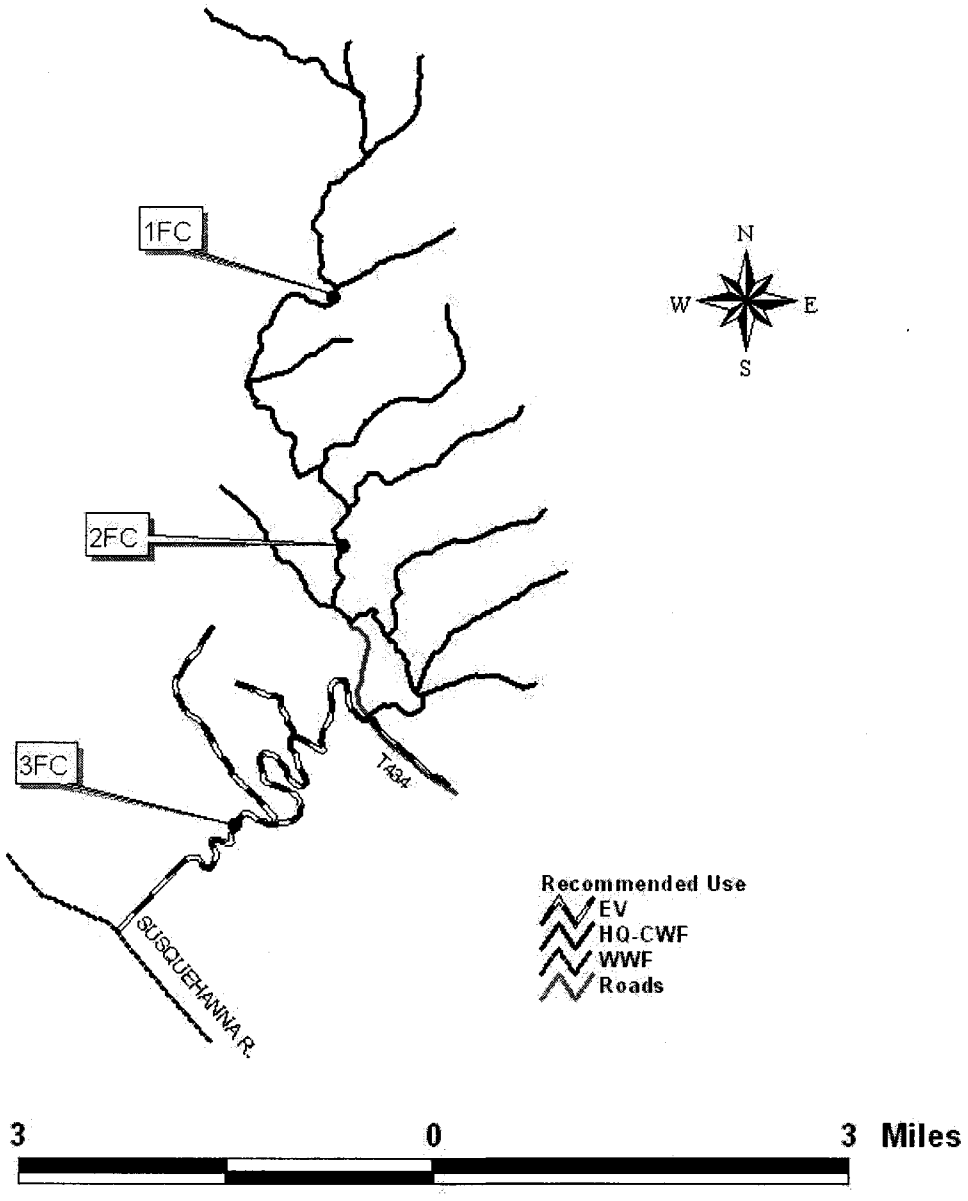

TABLE 1
STATION LOCATIONS
FISHING CREEK
LANCASTER COUNTY

STATION	LOCATION
1FC	Fishing Creek (07253) approximately 20 meters downstream from the T450 Bridge. Drumore Township, Lancaster County. Lat: 39 51 04 Long: 76 14 40 RM: 9.09
2FC	Fishing Creek approximately 100 meters upstream from the SR3006 Bridge. Drumore Township, Lancaster County. Lat: 39 49 28 Long: 76 14 38 RM: 6.14
3FC	Fishing Creek approximately 300 meters upstream from the SR3004 Bridge. Drumore Township, Lancaster County. Lat: 39 47 40 Long: 76 15 34 RM: 0.75
R1	Rock Run (01591); approximately 30 meters upstream of the crossing of old SR0023 South Coventry Township, Chester County. Lat: 40 10 27 Long: 75 41 46 RM: 0.24

TABLE 2
WATER CHEMISTRY[1]
FISHING CREEK
LANCASTER COUNTY

STATION	2FC	3FC
Temp (°C)	22	21
Cond (µmhos)	138	160
Diss. O_2 (mg/l)	8.3	9.0
pH	7.0	7.3
Total Hardness (mg/l)	55	61
Total Alkalinity (mg/l)	20	21

[1] - Data collected by PFBC (August 1993)

TABLE 3
HABITAT ASSESSMENT SUMMARY
FISHING CREEK
LANCASTER COUNTY
APRIL 21, 2005

HABITAT PARAMETER	STATIONS[1]			
	1FC	2FC	3FC	R1
1. instream cover	15	17	16	18
2. epifaunal substrate	17	18	15	19
3. embeddedness	14	16	13	17
4. velocity/depth	17	14	17	14
5. channel alterations	16	16	15	16
6. sediment deposition	16	17	15	18
7. riffle frequency	17	18	16	18
8. channel flow status	16	16	16	16
9. bank condition	15	16	17	15
10. bank vegetation protection	14	17	17	14
11. grazing/disruptive pressures	17	18	18	14
12. riparian vegetation zone width	17	18	14	12
Total Score	191	201	189	191
Rating[2]	OPT	OPT	OPT	OPT

[1] Refer to Figure 1 and Table 1 for station locations.

[2] OPT = Optimal (≥ 192) ;
SUB =Suboptimal (132-180)

TABLE 4
FISHES
FISHING CREEK
LANCASTER COUNTY

SPECIES NAME	STATION	
	2FC	3FC
Gizzard shad, *Dorosoma cepedianum*		A
Rainbow trout, *Oncorhynchus mykiss*	R	
Brown trout, *Salmo trutta*	P	P
Rosyside Dace, *Clinostomus funduloides*	A	
Cutlips minnow, *Exoglossum maxillingua*	P	P
Satinfin shiner, *Cyprinella analostana*		A
Spotfin shiner, *Cyprinella spiloptera*		A
Common shiner, *Luxillus cornutus*		A
Spottail shiner, *Notropis hudsonius*		A
Bluntnose minnow, *Pimephales notatus*		A
Blacknose dace, *Rhinichthys atratulus*	C	P
Longnose dace, *Rhinichthys cataractae*	C	P
Creek chub, *Semotilis atromaculatus*	A	
Common carp, *Cyprinus carpio*		P
White sucker, *Catostomus commersoni*	P	A
Northern hog sucker, *Hypentelium nigricans*	P	P
Yellow bullhead, *Ameiurus natalis*		P
Margined madtom, *Noturus insignis*	C	P
Green sunfish, *Lepomis cyanellus*		P
Rock bass, *Ambloplites rupestris*		R
Smallmouth bass, *Micropterus dolomieu*		P
Largemouth bass, *Micropterus salmoides*		P
Tessellated darter, *Etheostoma olmstedi*	R	C
Chesapeake Logperch, *Percina bimaculata*		A

1 - Data collected by the PFBC (August 1993)
A = Abundant; C = Common; P = Present; R = Rare

TABLE 5
SEMI-QUANTITATIVE MACROINVERTEBRATE DATA
FISHING CREEK, LANCASTER COUNTY
APRIL 21, 2005

TAXA	STATIONS			
	1FC	2FC	3FC	R1
Ephemeroptera (mayflies)				
Baetidae; *Acentrella*		2	2	10
Baetis	15	11	28	11
Ephemerellidae; *Drunella*				24
Ephemerella	22	46	12	79
Serratella	1			
Heptageniidae; *Cinygmula*			1	
Epeorus	2	4	4	15
Leucrocuta	1			
Rhithrogena		2		
Stenacron	1			
Stenonema	4	3	2	7
Isonychiidae; *Isonychia*	1			
Leptophlebiidae; *Paraleptophlebia*				1
Plecoptera (stoneflies)				
Chloroperlidae; *Haploperla*	16		4	
Sweltsa	1		3	
Leuctridae; *Leuctra*	2	3		1
Nemouridae; *Amphinemura*	2		3	7
Perlidae; *Acroneuria*	2	9	4	1
Paragnetina			2	
Perlodidae; *Isoperla*	3	4	1	2
Tricoptera (caddisflies)				
Hydropsychidae; *Cheumatopsyche*	7	1	10	2
Diplectrona	14	27	4	4
Hydropsyche	22	20	22	13
Philopotamidae; *Dolophilodes*	3	2	5	
Rhyacophilidae; *Rhyacophila*		2	2	6
Diptera (true flies)				
Blephariceridae; *Blepharicera*				1
Ceratopogonidae			1	
Empididae; *Chelifera*				1
Clinocera	1	1	1	
Hemerodromia			1	
Simuliidae; *Prosimulium*		2		
Simulium		2	2	1
Tipulidae; *Antocha*	7	2	4	6
Hexatoma			1	
Tipula	1			
Chironomidae	66	40	86	10

TABLE 5 (continued)

TAXA	STATIONS			
	1FC	2FC	3FC	R1
Megaloptera (dobson-, fishflies)				
Corydalidae; *Nigronia*	1	3	4	
Odonata (dragon-, damselflies)				
Gomphidae; *Stylogomphus*		1	1	2
Coleoptera (aquatic beetles)				
Elmidae; *Optioservus*	5			2
Stenelmis	15	1	13	
Psephenidae; *Psephenus*	3	1	3	4
Ptilodactylidae; *Anchytarsus*		1		
Non-Insect Taxa				
Oligochaeta	1		2	2
Amphipoda (scuds)				
Gammaridae; *Gammarus*	3		1	
Decapoda (crayfish)				
Cambaridae				
Cambaridae; *Cambarus*	1	1	1	
Total number of individuals	223	191	230	212

TABLE 6
RBP METRIC COMPARISON
FISHING CREEK
LANCASTER COUNTY

METRIC	STATIONS			
	1FC	2FC	3FC	R1
1. TAXA RICHNESS	29	25	31	24
Cand/Ref (%)	121	104	129	xxx
Biol. Cond. Score	8	8	8	8
2. MOD. EPT INDEX	15	11	14	12
Cand/Ref (%)	125	92	117	xxx
Biol. Cond. Score	8	8	8	8
3. MOD. HBI	3.86	2.84	4.60	2.27
Cand-Ref	1.59	0.57	2.33	xxx
Biol. Cond. Score	0	8	0	8
4. % DOMINANT TAXA	30	24	37	37
Cand-Ref	-7	-13	0	xxx
Biol. Cond. Score	8	8	8	8
5. % MOD. MAYFLIES	14	30	9	64
Ref-Cand	50	34	55	xxx
Biol. Cond. Score	0	2	0	8
TOTAL BIOLOGICAL CONDITION SCORE	24	34	24	40
% COMPARABILITY TO REFERENCE	60	85	60	

FRENCH CREEK AND BEAVER RUN

CHESTER COUNTY

WATER QUALITY STANDARDS REVIEW

STREAM REDESIGNATION EVALUATION REPORT

Segment: Basin, from Beaver Run
to the T522 Bridge (Kennedy Covered Bridge)
Stream Code: 01548
Drainage List: F

WATER QUALITY MONITORING SECTION (GLW)
DIVISION OF WATER QUALITY STANDARDS
BUREAU OF WATER STANDARDS AND FACILITY REGULATION
DEPARTMENT OF ENVIRONMENTAL PROTECTION

MAY 2010

INTRODUCTION

The Department conducted an evaluation of Beaver Run and the lower French Creek basin (from the confluence with Beaver Run, to the junction of West Vincent, East Vincent, and East Pikeland Township borders) in response to a petition submitted by the Green Valleys Association. The petition, which was accepted by the Environmental Quality Board (EQB) on February 17, 2004, requests this basin be redesignated to Exceptional Value Waters (EV). The study area includes the Beaver Run basin and French Creek basin from the confluence with Beaver Run to the Township 522 bridge in East Vincent Township, excluding the Birch Run tributary, which is currently designated Exceptional Value, Migratory Fishes (EV, MF). Beaver Run and the portion of French Creek petitioned for study are currently designated High Quality-Trout Stocking, Migratory Fishes (HQ-TSF, MF) and one unnamed tributary in East Pikeland Township is designated TSF, MF. The upper French Creek basin, source to the confluence with Beaver Run is currently designated EV, MF. One component of the evaluation contained in this report is based on field surveys conducted April 27-30, 2004.

GENERAL WATERSHED DESCRIPTION

French Creek and Beaver Run are freestone streams that are tributaries to the Schuylkill River in the Delaware River watershed. The candidate basin is located in East Nantmeal, South Coventry, East Vincent, West Vincent, and East Pikeland Townships; Chester County (Figure 1). The portion of the French Creek basin petitioned for study has a drainage area of 17.0 square miles and the mainstem consists of 22.3 stream miles. The Beaver Run basin has a drainage area of 5.0 square miles and 9.4 stream miles. The surrounding area is characterized by relatively flat topography with some gently rolling hills of low relief.

The current land use in the watershed consists mostly of single-family residential and open fields. Land use is a mixture of residential (50%), old fields (20%), forest (15%), cropland (5%), pasture (5%), and commercial (5%). One major population center, the Borough of Phoenixville, lies within the southern end of this basin.

WATER QUALITY AND USES

Surface Water

Long-term chemistry data were available from the Department's Water Quality Network Station (WQN 156, Figure 1), located 1.5 miles upstream of the petitioned area, to allow a direct comparison to water quality criteria (Table 2). The period of record for this WQN station was from January 2000 until it was discontinued after December 2004. Based on the concentrations of hardness, alkalinity, calcium and magnesium, French Creek displays soft-to-moderate hardness with moderate buffering capacity. Field alkalinity measurements collected from most stations in the petitioned area (Table 2A) supports these buffering capacity findings. Most metals concentrations were routinely well below numeric criteria values with many measurements being below laboratory detection limits. Similarly, total concentrations of

sulfates, chlorides, and phosphorus and nitrogen-based parameters also were well below criteria values or detection limits. These water parameter data indicates that French Creek has experienced neligible water quality degradation, if any. Additional data submitted by the Delaware Riverkeeper Network also demonstrated excellent water quality at the end of the petitioned reach near Phoenixville. Data submitted included nitrate and ortho-phosphate data with nitrate concentrations below numeric criteria and ortho-phosphate levels always at or below laboratory detection limits. There are seven NPDES permits (5 for treated waste water, and 2 for treated industrial water) and four biosolids applications in the study area of the French Creek basin. One of these NPDES permits was issued for a sewage treatment plant that has yet to be constructed as of this report date. There are no surface water withdrawals in the petitioned area.

Aquatic Biota

The indigenous aquatic community is an excellent indicator of long-term conditions and is used as a measure of both water quality and ecological significance. Department staff collected habitat and benthic macroinvertebrate data at eight locations in the petitioned area on April 27, 2004, and from one station each on Rock Run (small tributary EV reference; Chester County) and Kettle Creek (mainstem EV reference; Clinton County) on April 29 and 30, 2004, respectively (Figure 1, Table 1).

Habitat. Instream habitat was assessed at each station on French Creek, Kettle Creek, and Rock Run. Total habitat scores (Table 3) ranged from the suboptimal (4UNT) to the optimal (5FC and 8FC) compared to optimal scores found at reference stations 1 KC (198) and 1RR (195). The lower scoring parameters found at the stations with suboptimal habitat indicated moderate vegetative disruptive pressure, moderately eroded banks, and a lack of adequate riparian buffering.

Benthos. Benthic macroinvertebrate samples were collected at all eight stations (Table 4) using the Department's PA-DEP RBP benthic sampling methodology which is a modification of EPA's Rapid Bioassessment Protocols (RPBs; Plafkin, et al 1989; Barbour, et al 1999). With the exception of a low of 10 taxa at 7UNT, taxonomic diversity was very good overall, ranging from 16 to a high of 29 at the other stations. Taxa sensitive to water quality degradation were well represented at all stations except for 4UNT and 7UNT where they were nearly absent. This lack of sensitive taxa and relatively high abundances of tolerant taxa at stations 4UNT and 7UNT compared to reference station conditions, reflect the cumulative impacts of human activity to these two streams. The stations at Beaver Run (1BR) and the French Creek mainstem (5FC and 8FC) had very good-to-excellent taxa richness and were dominated by taxa sensitive to pollution, indicating minimal impacts from human activity.

Fish. Fishery data were made available from the U.S. Geological Survey (USGS) from the Delaware River National Water Quality Assessment (NAWQA) program. The French Creek fish populations were sampled at the USGS gauging station on July 20, 1999 (Figure 1; USGS, 1999). Nineteen species of fish (891 individuals) were captured in 3 hours and 24 minutes of sampling a 300m section of French Creek (Table 5). The French Creek mainstem has a diverse fish community and the species collected are commonly found in warm water habitats

and included several pollution sensitive taxa. The fish data reveal a balanced fish community indicative of a healthy warm water fishery.

BIOLOGICAL USE QUALIFICATIONS

The qualifying criteria applied to French Creek was the DEP integrated benthic macroinvertebrate scoring test described at § 93.4b(a)(2)(i)(A) and § 93.4b(b)(1)(v). Selected benthic macroinvertebrate community metrics from the French Creek petition area (Table 6) were compared to those from Exceptional Value (EV) reference streams with comparable drainage areas. Stations 5FC and 8FC were compared to a reference station on Kettle Creek (1KC) in Clinton County and stations 1BR, and 2-7UNT were compared to a station on Rock Run (1RR), a tributary to French Creek. Rock Run and Kettle Creek were used as references because both are freestone streams, have similar drainage areas to the candidate basins (Rock Run = 3.3 Beaver Run = 5.0; French Creek = 63.1 Kettle Creek = 86.5 square miles). In addition, both Kettle Creek and Rock Run have served as EV reference streams in several other Departmental surveys. Sampling from all stations was completed within a 3-day time frame (April 28-30, 2004) to minimize seasonal variation. The comparisons were done using metrics selected as being indicative of community health: taxa richness, modified EPT index, modified Hilsenhoff Biotic Index, percent dominant taxon, and percent modified mayflies.

Based on these five metrics, stations 1BR, 5FC and 8FC in the candidate streams had Biological Condition Scores (BCS) that were 100% of the reference station (Table 6), which exceeds the 92% comparison standard required to qualify as Exceptional Value Waters (§ 93.4b(b)(1)(v)). The remaining five stations (unnamed tributaries to French Creek) in the candidate basin had Biological Condition Scores that ranged from 20% to 82.5% of the reference station (Table 5). As a result, these candidate stations do not meet the 92% EV criterion found at (§ 93.4b(b)(1)(v). None of the other antidegradation requirements listed in § 93.4b, pertaining to qualifying as High Quality or Exceptional Value waters, apply to these stations.

PUBLIC RESPONSE AND PARTICIPATION SUMMARY

The Department provided public notice of this redesignation evaluation and requested technical data from the general public through publication in the Pennsylvania Bulletin on March 13, 2004 (34 Pa.B 1520). A similar notice was also published in The Mercury newspaper (Pottstown, PA) on March 12, 2004. In addition, East Nantmeal, East Pikeland, East Vincent, South Coventry, and West Vincent Townships and the Chester County Planning Commission were notified of the redesignation evaluation in a letter dated February 24, 2004. Water quality and benthic macroinvertebrate data were received from the Delaware Riverkeeper Network as a result of these requests. In addition, the petitioner provided data from Stroud Water Research Center, The Academy of Natural Sciences Patrick Center for Environmental Research and US Geological Survey. The data provided by the petitioner was used as documentation and support for acceptance of the French Creek and Beaver Run petition for redesignation. The data submitted by the Delaware Riverkeeper Network was used

as supporting documentation of the excellent water quality of the mainstem of French Creek in conjunction with the findings of the Department's survey on April 27-30, 2004.

The petitioner and local municipality and planning commission representatives were notified by a postcard mailing that the report was available on the Department's web page for review with a 30-day comment period, which closed on April 16, 2010. In response, DEP received comments from the petitioner, Green Valleys Association, the Delaware Riverkeeper, and the Valley Forge Chapter of Trout Unlimited. These commentors are in support of the EV redesignation recommendations below but noted that tributaries to the French Creek mainstem were not included in the EV redesignation recommendations and raised concerns that their exclusion would expose them to potential degradation. In addition, DEP received an inquiry fron the Honorable Curt Schroder, State Representative for the 155th Legislative District that raised these same concerns. While it is preferred to have included the unnamed tributaries as part of the EV recommendation, DEP's evaluation of these streams indicated they did not meet the biological qualifying EV criterion and therefore could not be included in the EV recommendation. It is further noted that since these tributaries are currently HQ, an EV mainstem designation adds an even higher level of protective review because if any wastewater discharges are proposed for these unnamed tributaries, they would not only need to meet more stringent HQ-based permit limits but must also then need to meet the more protective EV requirements at the point of confluence with the French Creek mainstem.

RECOMMENDATION

Based on the applicable regulatory definitions and requirements of § 93.4b, the Department recommends that the Beaver Run basin and the French Creek mainstem from Beaver Run to the T522 bridge (Kennedy Covered Bridge) be redesignated Exceptional Value, Migratory Fishes (EV, MF) and the unnamed tributary basins to this reach of the mainstem from Beaver Run to East Pikeland Township retain their current HQ-TSF, MF designation and the unnamed tributary in East Pikeland Township retain its current TSF, MF.

This recommendation adds approximately 16.3 stream miles of EV, MF waters to Chapter 93. A total of 14.7 stream miles will retain their current HQ-TSF, MF designation. With the exception of Beaver Run and the main stem of French Creek, this recommendation does not reflect the EV designation sought in the petition.

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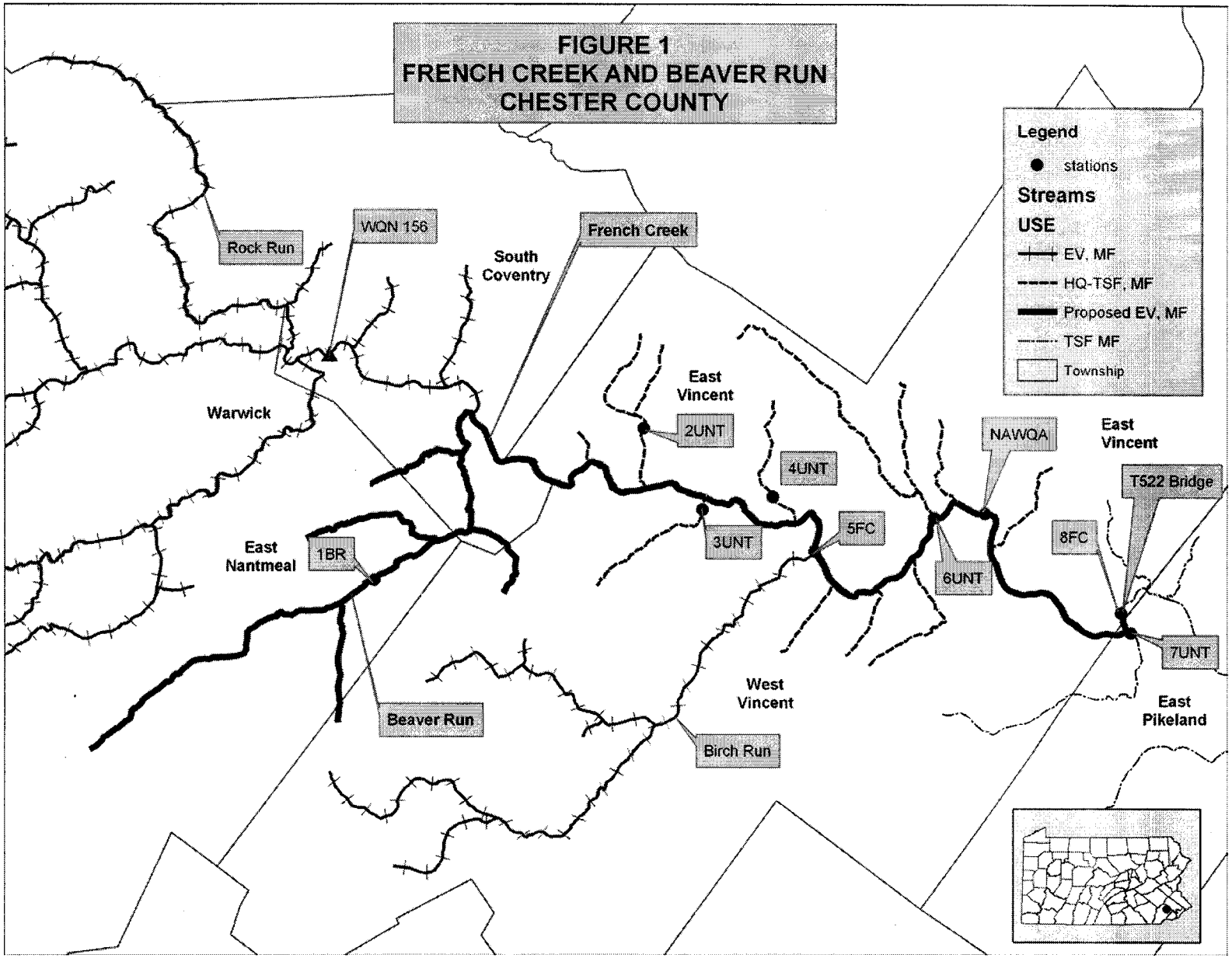


