

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

Clarks Creek, et al.

The Environmental Quality Board (EQB) approved the proposed rulemaking for the Clarks Creek, et al. package at its February 16, 2010 meeting. The proposed rulemaking was published in the *Pennsylvania Bulletin* on April 24, 2010 (40 Pa.B. 2122) with provision for a 45-day public comment period that closed on June 8, 2010. Comments were received from 10 commentators.

On April 14, 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.

Pine Creek Comments

Comment: Friends of Pine Creek, Inc. expressed their dismay that Pine Creek did not gain candidacy for special protection. Along with their comment, they submitted additional water chemistry data prepared by Skelly & Loy Environmental Consultants and they expressed a desire that the Department evaluate this data in hopes that it may satisfy the criteria for classification as special protection.

Response: The Department is encouraged that we receive public support for elevated protection of the waters of the Commonwealth. The Department examined the data and it was determined to be insufficient to justify a redesignation of Pine Creek. The Department still recommends no change to the designated use of Pine Creek. (1)

Hammer Creek – Supportive Comment

Comment: We would applaud the Department and the EQB for redesignating Walnut Run (a tributary to Hammer Creek in Lancaster County) to Exceptional Value. (5)

Comment Response Document

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

Comment: We largely support the Clarks Creek, et al Stream Redesignation Package. We appreciate and support the Department's efforts to move these proposals to completion. Many of these streams have been awaiting decisions regarding redesignation for lengthy periods of time. By moving these proposals through the redesignation process, the biological integrity of numerous streams in the Commonwealth will be preserved. The Chesapeake Bay Foundation (CBF) appreciates the Department's willingness to discuss our inquiries on Hammer Creek. (10)

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

Hammer Creek – Opposing Comments

Comment: We oppose the redesignation of Hammer Creek from HQ-CWF, MF to CWF, MF for the portion of the basin extending from the second Rexmont Road crossing to but not including UNT 07678. (2,3,4,5,6,7,8,9,10)

Response: The Department conducted an extensive review of historical data, recent field surveys and land use reviews. The review has determined that the portion of the upper Hammer Creek basin from the second Rexmont Road crossing to but not including UNT 07678 has not in the past displayed and does not currently display existing uses characteristic of special protection classification. Correctly defining the designated use based on the appropriate existing use will not have a negative impact on current water quality. The Department is required to periodically review and revise its water quality standards as necessary. This correction to Hammer Creek's designated use is such an action that strives for designation accuracy, while preserving the integrity of existing and designated use classifications in this Commonwealth.

Comment: We express concern for the potential degradation of downstream waters if the upstream restrictions are loosened. (2,5)

Response: Providing the appropriate (albeit less restrictive) designated use for these reaches will not adversely affect conditions in downstream waters with a more restrictive designated use. Hammer Creek basin from and including UNT 07678 to the inlet of Speedwell Forge Lake will retain its special protection designation and its water quality will be protected under the antidegradation requirements.

Comment Response Document

Comment: Agricultural activity is a primary source of pollution and the commentator recommends partnering with farmers to reduce their impact, rather than changing the designated use. (2)

Through the collaborative efforts of watershed associations, county conservation districts, residents, local communities, and other local organizations much work has been accomplished to restore and improve water quality in the Hammer Creek basin. The work has included offering technical assistance and cost-share opportunities to watershed landowners and farmers to implement best management practices (BMPs) reducing sediment and nutrients to the Hammer Creek. These efforts have been bolstered by support from the United States Fish and Wildlife Service and a Growing Greener Grant which allowed the completion of 9916 feet of stream bank fencing and the establishment of 9916 feet of riparian buffer zone. Additional fencing and stream bank stabilization work was also completed. (3,4,7)

The recommendation to remove the special protection from Hammer Creek does not comply with the Executive Order from President Barrack Obama to accelerate improvements in the Chesapeake Bay watershed. (3,4)

Moving forward to redesignate the Hammer Creek with a less restrictive use sends the wrong message to everyone engaged in improving the waters of the Hammer Creek. (3,4,7)

Response: The Department continuously seeks to restore and improve water quality by working with watershed associations, local residents and farmers, communities and organizations and is grateful for their hard work which is often conducted by volunteers and funded through donations and state funds. The Department is dependent on these locally organized efforts and commends their accomplishments in improving water quality. Defining the correct existing use will not diminish the value of these local efforts. The Department is not undermining the Executive Order from President Barrack Obama by accurately categorizing the surface water of Hammer Creek. Rather, the Department applauds President Obama's interest in improving the Chesapeake Bay Watershed and we are committed to the mutual goal of improving water quality through collaboration and cooperation at all levels.

