

# Compendium of State and Provincial Forestry Best Management Practices

Erik Schilling, George Ice, Ben Wigley

National Council for Air and Stream  
Improvement, Inc.

The background of the slide is a solid blue color. In the lower right quadrant, there are several faint, concentric white circles that resemble ripples on water, creating a decorative effect.

# Project Background & Goal

- This project was initiated to meet information needs of procurement organizations under the SFI® program
- Overall goal was to develop a compendium that includes information about state and provincial forestry BMP programs
  - BMP prescriptions
  - BMP monitoring programs
  - Implementation and compliance rates

# Summarize State & Provincial BMPs in Two Areas...

- Requirements/recommendations for roads, stream crossings, streamside management zones, and other major elements of BMPs for water quality
- Monitoring programs and protocols used by major wood producing states and provinces

# Framework Used to Present BMP Programs

- BMP categories evaluated
  - Streamside Management Zones
  - Stream Crossings
  - Forest Roads
  - Fertilizer and Herbicides
  - Harvesting and Reforestation
  - Waste Disposal

# Regions/Jurisdictions

- South
  - AL, AR, FL, GA, KY, LA, MS, NC, OK, SC, TN, TX, and VA
- West
  - AZ, CA, ID, MT, NM, NV, OR, UT, WA, and WY
- Midwest
  - IA, IL, IN, ND, MI, MN, MO, SD, and WI
- Northeast
  - MA, MD, ME, NH, NJ, NY, OH, PA, VT, and WV
- Canada
  - BC, AB, SK, MB, ON, QC, NB, NL, NS, and PE

# Key Point #1

Forestry BMP prescriptions are variable due to a multitude of legal, political, and socioeconomic factors inherent to a specific jurisdiction. However, all share common overarching themes or basic recommendations for protecting water resources.

# Common Forestry BMP Principles

- Rob Olszewski and Rhett Jackson (2005)
  - Minimize bare ground and soil compaction
  - Separate bare ground from surface waters
  - Separate fertilizers and pesticides from surface waters
  - Inhibit hydraulic connections between bare soils and surface waters
  - Provide forested buffers around streams
  - Engineer stable roads and stream crossings

# Important Things to Remember

- Recommendations vs. technical specifications
- Specific prescriptive recommendations vary but several basic BMP themes are evident within all jurisdictions
  - This is what needs to be focused on...

## Key Point #2

Properly implemented forestry BMPs are effective at protecting water resources during forest management regardless of jurisdictional requirements.