FIGURE 1
FRENCH CREEK AND BEAVER RUN
CHESTER COUNTY
Legend
stations
Streams
USE
EV, MF
HQ-TSF, MF
Proposed EV, MF
TSF MF
Township
Rock Run
WQN 156
South Coventry
French Creek
East Vincent
2UNT
4UNT
3UNT
5FC
NAWQA
East Vincent
T522 Bridge
8FC
6UNT
7UNT
Warwick
East Nantmeal
1BR
Beaver Run
West Vincent
Birch Run
East Pikeland

TABLE 1
STATION LOCATIONS
FRENCH CREEK
CHESTER COUNTY

STATION	LOCATION
1BR	Beaver Run (01573) approximately 15 meters downstream of Fairview Road (SR4031). East Nantmeal Township, Chester County Lat: 40° 08' 47" Long: 75° 41' 07" RMI: 1.98
2UNT	Unnamed Tributary to French Creek (01570) approximately 5 meters downstream of Pughtown Road (SR1028). East Vincent Township, Chester County Lat: 40° 09' 44" Long: 75° 38' 44" RMI: 0.50
3UNT	Unnamed Tributary to French Creek (01569) approximately 100 meters upstream of mouth adjacent to Sawmill Road (T490). West Vincent Township, Chester County Lat: 40° 09' 11" Long: 75° 38' 14" RMI: 0.11
4UNT	Unnamed Tributary to French Creek (01568) approximately 10 meters upstream of Pughtown Road (SR1028). East Vincent Township, Chester County Lat: 40° 09' 14" Long: 75° 37' 36" RMI: 0.30
5FC	French Creek (01548) approximately 20 meters upstream of Sheeder Road (SR1033). East and West Vincent Townships, Chester County Lat: 40° 08' 54" Long: 75° 37' 16" RMI: 9.03
6UNT	Unnamed Tributary to French Creek (01558) approximately 5 meters upstream of confluence with French Creek. East Vincent Township, Chester County Lat: 40° 09' 05" Long: 75° 36' 12" RMI: 0.01
7UNT	Unnamed Tributary to French Creek (01555) approximately 10 meters upstream of confluence with French Creek adjacent to Mill Lane (T536). East Pikeland Township, Chester County Lat: 40° 08' 18" Long: 75° 34' 31" RMI: 0.04
8FC	French Creek (01548) approximately 70 meters upstream of Kennedy Covered Bridge and Seven Stars Road (T522). East and West Vincent Townships, Chester County Lat: 40° 08' 25" Long: 75° 34' 38" RMI: 5.25

TABLE 2
WATER CHEMISTRY
FRENCH CREEK
WQN 156
CHESTER COUNTY

WQN 156[1]	
Period of Record Jan 2000 to Dec 2004	
Laboratory Parameters	
Parameter	**Range[2]**
Field	
Temperature ^{O}C	0.02 – 23.2
Dissolved Oxygen	8.4 – 16.2
Laboratory	
pH	5.9 – 8.2
Alkalinity as $CaCO_3$	2.0 – 56.0
Chloride	<0.5 – 18.9
Fluoride	<0.2
Hardness	0.0 – 73.3
T. Diss. Sol.	<2 – 600
Susp. Sol.	<2 – 36
NH_3-N	<0.02 – 0.11
NO_2-N	<0.04
NO_3-N	<0.04 – 2.05
Total N	0.56 – 2.31
Total P	<0.01 – 0.076
Sulfate	<1 – 24.4
Ca	<0.03 – 20.6
Mg	<0.01 – 6.34
SO_4	4.7 – 8.8
Ba (total) *	<2 – 39.4
As (dissolved) *	<4
Cd (dissolved) *	<0.2
Cu (total/dissolved) *	<4.0 – 6.8 / <4.0
Fe (total/dissolved) *	<20 – 2010 / <20 – 308
Pb (total/dissolved) *	<1.0 – 3.0 / <1.0 – 3.0
Mn (total/dissolved) *	<2 – 103 / <2 – 33
Ni (total/dissolved) *	<4 / <4
Zn (total/dissolved) *	<5 – 15.4 / <5 – 12
Al (total/dissolved) *	<10-984 / <10 – 41.2

[1] Refer to Figure 1 and Table 1 for station locations
[2] Except for pH & conductance and indicted otherwise, all values are total concentrations in mg/l
* Concentrations in µg/l

TABLE 2A
FIELD WATER CHEMISTRY
FRENCH CREEK AND BEAVER RUN
CHESTER COUNTY
April 27-30, 2004

	STATIONS[1]								REFERENCE STATIONS	
	1BR	2UNT	3UNT	4UNT	5FC	6UNT	7UNT	8FC	1KC[3]	1RR[4]
Field Parameters										
Temp (ºC)	15.2	11.03	12.33	13.55	11.43	13.74	16.97	11.22	10.94	13.94
pH	7.05	7.2	7.17	7.05	7.26	7.59	7.77	7.42	7.3	6.69
Cond (µS/cm)	156	222	128	172	154	161	254	182	47	79
Dissolved Oxygen	8.9	10.02	9.85	9.42	10.6	9.83	9.4	10.06	11.43	8.75
Total Alkalinity	40	50	30	30	NA	50	90	40	10	20

[1] Refer to Figure 1 and Table 1 for station locations

[2] Kettle Creek, Clinton County, April 30, 2004

[3] Rock Run, Chester County, April 29, 2004

NA = Not Available

TABLE 3
HABITAT ASSESSMENT RESULTS
FRENCH CREEK AND BEAVER RUN
CHESTER COUNTY
April 27-30, 2004

PARAMETER	STATION[1]									
	1BR	2UNT	3UNT	4UNT	5FC	6UNT	7UNT	8FC	1KC[3]	1RR[4]
1. instream cover	15	16	15	13	16	15	16	15	16	16
2. epifaunal substrate	16	16	16	16	16	15	16	18	19	16
3. embeddedness	15	13	15	14	12	15	15	13	17	15
4. velocity/depth regimes	16	10	10	10	15	10	15	16	15	17
5. channel alteration	17	17	12	18	18	16	16	19	19	16
6. sediment deposition	16	14	14	16	16	16	15	18	19	15
7. frequency of riffles	17	17	19	15	16	18	17	16	20	17
8. channel flow status	18	20	20	19	20	20	18	20	20	19
9. condition of banks	14	11	13	16	15	15	16	15	16	15
10. bank vegetative protection	15	14	14	16	16	16	16	16	16	16
11. disruptive pressure	11	18	17	11	16	12	16	13	10	16
12. riparian zone width	11	18	18	0	16	11	15	13	11	17
Total Score	181	184	183	164	192	179	191	192	198	195
Rating[2]	SUB	SUB	SUB	SUB	OPT	SUB	SUB	OPT	OPT	OPT

[1] Refer to Figure 1 and Table 1 for station locations
[2] OPT=Optimal (>192); SUB=Suboptimal (132-180)
[3] Kettle Creek, Clinton County, April 30, 2004
[4] Rock Run, Chester County, April 29, 2004

TABLE 4
SEMI-QUANTITATIVE BENTHIC MACROINVERTEBRATE DATA
FRENCH CREEK AND BEAVER RUN, CHESTER COUNTY
APRIL 27-30, 2004

TAXA	STATION[1]									
	1BR	2UNT	3UNT	4UNT	5FC	6UNT	7UNT	8FC	1KC[2]	1RR[3]
Ephemeroptera (mayflies)										
Baetidae; ***Acentrella***	2				2				20	
Acerpenna									6	
Baetis	1	1	27		1		3	1		
Caenidae; ***Caenis***						2				
Ephemerellidae; ***Drunella***	2				47	2		54	54	
Ephemerella	146	1	34		50	1		42	45	
Eurylophella				2		1		3		
Serratella					12	1				
Heptageniidae; ***Cinygmula***			15							
Epeorus			18						3	
Stenacron	1									
Stenonema	14	1			4			9	8	
Isonychiidae; ***Isonychia***	2		2		6			2	5	
Leptophlebiidae; ***Paraleptophlebia***										
Plecoptera (stoneflies)										
Chloroperlidae; ***Haploperla***	3				1					
Leuctridae; ***Leuctra***	2		4					1		
Nemouridae; ***Amphinemura***	4	1	42	7	1	4				
Peltoperlidae; ***Tallaperla***			1							
Perlidae; ***Acroneuria***	1		3		4	2		2	9	
Eccoptura		4								
Paragnetina									2	
Perlesta					9			7		
Perlodidae; ***Isoperla***		12	1	7	1	2		1		
Remenus			1							
Pteronarcyidae; ***Pteronarcys***			1						1	
Trichoptera (caddisflies)										

TAXA	STATION[1]									
	1BR	2UNT	3UNT	4UNT	5FC	6UNT	7UNT	8FC	1KC[2]	1RR[3]
Brachycentridae; ***Micrasema***					2			2		
Glossosomatidae; ***Agapetus***					6	1		8		
Glossosoma	1									
Hydropsychidae; ***Cheumatopsyche***	12	40			9	2	2	13	6	
Diplectrona	2		10							
Hydropsyche	17	12	3		15	4	2	5	9	
Limnephilidae; ***Pycnopsyche***			1							
Philopotamidae; ***Chimarra***		3						2		
Polycentropodidae;	1									
Polycentropus		1	1							
Rhyacophilidae; ***Rhyacophila***	5		2							
Uenoidae; ***Neophylax***	1	2	11						3	
Other Insect Taxa										
DIPTERA (true flies)										
Blephariceridae; ***Blepharicera***			2							
Ceratopogonidae; ***Atrichopogon***				1						
Chironomidae	3	55	4	60	4	169	59	2	32	
Dixidae; ***Dixa***			1							
Empididae; ***Chelifera***	1					2				
Clinocera	2	2	2						1	
Hemerodromia	1	1		2	3	1	1			
Simuliidae; ***Prosimulium***	1	1				2				
Simulium	1	4	1		23	5		17	4	
Tipulidae; ***Antocha***	12	10				8	1	2		
Hexatoma			2							
Tipula			1			1				
MEGALOPTERA (hellgrammites, dobson flies)										
Corydalidae; ***Corydalus***								1		
Nigronia		5								
ODONATA (dragon-, damselflies)										
Cordulegastridae, ***Cordulegaster***			1		1					
Gomphidae; ***Lanthus***									4	
Stylogomphus		1			1					

TAXA	STATION[1]									
	1BR	2UNT	3UNT	4UNT	5FC	6UNT	7UNT	8FC	1KC[2]	1RR[3]
COLEOPTERA (aquatic beetles)										
Dytiscidae				2						
Elmidae; ***Dubiraphia***		4		10	2					
Optioservus	3	16			6	4	24	8	4	
Oulimnius	1		4		1					
Promoresia								1		
Stenelmis	1	19		3	3	18	96	20	2	
Psephenidae; ***Psephenus***	1	2			2	6	13	3	8	
LEPIDOPTERA										
Pyralidae; ***Petrophila***					1					
Non-Insect Taxa										
OLIGOCHEATA		2		2	2	2				
GASTROPODA										
Physidae				8						
Planorbidae				27						
Sphaeriidae				42						
AMPHIPODA										
Talitridae; ***Hyalella***				1						
DECOPODA										
Cambaridae									1	
ISOPODA										
Asellidae; ***Caecidotea***				34						
Lirceus							2			
OSTROCODA				2						
Number of taxa in total sample	29	24	27	16	28	22	10	23	21	

[1] Refer to Figure 1 for station location
[2] Kettle Creek, Clinton County, April 30, 2004
[3] Rock Run, Chester County, April 29, 2004

TABLE 5
FISHES
FRENCH CREEK
CHESTER COUNTY
USGS NAWQA
JULY 20, 1999

SPECIES NAME	STATION[1] NAWQA
Satinfin shiner, ***Cyprinella analostana***	14
Cutlips minnow, ***Exoglossum maxillingua***	171
Common shiner, ***Luxilus cornutus***	28
Spottail shiner, ***Notropis hudsonius***	17
Swallowtail shiner, ***N. procne***	1
Blacknose dace, ***Rhinichthys atratulus***	54
Longnose dace, ***R. cataractae***	46
Fallfish, ***Semotilus corporalis***	119
White sucker, ***Catostomus commersoni***	140
Yellow bullhead, ***Ameiurus natalis***	1
Margined madtom, ***Notorus insignis***	28
American eel, ***Anguilla rostrata***	4
Rock bass, ***Ambloplites rupestris***	85
Redbreast sunfish, ***Lepomis auritus***	3
Green sunfish, ***Lepomis cyanellus***	16
Pumpkinseed, ***L. gibbosus***	1
Largemouth bass, ***Micropterus dolomieu***	86
Tessellated darter, ***Etheostoma olmstedi***	44
Shield darter, ***Percina peltata***	33
TOTAL INDIVIDUALS	**891**
TOTAL TAXA	**19**

[1]Refer to Figure 1 for station location

TABLE 6
RBP METRIC COMPARISON
FRENCH CREEK AND BEAVER RUN
CHESTER COUNTY
APRIL 27, 2004

METRIC	STATION									
	1BR	2UNT	3UNT	4UNT	5FC	6UNT	7UNT	8FC	1KC[1]	1RR[2]
1. TAXA RICHNESS	29	24	27	16	28	22	10	23	21	28
Cand/Ref (%)	103.57	82.76	96.43	57.14	133.33	78.57	35.71	109.52		
Biol. Cond. Score	8	8	8	0	8	7	0	8	8	8
2. MOD. EPT INDEX	14	7	15	3	13	8	0	12	10	17
Cand/Ref (%)	82.35	50.0	88.24	17.65	130.0	47.06	0	120.0		
Biol. Cond. Score	8	1	8	0	8	0	0	8	8	8
3. MOD. HBI	2.1	4.99	2.47	6.25	2.81	5.48	5.16	2.7	2.87	1.64
Cand-Ref	0.46	2.89	0.83	4.61	-0.06	3.84	3.52	-0.17		
Biol. Cond. Score	8	0	6	0	8	0	0	8	8	8
4. % DOMINANT TAXA	59.3	27.5	21.5	28.6	22.8	70.4	47.3	26.2	23.8	56.2
Cand-Ref	3.1	-31.8	-34.7	-27.6	-1	14.2	-8.9	2.4		
Biol. Cond. Score	8	8	8	8	8	5	8	8	8	8
5. % MOD. MAYFLIES	67.9	1	35.4	0.95	55.3	2.08	0	53.4	59.5	73.1
Cand-Ref	5.2	72.1	37.7	72.15	4.2	71.02	73.1	6.1		
Biol. Cond. Score	8	0	0	0	8	0	0	8	8	8
TOTAL BIOLOGICAL CONDITION SCORE	**40**	17	30	8	**40**	12	8	**40**	**40**	**40**
% COMPARABILITY TO REFERENCE	**100.0**	42.5	75.0	20.0	**100.0**	30.0	20.0	**100.0**		

[1] Kettle Creek, Clinton County, April 30, 2004
[2] Rock Run, Chester County, April 29, 2004

GALLOWS RUN

BUCKS COUNTY

WATER QUALITY STANDARDS REVIEW
STREAM REDESIGNATION EVALUATION

Segment: Basin
Stream Code: 03278
Drainage List E

WATER QUALITY MONITORING SECTION (RMR)
DIVISION OF WATER QUALITY ASSESSMENT AND STANDARDS
BUREAU OF WATER STANDARDS AND FACILITY REGULATION
DEPARTMENT OF ENVIRONMENTAL PROTECTION

MAY 2010

INTRODUCTION

The Gallows Run basin is currently designated Cold Water Fishes, Migratory Fishes (CWF, MF) in Chapter 93 and was evaluated for a redesignation to High Quality – Cold Water Fishes (HQ-CWF), MF in response to a petition submitted to the Environmental Quality Board (EQB) by the Gallows Run Watershed Association dated March 6, 2006. The petitioner requested redesignation of the Gallows Run basin alleging that the existing aquatic life use of the basin is of higher quality than is represented by the current designation. The EQB accepted the petition for further study on May 17, 2006. In anticipation of EQB acceptance, the Department conducted aquatic life use and stream survey work in the Gallows Run basin on May 08-09, 2006.

GENERAL WATERSHED DESCRIPTION

Gallows Run is a third-order tributary to the Delaware River at RMI 171.80 in northern Bucks County near Kintnersville and Ferndale, PA (Rieglesville 7.5-minute series USGS quadrangle) and drains 8.72mi^2 of land (Figure 1). It is located in Nockamixon, Durham, and Springfield Townships. Land use consists primarily of privately owned, suburban residential, forest, and old fields and horse pastures. The stream is relatively small and shallow, and is subject to substantial stormwater run-off due to urban development and limited riparian buffers. State Route 611 parallels the stream for much of its length, and is a significant contributor to stormwater runoff. According to a 2002 PA Fish and Boat (PFBC) report, 58 percent of the stream is within 109 yards of public roads.

WATER QUALITY AND USES

Surface Water

Leachate from the Hidden Valley Landfill (also known as the Nockamixon Landfill, currently inactive), located on the unnamed tributary to Gallows Run (locally known as "Nockamixon Creek") had severely polluted the stream in the late 1960s. A leachate treatment facility began operating in 1973 and appeared to mitigate the problem until approximately 2007, when residents noticed severe iron precipitation in the stream. The subsequent investigation of discharge monitoring records from the periods December 2003 to December 2007 indicated landfill leachate had greatly exceeded effluent limitations for several parameters (including ammonia and iron) at outfall 002 (Figure 1). The only other NPDES permitted discharge to Gallows Run is from the Palisades High School sewage treatment facility in Ferndale. Camp Nockamixon operates a small water treatment facility on Gallows Run and has several ground water wells for water supply. The historic Durham mill and furnace is permitted for a septic system and ground water withdrawal. Residential waste is treated by private, on-lot septic systems.

No long-term water quality data were available from the Gallows Run basin that would allow a direct comparison to water quality criteria. Grab samples taken May 9, 2006 at four locations in the watershed revealed moderately hard water quality and modest levels of fecal coliform bacteria (Table 2). No recent precipitation events had occurred to influence spring base flow. Due to the instantaneous nature of water chemistry grab samples, the indigenous aquatic

community is a better indicator of long-term water quality conditions and is used as a measure of both water quality and ecological significance.

Habitat

Physical instream habitat conditions were evaluated at each of the five stations where benthic macroinvertebrates were sampled. The habitat evaluation consists of rating twelve habitat parameters to derive an overall station habitat score. The cumulative habitat scores for the five Gallows Run stations ranged from 134 to 190, reflecting mostly suboptimal habitat conditions (Table 3). The optimal range for cumulative habitat condition score is from 192 to 240.

Benthos

Benthic macroinvertebrate collection efforts were employed using the Department's antidegradation sampling methodology, which is a modification of EPA's Rapid Bioassessment Protocols (Plafkin, et al. 1989; Barbour et al. 1999). Benthos were collected on five stations in the Gallows Run basin and mainstem on May 8-9, 2006. Taxonomic diversity was fair, ranging from 15 to 21 taxa (Table 4), but the benthic communities at all five stations were dominated by pollution- and disturbance-tolerant diptera (e.g., Chironomidae). Pollution sensitive mayflies were markedly reduced compared to typical abundances.

The Department used Pine Creek in Berks County (Manatawny USGS Quadrangle) as a reference for comparison to Gallows Run. Pine Creek is designated in Chapter 93 as having an Exceptional Value (EV) aquatic life use. It was chosen for a comparison to the candidate stream based on its proximity and documented biological integrity.

Fish

Electrofishing conducted by the PFBC on June 8, 2002 indicated that the Gallows Run mainstem supports a sparse coldwater fish community, to include a low-biomass wild brown trout (*Salmo trutta*) population (one young-of-the-year fish collected). That survey also documented an American eel (*Anguilla rostrata*) population (13 individuals collected). Other species collected were cutlips minnow (*Exoglossum maxillingua*), blacknose dace (*Rhinichthys atratulus*), longnose dace (*Rhinichthys cataractae*), and white sucker (*Catostomus commersoni*). Gallows Run is listed under the PFBC's Wild Trout Program and is currently managed as a Class D brown trout fishery. Class D streams are those that support a brook, brown, or combined brook and brown trout biomass of less than 10 kilograms/hectare.

BIOLOGICAL USE QUALIFICATIONS

The biological use qualifying criterion applied to Gallows Run was the antidegradation integrated benthic macroinvertebrate scoring test approved by the Department described at §93.4b(a)(2)(i)(A) and §93.4b(b)(1)(v). This scoring test is based on the benthic samples referenced above. Following the Department's antidegradation protocol, a 200+/- 20% count subsample was randomly selected from the total sample and enumerated (Table 4). Five benthic macroinvertebrate metrics (taxa richness, modified EPT index (total number of intolerant Ephemeroptera, Plecoptera, and Trichoptera taxa), modified Hilsenhoff Biotic Index (HBI), percent dominant taxon, and percent modified mayflies) were used in an integrated comparison

of the stations on Gallows Run (1GR, 2GR, 3UNT, 4UNT, and 5GR) to a reference station (1PC) established in the Exceptional Value (EV) Pine Creek basin (Manatawny 7.5-minute series USGS quadrangle), Berks County. The reference station (1PC) was selected based on ecoregion, drainage area, and documented biological integrity from previous use as a reference station.

Based on the benthic macroinvertebrate scoring test described above, no stations in the Gallows Run basin (Table 5) met the antidegradation qualifying biological condition scoring comparison of 83% listed at 25 Pa. Code §93.4b (a)(2)(i)(A). No other Antidegradation qualifying requirements listed in § 93.4b apply to the Gallows Run basin.

In addition to applying the above antidegradation scoring test, the Department's benthic Index of Biotic Integrity (IBI) was also employed. The Department's IBI for benthic macroinvertebrates in wadeable freestone riffle-run streams (Chalfant, 2007; modified in 2009) is calculated as the arithmetic mean of six adjusted, standardized metric scores: Beck's index (a tolerance value-weighted richness metric based on the most sensitive taxa defined as having HBI tolerance values of 2 or less); sensitive (having HBI tolerance values of 4 or less) EPT taxa richness; total taxa richness; Shannon Diversity; Hilsenhoff Biotic Index; and percent individuals of sensitive (having HBI tolerance values of 3 or less) taxa in a 200 (+/- 20%) count sub-sample. The six raw metric scores are standardized to reference values, which results in standardized metric scores adjusted to a scale of 0 to 100. These six adjusted standardized scores are averaged to calculate the total IBI score. IBI scores closer to 100 represent reference-quality conditions and scores closer to 0 represent more impacted conditions. An aquatic life use impairment threshold has been defined as an IBI score less than 63 (for non-summer samples). All five Gallows Run stations scored 61.9 or lower. Impairment decisions pertaining to IBI scores within a range of 50 to 63 may be based on site-specific considerations, e.g., a watershed's natural hydrogeology or habitat, probable sources and causes of impairment, or other mitigating factors. Such site-specific considerations of Gallows Run sites suggest that these stations are impaired.

PUBLIC RESPONSE AND PARTICIPATION SUMMARY

The Department provided public notice of this designation evaluation and requested any technical data from the general public through publication in the Pennsylvania Bulletin on June 24, 2006 (36 Pa.B 3167). In addition, the Bucks County Planning Commission and Nockamixon, Durham, and Springfield Townships were notified of the redesignation evaluation in a letter dated June 21, 2006. The Gallows Run Watershed Association provided the Department with the Gallows Run Watershed Restoration and Protection Plan. The Bucks County Planning Commission referred the Department to the Gallows Run Watershed Restoration and Protection Plan, the Heritage Conservancy's Middle Delaware River Conservation Plan, and the Bucks County Planning Commission's Delaware River (North) Act 167 Stormwater Management Plan. No other data were received resulting from the public notice.

The petitioner and local municipality and planning commission representatives were notified by a postcard mailing that the report was available on the Department's web page for review with a 30-day comment period, which closed on April 16, 2010. No comments were received in response to this notice.

CONCLUSIONS AND RECOMMENDATIONS

Based on applicable regulatory definitions and requirements of § 93.4b, the Department recommends that the Gallows Run basin, remain designated in Chapter 93 as Cold Waters Fishes, Migratory Fishes. This recommendation is based on the presence of a cold water biological community with biological condition scores lower than 83% of the reference score, and the presence of a modest brown trout fishery and American eel population (a migratory fish). This recommendation does not reflect the HQ-CWF designation sought in the petition. Because the Hidden Valley Landfill leachate treatment system is being repaired, the Department does not recommend designating any of the five stations "impaired" at this time. Follow-up assessments should be made at a suitable after the treatment system is online and the watershed has sufficient time to naturally recover.

REFERENCES

Barbour, M.T., J. Gerritsen, B.D. Snyder, and J.B. Stribling. 1999. Rapid Bioassessment Protocols for Use in Streams and Wadeable Rivers: Periphyton, Benthic Macroinvertebrates and Fish, Second Edition. EPA 841-B-99-002. U.S. Environmental Protection Agency, Office of Water; Washington, D.C.