Comment: The commentator is most familiar with and expresses concern for a portion of Hammer Creek basin near Old Mill Road where a native brown trout hatchery is present. (6)

Response: The proposed CWF, MF designated use is appropriate for the protection of the maintenance or propagation, or both, of fish species including the

Comment Response Document

family Salmonidae and additional flora and fauna which are indigenous to a cold water habitat.

Comment: Shaefferstown / Heidelberg Twp will connect its sewage system with the City of Lebanon Water Authority. The Department no longer needs to feel compelled to go forward with this redesignation in order to make it possible for Shaefferstown / Heidelberg Twp to discharge to Hammer Creek. (2,3)

Heidelberg Township has been dealing with failing septic systems for nearly 30 years and they would like to discharge to the upper Hammer Creek. We are concerned that the Department has redesignated a portion of the upper Hammer Creek so that Heidelberg Township can discharge. (5)

We understand the request to downgrade the stream was made by the Heidelberg Township Board of Supervisors in connection with Heidelberg Act 537 Plan. Discussions with the Township Solicitor confirm that the downgrade is no longer necessary for the Township to obtain Act 537 Plan approval and their current plan does not implicate the Hammer Creek. As a result, while Heidelberg Township has no further interest in pursuing a redesignation, the Department has determined to follow through with the same. (8)

We have been aware of the petition for the downgrade but hoped that this petition would be voided since the Township's need for sewers has been resolved by the planned connection to the Lebanon City plant. (9)

Response: The Department never considered the approval requirements of the Act 537 Plan for Heidelberg Township while determining its recommendation of the existing and designated use for the Hammer Creek basin. When evaluating the correct existing use, the BWSFR considers the factors in 25 Pa. Code § 93.4 and 93.4b. The type of sewage system needed in an area was not a factor in determining this recommendation.

Comment: The assumption by the Department that the section that will be redesignated to a less restrictive use can never achieve special protection is very disturbing and leads Lancaster County residents to wonder when DEP might redesignate our portion of the Hammer Creek. (5)

Response: While the Department did not state the upper Hammer Creek basin could "never achieve special protection" it did conclude that reaching the HQ designated use level of attainment does not appear to be possible without some conversion of agricultural lands to forest and wetlands, of which such land use reversions are highly unlikely. The redesignation recommendation is based upon good scientific data and accepted modeling

Comment Response Document

practices. If, in the unlikely event, land use changes substantially and positively affect the watershed, it may be redesignated as a special protection watershed.

The Department's redesignation report addresses the Lancaster County portion of the Hammer Creek basin upstream of the Speedwell Forge Lake Dam and recommends retaining the HQ-CWF, MF designations for the basin from UNT 07678 to the inlet of Speedwell Forge Lake except Walnut Run. (Walnut Run is recommended for EV, MF.) Additionally, the Department recommends retaining the designated use of HQ-CWF, MF for UNT 07671.

Comment: We believe that redesignating the portion of Hammer Creek basin from the second Rexmont Road Crossing to, but not including, UNT 07678 from HQ-CWF, MF to CWF, MF will hinder the water quality. (8)

Response: Application of water quality standards will protect and maintain the existing uses and the level of water quality necessary to support those uses.

Comment: We do not believe the Department's findings with respect to the current water quality are accurate. We do not believe a downgrade is supported by relevant evidence. (8)

Response: The less restrictive use recommendation was based upon good scientific data and accepted modeling practices.

Comment: We believe the findings of the scientists employed by the CBF are proper and demonstrate that the stream classification is properly high quality. (8)

Response: Department biologists used best professional judgment in the evaluation of all of the data to develop their recommendation. A combination of variable flow and other seasonal conditions and natural benthic community dynamics may account for the variability seen between the Department's data and CBF's data.

Comment: We believe that with further restorative work, the stream would actually improve and could be classified as exceptional value. (8)

Response: The Department acknowledged that restorative work completed to date has led to some water quality improvements and that additional restorative work could result in further improvements. However, past and present land use conditions and the Department's data and modeling review, indicates the improvements requisite for HQ existing uses, let alone EV, are not realistically achievable without long term changes in land use conditions. If, in the future, scientific evidence demonstrates that the stream should be redesignated as EV, that change in regulation may be made.

Comment Response Document

Comment: This redesignation would be severely detrimental to the Hammer Creek and the surrounding property. (8)

Response: The Department is required to periodically review Pennsylvania's water quality standards and revise and correct as necessary. The Hammer Creek recommendation to redesignate a portion of the basin with a less restrictive use is such a corrective action. Given that the current HQ designation was in error, this redesignation only serves to fit the watershed conditions that Hammer Creek has displayed prior to the time of this designation error and currently still does.