# Southeastern US

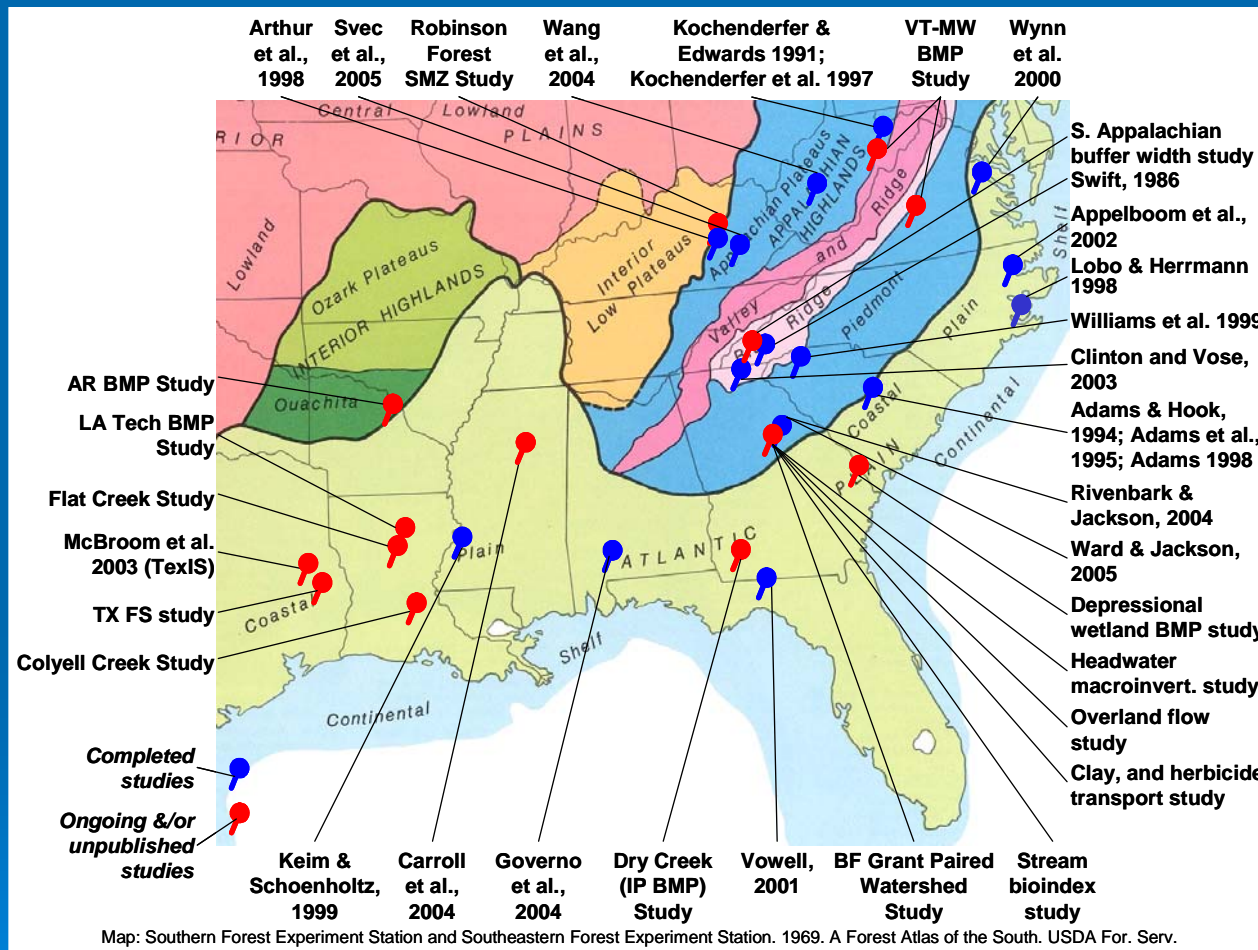


Figure courtesy of M. Miwa