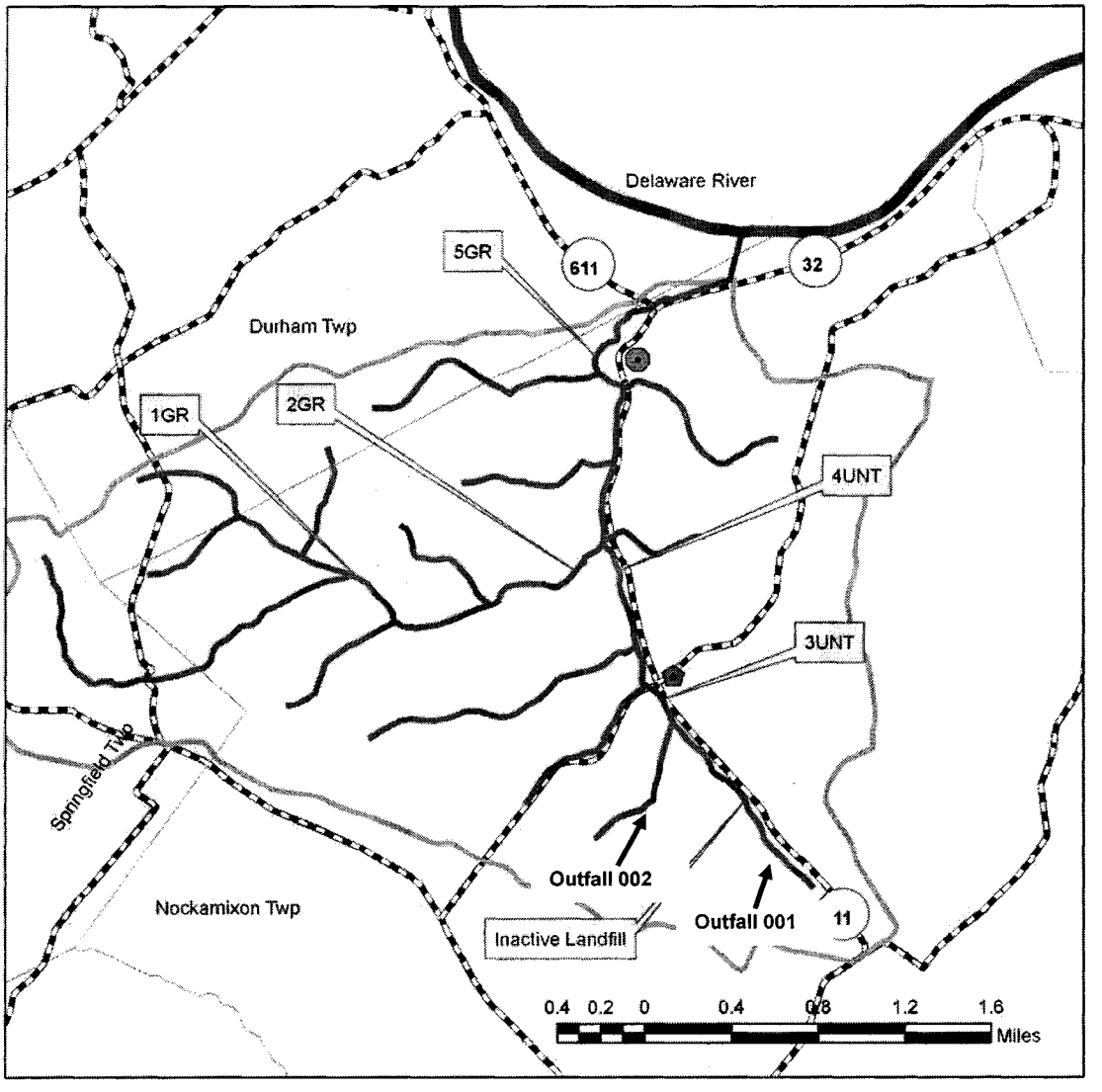
Chalfant, B. 2007. A Benthic Index of Biotic Integrity for Wadeable Freestone Streams in Pennsylvania. Pennsylvania Department of Environmental Protection, Division of Water Quality Standards. URL: http://www.depweb.state.pa.us/watersupply/lib/watersupply/ibi_rifflerun.pdf, accessed 20 February 2009.

Gallows Run Watershed Association. 2004. Gallows Run Restoration and Protection Plan. URL: http://www.grwabucks.org/report.htm, accessed 30 October 2007.

PA Fish and Boat Commission. File information.

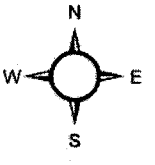
Plafkin, J.L., M.T. Barbour, K.D. Porter, S.K. Gross, and R.M. Hughes. 1989. Rapid Bioassessment Protocols for Use in Streams and Rivers: Benthic Macroinvertebrates and Fish. U.S. Environmental Protection Agency, Office of Water Regulation and Standards, Washington, D.C. EPA 440-4-89-001.

FIGURE 1
GALLOWS RUN, BUCKS COUNTY



Legend

- Delaware River
- Gallows Run
- Gallows Run Watershed
- Roads
- Township
- Kintnersville
- Ferndale



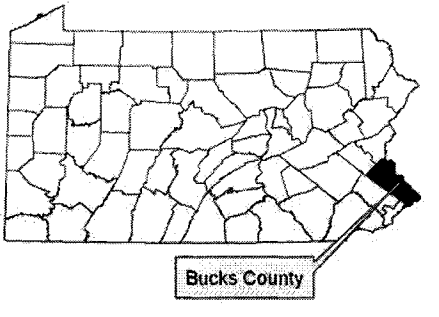


TABLE 1
STATION LOCATIONS
GALLOWS RUN, BUCKS COUNTY
MAY 09, 2006

STATION	LOCATION
1GR	Gallows Run upstream of Camp Nockamixon's upper pond outfall, Nockamixon Township. Lat: 40.5406, Long: -75.2041
2GR	Gallows Run upstream of Traugers Crossing Road bridge in Nockamixon Township. Lat: 40.5417, Long: -75.2041
3UNT	"Nockamixon Creek" approximately 100m upstream of Church Hill Road along SR611 in Nockamixon Township. Lat: 40.5328, Long: -75.1788
4UNT	"Nockamixon Creek" approximately 200m upstream of Gallows Run confluence, along SR611 in Nockamixon Township. Lat: 40.5406, Long: -75.1821
5GR	Gallows Run upstream of the Kintner Road bridge in Nockamixon Township. Lat: 40.5557, Long: -75.1836
1PC	Pine Creek approximately 200m upstream of the Heligs School Road Bridge in Pike Township, Berks County. Lat: 40.4232, Long: -75.7043

TABLE 2
WATER CHEMISTRY
GALLOWS RUN, BUCKS COUNTY
MAY 09, 2006

STATION	1GR	2GR	3UNT	4UNT	5GR
Laboratory Parameters					
pH	-	8.3	7.9	8.3	8.2
Alkalinity	-	48.2	75.6	79.2	56.4
Acidity	-	-35.4	-58.8	-64.4	-45.0
Hardness	-	69	118	134	87
T Diss. Sol.	-	140	240	264	158
Susp.Sol.	-	<2	<2	<2	<2
NH_3-N	-	0.02	0.02	0.38	<0.02
NO_2-N	-	<0.01	<0.01	0.02	<0.01
NO_3-N	-	1.93	1.56	1.73	1.45
Total P	-	0.026	0.031	0.134	0.037
Ca	-	18.2	29.6	34.8	22.7
Mg	-	5.760	10.8	11.4	7.461
Cl	-	12.0	19.8	27.2	16.2
SO_4	-	<20.0	36.2	47.9	24.3
As[2]	-	<4.0	<4.0	<4.0	<4.0
Cd[2]	-	<0.2	<0.2	<0.2	<0.2
hex Cr[2]	-	<1.0	<1.0	<1.0	<1.0
Cr[2]	-	<50.0	<50.0	<50.0	<50.0
Cu[2]	-	<4.0	15.0	<4.0	<4.0
Cu Diss[2]	-	<4.0	<4.0	<4.0	<4.0
Fe[2]	-	60.0	<20.0	101.0	<20.0
Pb[2]	-	<1.0	<1.0	<1.0	<1.0
Mn[2]	-	<10.0	<10.0	33.0	<10.0
Ni[2]	-	<4.0	<4.0	<4.0	<4.0
Zn[2]	-	<5.0	<5.0	<5.0	<5.0
Al[2]	-	13.8	<10.0	54.7	28.7
Total Coliform[3]	-	1400	900	1400	1000
Fecal Coliform[3]	-	<20	280	140	20

[1] - Except for pH & and indicated otherwise, all values are total concentrations in mg/l

[2] - Total concentrations in µg/l

[3] - Colonies per 100ml

TABLE 3
HABITAT ASSESSMENT[1]
GALLOWS RUN, BUCKS COUNTY
PINE CREEK, BERKS COUNTY (REFERENCE)
MAY 08-10, 2006

PARAMETER	Scoring Range	1GR	2GR	3UNT	4UNT	5GR	1PC
1. instream cover (fish)	0-20	16	15	15	14	13	17
2. epifaunal substrate	0-20	16	19	16	19	18	18
3. embeddedness	0-20	18	18	12	16	18	18
4. velocity/depth regimes	0-20	16	14	13	15	11	17
5. channel alterations	0-20	13	14	7	15	18	19
6. sediment deposition	0-20	18	18	15	16	18	18
7. frequency of riffles	0-20	18	18	15	19	19	18
8. channel flow status	0-20	17	14	13	12	15	17
9. condition of banks	0-20	14	16	12	12	11	17
10. bank vegetation protection	0-20	13	15	6	15	16	18
11. vegetation disruptive pressure	0-20	15	13	5	16	18	19
12. riparian vegetation zone width	0-20	12	8	5	13	15	18
Total Score	0-240	186	182	134	182	190	214
Rating		Suboptimal	Suboptimal	Suboptimal	Suboptimal	Suboptimal	Optimal

[1] - Refer to Figure 1 for station locations

TABLE 4
SEMI-QUANTITATIVE BENTHIC MACROINVERTEBRATE DATA
GALLOWS RUN, BUCKS COUNTY
PINE CREEK, BERKS COUNTY (REFERENCE)
MAY 08-10, 2006

TAXA	1GR	2GR	3UNT	4UNT	5UNT	1PC
EPHEMEROPTERA (Mayflies)						
Baetidae; *Acentrella*		2	1	5		1
Baetis	49	38	20	18	14	1
Ephemerellidae; *Drunella*						19
Ephemerella	29	17		1	8	57
Heptageniidae; *Cinygmula*						3
Epeorus	6					4
Maccaffertium (Stenonema)	1	3		1	5	
Rhithrogena						10
Leptophlebiidae; *Paraleptophlebia*		1				2
PLECOPTERA (Stoneflies)						
Chloroperlidae			1			
Alloperla						2
Haploperla				1		
Sweltsa	2	5			1	
Leuctridae; *Leuctra*	11	7		1	2	1
Nemouridae; *Amphinemura*	33	16	7	11	8	2
Peltoperlidae; *Peltoperla*						9
Perlidae; *Acroneuria*	1			1		2
Perlesta		21			11	10
Perlodidae; *Isoperla*	6		1		1	8
Pteronarcycidae; *Pteronarcys*						2
TRICHOPTERA (Caddisflies)						
Glossosomatidae; *Agapetus*		1				10
Glossosoma		1				
Hydropsychidae; *Cheumatopsyche*		2	2	2	10	
Diplectrona						1
Hydropsyche		3	1	3	5	
Philopotamidae; *Chimarra*			4	1	1	
Dolophilodes	11	6			6	38
Wormaldia				1		
Polycentropodidae; *Cyrnellus*				2		
Polycentropus	1	6	2	6	9	
Rhyacophilidae; *Rhyacophila*	1		2		1	6
DIPTERA (True Flies)						
Blephariceridae; *Blepharicera*						1
Chironomidae	49	83	126	130	123	10
Ceratopogonidae; *Probezzia*			1			

Table 4, con't TAXA	1GR	2GR	3UNT	4UNT	5UNT	1PC
Empididae; *Hemerodromia*		1				
Simuliidae; *Simulium*			10	6	3	
Tipulidae; *Antocha*	1	1				
Dicranota						1
Hexatoma	1				2	3
COLEOPTERA (Beetles)						
Elmidae; *Oulimnius*	6					5
Optioservus					1	
Promoresia						1
Psephenidae; *Ectopria*						1
Psephenus	1	3	21	2	2	2
ODONATA (Dragonflies, Damselflies)						
Gomphidae; *Lanthus*		1			1	
MEGALOPTERA (Dobsonflies, Fishflies)						
Corydalidae; *Nigronia*						3
NON-INSECT TAXA						
Cambaridae; *Orconectes*				1		
Oligochaeta	1	6	28	8	2	
SUMMARY						
Total number of taxa	18	21	15	19	21	29
Total number of individuals	210	224	227	201	216	215

TABLE 5
RBP METRIC COMPARISON
GALLOWS RUN, BUCKS COUNTY
PINE CREEK, BERKS COUNTY (REFERENCE)
MAY 08-10, 2006

METRIC	STATIONS					REFERENCE[1]
	1GR	2GR	3UNT	4UNT	5GR	1PC
TAXA RICHNESS	18	21	15	19	21	29
Cand/Ref (%)	62	72	52	66	72	-
Biol. Cond. Score	1	5	0	2	5	8
MOD. EPT INDEX	10	11	6	9	10	19
Cand/Ref (%)	53	58	32	47	53	-
Biol. Cond. Score	1	2	0	0	1	8
MOD. HBI	3.75	4.65	6.08	5.76	5.18	1.39
Cand-Ref	2.39	3.29	4.72	4.40	3.82	-
Biol. Cond. Score	0	0	0	0	0	8
% DOMINANT TAXA	23.3	37.1	55.5	64.7	56.9	26.5
Cand-Ref	-3.2	10.6	29	38.2	30.4	-
Biol. Cond. Score	8	8	0	0	0	8
% MOD. MAYFLIES	17.1	10.3	0.44	3.48	6.02	44.7
Ref-Cand	27.6	34.4	44.26	41.22	38.68	-
Biol. Cond. Score	4	2	0	0	1	8
TOTAL BIOLOGICAL						
CONDITION SCORE	**14**	**17**	**0**	**2**	**7**	**40**
% COMPARABILITY						
TO REFERENCE	**35**	**43**	**0**	**5**	**18**	**-**
PA DEP IBI SCORE (<63 indicates impairment)	**61.9**	**57.3**	**33.7**	**42.8**	**49.6**	**96.5**

[1] - Pine Creek, Berks County

LITTLE LEHIGH CREEK

LEHIGH AND BERKS COUNTIES

WATER QUALITY STANDARDS REVIEW

STREAM REDESIGNATION EVALUATION REPORT

Segment: Mainstem
Stream Code: 03420
Drainage List: D

WATER QUALITY MONITORING SECTION (GLW)
DIVISION OF WATER QUALITY STANDARDS
BUREAU OF WATER STANDARDS AND FACILITY REGULATION
DEPARTMENT OF ENVIRONMENTAL PROTECTION

MAY 2010

INTRODUCTION

The Department conducted an evaluation of the mainstem of Little Lehigh Creek in response to a petition from the Mid-Atlantic Environmental Law Center on behalf of the Little Lehigh Watershed Coalition. The petition requests that the main stem of the Little Lehigh Creek be redesignated as an Outstanding National Resource Water based on qualifying critera at 40 C.F.R. 131.32(3). This request was based on the candidate waters being located in the Delaware and Lehigh Canal National Heritage Corridor and Heritage State Park and the presence of an exceptional recreational fishery. The Environmental Quality Board (EQB) accepted the petition on May 21, 2003 for further study in accordance with the review criteria in 25 Pa. Code § 93.4b(b). The petitioner provided information regarding the wild brown trout fishery and its recreational value, which includes Pennsylvania Fish and Boat Commission (PFBC) designated Class A Wild Trout and Heritage Trout Angling segments. The Little Lehigh Creek mainstem is currently designated High Quality-Cold Water Fishes, Migratory Fishes (HQ-CWF, MF). The HQ-CWF designation was a final rulemaking in September 1979; prior to which it was designated as CWF and a Conservation Area. This evaluation is based on file and petitioner information and a field survey conducted in April 2004.

GENERAL WATERSHED DESCRIPTION

Little Lehigh Creek, a combination of freestone (headwaters) and limestone influenced stream habitat, is a tributary to the Lehigh River in the Delaware River watershed (Figure 1). The candidate basin is located in Longswamp Township (Berks County) and Lower Macungie and Salisbury Townships and the City of Allentown (Lehigh County). The Little Lehigh Creek basin has a drainage area of 189.8 square miles and the mainstem consists of 25.4 stream miles. The surrounding area is characterized by relatively flat topography with some gently rolling hills of low relief.

The current land use in the watershed consists mostly of single-family residential (40%) and forested areas (25%). Remaining land use is a mixture of cropland (15%), pasture (10%), industrial (5%), and commercial (5%) uses. One major population center, the City of Allentown partially lies within the lower basin area.

WATER QUALITY AND USES

Surface Water

Long-term chemistry data were available from the City of Allentown to allow a direct comparison to water quality criteria. The City collected this data from April 2001 to October 2002 at 4 stations on the mainstem and at 6 stations on 5 tributaries. Parameters sampled included alkalinity, dissolved oxygen, nitrate, ortho-phosphate, pH, fecal coliform bacteria, and total coliform bacteria. Analysis of the data indicates a stream with high alkalinity (indicative of good buffering capacity) and moderate levels of nitrate and phosphate. Analysis of the fecal-coliform bacteria and total coliform bacteria revealed chronic exceedences of the water-

contact-recreation and potable-water-supply criteria throughout the basin. In addition, field water chemsitry parameters were collected at six stations on Little Lehigh Creek on April 28, 2004 (Table 2). There are two NPDES permits associated with the mainstem: one for a sewage treatment plant and one for a waste water discharge. There is one permitted surface water withdrawal from the mainstem of the petitioned area.

Aquatic Biota

The indigenous aquatic community is an excellent indicator of long-term conditions and is used as a measure of both water quality and ecological significance. Department staff collected habitat and benthic macroinvertebrate data at six locations on Little Lehigh Creek on April 28, 2004, and from an EV reference station (1EC) on Elk Creek (Centre County) on April 21, 2004 (Figure 1, Table 1). Fishery data were provided by the PFBC.

Habitat. Instream habitat was assessed at each station on Little Lehigh Creek and Elk Creek. Total habitat scores (Table 3) ranged from 152 (5LLC) to 190 (3LLC) and all were suboptimal, compared to an optimal score at 1EC (211). Low scoring parameters indicated moderate vegetative disruptive pressure, eroded banks, and a lack of epifaunal substrate and adequate riparian buffering at most stations (Table 3).

Benthos. Benthic macroinvertebrate samples were collected at all six stations (Table 4) using the Department's PA-DEP RBP benthic sampling methodology, which is a modification of EPA's Rapid Bioassessment Protocols (RPBs; Plafkin, et. al. 1989; Barbour, et. al. 1999). Taxonomic diversity was moderately low at all stations ranging from 13 taxa at 2LLC to 19 taxa at 5LLC. While a few pollution sensitive taxa were present at all stations, the relatively high abundances of tolerant taxa at these stations reflect the cumulative impacts of human activity in the basin.

Fish. The PFBC surveyed 8 sections (total of 22 stations) of the Little Lehigh Creek from 1997 to 2004. Wild brown trout were found at 21 of 22 stations along with wild brook and rainbow trout at 4 stations and wild rainbow trout at an additional 4 stations (Table 5). The fish species composition at nearly all stations was a mix of both cold and warm water species (Table 5). A 1.6 mile segment of Little Lehigh Creek was designated Class A Wild Trout by PFBC in 1995 (Table 5, Section 3) and an additional 1 mile segment was designated Heritage Trout Angling in 1994 but was removed in 2005. In addition, the mainstem of Little Lehigh Creek has been designated wild trout waters by PFBC. Trout biomass for the Class A Wild Trout section was determined at two stations (RMI 17.15 and RMI 17.8) as 77.57 and 89.92 kg/ha respectively, in August of 2004 (Table 5A).

BIOLOGICAL USE QUALIFICATIONS

The qualifying criteria applied to Little Lehigh Creek was the DEP integrated benthic macroinvertebrate scoring test described at § 93.4b(a)(2)(i)(A) and § 93.4b(b)(1)(v). Selected benthic macroinvertebrate community metrics from Little Lehigh Creek (Table 5) were compared to those from a reference stream. All stations on Little Lehigh Creek were

compared to a reference station on EIK Creek (1EC). Elk Creek, an Exceptional Value (EV) stream was used as a reference because both Elk Creek and Little Lehigh Creek are limestone-influenced streams and are found in similar geologic settings. In addition, Elk Creek is the only available EV reference for limestone-influenced streams; having served as an EV reference stream in several other Departmental surveys. Sampling of all stations was conducted within one week to minimize seasonal variation.

The comparisons were done using the following metrics that were selected as being indicative of community health: taxa richness; modified EPT index; modified Hilsenhoff Biotic Index; percent dominant taxon; and percent modified mayflies. Based on these five scoring metrics, none of the six stations in the candidate basin had Biological Condition Scores (BCS) greater than 80% of the reference station (Table 6). As a result, the candidate basin does not meet the 83% comparison standard required to qualify as High Quality Waters; a pre-requisite for redesignation to EV waters (§ 93.4b(1)(v)). A 1.6 mile section of the mainstem from TR 476 to Spring Creek has been designated Class A Wild Trout Waters by the PFBC, which is a qualifying criterion for High Quality Waters (§ 93.4b(a)(2)(ii)). None of the other antidegradation criteria listed in § 93.4b, pertaining to Exceptional Value waters, apply to this basin.

In addition to applying the above antidegradation scoring test, the Department's benthic metric Index of Biotic Integrity (IBI) was also employed. The Department's IBI for benthic macroinvertebrates in wadeable freestone riffle-run streams (Chalfant, 2007; modified in 2008) is calculated as the arithmetic mean of six adjusted, standardized metric scores: Beck's index (a tolerance value-weighted richness metric based on the most sensitive taxa defined as having Hilsenhoff tolerance values of 2 or less); sensitive (having Hilsenhoff tolerance values of 4 or less) EPT taxa richness; total taxa richness; Shannon Diversity; Hilsenhoff Biotic Index; and percent individuals of sensitive (having Hilsenhoff tolerance values of 3 or less) taxa in a 200 (+/- 20%) count sub-sample. The six raw metric scores are standardized to reference values, which results in standardized metric scores adjusted to a scale of 0 to 100. These six adjusted standardized scores are averaged to calculate the total IBI score. IBI scores closer to 100 represent reference-quality conditions and scores closer to 0 represent more impacted conditions. The IBI scores at the 6 sampled stations (Table 6) revealed stressed conditions that are consistent with aquatic life use impairment. As a result of these IBI scores, the mainstem of Little Lehigh Creek from Lower Longswamp to the mouth was listed on Pennsylvania's 2008 303(d) list of impaired waters.

PUBLIC RESPONSE AND PARTICIPATION SUMMARY

The Department provided public notice of this redesignation evaluation and requested technical data from the general public through publication in the Pennsylvania Bulletin on June 21, 2003 (33 Pa.B 2933). A similar notice was also published in The Morning Call newspaper (Allentown, PA) on June 20, 2003. In addition, Longswamp Township, Berks County; Lower Macungie, Salisbury Townships, Borough of Emmaus, and the City of Allentown, Lehigh County were notified of the redesignation evaluation in a letter dated June 19, 2003. Long-term water quality data were received as a result of these requests from the City of Allentown, Bureau of Water Resources. Letters in support of the redesignation evaluation were received

from Lower Macungie Township, Lehigh County Fish and Game Protective Association, Partners for Community Preservation, 25 students from Salisbury High School, and two members of the public.

The petitioner and local municipality and planning commission representatives were notified by a postcard mailing that the report was available on the Department's web page for review with a 30-day comment period, which closed on April 16, 2010. No comments were received in response to this notice.

RECOMMENDATION

Based on the applicable regulatory definitions and requirements of § 93.4b, the Department recommends that Little Lehigh Creek mainstem from its source to its mouth retain its current High Quality-Cold Water Fishes, Migratory Fishes (HQ-CWF, MF) designation.

A total of 25.4 mainstem stream miles will retain their current HQ-CWF, MF designation. This recommendation does not reflect the EV designation sought in the petition.

