

# **Reviewing Forest Management Guidelines for Protecting Forest Riparian Areas and Seasonal Ponds Minnesota Forest Resources Council**

December 1999

## **Background**

In February 1996, the Minnesota Forest Resources Council (MFRC) initiated a process to develop comprehensive timber harvesting/forest management guidelines. Directed by the Minnesota Sustainable Forest Resources Act (SFRA), these voluntary guidelines are to "...reflect a range of practical and sound practices based on the best available scientific information, and be integrated to minimize conflicting recommendations while being easy to understand and implement" (MS § 89A.05 subd. 1). The MFRC identified four major topical areas to be addressed by the guidelines: riparian forest management, forest wildlife habitat, forest soil productivity, and historic/cultural resources. Technical teams, consisting of scientists, loggers, resource professionals, forest landowners, and interest group representatives, were established by the MFRC to assist it in developing draft guidelines. Over 60 individuals served on the MFRC's four technical teams, which met regularly through 1997 to draft proposed guidelines.

Prior to being submitted to the MFRC, each technical team's proposed guidelines were subject to an independent, structured review. Both scientists and practitioners (loggers and/or resource managers) evaluated each proposed set of guidelines according to specified criteria: practicality, effectiveness, science-based, flexibility, understandability, and economic feasibility. Technical teams considered all reviews prior to submitting their proposed guidelines to the MFRC in early 1998. Three of the four technical teams reached unanimous agreement on their proposed guidelines -- the riparian technical team did not. Once all technical team guidelines were forwarded to the MFRC, an separate integration team (consisting of representatives of each technical team and a representative of the MN Forest Resources Partnership) began the process of integrating the new proposed guidelines with existing water quality/wetlands and visual quality guidelines. During the summer and fall, the MFRC commissioned an analysis of the financial and economic impacts associated with the proposed integrated guidelines. Subsequent to this analysis, the MFRC established a 45 day public comment period, during which time it held an open house to provide information to the public on the proposed guidelines.

During a two-day meeting in November 1998 to review public comments on the proposed guidelines, the MFRC could not agree on final language for guidelines affecting forest riparian areas. To move past this disagreement, the MFRC appointed three members (representing environmental, industry, and forest land manager interests) to develop proposed guidelines for the MFRC's consideration. This ad hoc committee reached agreement on riparian guidelines and presented its recommendations to the MFRC in December. Upon incorporating the committee's riparian guideline recommendations, the MFRC unanimously adopted the timber harvesting/forest management guidelines. Distribution of the timber harvesting/forest management guidebook began in early 1999, as did guideline education and training programs.

### **Legislatively-Mandated Review of Riparian and Seasonal Pond Guidelines**

The 1999 Minnesota Legislature directs the MFRC to "...undertake a peer review of the recommendations in the forest management guidelines adopted in December 1998 for protecting forest riparian areas and seasonal ponds" by December 1999 (MS § 89A.05, subd.1). Peer review is defined by the Legislature as "...a scientifically based review conducted by individuals with substantial knowledge and experience in the subject matter" (MS § 89A.01, subd. 10a). *Consequently, invited reviews will focus on assessing the extent to which the guidelines for protecting forest riparian areas and seasonal ponds are consistent with available scientific information and understanding, given the guideline's stated objectives.*

### **Scientific Disciplines to be Considered in the Review**

Forested riparian areas and seasonal ponds perform important ecological functions and provide a variety of values. These include maintaining soil, channel, and streambank stability and water quality, and providing water storage and conservation, nutrient and food input and in-stream structure to the aquatic system, diverse and productive habitat for aquatic and terrestrial wildlife, and a variety of human values. The MFRC's guidelines recommend various practices to protect these functions and values in conjunction with timber harvesting and forest management activities. To better understand the extent to which the guidelines are consistent with available scientific information and understanding for many of these values and functions, the peer review will be organized around the following four scientific disciplines/areas of study:

- ***Aquatic Ecology*** -- assessing short and long term guideline impacts on the quality and function of aquatic habitat.
- ***Silviculture*** -- assessing short and long term guideline impacts on the long-term productivity and health of the forest.
- ***Terrestrial Ecology*** -- assessing short and long term guideline impacts on the quality and function of terrestrial habitat.
- ***Hydrology/Soil Chemistry*** -- assessing short and long term guideline impacts on surface water, wetlands, soil, and soil nutrients.

