

**U S Army Corps  
of Engineers**  
Huntington District

# Public Notice

In reply refer to Public Notice No.

**LRH-2007-IFAA-01**

Stream:

**WV High Gradient Streams**

Issuance Date:

**August 13, 2007**

Closing Date:

**September 12, 2007**

Please address all comments and inquiries to:

U.S. Army Corps of Engineers, Huntington District

ATTN: CELRH-OR-F Public Notice No. (*reference above*)

502 Eighth Street

Huntington, West Virginia 25701-2070

Phone: (304) 399-5710

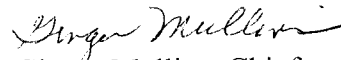
## **REGULATORY GUIDANCE ON THE INTERIM FUNCTIONAL ASSESSMENT APPROACH FOR HIGH GRADIENT STREAMS WITHIN THE STATE OF WEST VIRGINIA**

The purpose of this notice is to advise the general public of the availability of an Interim Functional Assessment Approach (IFAA) for High Gradient Streams within West Virginia prepared by the U.S. Army Engineer Research and Development Center (ERDC). The IFAA has been developed as a rapid assessment tool for headwater streams in West Virginia and is designed to evaluate the extent to which key physical and biological processes are operating or have been disrupted within aquatic ecosystems. The IFAA includes a spreadsheet to calculate a Functional Capacity Index and Functional Capacity Units, which are based upon stream length. The Huntington and Pittsburgh Districts intend to immediately apply the IFAA, where appropriate, to assess stream conditions at proposed project sites associated with Department of the Army permit applications, proposed compensatory mitigation sites, as well as the periodic monitoring and evaluation of required Department of the Army compensatory mitigation projects.

This office will continue to accept data obtained using other comparable functional assessment methodologies such as the U.S. Environmental Protection Agency's Rapid Bioassessment Protocols for Use in Streams and Wadeable Rivers. Furthermore, applicants are encouraged to voluntarily submit additional data (i.e. water quality, benthic data and etc.) to supplement the IFAA or other methodology where appropriate. Applicants are encouraged to utilize the best available information and science applicable to their specific project.

Corps guidance on the use and limitations of the IFAA and information on the future development of a more comprehensive methodology can be found in the attached memorandum. The IFAA document and accompanying worksheet may be obtained from a link on the U.S. Army Corps of Engineers Huntington District Regulatory webpage at <http://www.lrh.usace.army.mil/permits/>. Comments on the interim protocol should be addressed to Ms. Jennifer McCarthy at U.S. Army Corps of Engineers, 441 G Street, NW, Washington, DC, 20314-1000, or by email at: [Jennifer.L.McCarthy@usace.army.mil](mailto:Jennifer.L.McCarthy@usace.army.mil).

Please contact the appropriate district office for any other Regulatory-related questions for projects within the state of West Virginia [Huntington District Regulatory Branch at (304) 399-5710 or Pittsburgh District Regulatory Branch at 412-395-7152].

  
Ginger Mullins, Chief  
Regulatory Branch  
Huntington District

(W)



**DEPARTMENT OF THE ARMY**  
**U.S. ARMY CORPS OF ENGINEERS**  
441 G STREET NW  
WASHINGTON, D.C. 20314-1000

CECW-CO

**JUL 16 2007**

MEMORANDUM THRU COMMANDER, GREAT LAKES AND OHIO RIVER DIVISION  
FOR COMMANDERS, HUNTINGTON AND PITTSBURGH DISTRICTS  
SUBJECT: Interim Stream Assessment Method

1. Interim Assessment for High Gradient Streams in West Virginia. The Headquarters Regulatory Community of Practice recently forwarded the "Functional Assessment Approach for High Gradient Streams", which was developed by the U.S. Army Corps of Engineers Engineering Research and Development Center (ERDC) in June 2007. As stated in the introduction to the document, this protocol is intended to be used for high gradient (4 percent or steeper), ephemeral and intermittent headwater streams in West Virginia. The document further clarifies that the indicators are scaled based on limited field observation of a range of sites in the region, professional judgment, published literature, and rating scales developed for other regions. No field studies have been conducted in the region specifically to calibrate the indicators, and, therefore, the scaling is approximate. For these reasons, this method will only be used until a comprehensive stream assessment method, as described below, is developed.