FIGURE 1
LITTLE LEHIGH CREEK
BERKS AND LEHIGH COUNTIES

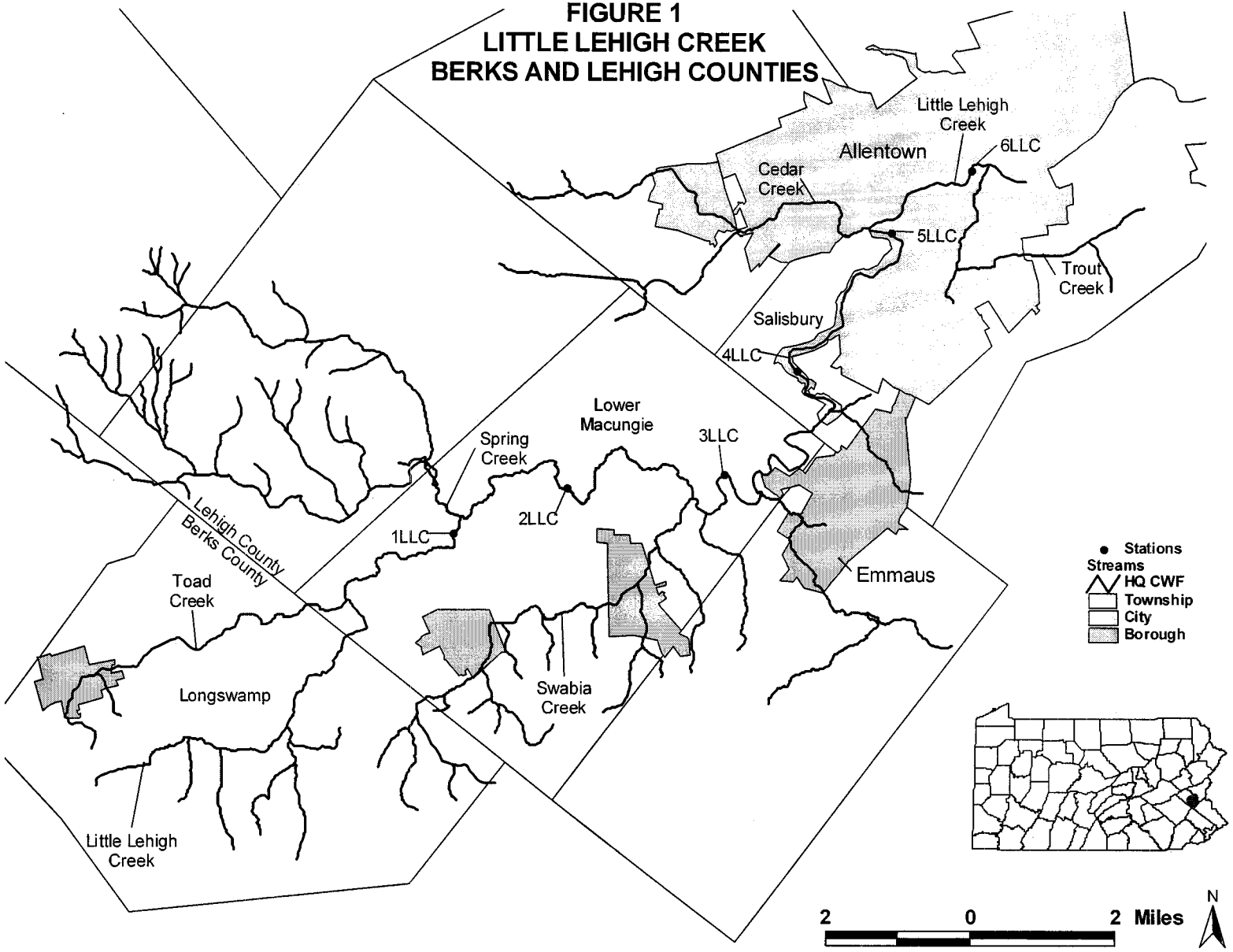


TABLE 1
STATION LOCATIONS
LITTLE LEHIGH CREEK
LEHIGH AND BERKS COUNTIES

STATION	LOCATION
1LLC	Little Lehigh Creek (03420) approximately 100 meters upstream of State Route 100. Lower Macungie Township, Lehigh County Lat: 40° 31' 48" Long: 75° 36' 09" RMI: 17.3
2LLC	Little Lehigh Creek (03420) approximately 30 meters upstream of –Mill Creek Road (TR 498). Lower Macungie Township, Lehigh County Lat: 40° 32' 18" Long: 75° 34' 19" RMI: 14.6
3LLC	Little Lehigh Creek (03420) approximately -- meters upstream of Mill Race Road (TR 510). Lower Macungie Township, Lehigh County Lat: 40° 32' 26" Long: 75° 31' 50" RMI: 10.6
4LLC	Little Lehigh Creek (03420) approximately 250 meters upstream of Hatchery Road. City of Allentown, Lehigh County Lat: 40° 33' 37" Long: 75° 30' 40" RMI: 6.2
5LLC	Little Lehigh Creek (03420) approximately 150 meters upstream of Road at Lehigh Parkway. City of Allentown, Lehigh County Lat: 40° 35' 15" Long: 75° 29' 06" RMI: 3.1
6LLC	Little Lehigh Creek (03420) approximately 50 meters upstream of confluence with Jordan Creek (03421) at Warwick County Park. City of Allentown, Lehigh County Lat: 40° 35' 58" Long: 75° 27' 50" RMI: 1.0

TABLE 2
WATER CHEMISTRY
LITTLE LEHIGH CREEK
LEHIGH AND BERKS COUNTIES
APRIL 28, 2004

	STATIONS[1]						
	1LLC	2LLC	3LLC	4LLC	5LLC	6LLC	1EC[2]
Field Parameters							
Temp (°C)	14.2	13	11.3	10.7	10.9	11.3	11
pH	8.03	8.26	8.24	7.81	7.84	7.93	6.73
Cond (µS/cm)	300	395	360	385	406	463	238
Dissolved Oxygen	10.8	12.3	12.1	9.73	10.4	10.2	10.7
Total Alkalinity	100	110	90	100	100	130	100

[1] Refer to Figure 1 and Table 1 for station locations

[2] Elk Creek, Centre County, April 21, 2004

TABLE 3
HABITAT ASSESSMENT RESULTS
LITTLE LEHIGH CREEK
LEHIGH AND BERKS COUNTIES
APRIL 28, 2004

PARAMETER	STATION[1]						
	1LLC	2LLC	3LLC	4LLC	5LLC	6LLC	1EC
1. instream cover	15	15	15	15	14	15	16
2. epifaunal substrate	15	16	17	13	12	14	18
3. embeddedness	11	8	10	12	12	13	16
4. velocity/depth regimes	16	18	18	16	16	16	16
5. channel alteration	15	15	18	18	16	16	19
6. sediment deposition	16	16	13	14	8	15	18
7. frequency of riffles	15	15	16	15	15	15	17
8. channel flow status	20	20	20	20	20	20	18
9. condition of banks	16	16	16	16	14	12	18
10. bank vegetative protection	16	16	17	16	14	11	18
11. disruptive pressure	16	11	15	13	10	11	18
12. riparian zone width	16	11	15	12	1	11	19
Total Score	187	177	190	180	152	169	211
Rating[2]	SUB	SUB	SUB	SUB	SUB	SUB	OPT

[1] Refer to Figure 1 and Table 1 for station locations
[2] OPT=Optimal (≥192); SUB=Suboptimal (132-180)

TABLE 4
SEMI-QUANTITATIVE BENTHIC MACROINVERTEBRATE DATA
LITTLE LEHIGH CREEK, LEHIGH AND BERKS COUNTIES
APRIL 28, 2004

TAXA	STATION[1]						
	1LLC	2LLC	3LLC	4LLC	5LLC	6LLC	1EC[2]
Ephemeroptera (mayflies)							
Baetidae; ***Acerpenna***			9			12	
Baetis	4	3		18	11	15	22
Callibaetis			2				
Caenidae; ***Caenis***							1
Ephemerellidae; ***Drunella***							5
Ephemerella	3	20	51	119	46	20	114
Serratella							1
Heptageniidae; ***Epeorus***				1			2
Stenacron					2	1	
Stenonema	2	1	2	4			
Leptophlebiidae; ***Paraleptophlebia***							6
Plecoptera (stoneflies)							
Nemouridae; ***Amphinemura***		1				1	3
Perlidae; ***Paragnetina***			1				
Perlodidae; ***Isoperla***				1			1
Trichoptera (caddisflies)							
Brachycentridae; ***Micrasema***							2
Hydropsychidae; ***Cheumatopsyche***	5	3	26	21	10	3	5
Hydropsyche	2	18	14	13	4	18	16
Odontoceridae; ***Psilotreta***							1
Philopotamidae; ***Chimarra***	4		3	3	1	1	
Polycentropodidae; ***Polycentropus***			1				
Rhyacophilidae; ***Rhyacophila***					2		1
Other Insect Taxa							
DIPTERA (true flies)							
Chironomidae	13	1	10	18	22	32	8
Empididae; ***Chelifera***	5		1	2	2		
Clinocera	1						
Hemerodromia	8	3			2	1	1
Simuliidae; ***Simulium***	2	6	7	1	4	38	10
Tipulidae; ***Antocha***	3	3	6	5	14	5	
Dicranota							
COLEOPTERA (aquatic beetles)							
Elmidae; ***Dubiraphia***	1		1				

TAXA	STATION[1]						
	1LLC	2LLC	3LLC	4LLC	5LLC	6LLC	1EC[2]
Optioservus	135	130	24	24	34	18	3
Oulimnius				1	23	9	
Promoresia							6
Stenelmis	51	37	41	8	10	39	
Psephenidae; ***Psephenus***			9	1			
Non-Insect Taxa							
TURBELLARIA (flat worms)							
Planariidae						2	
OLIGOCHEATA					1	1	
HYDRACARINA					1		2
AMPHIPODA							
Gammaridae; ***Gammarus***	1			1	15		1
DECOPODA							
Cambaridae		1					
ISOPODA							
Asellidae; ***Caecidotea***					2		
Lirceus				1			
Number of taxa in total sample	16	13	17	18	19	17	19

[1]Refer to Figure 1 for station location
[2]Elk Creek, Centre County, April 21, 2004

TABLE 5
FISH DATA
LITTLE LEHIGH CREEK, BERKS AND LEHIGH COUNTIES
July 8, 1996 through August 27, 2004

Species (Common Name)	Section 2			Section 3[1]		Section 4	Section 5			Section 6	Section 7		Section 8[2]	
	RMI 21.03	RMI 20.44	RMI 18.61	RMI 17.8	RMI 17.15	RMI 11.58	RMI 11.01	RMI 10.38	RMI 9.79	RMI 9.59	RMI 6.02		RMI 4.94	RMI 4.44
	July 23, 1996	July 8, 1996	July 23, 1996	August 27, 2004	July 8, 1996	June 12, 1997	June 16, 1997	June 12, 1997	June 24, 1997	June 23, 1997	August 14, 2001	July 25, 2002	July 30, 2003	July 31, 2003
Trout (*Salmonidae*)														
Brook trout (stocked) *Salvelinus fontinalis*						X	X	X		X		X	X	X
Brook trout (wild) *S. fontinalis*													X	X
Brown trout (stocked) *Salmo trutta*						X	X	X	X	X	X	X	X	X
Brown trout (wild) *S. trutta*	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Rainbow trout (stocked) *Oncorhynchus mykiss*				X		X	X	X		X	X	X	X	X
Rainbow trout (wild) *O. mykiss*							X	X	X				X	X
Bass and Sunfish (*Centrarchidae*)														
Largemouth bass *Micopterus salmoides*				X					X	X		X		
Rock bass *Ambloplites rupestris*	X		X			X	X	X	X	X	X	X		
Green Sunfish *Lepomis cyanellus*				X										
Redbreast sunfish *L. auritus*			X		X									
Pumpkinseed *L. gibbosus*	X			X		X	X		X	X				
Bluegill *L. macrochirus*	X						X				X	X		
Minnows (*Cyprinidae*)														
Common shiner *Luxilus cerasinus*		X			X	X	X	X	X					
Goldfish *Carassius auratus*												X		
Spottail shiner *Notropis hudsonius*				X			X							
Comely shiner *N. amoenus*				X										
Satinfin shiner *Cyprinella analostana*			X				X							
Blacknose dace *Rhinichthys atratulus*	X	X	X	X	X	X	X	X	X	X	X	X		
Longnose dace *R. cataractae*	X	X	X		X				X	X	X			
Cutlips minnow *Exoglossum maxillingua*	X	X	X	X	X	X	X	X	X	X		X		
Fallfish *Semotilus corporalis*					X									
Creek chub *S. atromaculatus*	X	X	X	X	X							X		
Perches and Darters (*Percidae*)														
Tessellated darter *Etheostoma olmstedi*	X	X	X	X	X	X	X	X				X		
Shield Darter *Percina peltata*						X		X						
Suckers (*Catostomidae*)														
White sucker *Catostomus commersoni*	X	X	X	X	X				X	X	X	X		
Catfishes (*Ictaluridae*)														

Species (Common Name)	Section 2			Section 3[1]		Section 4	Section 5			Section 6	Section 7		Section 8[2]	
	RMI 21.03	RMI 20.44	RMI 18.61	RMI 17.8	RMI 17.15	RMI 11.58	RMI 11.01	RMI 10.38	RMI 9.79	RMI 9.59	RMI 6.02		RMI 4.94	RMI 4.44
	July 23, 1996	July 8, 1996	July 23, 1996	August 27, 2004	July 8, 1996	June 12, 1997	June 16, 1997	June 12, 1997	June 24, 1997	June 23, 1997	August 14, 2001	July 25, 2002	July 30, 2003	July 31, 2003
Margined madtom *Noturus insignis*	X	X	X		X									
Pikes (*Esocidae*)														
Redfin pickerel *Esox americanus*					X	X				X				
Sculpins (*Cottidae*)														
Slimy sculpin *Cottus cognatus*								X			X	X		
Killifishes (*Fundulidae*)														
Banded Killifish *Fundulus diaphanus*	X		X	X			X							
Eels (*Anguillidae*)														
American eel *Anguilla rostrata*	X	X	X	X	X	X	X	X	X	X	X	X		

[1] 1.6 mile section of Little Lehigh Creek designated Class A Wild Trout

[2] Segment formerly designated Heritage Trout Angling

TABLE 5A
FISH DATA
LITTLE LEHIGH CREEK, BERKS AND LEHIGH COUNTIES
July 8, 1996 through August 27, 2004

Species (Common Name)	Section 3[1]		Section 8[2]	
	RMI 17.8	RMI 17.15	RMI 4.94	RMI 4.44
	August 27, 2004	July 8, 1996	July 30, 2003	July 31, 2003
Trout (*Salmonidae*)				
Brook trout (stocked) *Salvelinus fontinalis*			X	X
Brook trout (wild) *S. fontinalis*			X	X
Brown trout (stocked) *Salmo trutta*			X	X
Brown trout (wild) *S. trutta*	**89.92 kg/ha**	**93.03 kg/ha**	**112.46 kg/ha**	**166.58 kg/ha**
Rainbow trout (stocked) *Oncorhynchus mykiss*	X		X	X
Rainbow trout (wild) *O. mykiss*			X	X

[1] 1.6 mile section of Little Lehigh Creek designated Class A Wild Trout

[2] Segment formerly designated Heritage Trout Angling

TABLE 6
RBP METRIC COMPARISON
LITTLE LEHIGH CREEK
LEHIGH AND BERKS COUNTIES
APRIL 28, 2004

METRIC	STATION						
	1LLC	2LLC	3LLC	4LLC	5LLC	6LLC	1EC[1]
1. TAXA RICHNESS	16	13	17	18	19	17	19
Cand/Ref (%)	84.21	68.42	89.47	94.74	100.00	89.47	
Biol. Cond. Score	8	3	8	8	8	8	8
2. MOD. EPT INDEX	3	3	4	5	4	4	10
Cand/Ref (%)	30.00	30.00	40.00	50.00	40.00	40.00	
Biol. Cond. Score	0	0	0	1	0	0	8
3. MOD. HBI	4.488	4.106	4.053	3.042	3.971	2.325	2.405
Cand-Ref	2.083	1.701	1.648	0.637	1.566	-0.08	
Biol. Cond. Score	0	0	0	8	0	8	8
4. % DOMINANT TAXA	56.25	57.27	24.52	49.58	22.33	18.06	57
Cand-Ref	-0.75	0.27	-32.48	-7.42	-34.67	-38.94	
Biol. Cond. Score	8	8	8	8	8	8	8
5. % MOD. MAYFLIES	2.083	9.251	25.48	51.67	23.3	9.722	64
Cand-Ref	61.917	54.749	38.52	12.33	40.7	54.278	
Biol. Cond. Score	0	0	0	7	0	0	8
TOTAL BIOLOGICAL CONDITION SCORE	16	11	16	32	16	24	40
% COMPARABILITY TO REFERENCE	40.00	27.50	40.00	80.00	40.00	60.00	
DEP IBI Score	32.4	32.8	44.8	51.8	47.1	39.1	

[1] Elk Creek, Centre County, April 21, 2004.

TANNERY HOLLOW RUN
CAMERON COUNTY

WATER QUALITY STANDARDS REVIEW
STREAM REDESIGNATION EVALUATION REPORT

SEGMENT: BASIN

STREAM CODE: 24991

DRAINAGE LIST: L

WATER QUALITY MONITORING SECTION (DSB)
DIVISION OF WATER QUALITY STANDARDS
BUREAU OF WATER STANDARDS AND FACILITY REGULATION
DEPARTMENT OF ENVIRONMENTAL PROTECTION

MAY 2010

INTRODUCTION

Tannery Hollow Run has designated uses of Cold Water Fishes, Migratory Fishes (CWF, MF) in Chapter 93 of the Pennsylvania Code. A petition requesting the redesignation of Tannery Hollow Run to Exceptional Value, Migratory Fishes (EV, MF) was submitted to the Environmental Quality Board (EQB) by the Cameron County Conservation District. This petition was accepted for further study by the EQB on October 18, 2005. This report is based on a field survey conducted by the Department in April of 2006.

GENERAL WATERSHED DESCRIPTION

Tannery Hollow Run is a tributary to Sterling Run in the West Branch Susquehanna River watershed (Figure 1). This basin covers an area of 4.77 square miles and contains 6.55 stream miles. It is located in Gibson, Lumber, and Shippen Townships, Cameron County and Benezette Township, Elk County. Land use in this basin is almost entirely mixed hardwood forest with a few low-density residential houses in the lower portion of the basin. The southwestern edge of the watershed consists of unreclaimed strip mine lands. There is a dirt road that travels along the north side of the stream as far as the confluence of Snodgrass Run. This is a freestone stream with a moderate gradient throughout its length. Two candidate stations and one reference station were sampled as part of this survey (Figure 1 and Table 1).

WATER QUALITY AND USES

Surface Water:
No long-term water quality data were available to allow a direct comparison to water quality criteria. A report by the Cameron County Conservation District, based on samples collected in 2003 and 2004, indicated that the water quality of Tannery Hollow Run was generally good (Table 2). Based on 10 months of samples, the pH never fell below 6.0 and the concentrations of Iron (Fe), Manganese (Mn), and Aluminum (Al) never exceeded the state criteria for those substances (as listed in Chapters 93 and 16 of the PA Code). Since the instantaneous nature of grab samples precludes comparison to applicable water quality criteria, the indigenous aquatic community is a better indicator of long-term conditions and is used as a measure of ecological significance.

There is a pending permit filed by Allegheny Enterprises, Inc. (Permit No. 12080101) to remine abandoned strip mine lands in the Tannery Hollow and Finley Run watersheds. This would only affect 7.5 acres in the Tannery Hollow basin. The permit calls for reclamation of the area and treatment of a small discharge that currently flows into an unnamed tributary to Tannery Hollow Run about 0.6 stream miles above the confluence of Snodgrass Run. There are no surface water withdrawals for public water supply or other NPDES permitted discharges located in this basin. There is the potential for nonpoint source discharges from the area of unreclaimed strip mine but the macroinvertebrate community indicates that this is not a source of water quality degradation.

Aquatic Biota:

Habitat assessments and biological samplings were conducted at 3 stations (2 candidate and 1 reference) during the April 2006 survey. The physical habitat assessments revealed that conditions at Station 1SR, 2TR, and Reference Station R1 scored in the Optimal range for benthic macroinvertebrates and fish (Table 3). Overall, habitat scores for the Tannery Hollow Run stations scored 205 and 198 respectively.

Benthic macroinvertebrate samples were collected using the Department's Antidegradation protocol (adapted from Plafkin's 1989 and Barbour's 1999 Rapid Bioassessment Protocols manuals). Taxonomic diversity was high at both stations with individuals from taxa that are very sensitive to water quality degradation (e.g. *Epeorus, Cinygmula, Leuctra*, and *Diplectrona*) outnumbering individuals from more tolerant taxa. The dominance of individuals and genera of intolerant mayfly taxa would indicate that the existing abandoned strip mine area is creating little or no degradation of water quality in the candidate stream.

BIOLOGICAL USE QUALIFICATIONS

The biological use qualifying criteria applied to Tannery Hollow Run was the integrated benthic macroinvertebrate score test described at § 93.4b(a)(2)(i)(A) and § 93.4b(b)(1)(v). This score is calculated from the macroinvertebrate samples referenced above. Following the Department's Antidegradation protocol, a 200 (+/- 20%) count subsample was randomly selected from the total sample and enumerated (Table 4). Selected benthic macroinvertebrate community metrics were generated from these subsamples. Candidate station metrics were compared to Trout Run (23693) a reference stream with a comparable drainage area (Table 5). This reference stream has a protected use designation of EV and is a tributary to Kettle Creek (23661) located in Clinton County. All sampling was conducted on the same day to minimize the effects of seasonal variation. This comparison was done using the following metrics which were selected as being indicative of community health: taxa richness; modified EPT index (total number of intolerant Ephemeroptera, Plecoptera, and Trichoptera taxa); modified Hilsenhoff Biotic Index; percent dominant taxon; and percent modified mayflies.

Based on these five metrics, Stations 1SR and 2TR had biological condition scores of 100% of the reference station score. As a result both stations meet the threshold of 92% that would qualify them for an EV designation under the Department's regulatory criterion (§93.4b(b)(1)(v)).

PUBLIC RESPONSE AND PARTICIPATION SUMMARY

The Department provided public notice of this redesignation evaluation and requested any technical data from the general public through publication in the Pennsylvania Bulletin on August 19, 2006 (36 Pa.B 4665). A similar notice was also sent to Benezette, Gibson, Lumber, and Shippen Townships along with the Cameron and Elk County Planning Commissions and the North Central Regional Planning and Development Commission on July 21, 2006 to notify them of this evaluation. In response to these notifications, GeoTech Engineering, Inc submitted a report on behalf of their client Allegheny Enterprises, Inc. This report contains water chemistry

data on the small surface mine discharge in the headwaters of Tannery Hollow Run in addition to sample points on the stream above and below this discharge. It contends that the candidate stream is degraded by this discharge. The data collected by DEP and the Cameron County Conservation District show that this discharge does not significantly degrade the water quality of Tannery Hollow Run. Water chemistry samples from a location 900 meters below this discharge (Appendix 1) and Station 2TR (Table 2) do not indicate any significant elevation in TDS or conductivity or a decrease in pH which would be expected if this discharge was degrading the water quality of Tannery Hollow Run. Also the macroinvertebrate community shows no evidence of degradation due to AMD such as a reduction in the number and diversity of the mayfly community.

The petitioner and local municipality and planning commission representatives were notified by a postcard mailing that the report was available on the Department's web page for review with a 30-day comment period, which closed on April 16, 2010. No comments were received in response to this notice.

RECOMMENDATIONS

Based on applicable regulatory definitions and requirements of § 93.4b, the Department recommends that the protected use designation of Tannery Hollow Run basin (24991) be changed from the current CWF, MF designation to EV, MF based on § 93.4b(b)(1)(v). This designation affects 6.55 stream miles.

REFERENCES

Barbour, MT, J. Gerritsen, BT Snyder, and JB Stribling. 1999. Rapid Bioassessment Protocols for Use in Streams and Wadeable Rivers: Periphyton, Benthic Macroinvertebrates, and Fish, Second Edition. United States Environmental Protection Agency. EPA/841/B-99-002.

Plafkin, JL, MT Barbour, KD Porter, SK Gross, & RM Hughes. 1989. Rapid Bioassessment Protocols for Use in Streams and Rivers: Benthic Macroinvertebrates and Fish. United States Environmental Protection Agency. EPA/444/4-89-001

TABLE 1
STATION LOCATIONS
TANNERY HOLLOW RUN
CAMERON COUNTY

STATION	LOCATION
1SR	Snodgrass Run (24992) approximately 20 meters upstream from the mouth. Lumber Township, Cameron County. Lat: 41 24 49 Long: 78 14 21 RM: 0.07
2TR	Tannery Hollow Run (24991) approximately 0.65 miles upstream from the mouth. Lumber Township, Cameron County. Lat: 41 25 04 Long: 78 13 46 RM: 0.65
R1	Trout Run (23693) approximately 30 meters upstream of the confluence of Wykoff Branch. Leidy Township, Clinton County. Lat: 41 27 06 Long: 77 56 52 RM: 2.35

TABLE 2
WATER CHEMISTRY[1]
TANNERY HOLLOW RUN[2]
CAMERON COUNTY

DATE	7/22/03	9/25/03	10/24/03	12/8/03	12/30/03	4/3/03	4/24/04	8/21/04	9/16/04	10/13/04	MAX	MIN	AVE
Field Parameters													
Temp (°C)	15.7	10.4	6.0	3.3	5.1	6.3	9.2	14.1	14.8	7.3	15.7	3.3	9.7
Cond (µmhos)	37	35	61	36	28	35	30	41	36	42	61	28	38.2
pH	6.7	6.3	6.2	6.4	6.3	6.1	6.3	6.6	6.0	6.7	6.7	6.0	6.34
Laboratory Parameters (mg/l)													
Alkalinity	16	10	11	10	9	6	8	11	7	13	16	6	10
Acidity	0	0	4	0	6	3	2	0	3	0	6	0	2
Total Susp.Sol.	5.7	5.7	5.7	11.4	10.0	5.7	5.7	5.7	5.7	5.7	11.4	5.7	6.61
SO_4	15	7	10	7	6	9	7	13	25	13	25	6	11
Fe	0.27	0.10	0.05	0.06	0.14	0.07	0.12	0.05	0.05	0.05	0.27	0.05	0.09
Mn	0.02	0.02	0.02	0.02	0.02	0.02	0.23	0.02	0.02	0.02	0.23	0.02	0.04
Al	0.19	0.06	0.05	0.05	0.13	0.05	0.31	0.05	0.05	0.05	0.31	0.05	0.09

[1] - Data collected by Cameron County Conservation District

[2] - Station located near the mouth

TABLE 3
HABITAT ASSESSMENT SUMMARY
TANNERY HOLLOW RUN
CAMERON COUNTY
APRIL 27, 2006

HABITAT PARAMETER	STATIONS[1]		
	1FC	2FC	R1
1. instream cover	18	18	18
2. epifaunal substrate	19	19	19
3. embeddedness	17	16	17
4. velocity/depth	16	14	14
5. channel alterations	18	16	18
6. sediment deposition	18	18	18
7. riffle frequency	19	19	19
8. channel flow status	17	17	16
9. bank condition	16	16	16
10. bank vegetation protection	17	16	17
11. grazing/disruptive pressures	16	15	19
12. riparian vegetation zone width	14	14	20
Total Score	205	198	211
Rating[2]	OPT	OPT	OPT

[1] Refer to Figure 1 and Table 1 for station locations.

