COOPERATIVE EXTENSION SERVICE

UNIVERSITY OF KENTUCKY • COLLEGE OF AGRICULTURE

FORESTRY FORFS 97-4

Kentucky's Timber Harvesting BMP Implementation Study: Preliminary Results

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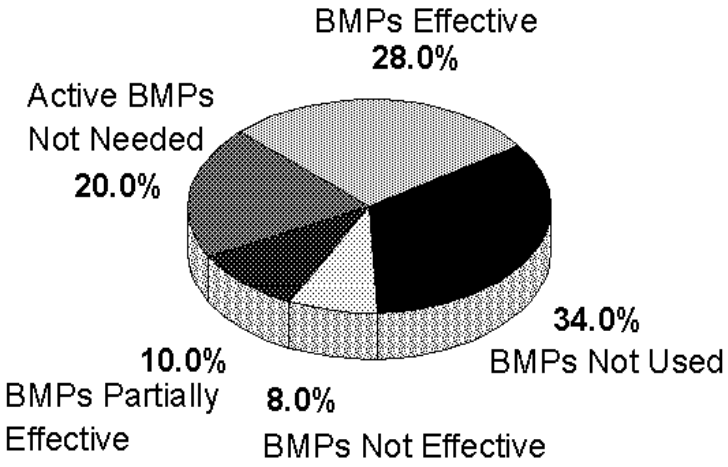
STUDY INFORMATION: This study was developed as a cooperative project by the University of Kentucky Department of Forestry and the Kentucky Division of Water (Section 319(h) Nonpoint Source Grants). It was developed to provide information on nonpoint source pollution issues as they relate to timber harvesting operations in Kentucky. Sampling design and analysis overviews can be found in University of Kentucky, Department of Forestry FORFS 97-2. **This survey was NOT designed to** determine the relative contribution of nonpoint source pollution from timber harvesting operations relative to other contributors. The results of this study should NOT be compared to BMP implementation results from other states.

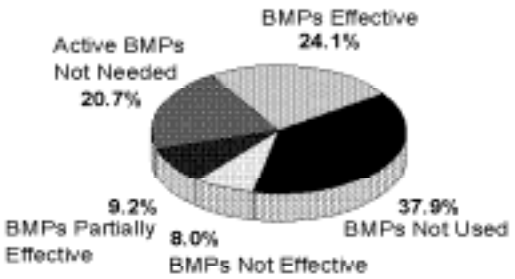
Preliminary Analysis: These analysis provide general information on the use of Kentucky's Silvicultural BMPs and their effectiveness for controlling nonpoint source runoff. This study determined BMP use at each timber harvesting site sampled. It was also designed to locate and document shading potential of water bodies and sources of runoff which reached surface waters or swallets. This study did not monitor water quality. Detailed analysis of the study data are underway and will be published as University of Kentucky Cooperative Extension Bulletins.

Overall BMP Use and Effectiveness For Controlling Nonpoint Source Runoff

Data from all timber harvesting sites including non-industrial private, industry, and publicly owned forests was used to provide the information in the accompanying graph. Each site was rated according to BMP use and the effectiveness of the BMP to prevent runoff. Twenty percent of the sites sampled either had no surface waters/drainage features (including swallets) present (6%) or the intensity or design of the harvesting operation was sufficient to avoid surface runoff into water bodies or drainage features. Active BMPs were necessary on the remaining 80%. BMPs were needed but not implemented on 34% of the sites. Eight percent of the sites had BMPs which, due to improper implementation, did not mitigate nonpoint source runoff. Ten percent of the sites had BMPs which partially mitigated nonpoint source runoff. Twenty-eight percent of the sites had BMPs which were implemented correctly and functioning to effectively reduce nonpoint source runoff.

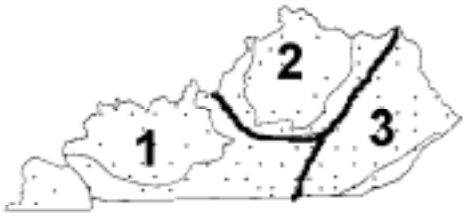


Non-Industrial Private Forest Owners



Eighty-six percent of the timber harvesting sites were on non-industrial private forest lands. This graph displays the BMP use and effectiveness ratings for this ownership.

Analysis Across Kentucky



Analysis of BMP use and effectiveness by physiographic region indicates a similar pattern across the state. Data have been grouped into 3 areas for this presentation. Area 1 includes the Jackson Purchase, Western Coalfield, and Pennyroyal regions. Area 2 contains the Inner and Outer Bluegrass and the Knobs regions. Area 3 is a combination of the Appalachian Plateau and Cumberland Mountain regions. The table below shows the BMP implementation and effectiveness ratings for each of the three areas.

	Area 1	Area 2	Area 3
BMPs Not Used or Not Effective	**37.9**	**59.0***	**43.2**
BMPs Used and Partially Effective	**7.4**	**4.5**	**13.5**
BMPs Effective or Active BMP Use Not Needed	**55.6**	**36.5**	**43.2**

* Analysis of this data by physiographic region shows that the Knobs region contained a significantly higher percentage of sites without BMPs or where BMPs did not effectively control nonpoint source runoff compared to the Bluegrass region.

Ownership Performance

BMP use and effectiveness was placed on a relative scale of 1 to 5 for analysis by forest ownership. Sites rated as 5 had no evidence of nonpoint source runoff. Rating 4 indicated that the site had BMPs which effectively mitigated nonpoint source runoff. Rating 3 indicated partial BMP effectiveness and rating 2 indicated BMPs present but not effective. A rating of 1 was applied to sites which had no BMPs and were generating nonpoint source runoff.