Comment: We dispute the assertion that best management practices (BMP's) cannot remedy the Hammer Creek. We have implemented the following BMP's on our 28+ acre farm to improve water quality: donation of an agricultural easement; placement of a 7-acre riparian strip; planting of 2400 trees/shrubs under the Conservation Reserve Enhancement Program; and the establishment of conservation-minded farming practices. Stream testing has been conducted by high school biology classes along with CBF scientists on the stretch of the stream that flows through our property. The results show marked improvement since the stream bank restoration changes and riparian zones have been established on this portion of the Hammer Creek. Furthermore researchers indicate that additional stream bank restoration and improved riparian zones up/down stream of the Walmer property could easily provide the necessary improvements to upgrade to exceptional value. Why would the Department accept this downgrade and not continue to promote the best stewardship possible? (9)

Response: The Department applauds the restorative efforts conducted on the Walmer farm and appreciates the stream condition improvements that have occurred. Such improvements in the Basin were acknowledged in the Hammer Creek report. However, these changes only affect a portion of the study area and on a larger scale, the watershed likely cannot achieve special protection unless permanent land use changes, such as forested buffers and conservation easements are widespread. The Department continues to promote and support BMPs and this redesignation does not indicate otherwise.

Comment: The legal threshold for petitions to downgrade designated uses of streams states, in essence, that a petitioner must provide evidence in the manner of a structured scientific assessment that the stream can *never* be restored sufficiently to meet its designated use. 25 Pa. Code §§ 93.4(b); 93.4(c); *see also* 40 C.F.R. §§ 131.10(d), (g), (j). We do not believe the Department has met this legal threshold for downgrade. (10)

Comment Response Document

Response: To the contrary, the Department has met the legal thresholds required by the above cited regulations for “less restrictive use” evaluations. This detailed analysis is provided in the Hammer Creek report and clearly demonstrates the proper assessment for removing the HQ designation for the upper Hammer Creek basin.

Comment: Hammer Creek currently meets the HQ biological macroinvertebrate criteria in its forested headwaters. In fact, recent surveys indicate dramatic improvement in all water quality parameters (biological, chemical, and physical/habitat) overtime--to the degree that the Creek will be able to achieve Exceptional Value (EV) status in at least one location. (10)

Response: The Department has noted in the report the improved water quality conditions in the lower reaches of Hammer Creek, however it was found to be very unlikely that this portion of the basin should reach the HQ designated use level of attainment without some conversion of agricultural lands to forest and wetlands, of which such land use reversions are highly unlikely. Regarding Walnut Run, the EV status was not the result of any restorative efforts such as those experienced in other portions of Hammer Creek. Rather, the original HQ designation of Walnut Run was a proper reflection of the use designation criteria in place at that time. The EV determination is based on newer designated use criteria and evaluation procedures.

Comment: We believe the model employed by the Department was not appropriately calibrated. Published literature has indicated the calibration approach used by the Department can lead to large errors in results. (10)

Response: To limit error, steps were taken to match geology and land use as closely as possible. Also, the reference watersheds were in close proximity to each other and adjustments were made in some modeling parameters to account for BMPs and animals in each watershed.

Comment: The Department’s analysis only included three agricultural BMPs and one modified BMP for forested buffers. Such a limited suite severely limits the type and mixture of BMPs that are available to farmers in real-world conditions. (10)

Response: The PredICT model groups BMPs into 8 general types and does not model specific practices. BMP efficiencies can be adjusted to reflect what is in place or available; therefore there is no actual limitation on the mixture of BMPs. DEP used applicable BMP efficiencies and considered all practical BMPs in its modeling analyses.

Comment: No suburban BMPs or on-site septic system BMPs appear to be included in the Department’s analysis. (10)

Comment Response Document

Response: No suburban or on-site septic system BMPs were included in the analysis because neither one would have provided any significant reduction in loadings. Suburban and urban areas accounted for only 9% of the basin area so that those reductions were negligible. The assumption for on-site septic was that it would be converted to a point source discharge and the treatment system would have employed tertiary treatment resulting in very small nutrient loadings to Hammer Creek.

Comment: The model fails to account for reductions of groundwater inputs of nitrogen and phosphorus over time. These high nutrient inputs in groundwater are reasonably expected to be reduced as agricultural BMPs are implemented. (10)