[2] OPT = Optimal

TABLE 4
SEMI-QUANTITATIVE MACROINVERTEBRATE DATA
TANNERY HOLLOW RUN, CAMERON COUNTY
APRIL 27, 2006

TAXA	STATIONS		
	1SR	2TR	R1
Ephemeroptera (mayflies)			
Baetidae; *Acentrella*			1
Baetis	1		4
Ephemerellidae; *Drunella*	25	11	8
Ephemerella	6	10	7
Heptageniidae; *Cinygmula*	16	7	22
Epeorus	24	43	41
Heptagenia			1
Leucrocuta	1		
Stenonema	1		1
Isonychiidae; *Isonychia*		1	
Leptophlebiidae; *Habrophlebiodes*	2		
Paraleptophlebia	11	22	10
Plecoptera (stoneflies)			
Chloroperlidae; *Suwallia*	6	10	3
Sweltsa	7	4	6
Leuctridae; *Leuctra*	20	9	14
Nemouridae; *Amphinemura*	11	6	3
Peltoperlidae; *Tallaperla*	3	1	
Peltoperla	1		
Perlidae; *Acroneuria*	5	2	
Perlodidae; *Isoperla*	1	7	1
Malirekus			1
Remenus	1		
Yugus	1		
Pteronarcyidae; *Pteronarcys*	7	5	17
Tricoptera (caddisflies)			
Hydropsychidae; *Cheumatopsyche*		1	
Diplectrona	9	2	7
Hydropsyche	4	5	1
Lepidostomatidae; *Lepidostoma*	1	1	1
Philopotamidae; *Dolophilodes*		1	
Wormaldia	1	1	
Polycentropodidae; *Polycentropus*		2	
Rhyacophilidae; *Rhyacophila*	3	2	9
Uenoidae; *Neophylax*	2	2	

TAXA (continued)	STATIONS		
	1SR	2TR	R1
Diptera (true flies)			
Athericidae; *Atherix*		1	1
Ceratopogonidae; *Probezzia*		2	
Empididae; *Chelifera*			3
Simuliidae; *Prosimulium*	7	30	7
Tipulidae; *Antocha*	1	2	2
Dicranota	1		1
Hexatoma	1	3	1
Chironomidae	24	19	28
Odonata (dragon-, damselflies)			
Gomphidae; *Lanthus*	2	1	
Coleoptera (aquatic beetles)			
Elmidae; *Oulimnius*	2	13	19
Non-Insect Taxa			
Oligochaeta	1		1
Decapoda (crayfish)			
Cambaridae; *Cambarus*	1		
Total number of individuals	210	226	221

TABLE 5
RBP METRIC COMPARISON
TANNERY HOLLOW RUN
CAMERON COUNTY

METRIC	STATIONS		
	1SR	2TR	R1
1. TAXA RICHNESS	35	31	29
Cand/Ref (%)	121	107	xxx
Biol. Cond. Score	8	8	8
2. MOD. EPT INDEX	23	20	18
Cand/Ref (%)	128	111	xxx
Biol. Cond. Score	8	8	8
3. MOD. HBI	1.68	1.81	1.94
Cand-Ref	-0.26	-0.13	xxx
Biol. Cond. Score	8	8	8
4. % DOMINANT TAXA	12	19	19
Cand-Ref	-7	0	xxx
Biol. Cond. Score	8	8	8
5. % MOD. MAYFLIES	40	42	41
Ref-Cand	1	-1	xxx
Biol. Cond. Score	8	8	8
TOTAL BIOLOGICAL CONDITION SCORE	40	40	40
% COMPARABILITY			

TO REFERENCE	100	100	

APPENDIX 1
WATER CHEMISTRY[1]
TANNERY HOLLOW RUN
CAMERON COUNTY
APRIL 16, 2009

STATION	APX1**
Field Parameters	
Temp (°C)	5.5
pH	5.9
Cond (µmhos)	40
Diss. O_2	11.5
Laboratory Parameters	
pH	6.6
Alkalinity	2.6
Acidity	-2.0
Hardness	15
T Diss. Sol.	54
Susp.Sol.	< 5
NH_3-N	<.02
NO_2-N	<.01
NO_3-N	0.06
Total P	<0.01
Ca	3.39
Mg	1.56
Cl	4.0
SO_4	<15
As*	< 3.0
As Diss*	< 3.0
Cd*	< 0.2
Cd Diss*	< 0.2
Cr*	<50
Cu*	< 4.0
Cu Diss*	< 4.0
Fe*	<20
Pb*	< 1.0
Pb Diss*	< 1.0
Mn*	<10
Ni*	< 4.0
Ni Diss*	< 4.0
Zn*	5.5
Zn Diss*	6.1
Al*	26

[1] - Except for pH & conductance and indicated otherwise, all values are total concentrations in mg/l

* - Concentrations in µg/l
** - Station located immediately upstream of the confluence of Snodgrass Run

UPPER LEHIGH RIVER

LACKAWANNA, LUZERNE, MONROE AND WAYNE COUNTIES

WATER QUALITY STANDARDS REVIEW

STREAM REDESIGNATION EVALUATION REPORT

Segment: Basin
Stream Code: 03335
Drainage List D

WATER QUALITY MONITORING SECTION (GLW)
DIVISION OF WATER QUALITY STANDARDS
BUREAU OF WATER STANDARDS AND FACILITY REGULATION
DEPARTMENT OF ENVIRONMENTAL PROTECTION

MAY 2010

INTRODUCTION

The Department conducted an evaluation of the upper Lehigh River basin (source to Tobyhanna Creek) in response to a petition from the North Pocono Citizens Alert Regarding the Environment (North Pocono CARE). This petition, which was accepted for study by the Environmental Quality Board on May 22, 2002, requests this basin be redesignated as Exceptional Value waters (EV). The current Chapter 93 designated use for the Lehigh River headwaters is High Quality-Cold Water Fishes (HQ-CWF), Migratory Fishes (MF). This evaluation is based on a field survey conducted on April 14 and 15, and May 5, 2003.

GENERAL WATERSHED DESCRIPTION

The upper Lehigh River basin, located northeast of White Haven, Pennsylvania, is a tributary to the Delaware River (Figure 1). The candidate basin is located in Buck Township, Luzerne County; Tobyhanna and Coolbaugh Townships, Monroe County; Thornhurst, Clifton, and Covington Townships, Lackawanna County; and Lehigh and Sterling Townships, Wayne County. The upper Lehigh River and its tributaries are freestone streams that drain approximately 93.8 mi^2 of the Glaciated Pocono Plateau. The mainstem flows for 22.9 miles in a southwesterly direction from its origin in Lehigh Township, Wayne County to the confluence with Tobyhanna Creek southwest of the village of Stoddartsville (Figure 1).

There are limited impacts to the upper Lehigh River headwater basin from human disturbance. Land uses primarily consist of forest management activities with some low-density residential development. Approximately 43.8% of the lands in the basin are in public ownership (Lackawanna State Forest, Gouldsboro and Tobyhanna State Parks, and State Game Lands 91, 127, 135, and 312). A significant portion of the upper Lehigh River petition area is further characterized by the abundant distribution of natural wetlands; a condition that typifies streams draining the Glaciated Pocono Plateau.

There are five NPDES (National Pollution Discharge Elimination System) -permitted systems (4 privately-owned wastewater treatment works, and 1 industrial stormwater), two surface water withdrawals, and fourteen ground water withdrawals in the study area. The four

wastewater treatment works in the basin (Arrowhead Sew. Co. Inc., Eagle Lake Community Association Inc., Thornhurst Country Club Estates, and Lake View Estates Inter. Corp.) are permitted to discharge a maximum of 0.525, 0.500, 0.070, and 0.054 MGD respectively.

WATER QUALITY AND USES

Surface Water Quality

Sufficient long-term water quality data were available from the Department's Water Quality Network (WQN) stations on the mainstem of the Lehigh River at Stoddartsville (WQN 126) and on Choke Creek (WQN 190) to allow a direct comparison to water quality criteria (Table 2). These WQN stations are situated near the downstream terminus of their respective drainage areas. With the exception of naturally low alkalinity and occasional occurrences of acidity and low pH measurements, an analysis of approximately 5 years of data collected bimonthly from September 1998 to May 2005 (47 observations) shows that water quality was better than established criteria 99% of the time for most of the other measured parameters. The low alkalinity values, sporadic detections of acidity, and pH values <6 reflect the natural influence of the abundant wetlands and ponds found in the petition area, which limits the buffering capacity of the upper Lehigh River basin. The excellent and natural water quality found at both WQN 126 and 190, which are situated near the downstream terminus of their respective drainage areas (the upper Lehigh River petition area and the Choke Creek tributary), reflects the lack of negative impacts from land uses upstream of these stations.

Additional water quality data were available from the Monroe County Planning Commission for 3 tributaries (Blexley Run - 1 sample, Tripup Run - 2 samples and unnamed tributary (UNT) to Trout Creek - 6 samples) from 1997 to 2001. While the instantaneous nature of these grab samples does not allow for a meaningful comparison to established water quality criteria, analysis of these data suggests the water quality of these sub-basins is excellent. Alkalinity in these streams reflects low buffering capacity similar to that found in the Lehigh River mainstem. Alkalinity values were very low – varying from below method detection limits (MDL) for Blexley and Tripup Runs up to 13.5 mg/l for UNT Trout Creek. Nutrient concentrations of ammonia, nitrite, and phosphorus were below respective MDLs for Tripup Run and UNT Trout

Creek and are indicative of limited human impact in these tributary basins. No water chemistry data were available from other tributaries in the petition study area.

In addition to the available water quality data, biological data were collected to further evaluate the long-term water quality conditions in the upper Lehigh River study area. Field water quality parameters were measured at most of the stations in the upper Lehigh River basin on April 14 and 15 and May 5, 2003 (Table 2A).

Aquatic Biota

The indigenous aquatic community is an excellent indicator of long-term conditions and is used as a measure of both water quality and ecological significance. Department staff collected habitat and benthic macroinvertebrate data at 22 sampling locations in the upper Lehigh River basin (Figure 1 and Table 1). Fishery data for the Lehigh River and Ash Creek were provided by the Pennsylvania Fish and Boat Commission (PFBC) (Table 5).

Habitat. Instream habitat was assessed at each station where benthic macroinvertebrates were sampled (Table 3). The habitat evaluation consists of rating twelve habitat parameters to derive a station habitat score. The total habitat scores for the upper Lehigh River headwater basin ranged from 172 at 12PC to 231 at 9BR, which reflect suboptimal-to-optimal habitat conditions.

Benthos. Benthic macroinvertebrate samples were collected at all stations (Table 4) using Pa-DEP's Rapid Bioassessment Protocols (RBP) benthic macroinvertebrate sampling technique, which is a modification of the US Environmental Protection Agency's (EPA) RBPs (Plafkin, et al 1989 and Barbour, et al 1999). Taxonomic richness (total number of taxa) scored very good-to-excellent at all 6 mainstem stations (22 to 37 taxa) and at 11 tributaries (20 to 35 taxa). At the remaining 5 stations, taxonomic richness was good (14 to 19).

The upper Lehigh River basin supports a diverse benthic macroinvertebrate population dominated by a number of pollution-sensitive genera. The macroinvertebrate samples revealed relatively high taxa richness values that ranged from 14 to 37 (Table 4) at the 22

candidate basin stations. The benthic samples for the 6 mainstem and 11 of the 16 tributaries contained many pollution sensitive taxa (Table 4) of the Ephemeroptera (mayflies), Plecoptera (stoneflies) and Trichoptera (caddisflies) groups. Despite the presence of many pollution sensitive taxa, a single pollution tolerant taxonomic family, the Simuliidae (black flies), dominated many of the stations (Table 4). Headwater ponds, wetlands, and low gradient conditions are prevalent throughout the basin and are optimal habitat for simuliids, which filter feed on suspended particulate material. Many of the small tributaries and the mainstem originate as outflow from glacial ponds. As a result of these natural conditions, the aquatic biological communities are composed of individuals that are adapted for the low pH and tannic conditions that characterize these streams.

Fishes. Fishery data, supplied by the PFBC, were collected from 3 sites (River Mile 87.8, 89.5 and 92.8) on the Lehigh River on July 10, 1997. A total of 13 species were collected (Table 5). The fishery at all three sites exhibited good diversity. Wild brown trout were collected at all three sites and wild brook trout were collected at the 2 upstream locations. Currently, PFBC has designated a 1.9 mile section of Ash Creek as Class A Wild Trout waters and other headwater tributaries and the mainstem of the upper Lehigh River as wild trout waters.

BIOLOGICAL USE QUALIFICATIONS

The biological use qualifying criterion applied to the upper Lehigh River basin was the Department's integrated benthic macroinvertebrate scoring test described at 25 Pa. Code § 93.4b(b)(1)(v). Selected benthic macroinvertebrate community metrics calculated for the upper Lehigh River stations (Figure 1) were compared to those from EV reference streams of comparable drainage areas including: Kettle Creek (1KCR) in Clinton County, Saw Kill Creek (1SKC) and Dimmick Meadow Brook (1DMB) in Pike County (Table 6). The aforementioned streams were used as references because they are freestone streams, have drainage areas (86.6, 24.7 and 2.7 mi^2 respectively) similar to the compared study streams, and are found in similar geologic settings as the study streams. In addition, these streams have served as EV reference streams in several other Departmental surveys. Stations 10LR, 13LR and 22LR were compared to reference station 1KCR; stations 3LR, 6LR and 18TC were compared to reference station 1SKC; and stations 1LR, 2UNT, 4TMC, 5FR, 7SC, 8AC, 9BR, 11SR, 12PC,

14SSC, 15BS, 16TR, 17TC, 19CC, 20CC and 21KC were compared to reference station 1DMB. The comparisons were done using the following metrics that were selected as being indicative of community health: taxa richness; modified EPT index; modified Hilsenhoff Biotic Index; percent dominant taxon; and percent modified mayflies.

Based on these five metrics, only one station, 14SSC (Sand Spring Creek) with a Biological Condition Score of 100%, exceeded the EV qualifying criterion of 92% (§ 93.4b(b)(1)(v)). The metric score calculated for Station 14SSC, being located near the mouth of Sand Spring Creek, reflects the cumulative influence of upstream land uses that are dominated by undisturbed areas of the Lackawanna State Forest and Spruce Swamp Natural Area. The remainder of the candidate stations scored less than 92% of the reference stations (Table 6).

A total of 5.5 stream miles qualify as EV Waters under this criterion.

ADDITIONAL EXCEPTIONAL VALUE WATERS QUALIFYING CRITERIA

Based on petitioner information suggesting that additional EV regulatory criteria may apply, DEP evaluated additional antidegradation criteria listed in § 93.4b(b). These additional criteria include:

A. The water is located in a designated State park natural area or State forest natural area, National natural landmark, Federal or State wild river, Federal wilderness area or National recreation area [§ 93.4b(b)(1)(ii)];
B. The water is an outstanding National, State, regional or local resource water [§ 93.4b(b)(1)(iii) – see Appendix A[1]];
C. The water is a surface water of exceptional ecological significance [§ 93.4b(b)(2) – see Appendix A[2]].

Areas of the upper Lehigh River basin that satisfy these EV qualifying criteria are depicted in Figure 1 (basin overview) and Figures 2-6 (basin close-up views) and are discussed below:

A. Waters in Natural Areas qualifying as EV under § 93.4b(b)(1)(ii):

This criterion may be applied to petitioned waters located in natural areas since they already have the prerequisite HQ designation. The Black Bear and Bender Swamps Natural Area in Tobyhanna State Park and the Spruce Swamp Natural Area in Lackawanna State Forest have been designated by the Department of Conservation & Natural Resources (DCNR) to be maintained in a natural condition. See 17 Pa. Code § 17.5 (relating to State Parks natural area designation procedures) and 17 Pa. Code § 27.5 (relating to State Forest natural area

designation procedures). Based on the Department's review of these natural area designations, the HQ designated waters located in a designated State Park natural area or State Forest natural area[1] qualify for designation as EV as provided by § 93.4b(b)(1)(ii).

A total of 2.3 stream miles qualify as EV Waters under this criterion.

B. Waters qualifying as EV as outstanding National, State, regional or local resource waters under § 93.4b(b)(1)(iii):

The outstanding resource waters EV criterion may be applied to the petitioned waters since they already have the prerequisite HQ designation. The definition of "Outstanding National, State, regional or local resource waters" in § 93.1 requires adoption of "water quality protective measures". "Coordinated water quality protective measures", also defined at § 93.1, are required for regional or local governments. (See Appendices A^1 and A^3 for the definitions). Such water quality protective measures have been applied through management activities implemented on lands draining to the upper Lehigh River in Lackawanna, Luzerne, Monroe and Wayne Counties as described below:

Outstanding State Resource Waters

The Department evaluated water quality protective measures included in resource management plans prepared by DCNR's Bureau of Forestry. The Bureau of Forestry has issued Aquatic Habitat Buffer Guidelines (DCNR 2007) for all state forest lands that apply both "outer" and "inner" buffer zones, which provide differing levels of water quality protection. Inner buffers zones function as a critical area of protection that allow only minimal human activity (e.g. tree cutting can only occur to protect property and human safety) and have been applied to the Lackawanna State Forest lands. The inner buffer zones range from 30 feet to 200 feet. Inner buffer zones of 200 feet are applied to Wilderness Trout Streams and Wild Rivers, whereas an inner buffer zone of 135 feet is applied to EV streams. For HQ streams, a 30 foot inner buffer zone is required, and coupled with a requisite 105-foot outer buffer zone, provides a total habitat buffer of 135 feet.

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[1] *A "natural area" is generally defined as one of unique scenic, geologic, or ecological value and which is maintained in a natural condition, usually without direct human intervention.*

A review of DCNR's Bureau of State Parks management plans for Gouldsboro and Tobyhanna State Parks found that there were no water quality protection measures specifically for streams for either park. However, Bureau of State Parks will be updating their management plans for individual parks to include specific water quality protective measures for all surface waters within park boundaries in the future. Therefore at this time, no recommendations in this report rely on state park resource management plans.

The Department evaluated water quality protective measures developed by the Pennsylvania Game Commission (PGC) to protect aquatic and adjacent riparian areas as important habitats on state game lands. The PGC has issued aquatic habitat buffer guidelines similar to those of DCNR, but with inner buffer zones of 100 feet for EV and 50 feet for HQ streams and with outer buffer zones of 50 and 100 feet respectively, for a total of 150 feet of protection. The management plans allow limited activities within the buffered areas, recommend elimination or minimization of existing roads or parking areas, and encourage restoration of riparian areas.

The water quality protective measures described in DCNR – Bureau of Forestry and PGC resource management plans meet the "outstanding National, State, regional or local resource waters" definition and apply to stream segments within State Game Lands 91, 127, 135 and 312; and the Lackawanna State Forest within the upper Lehigh River basin.

A total of 79.1 stream miles qualify as EV Waters under this criterion.

Outstanding Local Resource Waters

The Department evaluated local ordinances described below, as "coordinated water quality protective measures" adopted by local governments along the Lehigh River watershed corridor.

1. Coolbaugh Township, Monroe County has adopted sound land use water quality protective measures through ordinances that include the following:

   a. Regulations to conserve natural features, including land or water resource areas (e.g. wetlands, groundwater recharge zones, springs, and streams). The purpose of the regulations is to ensure that land uses minimize disturbances to natural features and that reasonable measures are taken to mitigate any adverse impacts from such uses.

b. Conservation plan approval when any person, corporation or other entity proposes certain defined activities that disturb or impact any natural feature.

c. Site planning requirements designed to conserve woodlands and other vegetation. Except in conjunction with routine property maintenance or safety precautions, the requirements minimize disturbance or removal of vegetation occupying environmentally sensitive areas, including stream and pond banks. Such disturbance or removal may only be undertaken when necessary and on a limited, selective basis to minimize the adverse impacts of such actions and to maintain the natural integrity of these sensitive areas.

d. Regulations to conserve open space. Wherever possible, land containing prime wildlife habitat must be left as permanent open space. The regulations include the protection of wildlife corridors, wherever possible, that are contiguous to environmentally sensitive areas such as wetlands, watercourses and steep slopes.

2. Bear Creek Township, Luzerne County has adopted sound land use water quality protective measures through ordinances that include the following:

   a. A subdivision and land development ordinance that requires care to be taken to preserve natural features such as watercourses and bodies of water. The ordinance recognizes that stream channels are resources that warrant restrictive land use controls because of 1) flooding hazards to human life and property, 2) ground water recharge functions, 3) importance to water quality and the health of the aquatic communities, and 4) importance to associated wildlife habitats. The ordinance further requires the minimization of disturbance to streams and drainage swales to the greatest practical extent.

   b. A zoning ordinance and supplemental regulations limit forestry activities within the 100-year floodway and require a minimum riparian buffer of 100 feet from any natural watercourse for any form of development and/or improvements in all zoning districts.

3. Thornhurst Township, Lackawanna County has adopted sound land use water quality protective measures that include the following:

a. A zoning ordinance that states no alteration of watercourses, whether by excavation, filling, grading, clearing, draining, or otherwise, may be made that affects the water levels or flow of such watercourses without careful review and study of the effect of such alteration and any related facilities on water recharge areas, water table levels, water pollution, aquatic animal and plant life, temperature change, drainage, flooding runoff and erosion. Review and approval of such alterations must be made by the Board in consultation with the County Conservation District and DEP.
b. The ordinance also mandates a stream buffer of 100 feet, on both sides of the stream, limiting activities that may occur within the buffer area.

4. Covington Township, Lackawanna County has adopted sound land use water quality protective measures, which include a zoning ordinance that requires a minimum buffer zone of 50 feet shall be maintained from any body of water or stream. No buildings, structures, sewage disposal systems or impervious surfaces can be placed within these zones. In residential subdivisions, these zones will be protected via a protective easement.

Although the protective measures provided by these townships will enhance water quality protection, the regulations require that such measures be "coupled with" an interest in real estate, as described at § 93.1. Definitions - "*Coordinated water quality protective measures*". It is not necessary to delineate such interests in real estate for this report since other antidegradation criteria apply to these waters.

C. Waters Qualifying as EV as Surface Waters of Exceptional Ecological Significance under § 93.4b (b)(2):

Information gathered for the Pennsylvania Natural Heritage Program and reported in County Natural Areas Inventories for Lackawanna (1997, 2003), Luzerne (2001, 2006), Monroe (1991, 1999), and Wayne (1991) Counties identified a total of 22 areas with statewide or local ecological significance that is based upon the rarity and uniqueness of the areas' endemic ecological community types. Seven rare ecological community types have been associated with these 22 ecologically significant upper Lehigh River watershed areas. These 7 rare community types are:

1. Natural pond (exceptionally rare)

2. Mesic scrub oak-heath-pitch pine barrens (exceptionally rare)
3. Northern conifer swamp – highest number of PA occurrences are in Monroe Co.
4. Acidic glacial lake
5. Acidic shrub swamp – PA occurrences found only in the northeast; 1/3 of which are in upper Lehigh River basin
6. Boreal conifer swamp
7. Oligotrophic glacial kettlehole bog– one in the upper Lehigh River basin supports 8 "species of special concern")

Many of these unique endemic plant communities are relics of past glaciations and are typical of the more northern latitudes of northern New England and Canada. In Pennsylvania, most of these endemic communities are found only in the Pocono region and are dependent on water quality and/or hydrology for their continued existence.

Of the 22 ecologically significant areas noted above, 10 are wetlands hydrologically connected to riverine surface waters and therefore, are water quality dependent. One of these wetlands is characterized by an Acidic Glacial Lake community, which is known only from Carbon, Lackawanna, Pike and Wayne Counties. The only known Pennsylvania occurrence of the natural pond wetland community type is from the upper Lehigh River watershed.

The county natural area inventories and a search of the Pennsylvania Natural Diversity Inventory (PNDI) system illustrate a concentration of these relatively unique ecologically significant areas on the Glaciated Pocono Plateau Section and within the upper Lehigh River basin in particular. The 10 natural areas are listed below:

Ecologically Significant Areas	Community Type	Location	County
Bradys Swamp*	Acidic Shrub Swamp	State Game Lands (SGL) 127	Monroe
Pond Swamp*	Acidic Shrub Swamp	SGL 127	Monroe

Big Marsh*	Acidic Shrub Swamp	SGL 127	Monroe
Mash Creek Marsh*	Graminoid Marsh	Lackawanna State Forest	Lackawanna
Nines Pond*	Natural Pond	Lackawanna State Forest	Lackawanna
Bear Lake/Grassy Pond	Acidic Glacial Lake/Natural Pond	Thornhurst Township	Lackawanna
English Swamp	Boreal Conifer Swamp	Covington Township	Lackawanna
Choke Creek Shrub Swamp	Acidic Shrub Swamp	Buck Township	Luzerne
Lehigh Pond*	Oligotrophic Glacial Kettlehole Bog	SGL 312	Wayne
Snag Pond	Oligotrophic Glacial Kettlehole Bog	Lehigh Township	Wayne

*Qualified as Outstanding State Resource Waters due to resource management plans

The remaining 12 ecologically significant areas listed below are upland areas or are wetland communities that, while not particularly rare in Pennsylvania, provide an important function as ecological filtering systems (much like riparian buffers) for the Lehigh River.

Ecologically Significant Areas	Community Type	Location	County
Sand Springs Woods	*not identified*	Thornhurst	Lackawanna
Lehigh River-Route 115 Bridge	*not identified*	BuckTownship, Tobyhanna Township	Luzerne, Monroe
Johnson Pond-Westend Pond Complex	*not identified*	Clifton Township, Lehigh Township	Lackawanna, Wayne
Balsam Swamp*	Boreal Conifer Swamp	Lackawanna State Forest	Lackawanna
America Swamp*	Boreal Conifer Swamp	Lackawanna State Forest	Lackawanna
Horseshoe Swamp*	Boreal Conifer Swamp	Lackawanna State Forest	Lackawanna
Tannery Road Swamp	Boreal Conifer	Lackawanna State Forest	Lackawanna

(Spruce Swamp Natural Area)*	Swamp		
Sassafras Hill Wetlands*	Boreal Conifer Swamp	Lackawanna State Forest	Lackawanna
Oakes Swamp	*not identified*	Tobyhanna Army Depot	Monroe
Longpatch Swamp*	*not identified*	SGL 127	Monroe
Underwood Swamp*	*not identified*	SGL 127	Monroe
Birch Swale*	Northern Conifer Swamp	SGL 127	Monroe

*Qualified as Outstanding State Resource Waters due to resource management plans

It is widely understood that the larger a buffer area is surrounding a body of water, the more effective it is in filtering pollutants; preventing them from entering the water. Thus, it is not just wetlands that are important but upland areas as well, in filtering potential pollutants. One of these endemic ecologically significant upland areas found in the upper Lehigh River watershed is the Mesic-Scrub Oak-Heath-Pitch Pine Barrens community type, which is only known in Luzerne, Monroe and Carbon counties. In Pennsylvania, there are only four known occurrences of this natural community type - one of which occurs within the upper Lehigh River petitioned area.