### **Criteria for Selecting Peer Reviewers**

MFRC staff will secure the services of individuals who will participate in the peer review process according to the following criteria. Each reviewer must meet all criteria in order to participate in the review.

- 1) The individual must have substantial knowledge and research experience in the scientific discipline (i.e., aquatic ecology) in which participation is requested. The individual's research experience must be in a forest management context.
- 2) The individual must be able to apply existing scientific knowledge to the ecological conditions of and management practices in Lake States forests.
- 3) The individual must not have served on any of the MFRC's guideline development technical teams.

- 4) The individual must be able to commit the time necessary to conduct the peer review within the time frame established by the MFRC.
- 5) The individual must be able to provide an objective review that is responsive to the information needs of the MFRC.

### **The Peer Review Process**

Peer review of the guidelines affecting forest riparian areas and seasonal ponds will be administered by MFRC staff according to the following process.

- 1) Two scientists from each scientific discipline (eight in total) will be recruited to participate in the MFRC's peer review process. Reviewers will be selected from a list of potential reviewers identified herein.
- 2) The two reviewers in each scientific discipline (e.g., aquatic biology) will be asked to collaboratively prepare a single consensus-based review for the MFRC that assesses the extent to which the MFRC's guidelines affecting riparian areas and seasonal ponds are consistent with available scientific information and understanding, given the guideline's stated objectives.
- 3) Prior to the meeting, reviewers will be sent the following materials: a) MFRC's Timber Harvesting/Forest Management Guidebook; b) background information on the guidebook development process, use of the guidelines, and identification of those sections of the guidebook addressing forested riparian areas and seasonal ponds; and 3) directions for preparing the review.
- 4) MFRC staff will organize a one-day meeting (as soon as practical) in which all peer reviewers will participate. The objectives of the meeting will be to provide: a) a common understanding of the timber harvesting/forest management guidelines, particularly as they pertain to Minnesota's forested riparian areas and seasonal ponds; b) an opportunity for review teams to begin formulating their responses; and c) an opportunity for review teams to identify common themes regarding the extent to which the MFRC's guidelines directed at forested riparian areas and seasonal ponds are consistent with available scientific information and understanding.
- 5) Review teams will be asked to provide an objective rating (scaled 1-4) reflecting the degree to which the guidelines are consistent with available scientific information and understanding and a narrative supporting their rating. Reviewers will be asked to identify specific guidelines considered inconsistent with available scientific information and understanding, and to cite specific studies supporting this

conclusion. Each team's review will be limited to no more than four pages. Review teams will be asked to complete their review within 30 days after the January 2000 peer review meeting.

- 6) MFRC staff will compile the four team's reviews, along with any common themes identified by the peer review participants during the one-day workshop, into one document for the MFRC's consideration.

### **Proposed Reviewers**

The following is a list of potential reviewers based on the reviewer selection criteria. MFRC staff will use this list to secure eight individuals (two within each scientific discipline) to participate in the review.

#### ***Aquatic Ecology***

Dr. Ray Newman - University of Minnesota  
Dr. Patrick J. Mulholland, Oak Ridge National Laboratory  
Dr. Kurt Richardson - Duke University  
Dr. Clay Edwards -- USDA-Forest Service, North Central Research Station

#### ***Silviculture***

Dr. Craig G. Lorimer - University of Wisconsin, Madison  
Dr. John Zazada -USDA-Forest Service, North Central Research Station  
Dr. Don Dickmann - Michigan State University  
Dr. Edward Lowenstein -USDA-Forest Service, North Central Research Station

#### ***Terrestrial Ecology***

Dr. Brian Palik - USDA-Forest Service, North Central Research Station  
Dr. Peter Reich - University of Minnesota  
Dr. Thomas Crow - University of Michigan  
Dr. Frank Thompson - USDA-Forest Service, North Central Research Station

#### ***Hydrology/Soil Chemistry***

Dr. James G. Bockheim - University of Wisconsin, Madison  
Dr. L.W. Swift - USDA-Forest Service, Cowetta Hydrologic Research Station  
Dr. Dan Neary - USDA-Forest Service, Rocky Mountain Research Station  
Dr. Dan Richter - Duke University

### **Post Review Actions**

Once the peer reviews are forwarded to the MFRC, the Council will devote time at its next meeting to discuss

the reviews and formulate possible responses. Options for responding to the peer reviews include doing nothing; identifying areas where additional research is needed and working through the Research Advisory Committee to initiate such research; increasing education and training opportunities to enhance the application of certain guidelines; and/or revising the guidelines.