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### Watershed Management and Water Quality Protection

Thomas E. Wilson

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Thomas E. Wilson, *Watershed Management and Water Quality Protection, in THE PUBLIC LANDS DURING THE REMAINDER OF THE 20<sup>TH</sup> CENTURY: PLANNING, LAW, AND POLICY IN THE FEDERAL LAND AGENCIES* (Natural Res. Law Ctr., Univ. of Colo. Sch. of Law 1987).

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Watershed Management

and

Water Quality Protection

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The Public Lands During the Remainder of the 20th Century:  
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## SUMMARY

We are leaving the era of promises and entering the era of accountability in water quality protection on public lands. Public lands managers will be held increasingly accountable for fulfilling water quality commitments made during the current planning process. States have significant new statutory authority under the revised Clean Water Act to demand full evaluation and disclosure of water quality impacts. Compliance with water quality standards will be increasingly measured in terms of in-stream biological effects, as opposed to simply BMP utilization or water column chemistry.

## General References

Clean Water Act USC 1251 et seq, as amended by Water Quality Act of 1987 P.L. 100-4 (February 4, 1987).

U.S. EPA Water Quality Standards Regulation 40 CFR 131.

## WATERSHED MANAGEMENT AND WATER QUALITY PROTECTION

- I. SOCIETY'S EXPECTATIONS ARE CHANGING-WE MUST CHANGE ALSO
  - A. Recreational and fisheries demands on public lands will continue to grow.
  - B. Demands for riparian zone protection will increase dramatically as its value in meeting multiple use needs is better recognized.
    1. The majority of fisheries, wildlife, and recreation use on public lands is directly dependent upon the riparian zone.
    2. The economic value of the tourist industry in many western states now rivals or exceeds the value of the forest products industry.
    3. The social and economic costs of abusing riparian zones can be enormous.
  - C. Such change is painful but necessary.
  - D. To change successfully, we must learn to work together.

II. WE'RE LEAVING ERA OF PROMISES---AND ENTERING ERA OF  
ACCOUNTABILITY

- A. The Clean Water Act and related mandates indicate that public land managers are legally accountable for achieving:
1. Restoration and protection of the chemical, physical and biological integrity of the Nation's waters.
  2. Full protection of the designated beneficial uses (e.g., salmonid spawning, rearing, etc.) of those waters.
  3. Prevention of degradation of the higher quality waters (antidegradation).
- B. Similar mandates also exist in the National Forest Management Act (NFMA) and other public lands legislation.
- C. Land managers have made strong commitments to the public in the current planning process to meet those mandates, promising that:
1. Water quality standards will be met.
  2. Multiple use values will be enhanced.

3. Monitoring will be conducted to identify and correct any problems.
- D. Land managers face increasingly stringent legal mandates for reporting their success (or failure) in meeting those mandates.
1. They must periodically report to states on water quality problems and management actions taken to correct those problems.
  2. Forest Service managers must monitor and report on the impact of land management activities on selected "management indicator species".
- E. Land managers failing to meet those commitments will be increasingly subject to both public pressure and legal action.
1. Most states will hold periodic public meetings to review compliance with land management plan commitments.
  2. Failure to honor planning commitments or meet statutory mandates will likely result in lawsuits by concerned environmental groups.
  3. Legal suits are also likely wherever necessary data is not collected or is withheld.



III. ACCOUNTABILITY TO FOCUS ON IN-STREAM IMPACTS RATHER THAN UPLAND BEST MANAGEMENT PRACTICES (BMPs) USE

- A. Basic mandate of Clean Water Act (CWA) is to protect designated beneficial uses, e.g., salmonid spawning, rearing, etc.
  - 1. Existing water quality criteria must be periodically reviewed and revised, if appropriate, to ensure that designated uses are protected.
  - 2. The CWA mandate to fully protect designated beneficial uses supersedes the NFMA mandate to maintain "minimal viable populations".
- B. Use of BMPs on uplands does not guarantee stream protection.
  - 1. Many streams in the logged watersheds of Idaho's National Forests where BMPs were considered properly implemented have suffered up to a 75% loss of fishery production potential.
  - 2. Average loss of fishery potential in entered watersheds is 50%.

- C. Traditional water column criteria for protection of beneficial uses (e.g., pH, turbidity, etc.), have also failed to identify many problems.
  - 1. Deficiencies are due to both the transitory nature of violations and the lack of an intensive monitoring network to detect such events.
- D. When violations are detected, they often do not provide project managers with the necessary information on appropriate corrective actions.
  - 1. It is difficult to attribute violations to specific upland activities.
  - 2. Periodic exceedences of turbidity standards don't measure cumulative damages to fisheries resources.
- E. Future regulatory emphasis will be on protecting the health of aquatic communities, particularly fisheries.
  - 1. The bottom line is protection of the biological integrity of the stream, not application of upland BMPs.
  - 2. Future in-stream criteria will probably be either fisheries or habitat based, with criteria for habitat protection most likely.

3. Criteria will reflect USFS habitat evaluation techniques.
4. Such criteria will strengthen coordination between regulatory and resource management agencies.

IV. MONITORING--AND REPORTING OF MONITORING RESULTS--MUST BE IMPROVED

- A. Agencies must be able to document actual effectiveness of BMPs.
  1. State can require federal agencies to periodically report on the status of waters and actions needed to correct identified problems.
  2. Documenting federal public lands compliance with state water quality standards is mandatory.
- B. A need for improved in-stream impact assessment methodologies will not be a legitimate reason for failure to assess actual impacts.
  1. Similar scientific uncertainties have long been accepted by land managers in methodologies used to justify planned management actions.

2. Quantitative tools for evaluation of effects will never fully supplant scientific judgement.
  3. Conservative planning assumptions protective of water quality/habitat should be used whenever uncertainty in methodologies exist.
  4. Responsibilities for improving methodologies will rest with the land managers.
- C. Lack of monitoring resources not acceptable rationale for failure to conduct required monitoring.
1. USFS, for example, has numerous other mandates to monitor impact of their land management activities.
  2. Failure to adequately monitor forest plan implementation may be subject to legal challenge.
- D. All affected interested parties must be informed of monitoring results.
1. States may require public hearings on results.

V. HOW CAN WE BEST WORK TOGETHER IN THE FUTURE?

- A. Recognize that change is inevitable.
  - 1. Society's demands on public lands are shifting; as public lands managers we should be responsive to those demands.
- B. Ensure that valid data will be available to guide future technical decisions.
  - 1. Develop interagency consensus on monitoring objectives for specific watersheds.
  - 2. Use available monitoring resources to maximum efficiency by coordination of local, state and federal monitoring activities to reach those objectives.
- C. Keep all concerned parties fully informed of monitoring results and the management changes made as a result of that data.
  - 1. Hold biennial public meetings on implementation of land management plans, comparing: a) actions planned vs. taken, b) environmental impacts expected vs. experienced, and c) management changes to be made as a result of that analysis.