The co-occurrence of the 12 upland and other wetland communities with the 10 hydrologically connected/ecologically significant areas demonstrates an important ecological connectance that supports the natural diversity found in the Lehigh River petition area, which has resulted in the ecology and hydrology of the upper Lehigh River basin remaining largely intact and undisrupted over the 93.8 mi^2 area. Currently, there are only a few small residential communities and one quarry operation (near the lower end of the basin) that could have potential impacts on this unique environment. Because of the distribution and high concentration of the ecologically significant rare and unique endemic natural communities (both aquatic-based and uplands) in the upper Lehigh River basin and the ecological connectivity they provide to the aforementioned natural areas, the basin qualifies as EV waters based on its exceptional ecological significance.

This reflects an additional 132.4 stream miles that were not included under other qualifying criteria.

D. Areas Protected by Private Organizations

Many of the residential communities have taken the upper Lehigh River into consideration in their land use practices. Buffer requirements in effect for communities in the Big Bass Lake Community Association (Big Bass Lake Community Association, 2006) in Covington and Clifton Townships of Lackawanna County and in Riverside Estates (Coolbaugh Township, Monroe County) require buffers and building setbacks that must be maintained between all structures and waterbodies. Other lands have been preserved by Wildlands Conservancy (609 acres) in Lackawanna and Luzerne Counties along the Lehigh River and by The Nature Conservancy's Thomas Darling Preserve at Two-Mile Run in Monroe County. In addition, both the Wildlands Conservancy and The Nature Conservancy hold conservation easements in portions of the petitioned area in Lackawanna, Luzerne and Monroe Counties. In addition, a conservation easement held by the North Branch Land Trust, Inc. includes lands adjacent to Tamarack Creek and provides for a riparian buffer of 300 feet for any permanent or intermittent watercourse. Tamarack Creek is located in Covington Township, Lackawanna County.

Although these protective measures will enhance water quality protection, such measures must be coupled with local or regional government protective measures to meet the EV qualifiers in Chapter 93.

It is not necessary to delineate where the private water quality protective measures are coupled with local government measures for this report since other antidegradation criteria apply to these waters.

PUBLIC RESPONSE AND PARTICIPATION SUMMARY

The Department provided public notice of this stream redesignation evaluation and requested any technical data from the general public through publication in the Pennsylvania Bulletin on June 8, 2002 (32 Pa.B 2162). A similar notice was published in the Pocono Record and the Scranton Times on June 7, 2002. In addition, Clifton, Covington, Thornhurst, Buck, Coolbaugh, Tobyhanna, Lehigh and Sterling Townships and the Lackawanna (Regional), Luzerne, Monroe, and Wayne County Planning Commissions were notified of the redesignation evaluation in a letter dated June 7, 2002. Data on water chemistry, instream

habitat, and the aquatic community were received from the Monroe County Planning Commission in response to these notices. Letters supporting this proposed redesignation were received from Thornhurst and Buck Townships, Lackawanna County and the Monroe County Conservation District. Letters in opposition to this proposed redesignation were received from Clifton Township, Lackawanna County and the developers of Big Bass Lake, Gouldsboro, PA.

Subsequent to receiving the support letters noted above, DEP received a letter of support from the Monroe County Conservation District in July 2009. In addition, Tobyhanna Township submitted a letter in opposition to an EV redesignation in which they state that the current HQ designation provides adequate protection.

The petitioner and local municipality and planning commission representatives were notified by a postcard mailing that the report was available on the Department's web page for review with a 30-day comment period, which closed on April 16, 2010. In response, letters were received from the Lackawanna, Luzerne, and Wayne Conservation Districts; the Pennsylvania Council of Trout Unlimited; the local Brodhead and Stanley Cooper Sr. Chapters of Trout Unlimited; the Lehigh Coldwater Fishery Alliance; Wildlands Conservancy; Riverside Estates Community Association; and Thornhurst Township indicating their support of the EV recommendations below. These supportive letters were provided by Barbara Smith who represents the petitioners (North Pocono CARE). Letters were submitted by Tobyhanna Township to restate their original opposition to the EV recommendation. Further, they infer that the petition marginally meets the EV Criteria and does not meet EV chemistry criteria. However, the Department's report clearly demonstrates overwhelming qualification of the Upper Lehigh River as EV waters under numerous EV criteria and it must be noted that there is no chemistry criterion that needs to be met for EV consideration.

RECOMMENDATIONS

Based on applicable regulatory definitions and requirements of § 93.4b, the Department recommends that the upper Lehigh River basin, from the source to Tobyhanna Creek should be redesignated Exceptional Value, Migratory Fishes (EV, MF). This recommendation adds approximately 219.2 stream miles of EV waters to Chapter 93. This recommendation reflects the EV designation requested by the petitioner.

The EV qualifying waters and their associated § 93.4b(b) criteria are presented in the Figure 1 basin overview and Figures 2-6 close-up views.

APPENDIX A

[1]Definition at § 93.1: *Outstanding National, State, regional or local resource water*—A surface water for which a National or State government Agency has adopted water quality protective measures in a resource management plan, or regional or local governments have adopted coordinated water quality protective measures[3] along a watershed corridor.

[2] Definition at § 93.1: *Surface water of exceptional ecological significance*—A surface water which is important, unique or sensitive ecologically, but whose water quality as measured by traditional parameters (for example, chemical, physical or biological) may not be particularly high, or whose character cannot be adequately described by these parameters. These waters include:

(i) Thermal springs.

(ii) Wetlands which are exceptional value wetlands under § 105.17(1) (relating to wetlands).

[3] Definition at § 93.1: *Coordinated water quality protective measures*—

(i) Legally binding sound land use water quality protective measures coupled with an interest in real estate which expressly provide long-term water quality protection of a watershed corridor.

(ii) Sound land use water quality protective measure include: surface or ground water protection zones, enhanced stormwater management measures, wetland protection zones or other measures which provide extraordinary water quality protection.

(iii) Real estate interests include:

(A) Fee interests.

(B) Conservation easements.

(C) Government owned riparian parks or natural areas

(D) Other interests in land which enhance water quality in a watershed corridor area.

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FIGURE 1
LEHIGH RIVER
LACKAWANNA, LUZERNE, MONROE AND WAYNE COUNTIES