# Western US

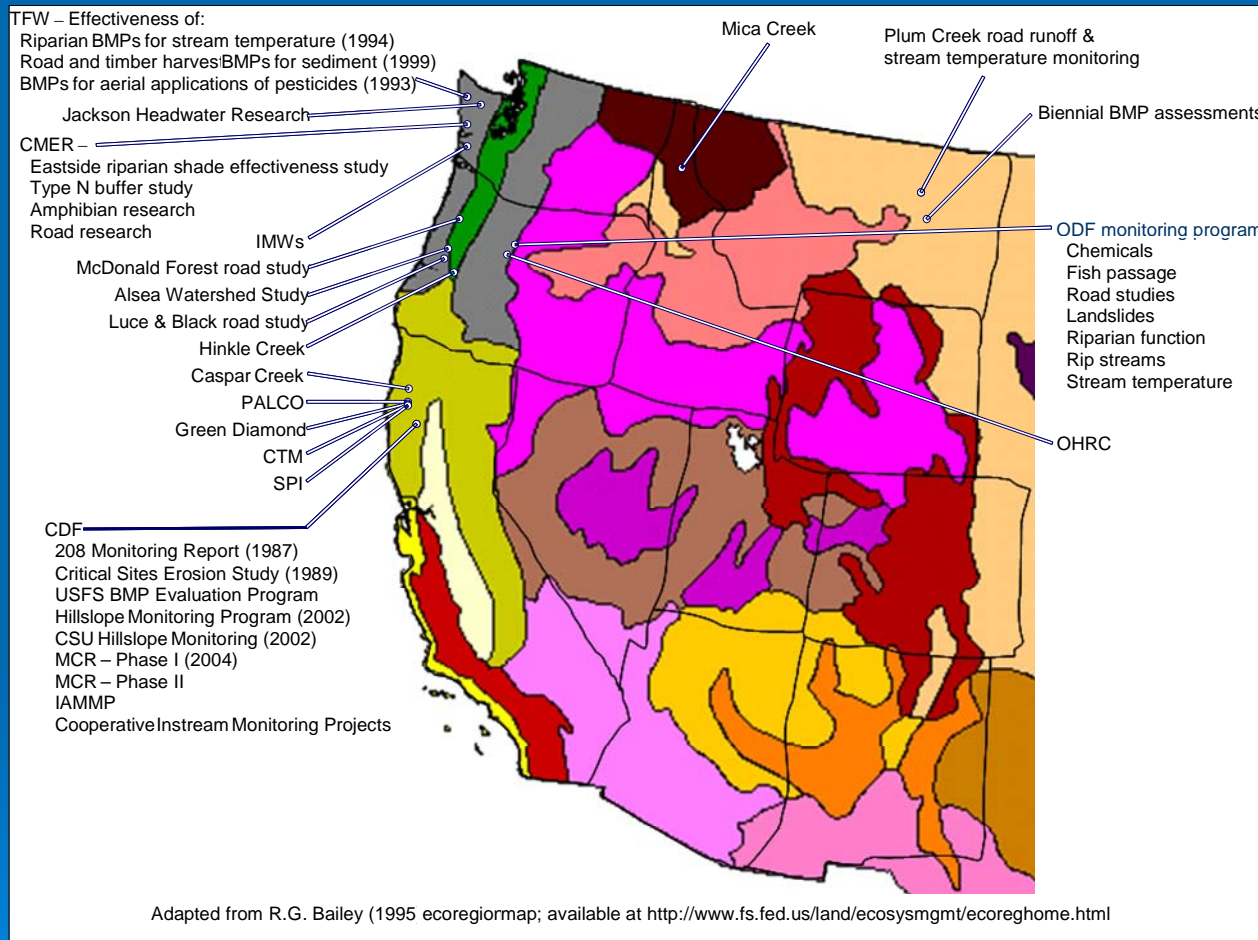
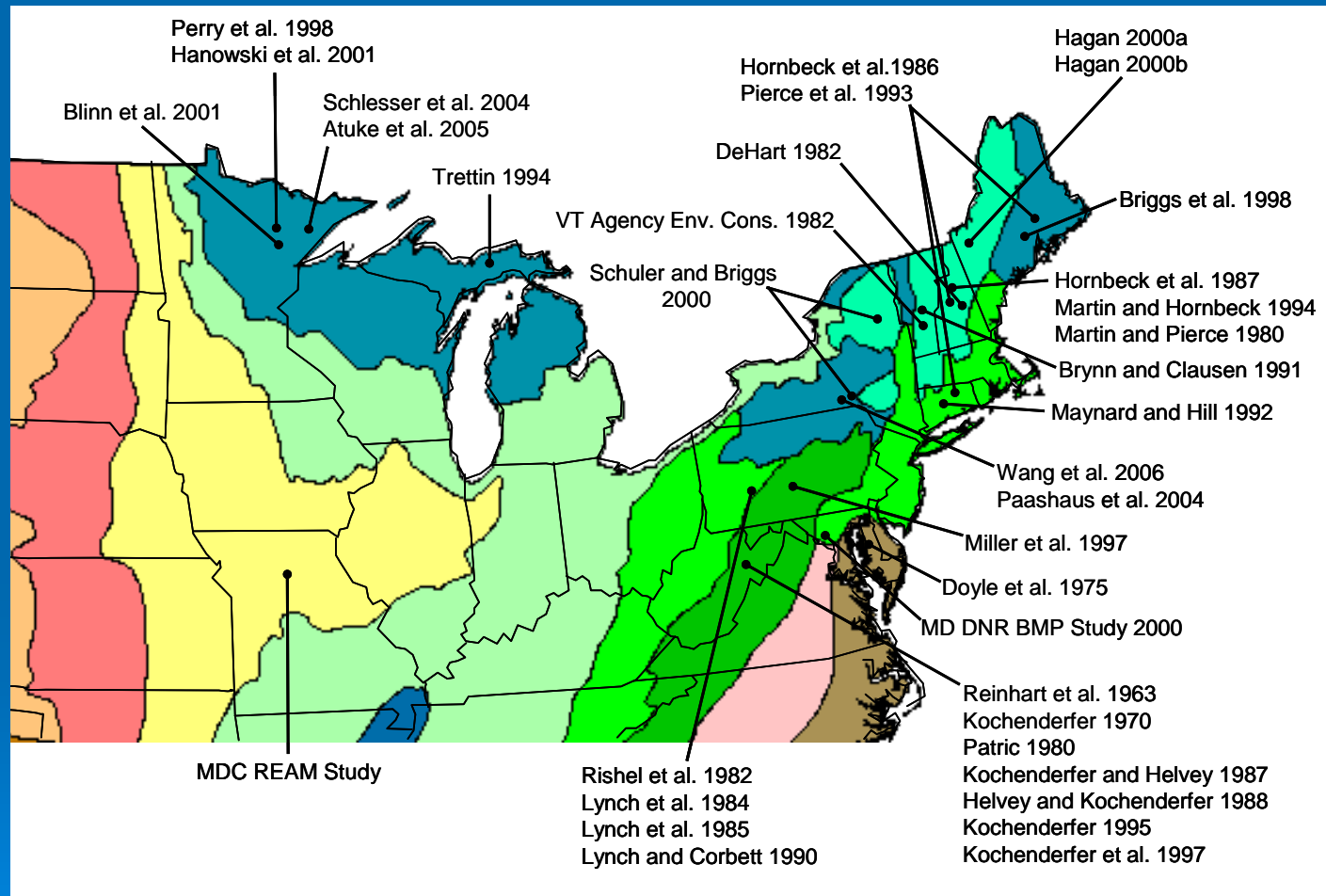