Many rapid assessment procedures have been developed for use in the planning and management of ecological resources. One such procedure, the Environmental Protection Agency's Rapid Bioassessment Protocols<sup>1</sup> (RBP), recognizes that physical characteristics of streams affect ecosystem function and biological community structure, and that assessments of stream structure can be used to estimate the capacity of the stream to support biota. This approach is also used in peer-reviewed hydrogeomorphic (HGM) assessment methods<sup>2</sup>.

Assessment methods like the enclosed ERDC approach apply the same scientific concepts used in the peer-reviewed RBP and HGM approaches, that structural measures of stream condition can be used to infer ecological function. However, as both physical characteristics and water quality parameters affect stream function, stream structure can only be used to predict the stream's biological community and functioning if the stream is not affected by poor water quality. The ERDC interim method provides an assessment of the structure of the stream, riparian area and watershed only, and should be used in combination with biological assessments and/or water quality measures to fully assess the potential for ecological functioning.

<sup>1</sup> 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.

<sup>2</sup> See Smith, R.D., Ammann, A., Bartoldus, C., and Brinson, M.M. 1995. An Approach for Assessing Wetland Functions using Hydrogeomorphic Classification, Reference Wetlands, and Functional Indices. Technical Report WRP-DE-9, U.S. Army Engineer Waterways Experiment Station, Vicksburg, MS.

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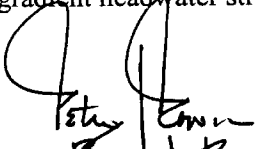
2. Limitations of this approach. Within the use criteria outlined in paragraph 1 above (i.e. high gradient ephemeral and intermittent streams in West Virginia), this functional assessment approach can be used to evaluate existing streams, before proposed impacts occur, in order to quantify what stream functions would be lost, as well the success of stream mitigation areas. It can be used to compare streams of the same type (i.e., high gradient headwater streams in West Virginia), but cannot be used to compare streams of different types or outside of the target region (i.e., West Virginia). This approach also cannot be used to assess cumulative impacts of proposed projects or to predict impacts to downstream aquatic resources.

Furthermore, this method is not intended to be the only tool used to assess stream functions, aquatic impacts and mitigation in West Virginia. In any given situation, assessing other factors, such as water quality measures (e.g., dissolved oxygen, pH, conductivity, turbidity, temperature), or biological assessment or monitoring, might be needed. When performing a stream assessment, the Corps should first identify what information is needed and what tools are available and appropriate to acquire that information. For example, if water quality or some other parameter is likely to be a limiting factor to stream functioning, then it should be considered in the assessment. Likewise, biological assessment and monitoring can provide a direct indicator of water quality.

3. Development of a Comprehensive Stream Assessment Method. ERDC has begun the process of developing a comprehensive functional assessment method based on the HGM approach. This approach begins with a development phase that is performed by an interdisciplinary assessment team, or A-team. Through knowledge of the aquatic resources and review of the scientific literature, the A-team develops a functional profile that describes the physical, chemical, and biological characteristics of the ecosystem and identifies reference sites that encompass the range of variability of that ecosystem in that region. The A-team develops assessment models that define the relationship between attributes of the stream and watershed and the stream's capacity to perform functions. These models are calibrated and ultimately validated using data collected from the reference sites. ERDC expects to involve District personnel, experts from other agencies and stakeholder groups, and members of the scientific community in developing this method. The method will also undergo peer review prior to being finalized. The regional comprehensive HGM stream model is expected to be completed in 2009.

4. Summary. Headquarters Regulatory believes that the interim method will be a useful, cost-effective, and scientifically valid tool for use in West Virginia until the comprehensive method is available. The Huntington and Pittsburgh District regulatory staff must be vigilant to ensure the attached interim method is applied correctly, subject to the stream criteria and limitations described herein. Effective immediately, the interim method should be used as a framework for conducting functional assessments for high gradient headwater streams in West Virginia.

FOR THE COMMANDER:

  
for: Peter J. Rowan COL, EN  
Steven L. Stockton, P.E. EXEC. DIRECTOR  
Deputy Director of Civil Works

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