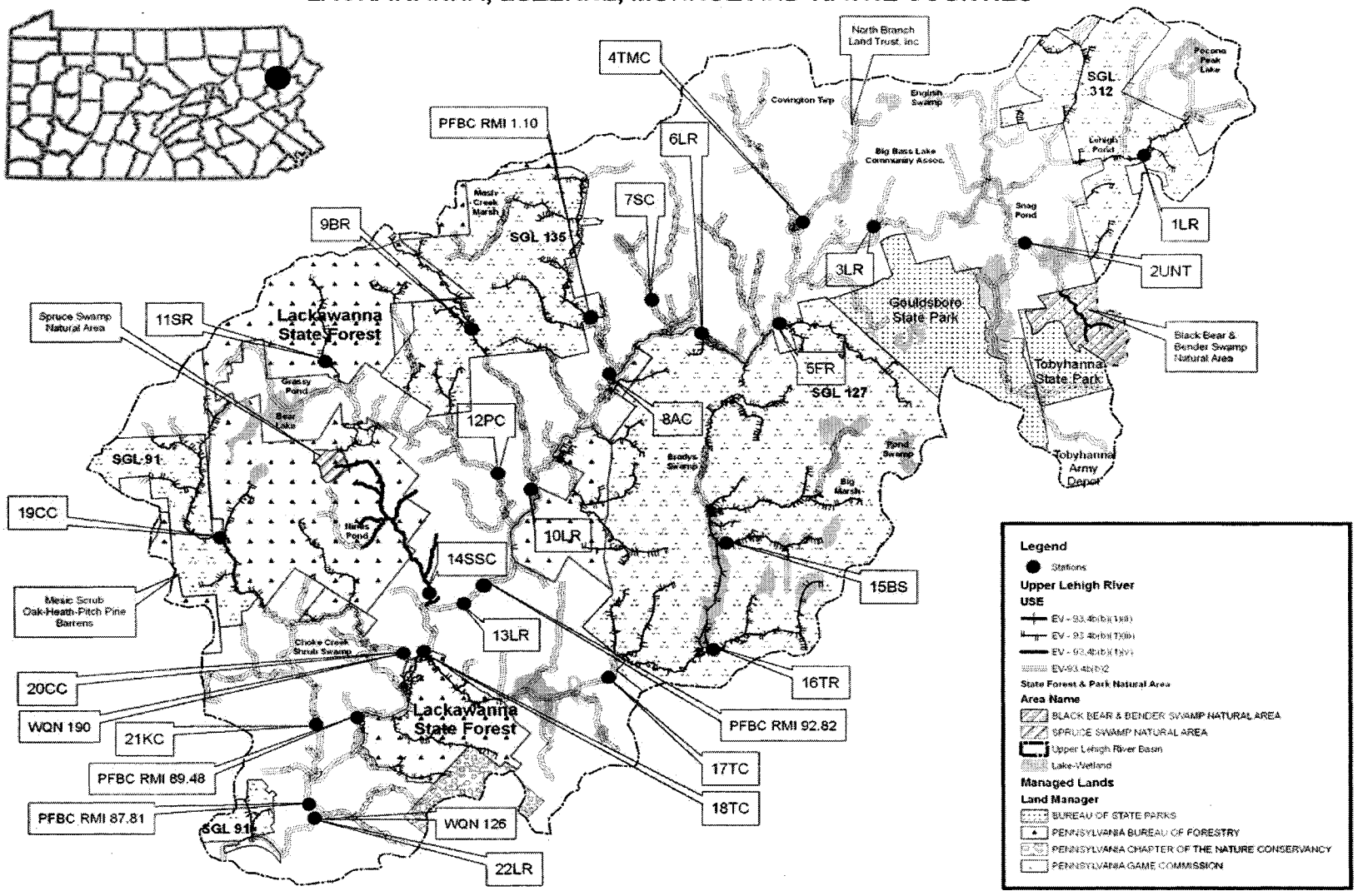

FIGURE 2
LEHIGH RIVER
LACKAWANNA, LUZERNE, MONROE AND WAYNE COUNTIES

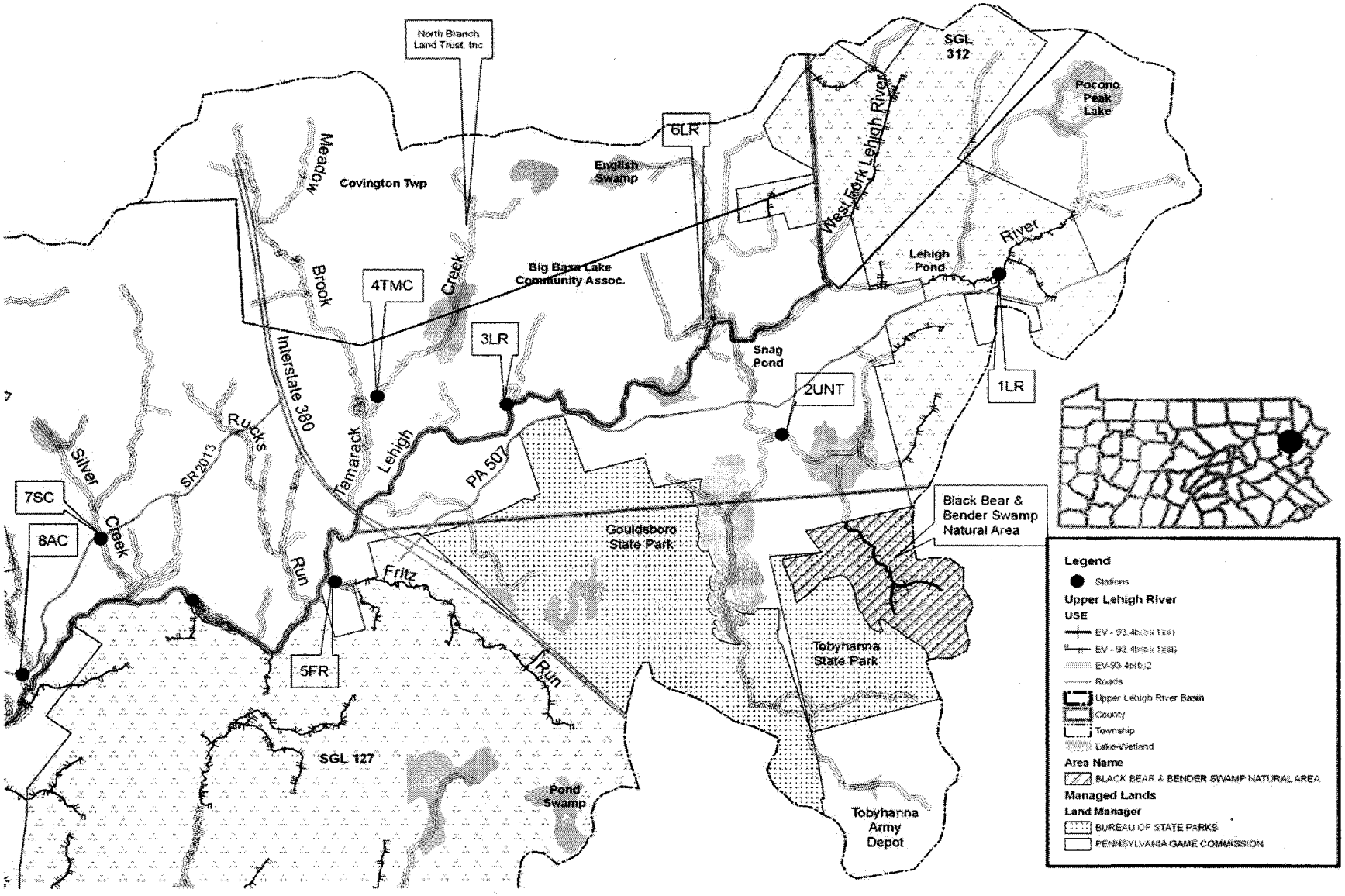

FIGURE 3
LEHIGH RIVER
LACKAWANNA, LUZERNE, MONROE AND WAYNE COUNTIES

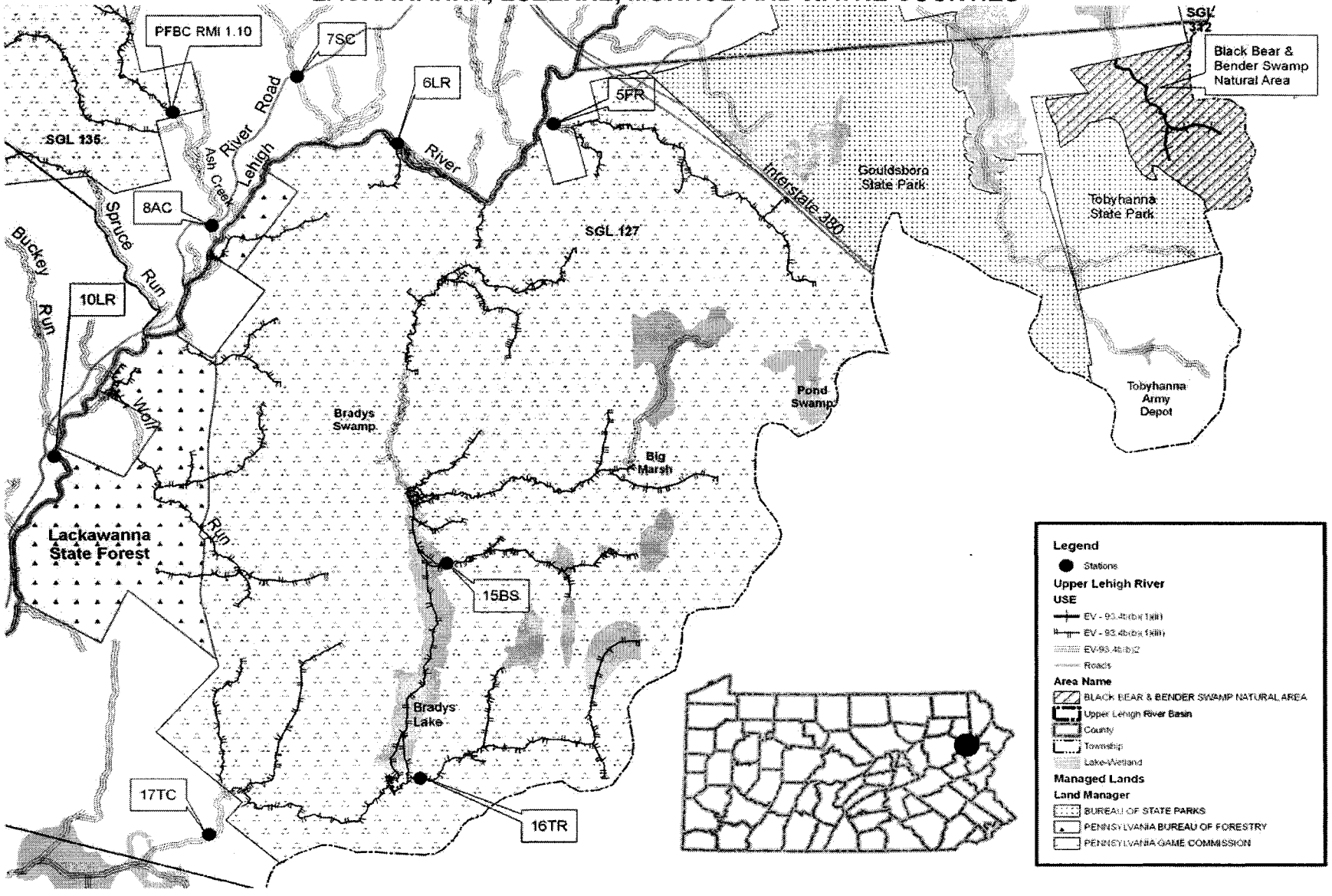

FIGURE 4
LEHIGH RIVER
LACKAWANNA, LUZERNE, MONROE AND WAYNE COUNTIES

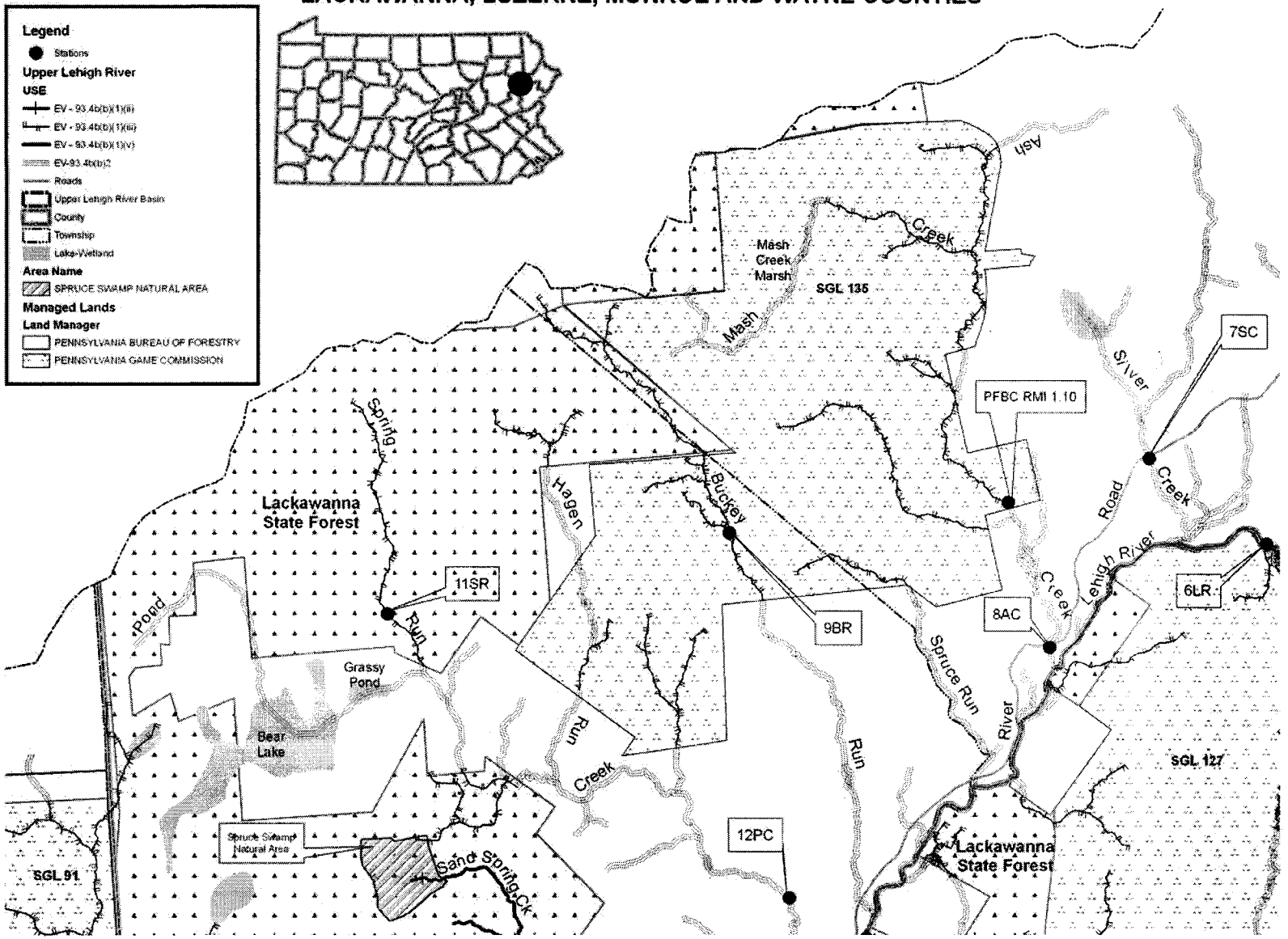

FIGURE 5
LEHIGH RIVER
LACKAWANNA, LUZERNE, MONROE AND WAYNE COUNTIES

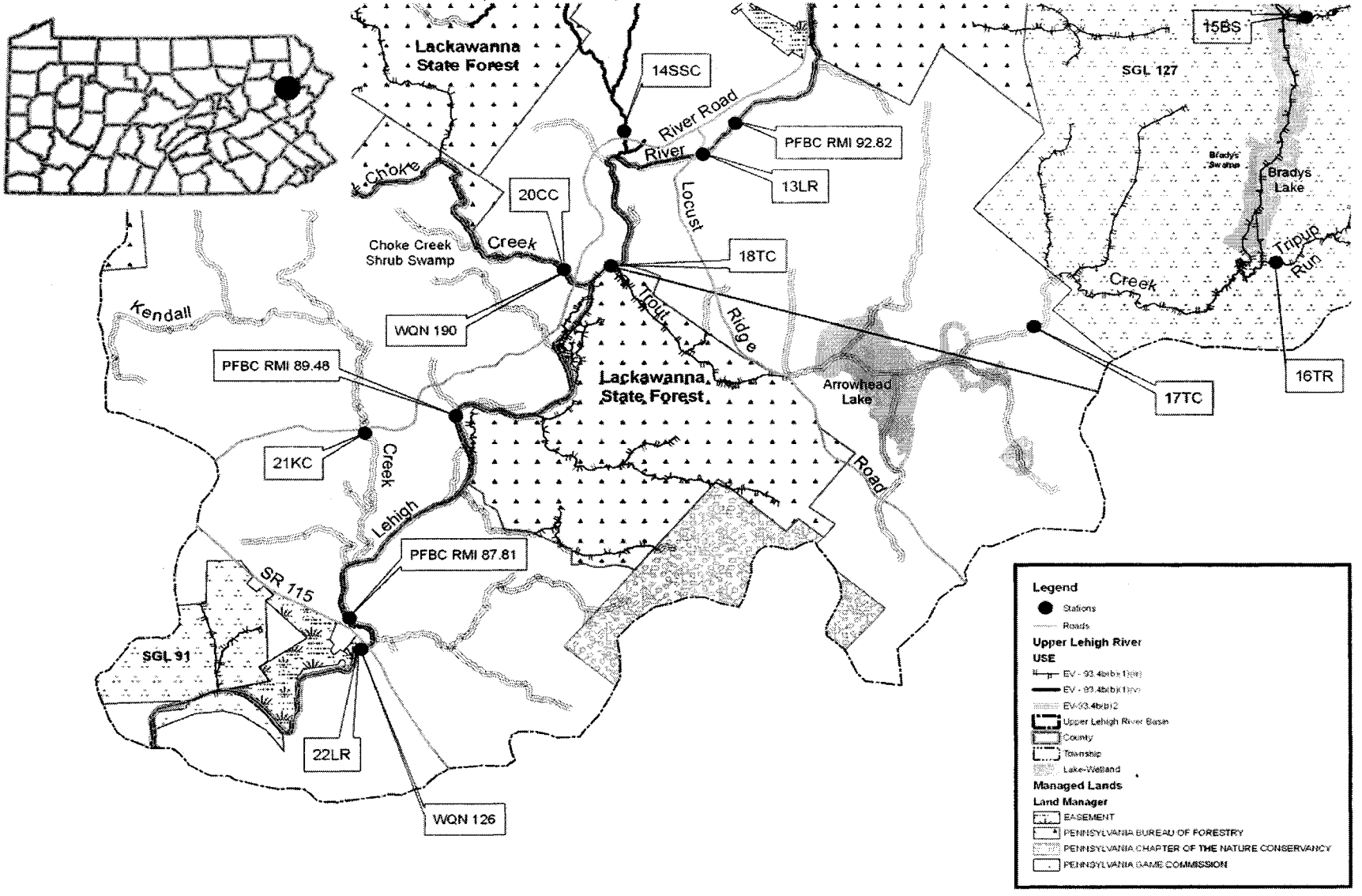

FIGURE 6
LEHIGH RIVER
LACKAWANNA, LUZERNE, MONROE AND WAYNE COUNTIES

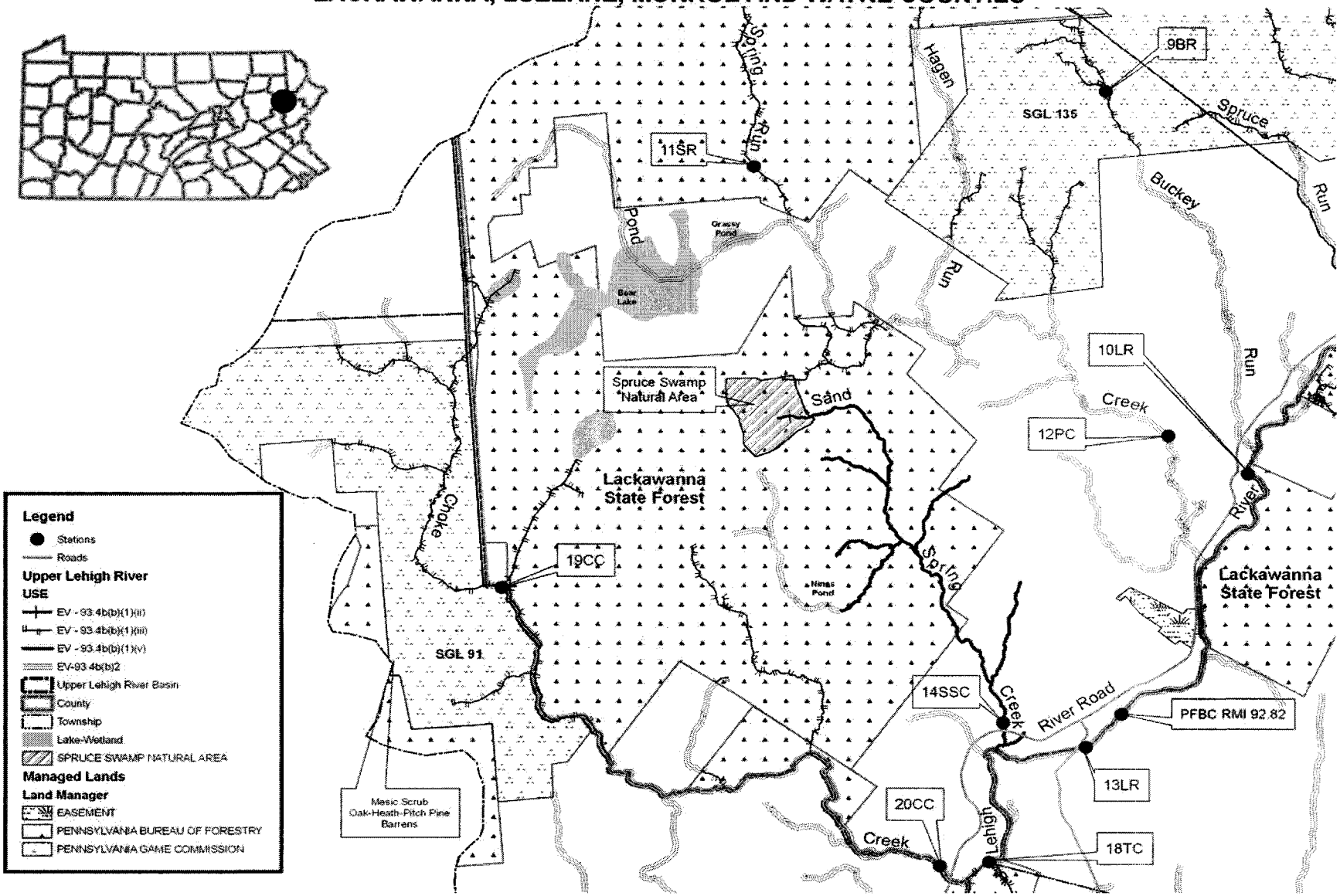

TABLE 1
STATION LOCATIONS
LEHIGH RIVER
LACKAWANNA, LUZERNE, MONROE AND WAYNE COUNTIES

STATION	LOCATION
1LR	Upstream of private road. Lehigh Township, Wayne County Stream Code 03335 Lat: 41 15 31 Long: 75 25 03 RMI: 105.98
2UNT	Downstream of SR3001 approximately 150 meters. Lehigh Township, Wayne County Stream Code 04615 Lat: 41 14 28 Long: 75 26 50 RMI: 0.10
3LR	Upstream of T301/T308 approximately 50 meters. Lehigh Township, Wayne County Stream Code 03335 Lat: 41 14 45 Long: 75 29 04 RMI: 101.28
4TMC	Upstream of SR0435 approximately 25 meters. Clifton Township, Lackawanna County Stream Code 04603 Lat: 41 14 49 Long: 75 30 06 RMI: 1.05
5FR	Upstream of T597 approximately 15 meters. Coolbaugh Township, Monroe County Stream Code 04599 Lat: 41 13 36 Long: 75 30 30 RMI: 0.09
6LR	Upstream of unnamed tributary 04591 approximately 40 meters, in State Game Lands (SGL) 127. Coolbaugh Township, Monroe County Stream Code 03335 Lat: 41 13 31 Long: 75 31 38 RMI: 97.45
7SC	Upstream of SR2013 approximately 20 meters. Clifton Township, Lackawanna County Stream Code 04587 Lat: 41 13 56 Long: 75 32 23 RMI: 0.59
8AC	Upstream of SR2013 approximately 20 meters. Clifton Township, Lackawanna County Stream Code 04578 Lat: 41 13 04 Long: 75 33 03 RMI: 0.13
9BR	Upstream of road in SGL 135 approximately 20 meters. Lehigh Township, Lackawanna County Stream Code 04564 Lat: 41 13 38 Long: 75 35 02 RMI: 2.44

10LR Upstream of Pond Creek approximately 1200 meters.
Lehigh Township, Lackawanna County
Stream Code 03335
Lat: 41 11 42 Long: 75 34 14 RMI: 93.67

11SR Upstream of SR2016 approximately 930 meters in Lackawanna State Forest.
Lehigh Township, Lackawanna County
Stream Code 04563
Lat: 41 13 17 Long: 75 37 12 RMI: 0.4563

12PC Downstream of T301 approximately 25 meters.
Lehigh Township, Lackawanna County
Stream Code 04541
Lat: 41 10 29 Long: 75 35 48 RMI: 0.20

13LR Upstream of SR4003 approximately 20 meters.
Coolbaugh Township, Monroe County
Stream Code 03335
Lat: 41 10 21 Long: 75 35 17 RMI: 91.47

14SSC Upstream of SR2013 approximately 40 meters.
Lehigh Township, Lackawanna County
Stream Code 04515
Lat: 41 09 43 Long: 75 36 10 RMI: 0.14

15BS Upstream of Brady's Lake approximately 75 meters in SGL 127.
Coolbaugh Township, Monroe County
Stream Code 04535
Lat: 41 10 59 Long: 75 31 22 RMI: 0.15

16TR Upstream of game lands road in SGL 127 approximately 30 meters.
Coolbaugh Township, Monroe County
Stream Code 04534
Lat: 41 09 43 Long: 75 31 38 RMI: 0.28

17TC Upstream of Lake Shore Drive (private road) approximately 150 meters.
Coolbaugh Township, Monroe County
Stream Code 04526
Lat: 41 09 24 Long: 75 33 12 RMI: 2.82

18TC Upstream of confluence with Lehigh River approximately 10 meters,
Tobyhanna Township, Monroe County
Stream Code 04526
Lat: 41 09 46 Long: 75 35 52 RMI: 0.02

19CC Upstream of unnamed tributary 04521 approximately 25 meters.
Buck Township, Luzerne County
Stream Code 04515
Lat: 41 11 13 Long: 75 38 51 RMI: 4.23

20CC Upstream of SR2013/SR2040 approximately 20 meters.
Buck Township, Luzerne County
Stream Code 04515
Lat: 41 09 43 Long: 75 36 11 RMI: 0.13

21KC Downstream of SR2040 approximately 40 meters.
Buck Township, Luzerne County
Stream Code 04500
Lat: 41 08 55 Long: 75 37 32 RMI: 0.92

22LR Downstream of SR0115 approximately 50 meters.
Buck Township, Luzerne County
Stream Code 03335
Lat: 41 07 49 Long: 75 37 35 RMI: 86.56

LR= Lehigh River KC= Kendall Creek CC= Choke Creek TC= Trout Creek SSC= Sand Spring Creek
SR= Spring Run PC= Pond Creek BR= Buckey Run AC= Ash Creek FR = Fritz Run
TMC= Tamarack Creek UNT=Unnamed Tributary

TABLE 2
WATER CHEMISTRY
LEHIGH RIVER
WQN 126 & 190
LUZERNE AND MONROE COUNTIES

	WQN 126[1]	WQN 190[1]
Period of Record	**Oct 1998 to May 2005**	**Sept 1998 to Jan 2005**
Parameters	**Range[2]**	**Range[2]**
	Field	
Temperature ^{O}C	0 – 25	0 – 21.7
Dissolved Oxygen	8.2 – 15.28	7.7 – 18.66
	Laboratory	
pH	5.1 – 7.0	4.5-6.3
Acidity as $CaCO_3$	0 – 36	0 – 36
Alkalinity as $CaCO_3$	4.0 – 15.8	0 – 3.6
Hardness	12.0 – 25.4	0 – 9.26
T. Diss. Sol.	18 – 244	<2 – 430
Susp. Sol.	<2 – 58	<2 – 70
NH_3-N	<0.02 – 0.197	<0.02 – 0.52
NO_2-N	0.01 – 0.04	<0.04 – 0.07
NO_3-N	0.06 – 0.33	<0.01
Total P	<0.01 – 0.062	<0.01 – 0.36
Ca	3.51 – 7.63	<0.03 – 20.7
Mg	0.484 – 1.53	<0.01 – 9.95
SO_4	4.7 – 8.8	<1 – 7.23
Cu (total/dissolved)*	<4.0 – 34.1 / <4.0 – 4.3	<4 – 4.6 / <4 – 5.3
Fe (total/dissolved)*	45 – 456 / 28 – 194	<20 – 422 / <20 – 239
Pb (total/dissolved)*	<1.0 – 1.1 / <1.0 – 1.0	<1 / <1 – 1
Mn (total/dissolved)*	12.8 – 236 / 7.9 – 124	<2 – 152 / <2 – 142
Ni (total/dissolved)*	<4 – 4 / 4 – 36.908	<4 – 6.5 / <4
Zn (total/dissolved)*	<5 – 23.5 / <5 – 16.9	<5 – 32.5 / <5 – 30.4
Al (total/dissolved)*	17.9-272 / 17 – 135	<10 – 313 / <10 – 250

[1] Refer to Figure 1 and Table 1 for station locations
[2] Except for pH & conductance and indicated otherwise, all values are total concentrations in mg/l
* Concentrations in µg/l

TABLE 2A
WATER CHEMISTRY
LEHIGH RIVER
LACKAWANNA, LUZERNE, MONROE AND WAYNE COUNTIES
APRIL and MAY 2003

	STATIONS[1]												
	1LR Apr-03	2UNT Apr-03	3LR Apr-03	4TMC Apr-03	5FR Apr-03	6LR Apr-03	7SC Apr-03	8AC Apr-03	9BR Apr-03	10LR Apr-03	11SR Apr-03	12PC Apr-03	13LR Apr-03
Field Parameters													
Temp (°C)	NA	NA	9.3	9.44	NA	8.28	6.66	6.66	8.88	7.96	7.22	8.88	8.13
pH	NA	NA	5.73	6.48	NA	6.01	5.85	5.5	4.02	6.2	3.76	4.14	6.02
Cond (µS/cm)	NA	NA	70	76	NA	110	65	33	19	80	19	52	90

TABLE 2A (CONTINUED)

	STATIONS[1]									REFERENCE STATIONS		
	14SSC Apr-03	15BS Apr-03	16TR Apr-03	17TC Apr-03	18TC May-03	19CC May-03	20CC Apr-03	21KC Apr-03	22LR Apr-03	1KCR[2] Apr-03	1SWC[3] Apr-03	1DMB[4] Apr-03
Field Parameters												
Temp (°C)	10.6	10.2	NA	NA	14.8	9.45	7.77	6.66	10.2	10	NA	9.98
pH	5.88	3.82	NA	NA	6.19	NA	4.14	3.9	6.19	5.85	NA	5.31
Cond (µS/cm)	32	24	NA	NA	65	37	33	33	70	48	NA	20

[1] Refer to Figure 1 and Table 1 for station locations
[2]Kettle Creek, Clinton County
[3]Saw Kill Creek, Pike County
[4]Dimmick Meadow Brook, Pike County
NA = Not Available

TABLE 3
HABITAT ASSESSMENT SUMMARY
LEHIGH RIVER
LACKAWANNA, LUZERNE, MONROE AND WAYNE COUNTIES
APRIL and MAY 2003

HABITAT PARAMETER	STATIONS[1]												
	1LR Apr-03	2UNT Apr-03	3LR Apr-03	4TMC Apr-03	5FR Apr-03	6LR Apr-03	7SC Apr-03	8AC Apr-03	9BR Apr-03	10LR Apr-03	11SR Apr-03	12PC Apr-03	13LR Apr-03
1. instream cover	17	16	17	16	18	18	18	15	19	16	19	18	19
2. epifaunal substrate	19	19	18	14	18	18	19	18	18	18	16	16	19
3. embeddedness	16	16	11	15	18	12	19	16	19	15	19	18	15
4. velocity/depth	10	10	15	13	10	18	18	15	19	19	17	18	18
5. channel alterations	20	15	19	19	15	20	19	19	20	19	19	7	17
6. sediment deposition	11	18	19	16	18	18	19	19	20	17	19	18	18
7. riffle frequency	9	18	18	16	17	20	19	16	19	16	19	16	17
8. channel flow status	20	20	20	18	19	20	19	19	19	20	19	18	20
9. bank condition	18	19	19	16	16	18	17	19	19	18	19	13	19
10. bank vegetative protection	18	18	16	16	17	19	18	18	19	16	19	13	17
11. grazing/disruptive pressures	20	15	17	15	16	19	19	18	20	18	19	10	18
12. riparian vegetation zone width	20	13	15	12	14	16	18	16	20	18	19	7	17
Total Score	198	197	204	186	196	216	222	208	231	210	223	172	214
Rating[2]	OPT	OPT	OPT	SUB	OPT	OPT	OPT	OPT	OPT	OPT	OPT	SUB	OPT

[1] Refer to Figure 1 and Table 1 for the station locations
[2] OPT=Optimal; SUB=Suboptimal;

TABLE 3. (CONTINUED)
HABITAT ASSESSMENT SUMMARY
LEHIGH RIVER
LACKAWANNA, LUZERNE, MONROE AND WAYNE COUNTIES
APRIL 14, 15, and MAY 5, 2003

HABITAT PARAMETER	STATIONS[1]									REFERENCE STATIONS		
	14SSC Apr-03	15BS Apr-03	16TR Apr-03	17TC Apr-03	18TC May-03	19CC May-03	20CC Apr-03	21KC Apr-03	22LR Apr-03	1KCR[2] Apr-03	1SWC[3] Apr-03	1DMB[4] Apr-03
1. instream cover	15	19	18	13	18	16	16	18	16	18	19	19
2. epifaunal substrate	16	16	18	14	19	18	18	19	18	20	19	19
3. embeddedness	13	17	16	13	15	16	18	19	16	19	18	16
4. velocity/depth	16	10	15	13	15	18	18	17	17	17	19	19
5. channel alterations	18	20	18	20	20	20	18	19	15	18	20	20
6. sediment deposition	15	20	19	18	20	18	19	17	18	16	19	18
7. riffle frequency	17	20	18	12	19	20	18	19	17	19	19	18
8. channel flow status	19	20	19	20	20	20	18	19	20	20	20	20
9. bank condition	18	20	19	18	19	18	16	18	16	15	19	18
10. bank vegetative protection	19	20	20	19	19	19	16	19	17	16	18	19
11. grazing/disruptive pressures	18	20	19	20	20	20	16	19	17	16	20	20
12. riparian vegetation zone width	19	20	19	18	20	20	15	19	16	14	20	20
Total Score	203	222	218	198	224	223	206	222	203	208	230	226
Rating[5]	OPT	OPT	OPT	OPT	OPT	OPT	OPT	OPT	OPT	OPT	OPT	OPT

[1] Refer to Figure 1 and Table 1 for station locations
[2]Kettle Creek, Clinton County
[3]Saw Kill Creek, Pike County
[4]Dimmick Meadow Brook, Pike County
[5] OPT=Optimal; SUB=Suboptimal;

TABLE 4
BENTHIC MACROINVERTEBRATE TAXA LIST
LEHIGH RIVER
LACKAWANNA, LUZERNE, MONROE AND WAYNE COUNTIES
APRIL and MAY 2003

TAXA	STATION[1]												
	1LR Apr-03	2UNT Apr-03	3LR Apr-03	4TMC Apr-03	5FR Apr-03	6LR Apr-03	7SC Apr-03	8AC Apr-03	9BR Apr-03	10LR Apr-03	11SR Apr-03	12PC Apr-03	13LR Apr-03
Ephemeroptera (mayflies)													
Ameletus; ***Ameletus***													
Baetidae;	1		1										
Acentrella						7							
Acerpenna								2	2			3	1
Baetis							4		2				
Caenidae; ***Caenis***				6									
Ephemeridae; ***Ephemera***				2									
Ephemerellidae;	3												
Attenella										10			
Drunella			7			49		12		16			6
Ephemerella	6	7	3			4	20	26		6		3	26
Eurylophella	8		1			1		4	3	11	10	22	
Serratella			1	7		7	2	7		12			1
Timpanoga													3
Heptageniidae;												1	
Epeorus						7	3	3		3			3
Cinygmula													
Heptagenia						1							
Leucrocuta													
Stenacron						1							1
Stenonema	3					5			5	3			1
Isonychiidae; ***Isonychia***													
Leptophlebiidae	2											1	4
Choroterpes							10						
Leptophlebia													

TAXA	STATION[1]												
	1LR Apr-03	2UNT Apr-03	3LR Apr-03	4TMC Apr-03	5FR Apr-03	6LR Apr-03	7SC Apr-03	8AC Apr-03	9BR Apr-03	10LR Apr-03	11SR Apr-03	12PC Apr-03	13LR Apr-03
Habrophlebia								1	1				
Habrophlebiodes								1					
Paraleptophlebia								21		3		2	2
Plecoptera (stoneflies)													
Capniidae				2									
Chloroperlidae;					1								
Sweltsa													
Suwallia												2	
Leuctridae; ***Leuctra***	6				27		3		4		1	7	
Nemouridae	1												
Amphinemura	1			10	30	1			14		19	1	
Nemoura												1	
Prostoia			4										
Shipsa						1							
Perlidae;							1						
Acroneuria		2	1	1	2	3	1	3	1	3		3	5
Agnetina													3
Paragnetina													
Perlesta													1
Perlodidae;													1
Helopicus													
Isoperla	1					1		1	4				2
Isogenoides						1							
Peltoperlidae; ***Tallaperla***									1				
Pteronarcyidae; ***Pteronarcys***													
Taeniopterygidae; ***Oemopteryx***													
Strophopteryx													
Trichoptera (caddisflies)													
Brachycentridae; ***Micrasema***					2					1			3
Glossosomatidae; ***Glossosoma***													
Helicopsychidae; ***Helicopsyche***													

TAXA	STATION[1]												
	1LR Apr-03	2UNT Apr-03	3LR Apr-03	4TMC Apr-03	5FR Apr-03	6LR Apr-03	7SC Apr-03	8AC Apr-03	9BR Apr-03	10LR Apr-03	11SR Apr-03	12PC Apr-03	13LR Apr-03
Hydropsychidae;													1
Cheumatopsyche	2	3	12	6		9	3	2		9	5	1	11
Diplectrona	5				1		6		2			1	
Hydropsyche		1	5	1		4	3	5	1	5		4	15
Hydroptilidae; ***Hydroptila***					1	1			5		6		
Palaeagapetus													
Oxyethira				1					2				
Stactobiella						1							
Leptoceridae;										1			
Ceraclea	1												
Oecetis		1											
Setodes													1
Lepidostomatidae; ***Lepidostoma***					1				1		4	1	
Limnephilidae;											1		
Goera								1					
Pycnopsyche			1									1	
Odontoceridae; ***Psilotreta***										1			
Philopotamidae										1			
Chimarra		1	7	2		1		2		6			
Dolophilodes									1				
Polycentropodidae; ***Polycentropus***													
Psychomyiidae; ***Lype***							1						
Rhyacophilidae; ***Rhyacophila***	1				2	4	2		1	1	2	3	6
Uenoidae; ***Neophylax***					4					1	3		
Other Insect Taxa													
LEPIDOPTERA; ***Langessa***													
DIPTERA (true flies)													
Athericidae; ***Atherix***													
Ceratopogonidae	1												
Alluaudomyia													1
Bezzia				2				3					
Chironomidae	47	43	44	85	21	63	78	93	42	51	11	81	53

TAXA	STATION[1]												
	1LR Apr-03	2UNT Apr-03	3LR Apr-03	4TMC Apr-03	5FR Apr-03	6LR Apr-03	7SC Apr-03	8AC Apr-03	9BR Apr-03	10LR Apr-03	11SR Apr-03	12PC Apr-03	13LR Apr-03
Empididae;			1	1									
Chelifera					3		1						1
Clinocera	1	1				4				1			
Hemerodromia			1	4		1		5	1				1
Psychodidae, ***Psychoda***								1					
Simuliidae; ***Cnephia***				10									
Prosimulium	13	68	104	5	75	5	40	3	87	58	111	54	2
Simulium	37	12	1		2			8	43		20	1	
Stegopterna				8	2				4				
Tabanidae	1												
Chrysops													
Tipulidae; ***Antocha***			2			3	1			1		1	8
Dicranota	1	1		1								2	
Erioptera									1				
Hexatoma							1	7					
Limnophila	1												
Pilaria													
Pseudolimnophila									1				
Tipula													
MEGALOPTERA													
Corydalidae; ***Corydalus***													
Nigronia	6	9		4	1			1	1				
Sialidae; ***Sialis***													
ODONATA (dragon-, damselflies)													
Aeshnidae; ***Aeshna***													1
Boyeria	2	1	2					1					
Calopterygidae; ***Calopteryx***	2												
Cordulegastridae; ***Cordulegaster***	1											1	
Coenagrionidae; ***Argia***													
Gomphidae;								1		2			2
Arigomphus	1												
Gomphus													

TAXA	STATION[1]												
	1LR Apr-03	2UNT Apr-03	3LR Apr-03	4TMC Apr-03	5FR Apr-03	6LR Apr-03	7SC Apr-03	8AC Apr-03	9BR Apr-03	10LR Apr-03	11SR Apr-03	12PC Apr-03	13LR Apr-03
Lanthus													
Ophiogomphus						1			2				
Stylogomphus		1	1										
COLEOPTERA (aquatic beetles)													
Elmidae; ***Dubiraphia***					1								
Macronychus													
Optioservus	3			1	1	2	1	8			3	1	7
Ordobrevia										1			1
Oulimnius					2					3			
Promoresia	5	1		2	4	2	1	1	4		8	3	6
Stenelmis	4			2			2	4					1
Hydrophilidae; ***Berosus***													1
Psephenidae; ***Ectopria***													
Psephenus		2				6		8		14			3
Ptilodactylidae; ***Anchytarsus***	3												
Non-Insect Taxa													
Turbellaria (flat worms)													
Planariidae		1											
Oligochaeta	5	22	13	8	8	13		5	4	7			18
Nematoda				6									
Nemertea													
Hydracarina				1									
GASTROPODA													
Ancylidae						2							
Ferrissia													
Physidae				1									
Sphaeriidae;						3							1
Sphaerium	34		3	17									
Pisidium										1			
Unionidae		24											
AMPHIPODA													
Talitridae; ***Hyallela***				1									

TAXA	STATION[1]												
	1LR Apr-03	2UNT Apr-03	3LR Apr-03	4TMC Apr-03	5FR Apr-03	6LR Apr-03	7SC Apr-03	8AC Apr-03	9BR Apr-03	10LR Apr-03	11SR Apr-03	12PC Apr-03	13LR Apr-03
ISOPODA													
Asellidae													
DECAPODA													
Cambaridae;													
Cambarus													
Number of taxa in total sample	**33**	**19**	**22**	**28**	**21**	**32**	**21**	**30**	**28**	**28**	**14**	**25**	**37**

[1]Refer to Figure 1 for station location

TABLE 4 (continued)
BENTHIC MACROINVERTEBRATE TAXA LIST
LEHIGH RIVER
LACKAWANNA, LUZERNE, MONROE AND WAYNE COUNTIES
APRIL and MAY 2003

TAXA	STATION[1]									REFERENCE STATIONS		
	14SSC Apr-03	15BS Apr-03	16TR Apr-03	17TC Apr-03	18TC May-03	19CC May-03	20CC Apr-03	21KC Apr-03	26LR Apr-03	1KCR[2] Apr-03	1SWC[3] Apr-03	1DMB[4] Apr-03
Ephemeroptera (mayflies)												
Ameletidae; ***Ameletus***											1	
Baetidae;												
Acentrella					12							
Acerpenna				2			3					
Baetis	5										1	
Caenidae; ***Caenis***				2								
Ephemeridae; ***Ephemera***				1								
Ephemerellidae;												
Attenella												
Drunella	1				10				14	92	1	
Ephemerella	37			6	18				8	5	51	40
Eurylophella		15	4	3	1	6	4	4	8	1	1	1
Serratella	1				2					14	8	
Timpanoga												
Heptageniidae;												
Epeorus	14				1		1			3	2	13
Cinygmula										2		
Heptagenia												
Leucrocuta							1			5		1
Stenacron				1			2				1	
Stenonema					2				3	3	8	
Isonychiidae; ***Isonychia***									1	1	2	
Leptophlebiidae												
Choroterpes												