Figure courtesy of G. Ice, NCASI

NCASI...Serving the forest products industry since 1943

# Northeast and Midwestern US

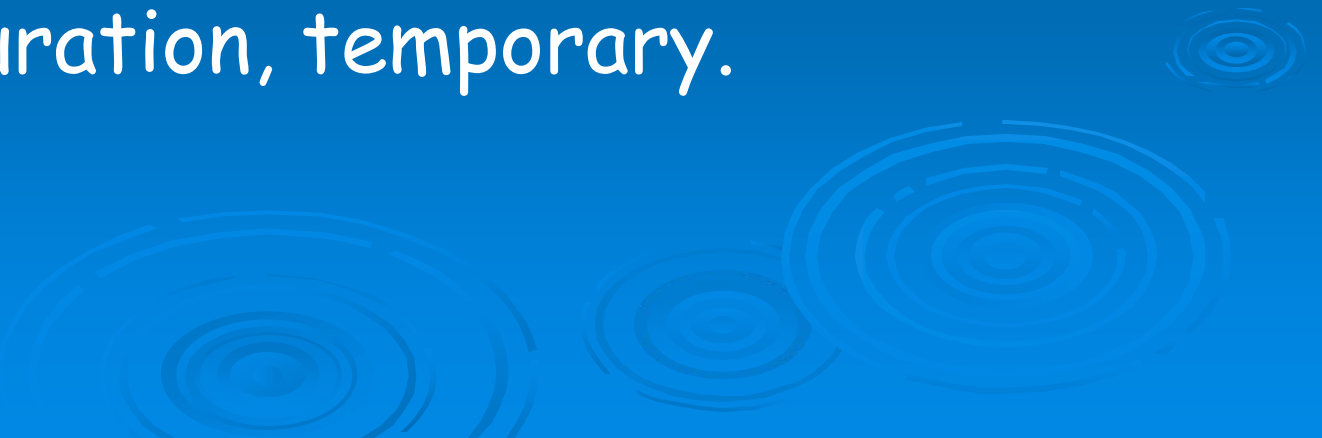


## Key Point #3

While monitoring programs and protocols vary among jurisdictions rates of BMP implementation or compliance are generally high.

# Opportunities for Improvement

- Greatest opportunities for improvement exist in two areas :
  - Stream crossings
  - Forest roads
- If a water quality impairment is observed it is often found to be minor and the duration, temporary.



## Key Point #4

Jurisdictions having long-term monitoring programs have shown steady improvement in compliance rates over time.