Response: The Department agrees that the model did not account for a reduction in groundwater inputs of nitrogen and phosphorus over time. However, for nutrients to appreciably diminish, significant BMP additions and land use conversions (e.g. forested buffers and cessation of agricultural uses) would need to occur. Given the long-term nutrient saturation of the soils since Hammer Creek was agriculturally developed it would take many years before a nutrient decrease would be evident in response to such BMP implementation or land use conversions. This potential delay in the remediation of water quality in response to agricultural BMP's resulting from the reserves of leachable nitrogen in heavily manured soils was recognized and addressed by Koerkle and Gustafson-Minnich, 1997 in a report titled *Surface-water Quality Changes After 5 Years of Nutrient Management in the Little Conestoga Creek Headwaters, Pennsylvania, 1989-91* (USGS: Water-Resources Investigations Report 97-4048). Another confounding factor which could contribute to the lag time between the implementation of BMP's and noted improvements in water quality is the unknown travel times for ground-water. "The time required for the effects of reduced nutrient inputs to travel from the land surface to the ground water, then to be discharged as base flow, could have exceeded the 3.5 year post-BMP monitoring period" in a study by Koerkle, et al. in 1996 titled *Evaluation of Agricultural Best-Management Practices in the Conestoga River Headwaters, Pennsylvania: Effects of Nutrient Management on Water Quality in the Little Conestoga Creek Headwaters, 1983-89* (USGS: Water Resources Investigations Report 95-4046).

Comment: The Department did not account for improvements in in-stream habitat and stream shading that will result from restoration, primarily forested riparian buffers. Extensive research efforts have pointed to the importance of forested buffers in improving the physical in-stream habitat and shade from the tree canopy that is vitally supportive of macroinvertebrate and fish populations. (10)

Comment Response Document

Response: The Department acknowledges the ability of improved forested buffers to improve the physical in-stream habitat and provide shade from the tree canopy. The benefits from improving forested buffers are vitally supportive of macroinvertebrate and fish populations. These benefits can begin and become noticeable within the first 5 to 10 years of the implementation of the improvement. Over time the tree canopy will mature and provide more shade for the aquatic habitat. It will likely take at least 20 to 25 years for the benefits of newly planted forest buffers to improve the stream quality to a level commensurate with special protection qualifications. If stream improvements are demonstrated by such widespread land use conversions in the watershed, the stream may be eligible for special protection in the future.

Comment: 40% of the Hammer Creek's land use was classified as "other" and was not considered for any BMP implementation. (10)

Response: The 40% of land use classified as "other" was forest land and waterbodies where BMPs would not be implemented.

Comment: The Department's own analysis indicates Hammer Creek pollutant loads are within an acceptable level of error when compared to a reference watershed, indicating that BMP loads can be reduced to be very similar to a nearby special protection stream, although not necessarily exact. (10)

Response: The loadings that are referenced are based on very optimistic BMP implementation that is not supported by current conditions on the ground or by what has occurred in the previous 15 years.

Hammer Creek – Additional Comments

Comment: We would encourage the Department to also investigate other tributaries to Hammer Creek to determine if they are candidates for redesignation to a more restrictive designated use, most notably Kettle Run. (5)

Response: The Department did include Kettle Run in its evaluation as it did the EV qualifying Walnut Run. However, the data did not support changing its current HQ designation.

Comment Response Document

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	Friends of Pine Creek, Inc. Victoria Sobolewski, President 433 Pine Creek Drive Barnesville, PA 18241	NO	N/A	NO
2	Brooke Minnich 84 Speedwell Forge Road Lititz, PA 17543 pt@worksiteplus.com	NO	N/A	NO
3	Lebanon County Conservation District Charles W. Wertz, Manager 2120 Cornwall Road, Suite 5 Lebanon, PA 17042-9788 Charles.Wertz@pa.nacdnet.net	NO	N/A	NO
4	Honorable RoseMarie Swanger PA House of Representatives PO Box 202102 Harrisburg, PA 17120-2102 rswanger@pahousegop.com	NO	N/A	NO
5	Lancaster County Conservation District Matthew W. Kofroth, Watershed Coordinator 1383 Arcadia Road; Room 200 Lancaster, PA 17601-3149 Matt.Kofroth@pa.nacdnet.net	NO	N/A	NO
6	Watercress Mill Douglass C. Henry 327 Old Mill Road Newmanstown, PA 17073 associate@henry-molded.com	NO	N/A	NO

Comment Response Document

7	<p>Quittaphilla Watershed Association David I. Lasky, Ph.D., President 610 East Walnut Street Annville, PA 17003 dlasky610@comcast.net</p>	NO	N/A	NO
8	<p>Lebanon Valley Conservancy, Inc. Stephanie DiVittore, President Rhoads & Sinon, LLP One South Market Square, 12th Floor PO Box 1146 Harrisburg, PA 17108-1146 SDiVittore@rhoads-sinon.com</p>	NO	N/A	NO
9	<p>Steven and Patricia Walmer 220 Distillery Road Newmanstown, PA 17073 tmw@lmf.net</p>	NO	N/A	NO
10	<p>Chesapeake Bay Foundation Harry L. Campbell III, Senior Scientist Old Waterworks Building 614 North Front Street, Suite G Harrisburg, PA 17101 Hcampbell@cbf.org</p>	YES	N/A	NO