TAXA	STATION[1]									REFERENCE STATIONS		
	14SSC Apr-03	15BS Apr-03	16TR Apr-03	17TC Apr-03	18TC May-03	19CC May-03	20CC Apr-03	21KC Apr-03	26LR Apr-03	1KCR[2] Apr-03	1SWC[3] Apr-03	1DMB[4] Apr-03
Leptophlebia		1		3								
Habrophlebia												
Habrophlebiodes												
Paraleptophlebia							7				5	5
Plecoptera (stoneflies)												
Capniidae												
Chloroperlidae;	1											
Sweltsa	2				1							2
Suwallia												
Leuctridae; ***Leuctra***	1	10	87	1	6	34	19	3				16
Nemouridae	1						3					
Amphinemura		61	17		1	2					2	7
Nemoura								2				
Prostoia			3							9	1	
Shipsa												
Perlidae;												
Acroneuria				1	4	1	2		1	7	3	1
Agnetina	3											
Paragnetina					1							
Perlesta												
Perlodidae;												
Helopicus										1		
Isoperla	1	1	4	2	1		1				2	1
Isogenoides												
Peltoperlidae; ***Tallaperla***	1	1	6				1				1	
Pteronarcyidae; ***Pteronarcys***										3		3
Taeniopterygidae; ***Oemopteryx***											1	
Strophopteryx											1	
Trichoptera (caddisflies)												
Brachycentridae; ***Micrasema***				1	1						1	

TAXA	STATION[1]									REFERENCE STATIONS		
	14SSC Apr-03	15BS Apr-03	16TR Apr-03	17TC Apr-03	18TC May-03	19CC May-03	20CC Apr-03	21KC Apr-03	26LR Apr-03	1KCR[2] Apr-03	1SWC[3] Apr-03	1DMB[4] Apr-03
Glossosomatidae; ***Glossosoma***									1			
Helicopsychidae; ***Helicopsyche***										3		
Hydropsychidae;												
Cheumatopsyche				3	5				5	1	1	
Diplectrona	1	12	11			1	7	5			1	11
Hydropsyche	2			3	6	1	1	1	4	1	5	
Hydroptilidae; ***Hydroptila***						1	3	17	2			
Palaeagapetus			1									
Oxyethira												
Stactobiella												
Leptoceridae;												
Ceraclea												
Oecetis				1								
Setodes												
Lepidostomatidae; ***Lepidostoma***		9	1				3					1
Limnephilidae;												
Goera												
Pycnopsyche			1	1					1			
Odontoceridae; ***Psilotreta***				1			1					
Philopotamidae;												
Chimarra				7	1	7					1	
Dolophilodes	2										2	
Polycentropodidae; ***Polycentropus***							1					2
Psychomyiidae; ***Lype***												
Rhyacophilidae; ***Rhyacophila***		2	7			4	2	1	2	2	5	2
Uenoidae; ***Neophylax***	1				1					11		
Other Insect Taxa												
LEPIDOPTERA; ***Langessa***										1		
DIPTERA (true flies)												
Athericidae; ***Atherix***	1					1						
Ceratopogonidae		1										1

TAXA	STATION[1]									REFERENCE STATIONS		
	14SSC Apr-03	15BS Apr-03	16TR Apr-03	17TC Apr-03	18TC May-03	19CC May-03	20CC Apr-03	21KC Apr-03	26LR Apr-03	1KCR[2] Apr-03	1SWC[3] Apr-03	1DMB[4] Apr-03
Alluaudomyia												
Bezzia						1						
Chironomidae	8	36	73	53	45	65	60	19	115	9	41	25
Empididae;												
Chelifera					1							
Clinocera									4	1	1	
Hemerodromia		1			1							
Psychodidae, ***Psychoda***												
Simuliidae; ***Cnephia***												
Prosimulium	82	21	1	77		58	51	10	18	4	24	74
Simulium	1	42	10	25	8	14	3	119			1	
Stegopterna												
Tabanidae;												
Chrysops		1						1				
Tipulidae; ***Antocha***					1				6			
Dicranota						1						1
Erioptera												
Hexatoma	1											3
Limnophila	1											
Pilaria				1								
Pseudolimnophila				1								
Tipula			1	1								
MEGALOPTERA												
Corydalidae; ***Corydalus***							1		1			
Nigronia	1	5	4	7	4	4			2	1		1
Sialidae; ***Sialis***				1		1		1		1		
ODONATA (dragon-, damselflies)												
Aeshnidae; ***Aeshna***												
Boyeria		1					1					
Calopterygidae; ***Calopteryx***												
Cordulegastridae; ***Cordulegaster***												

TAXA	STATION[1]									REFERENCE STATIONS		
	14SSC Apr-03	15BS Apr-03	16TR Apr-03	17TC Apr-03	18TC May-03	19CC May-03	20CC Apr-03	21KC Apr-03	26LR Apr-03	1KCR[2] Apr-03	1SWC[3] Apr-03	1DMB[4] Apr-03
Coenagrionidae; ***Argia***									1			
Gomphidae;												
Arigomphus												
Gomphus				1					3			
Lanthus										1		
Ophiogomphus					2				1	1	1	
Stylogomphus				1	5						4	
COLEOPTERA (aquatic beetles)												
Elmidae; ***Dubiraphia***				1								
Macronychus					2							
Optioservus	1						5	1		3		
Ordobrevia												
Oulimnius	2				1	10	2		4		4	1
Promoresia	18			16	1	2	1	9	4		14	2
Stenelmis				1	2				10			
Hydrophilidae; ***Berosus***												
Psephenidae; ***Ectopria***					1						1	
Psephenus					3				2	8	2	2
Ptilodactylidae; ***Anchytarsus***												
Non-Insect Taxa												
Turbellaria (flat worms)												
Planariidae												
Oligochaeta				3	2	1	1		14	1		
Nematoda												
Nemertea									2			
Hydracarina												
GASTROPODA												
Ancylidae;												
Ferrissia					3					1		
Physidae												
Sphaeriidae;					60				5		2	1

TAXA	STATION[1]									REFERENCE STATIONS		
	14SSC Apr-03	15BS Apr-03	16TR Apr-03	17TC Apr-03	18TC May-03	19CC May-03	20CC Apr-03	21KC Apr-03	26LR Apr-03	1KCR[2] Apr-03	1SWC[3] Apr-03	1DMB[4] Apr-03
Sphaerium												
Pisidium												
Unionidae												
AMPHIPODA												
Talitridae; ***Hyallela***												
ISOPODA												
Asellidae								1				
DECAPODA												
Cambaridae;							1					
Cambarus										1		
Number of taxa in total sample	**26**	**17**	**16**	**31**	**35**	**20**	**28**	**15**	**27**	**31**	**36**	**25**

[1]Refer to Figure 1 for station location
[2]Kettle Creek, Clinton County
[3]Saw Kill Creek, Pike County
[4]Dimmick Meadow Brook, Pike County

TABLE 5
FISHES
LEHIGH RIVER
LACKAWANNA, LUZERNE, MONROE AND WAYNE COUNTIES

SPECIES NAME	STATION[1]											
	Ash Creek RMI 1.10									Lehigh River		
	Aug 1976	June 1983	July 1985	Oct 1991	June 1992	July 1998	July 1999	June 2000	June 2001	RMI 87.81 July 1997	RMI 89.48 July 1997	RMI 92.82 July 1997
Brown Trout, ***Salmo trutta***	X	X	X	X	X	X	X	X	X	X	X	X
Brook Trout, ***Salvelinus fontinalis***	X	X	X	X	X	X	X	X	X		X	X
Rainbow Trout, ***Oncorhynchus mykiss***												X
White Sucker, ***Catastomus commersoni***						X				X	X	X
Cutlips Minnow, ***Exoglossum maxillingua***						X				X	X	X
Common Shiner, ***Luxilus cornutus***										X	X	X
Golden Shiner, ***Notemigonus crysoleucas***	X											
Blacknose Dace, ***Rhinichthys atratulus***		X	X			X	X			X	X	X
Longnose Dace, ***R. cataractae***		X	X			X				X	X	X
Margined Madtom, ***Noturus insignis***										X	X	X
Largemouth Bass, ***Micropterus salmoides***												X
Pumpkinseed, ***Lepomis gibbosus***											X	X
Bluegill, ***L. macrochirus***											X	
Tessellated Darter, ***Etheostoma olmstedi***						X				X	X	X
TOTAL TAXA	**3**	**4**	**4**	**2**	**2**	**7**	**3**	**2**	**2**	**8**	**11**	**12**

[1] X = Present but abundance not recorded

TABLE 6
RBP METRIC COMPARISON
LEHIGH RIVER
LACKAWANNA, LUZERNE, MONROE AND WAYNE COUNTIES
APRIL and MAY 2003

METRIC	STATION												
	1LR Apr-03	2UNT Apr-03	3LR Apr-03	4TMC Apr-03	5FR Apr-03	6LR Apr-03	7SC Apr-03	8AC Apr-03	9BR Apr-03	10LR Apr-03	11SR Apr-03	12PC Apr-03	13LR Apr-03
1. TAXA RICHNESS	33	19	22	28	21	32	21	30	28	28	14	25	37
Cand/Ref (%)	132.0	76.0	88.0	112.0	84.0	88.9	84.0	120.0	100.0	77.8	56.0	100.0	119.4
Biol. Cond. Score	8	6	8	8	8	8	8	8	8	7	0	8	8
2. MOD. EPT INDEX	12	3	8	7	9	17	10	11	13	16	7	14	17
Cand/Ref (%)	85.71	21.43	57.14	50.0	64.29	77.27	71.43	78.75	92.86	72.73	50.0	100.0	106.25
Biol. Cond. Score	8	0	2	1	4	7	6	7	8	6	1	8	8
3. MOD. HBI	5.075	4.358	3.82	5.685	2.843	3.977	3.712	4.108	3.846	3.582	3.029	3.828	4.278
Cand-Ref	3.103	2.386	1.848	3.713	0.871	1.135	1.74	2.136	1.874	0.74	1.057	1.856	2.364
Biol. Cond. Score	0	0	0	0	6	3	0	0	0	7	3	0	0
4. % DOMINANT	22.17	33.83	47.93	43.15	39.27	29.44	42.39	38.75	36.25	25	54.41	39.71	25.36
TAXA	-11.93	-0.27	13.83	9.05	5.17	4.32	8.29	4.65	2.15	-0.12	20.31	5.61	-21.34
Cand-Ref	8	8	6	8	8	8	8	8	8	8	2	8	8
Biol. Cond. Score													
5. % MOD. MAYFLIES	10.38	3.483	5.53	4.569	0	9	19.02	30.83	3.75	27.59	4.902	14.22	24.88
Cand-Ref	17.27	24.17	22.12	23.08	27.65	30.41	8.63	-3.18	23.9	11.82	22.75	13.43	39.08
Biol. Cond. Score	6	4	5	5	4	3	8	8	4	8	5	7	0
TOTAL BIOLOGICAL CONDITION SCORE	30	18	21	22	30	29	30	31	28	36	11	31	24
% COMPARABILITY TO REFERENCE	75	45	52.5	55	75	72.5	75	77.5	70	90	27.5	77.5	60

TABLE 6 (continued)
RBP METRIC COMPARISON
LEHIGH RIVER
LACKAWANNA, LUZERNE, MONROE AND WAYNE COUNTIES
APRIL 14, 15, and MAY 5, 2003

METRIC	STATION									REFERENCE STATIONS		
	14SSC Apr-03	15BS Apr-03	16TR Apr-03	17TC Apr-03	18TC May-03	19CC May-03	20CC Apr-03	21KC Apr-03	22LR Apr-03	1KCR[1] Apr-03	1SWC[2] Apr-03	1DMB[3] Apr-03
1. TAXA RICHNESS	26	17	16	31	35	20	28	15	27	31	36	25
Cand/Ref (%)	104.0	68.0	64.0	124.0	97.2	80.0	112.0	60.0	87.1			
Biol. Cond. Score	8	3	2	8	8	7	8	1	8	8	8	8
2. MOD. EPT INDEX	14	9	11	12	16	7	14	5	9	16	22	14
Cand/Ref (%) Biol.	100.0	64.3	78.6	85.7	72.7	50.0	100.0	35.71	56.25			
Cond. Score	8	4	7	8	6	1	8	0	2	8	8	8
3. MOD. HBI	1.947	3.641	2.623	3.846	5.032	3.498	3.33	5.242	4.992	1.914	2.842	1.972
Cand-Ref	-0.025	1.669	0.651	1.874	2.19	1.526	1.358	3.27	3.078			
Biol. Cond. Score	8	0	8	0	0	0	0	0	0	8	8	8
4. % DOMINANT TAXA	43.16	27.73	37.66	33.77	27.78	30.23	31.91	61.34	47.92	46.7	25.12	34.1
Cand-Ref	9.06	-6.37	3.56	-0.33	2.66	-3.87	-2.19	27.24	1.22			
Biol. Cond. Score	8	8	8	8	8	8	8	0	8	8	8	8
5. % MOD. MAYFLIES	27.89	7.273	1.732	6.14	21.3	2.791	7.979	2.062	14.17	63.96	39.41	27.65
Cand-Ref	-0.24	20.38	25.92	21.51	18.11	24.86	19.67	25.59	49.79			
Biol. Cond. Score	8	5	4	5	6	4	6	4	0	8	8	8
TOTAL BIOLOGICAL CONDITION SCORE	40	20	29	29	28	20	30	5	18	40	40	40
% COMPARABILITY TO REFERENCE	100	50	72.5	72.5	70	50	75	12.5	45			

[1] Kettle Creek, Clinton County
[2] Saw Kill Creek, Pike County
[3] Dimmick Meadow Brook

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION
POLICY OFFICE

June 16, 2011

Ms. Fiona E. Wilmarth
Acting Executive Director
Independent Regulatory Review Commission
14th Floor
333 Market Street
Harrisburg, PA 17120

Re: Final-Form Rulemaking – Clarks Creek, et al Stream Redesignations (#7-438)
Final-Form Rulemaking – Fishing Creek, et al Stream Redesignations (#7-461)
Final-Form Rulemaking – Nonattainment New Source Review (#7-450)
Final-Form Rulemaking – Unsuitable for Surface Mining (Muddy Run) (#7-456)

Dear Ms. Wilmarth:

Pursuant to Section 5.1(a) of the Regulatory Review Act, please find enclosed copies of four final-form rulemakings for review and comment by the Independent Regulatory Review Commission (Commission). The Environmental Quality Board (EQB) approved these final-form rulemakings at its May 18, 2011, meeting.

The **Clarks Creek, et al Stream Redesignations** final rulemaking was initiated by the Department of Environmental Protection (Department) as a part of its on-going review of water quality standards. Studies in support of the recommendations contained in the rulemaking were conducted in response to four rulemaking petitions, as well as requests from the Department's Southcentral Regional Office (SCRO) and the Pennsylvania Fish and Boat Commission (PFBC). The rulemaking also includes a corrective amendment initiated by the Department's Bureau of Water Standards and Facility Regulation (BWSFR). The rulemaking package includes as follows:

Pine Creek (Schuylkill County) – Petition: Friends of Pine Creek
Cacoosing Creek (Berks County) – Request: SCRO
UNT 00926 to Schuylkill River; *locally Spring Mill Run* (Montgomery County) – Petition: Steven S. Brown, (Chairman; Whitemarsh Twp Environmental Advisory Board)
UNT 28600 to Lackawanna River; *locally Clarks Creek* (Wayne County) – Petition: Glen Abello
UNT 07792 to Conestoga River (Lancaster County) – Request: PFBC
Hammer Creek (Lebanon and Lancaster Counties) – Petition: Heidelberg Township
Toms Run (Clarion and Forest Counties) – Correction: BWSFR

The regulatory changes included in this rulemaking, which impact 43.89 stream miles, were developed as a result of aquatic studies conducted by the Department's Bureau of Water Standards and Facility Regulation. The physical, chemical, and biological characteristics and other information on these waterbodies were evaluated to determine the appropriateness of the

current and requested designations using applicable regulatory criteria and definitions. In reviewing whether waterbodies qualify as High Quality (HQ) or Exceptional Value (EV) waters, the Department considered the criteria in § 93.4b (relating to qualifying as HQ or EV Waters). Based on these data and appropriate regulatory criteria, the Department is proposing revisions to 25 *Pa. Code*, Sections 93.9f, 93.9j, 93.9o and 93.9r, as included in the final rulemaking.

The rulemaking was adopted as proposed by the EQB on February 16, 2010, and advertised for a 45-day public comment period in the *Pennsylvania Bulletin* on April 24, 2010 (40 *Pa.B.* 2122). During the comment period, 10 commentators provided comments to the EQB, a majority of which largely opposed the redesignation of a portion of Hammer Creek from HQ-Cold Water Fishes (CWF), Migratory Fishes (MF) to CWF, MF. The Independent Regulatory Review Commission (IRRC) also reviewed the proposed rulemaking, but did not raise any comments, recommendations or objections to the proposed rulemaking and noted that the rulemaking would be deemed approved if the regulation is not amended and is retained in its proposed form. Although comments were addressed by the Department in the Comment and Response Document, no changes were made to the final rulemaking from its proposed version.

The **Fishing Creek, et al Stream Redesignations** final rulemaking package was initiated by the Department in response to petitions submitted to the EQB as follows: Buck Hill Creek (Monroe County) - Buck Hill Conservation Foundation; Upper Lehigh River (Lackawanna, Monroe, Wayne and Luzerne Counties) - North Pocono Citizens Alert Regarding the Environment (CARE); Little Lehigh Creek (Lehigh and Berks Counties) – Mid-Atlantic Environmental Law Center; Gallows Run (Bucks County) – Gallows Run Watershed Association; French Creek and Beaver Run (Chester County) – Green Valleys Association; Tannery Hollow Run (Cameron County) – Cameron County Conservation District; Fishing Creek (Lancaster County) – Patrick McClure; and Deer Creek and Little Falls (York County) – Shrewsbury Township. If finalized as proposed, this final rulemaking will redesignate 251.35 stream miles in this Commonwealth to EV status.

The regulatory amendments included in the rulemaking were developed in response to aquatic studies conducted by the Department's Bureau of Water Standards and Facility Regulation. The physical, chemical, and biological characteristics and other information on these waterbodies were evaluated to determine the appropriateness of the current and requested designations using applicable regulatory criteria and definitions. In reviewing whether waterbodies qualify as HQ or EV waters, the Department considered the criteria in § 93.4b (relating to qualifying as HQ or EV Waters). Based on supporting data and appropriate regulatory criteria, the Department is proposing revisions to 25 *Pa. Code*, Sections 93.9c, 93.9d, 93.9f, 93.9l and 93.9o as set forth in the final rulemaking.

The proposed rulemaking was adopted by the EQB at its July 13, 2010, meeting. The proposed rulemaking was published in the *Pennsylvania Bulletin* on September 18, 2010, (40 *Pa.B.* 5337), where a 45-day public comment period was advertised. During the official comment period, 163 commentators submitted comments to the EQB on the rulemaking, including 162 commentators who provided their strong support of the redesignation of a portion of the French Creek basin to EV status. In addition, the U.S. Environmental Protection Agency (EPA) Region 3 submitted comments in which it commended the Department on its continuing efforts to upgrade streams

into its highest level of the Special Protection Waters Program. IRRC also reviewed the proposed rulemaking but did not raise any comments, recommendations or objections to the proposed rulemaking and noted that the rulemaking would be deemed approved if the regulation is not amended and is retained in its proposed form. Although comments were addressed by the Department in the Comment and Response Document, no changes were made to the final rulemaking from its proposed version.

The **Nonattainment New Source Review for $PM_{2.5}$** final rulemaking includes amendments to existing nonattainment New Source Review (NSR) requirements at 25 *Pa Code* Chapters 121 and 127 in order to incorporate recently promulgated Federal requirements for $PM_{2.5}$ and $PM_{2.5}$ precursors. The amendments would limit the emissions of $PM_{2.5}$ and $PM_{2.5}$ precursors, including SO_2 and NOx precursor emissions, from new major air contamination sources or major air contamination sources being modified in areas of the Commonwealth that are designated as nonattainment for the $PM_{2.5}$ National Ambient Air Quality Standard (NAAQS). There are approximately 887 major facilities in Pennsylvania that may be subject to the existing NSR rules if major modifications to those facilities are proposed. This final rulemaking is reasonably required to attain and maintain the 1997 annual and 2006 24-hour $PM_{2.5}$ NAAQS. The final-form regulation, if published in the *Pennsylvania Bulletin* as final rulemaking, will be submitted to the EPA as a revision to the Commonwealth's State Implementation Plan (SIP).

The EQB approved the proposed rulemaking at its November 17, 2009, meeting. The rulemaking was published in the *Pennsylvania Bulletin* on February 6, 2010, at 40 *Pa B.* 703, for a 60-day public comment period. Three public hearings on the proposal were held in Pittsburgh, Norristown and Harrisburg. The EQB received comments from 8 commentators, a majority of which provided comments relating to the inclusion of fugitive emissions of certain pollutants, including $PM_{2.5}$, from all sources when determining whether a facility is defined as a "major facility" under § 121.1 and the treatment of projected actual emissions related to a project. Although these provisions are more stringent than Federal regulations, they are existing provisions previously promulgated by the EQB, which the EQB determined are reasonably necessary to achieve or maintain the $PM_{2.5}$ NAAQS; therefore, no changes were made to the final rulemaking based on the specific comments. At final rulemaking, interpollutant trading ratios for $PM_{2.5}$ and $PM_{2.5}$ precursors were removed from the rulemaking. EPA is reconsidering its interpollutant trading approach, which the Department had incorporated in the proposed rulemaking, and will not approve the SO_2 and NO_x interpollutant trading ratios as a SIP revision. The amended provision in the final rulemaking allows the Department, based on a technical assessment, to establish interpollutant trading ratios for offsetting $PM_{2.5}$ emissions or $PM_{2.5}$ precursor emissions in a specific nonattainment area or geographic area in the state. The Department must provide a public comment period for at least 30 days prior to submitting the ratios to the EPA for approval as a SIP revision.

The Department consulted with the Air Quality Technical Advisory Committee (AQTAC) in the development of this rulemaking, as well as the Department's Citizens Advisory Council (CAC). On September 15, 2010, and October 18, 2010, AQTAC and the CAC, respectively, concurred with the Department's recommendation to move the final-form rulemaking forward to the EQB.

The **Unsuitable for Surface Mining (Muddy Run)** final rulemaking was initiated in response to a rulemaking petition submitted to the Department by the Read Township Municipal Authority (RTMA) under 25 *Pa Code,* Chapter 86. The petitioner requested that approximately 3,200 acres of the Muddy Run watershed be designated as "unsuitable for mining". RTMA's purpose for pursuing the petition was the protection of public water supply wells from potential, adverse mining-related impacts. Pursuant to receipt of the complete petition, the Department initiated a technical study of the petition area, including water sampling and site reconnaissance and notified potentially interested parties about the petition and the Department's technical study of the area. Interested parties were invited to provide comments to the Department, as well as provide testimony at a public hearing.

As a result of the technical study of the petition, the Department determined that there is a presence of high sulfur zones, with little or no alkaline strata, in the petition area and that there is a very significant potential for the production of acid mine water from surface mining of coal in the petition area. The technical study also confirmed that there is a potential for mining-related pollution of the RTMA wells and that surface mining activities significantly degraded groundwater resources within the technical study area, including numerous domestic and private water supplies.

In response to the rulemaking petition and as a result of technical studies, the final rulemaking amends 25 *Pa Code* Chapter 86.130 to add subsection (b)(18), which designates the Lower Kittanning, Clarion, Brookville and Mercer coals within the upper portions of the Muddy Run watershed, Reade Township, Cambria County, as unsuitable for surface mining operations. The designation will protect the RTMa's water supply wells by restricting mining on acid mine drainage producing coal seams situated in close proximity to the water supply's source aquifers.

The EQB approved the proposed rulemaking on March 16, 2010, with a recommended 30-day public comment period. The proposed rulemaking was published in the *Pennsylvania Bulletin* on May 8, 2010, at 40 *Pa.B.* 2425. During the 30-day public comment period, the EQB received one comment from the Pennsylvania State Association of Township Supervisors (PSATS). In their comments, PSATS stated their support of the rulemaking and noted that without the rulemaking, there most likely would be a detrimental effect to those municipalities within the watershed that rely on groundwater for human consumption. IRRC issued no objections, comments or recommendations on the rulemaking and noted that the rulemaking would be deemed approved if the regulation is not amended and is retained in its proposed form. No changes are proposed to the final rulemaking.

The Department will provide assistance as necessary to facilitate the Commission's review of the enclosed final-form rulemakings under Section 5.1(e) of the Regulatory Review Act.

Please contact me at the number above if you have any questions or need additional information.

Sincerely,

Michele L. Tate

Michele L. Tate
Regulatory Coordinator

Enclosures

0120-FM-PY0011 8/2006

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
OFFICE OF POLICY

TRANSMITTAL SHEET FOR REGULATIONS SUBJECT TO THE REGULATORY REVIEW ACT

I.D. NUMBER: 7- 461

SUBJECT: Fishing Creek, et al. Stream Redesignations

AGENCY: DEPARTMENT OF ENVIRONMENTAL PROTECTION

TYPE OF REGULATION

- ☐ Proposed Regulation
- ☒ Final Regulation
- ☐ Final Regulation with Notice of Proposed Rulemaking Omitted
- ☐ 120-day Emergency Certification of the Attorney General
- ☐ 120-day Emergency Certification of the Governor
- ☐ Delivery of Tolled Regulation
  a. ☐ With Revisions b. ☐ Without Revisions

RECEIVED
IRRC
2011 JUN 16 P 4:07

FILING OF REGULATION

DATE	SIGNATURE	DESIGNATION
6-16-11		Majority Chair, HOUSE COMMITTEE ON ENVIRONMENTAL RESOURCES & ENERGY Rep. Hutchinson
6-16-11	D. Nowak	Minority Chair, HOUSE COMMITTEE ON ENVIRONMENTAL RESOURCES & ENERGY
6-16-11	D. Costello	Majority Chair, SENATE COMMITTEE ON ENVIRONMENTAL RESOURCES & ENERGY Senator Mary Jo White
6/16/11		Minority Chair, SENATE COMMITTEE ON ENVIRONMENTAL RESOURCES & ENERGY
6/16/11	A. Cooper	INDEPENDENT REGULATORY REVIEW COMMISSION
		ATTORNEY GENERAL (for Final Omitted only)
		LEGISLATIVE REFERENCE BUREAU (for Proposed only)