# Continuous Improvement - Florida Example

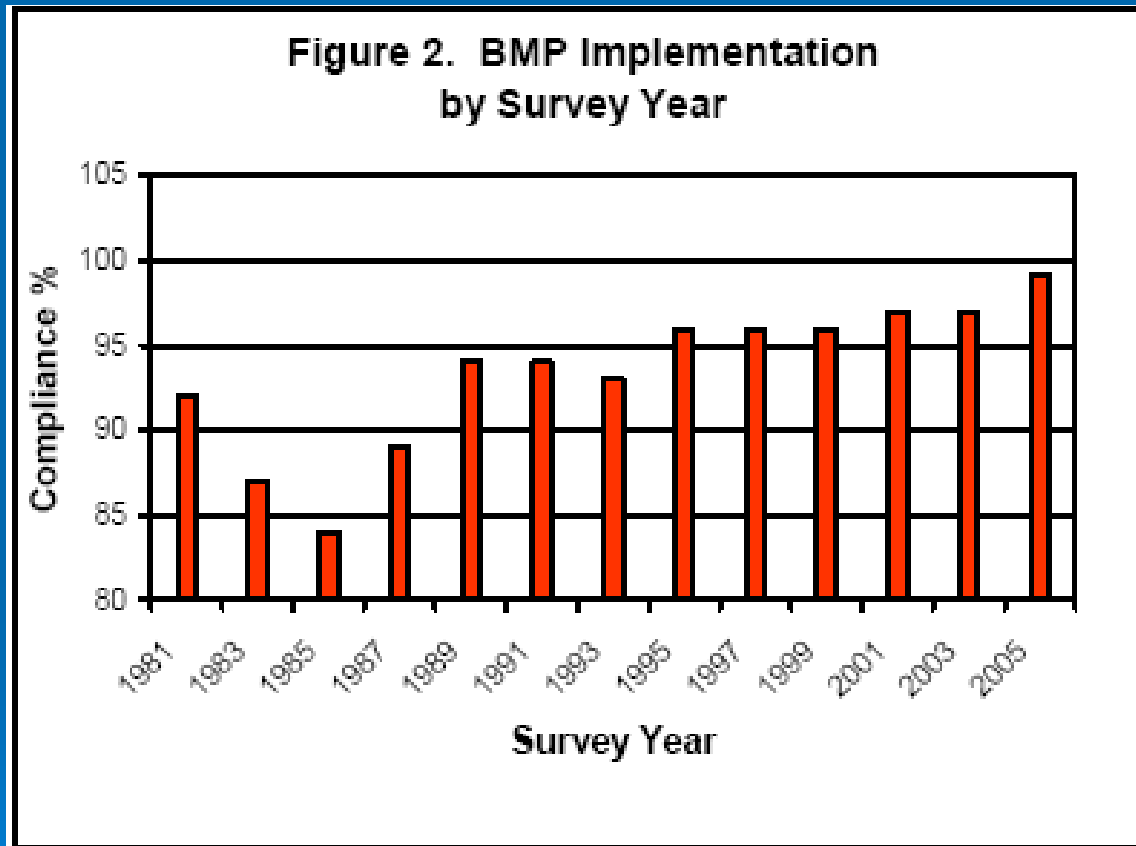


Figure from Vowell and Lima (2006)

# Continuous Improvement - Montana Example

| Category   | 2006            | 2004             | 2002              | 2000             | 1998             | 1996              | 1994              | 1992              | 1990              |
|--|-----------------|------------------|-------------------|------------------|------------------|-------------------|-------------------|-------------------|-------------------|
| Application of practices that meet or exceed BMP requirements.           | 96%             | 97%              | 96%               | 96%              | 94%              | 92%               | 91%               | 87%               | 78%               |
| Application of high risk practices that meet or exceed BMP requirements. | 89%             | 89%              | 90%               | 92%              | 84%              | 81%               | 79%               | 72%               | 53%               |
| Number of sites with at least one major departure in BMP application.    | 4 of 44<br>(9%) | 5 of 39<br>(13%) | 10 of 43<br>(23%) | 4 of 42<br>(10%) | 8 of 47<br>(17%) | 12 of 44<br>(27%) | 17 of 46<br>(37%) | 20 of 46<br>(43%) | 27 of 44<br>(61%) |
| Average number of departures in BMP application, per site.               | 1.52            | 1.3              | 1.8               | 1.4              | 2                | 3                 | 3.9               | 5.6               | 9                 |

Table from Rogers 2007

## Key Point #5

Education, outreach programs and forest certification programs like SFI® have increased knowledge, use, and compliance with jurisdictional BMP recommendations and/or requirements.

# Role of Forest Certification - Texas Example

- Simpson et al. 2005 (TX-FS) noted higher BMP compliance on sites in which the receiving mill was known to be a SFI® participant
  - Implementation rating of 95.5% for SFI mills
  - Implementation scored 89.5% on sites where timber went to non-certified mills or the receiving mill was unknown

# Conclusions

- While jurisdictions have developed their own BMP prescriptions and monitoring programs, there exists a great deal of consistency
  - Input from industry and advocacy groups
  - Strong scientific understanding of BMPs and especially available control options

# Conclusions

- Rates of BMP implementation are generally high
- Greater prescription complexity generally leads to greater potentials for decreased compliance
  - Need to balance prescription complexity with on site practicality

# Conclusions

- State and Provincial BMPs have been successful in controlling NPS pollution potentially associated with forestry practices
  - Forestry is not often cited as a major contributor to water quality impairment