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Growing Value from Exceptional Resources

Case Study:
BMP Compliance and Effectiveness

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Development of Forestry BMPs and Certification Timeline

1971 OR FPA

1972 Federal Water Pollution Control Act Amendments (CWA)

1977 EPA develops guidelines for state NPS control programs

1987 CWA Sect. 319 program to strengthen state NPS programs

1993 FEMAT report published
1993 FSC certification program established

1994 SFI certification program established

1997 Sect. 303(d) lawsuits set timelines for TMDLs

1999 EPA proposes forestry as point source
1999 PEFC certification program established

2000 EPA withdraws proposal to classify forestry as a point source

2007 EPA begins review of forest roads for possible reclassification under the CWA

2008 ATFS certification program established

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1972 Federal Water Pollution Control Act

- Clean Water Act (CWA) represented a landmark change in the way we approached water quality protection
  - Separating point and nonpoint sources
- CWA is an example of ‘cooperative federalism’
- Sect. 208 was designed to control NPS pollution
  - Later Sect. 319 added to strengthen NPS programs
- Best Management Practices (BMPs) traditionally used to control NPS pollution during forest management

Clean Water Act and Forestry BMPs

- Development of BMPs to control NPS pollution represents one of the great successes of the CWA
- All states with significant forest management activities have BMP programs in place to achieve their water quality goals
  - Type of state BMP program (i.e., regulatory or non-regulatory) often not important regarding levels of implementation and effectiveness

Development of Forestry BMPs

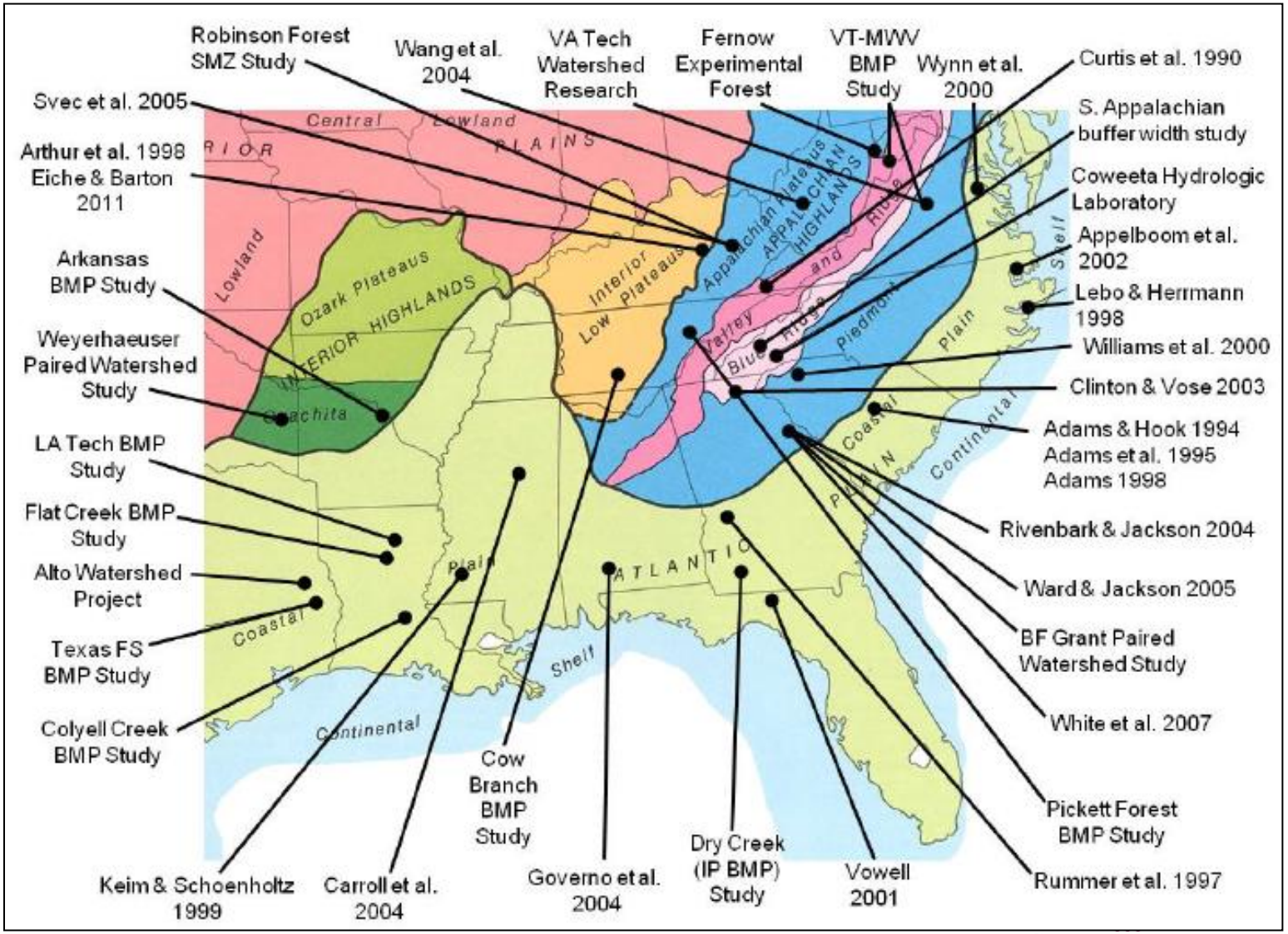
- Initially, BMPs resulted from negotiation and compromise among stakeholders
  - Industrial forestland owners and NIPFLs
  - Environmental groups
  - State and Federal agencies
  - University researchers
- Today, forest BMPs are scientifically defensible
- Uniformly conducted under the most comprehensive environmental programs of any land use activity (NCASI Tech. Bull. #966)

Assessing Forestry BMP Effectiveness and Implementation

- Traditionally, progress was assessed through BMP development and implementation monitoring
  - Identify problem
  - Test solutions (i.e., effectiveness testing)
  - Evaluate use (i.e., implementation monitoring)
- Numerous studies have documented BMP effectiveness
  - Ice et al. 2004, NCASI SR 12-01
- And evaluated BMP implementation rates
  - NCASI TB #966
  - Ice et al. 2010

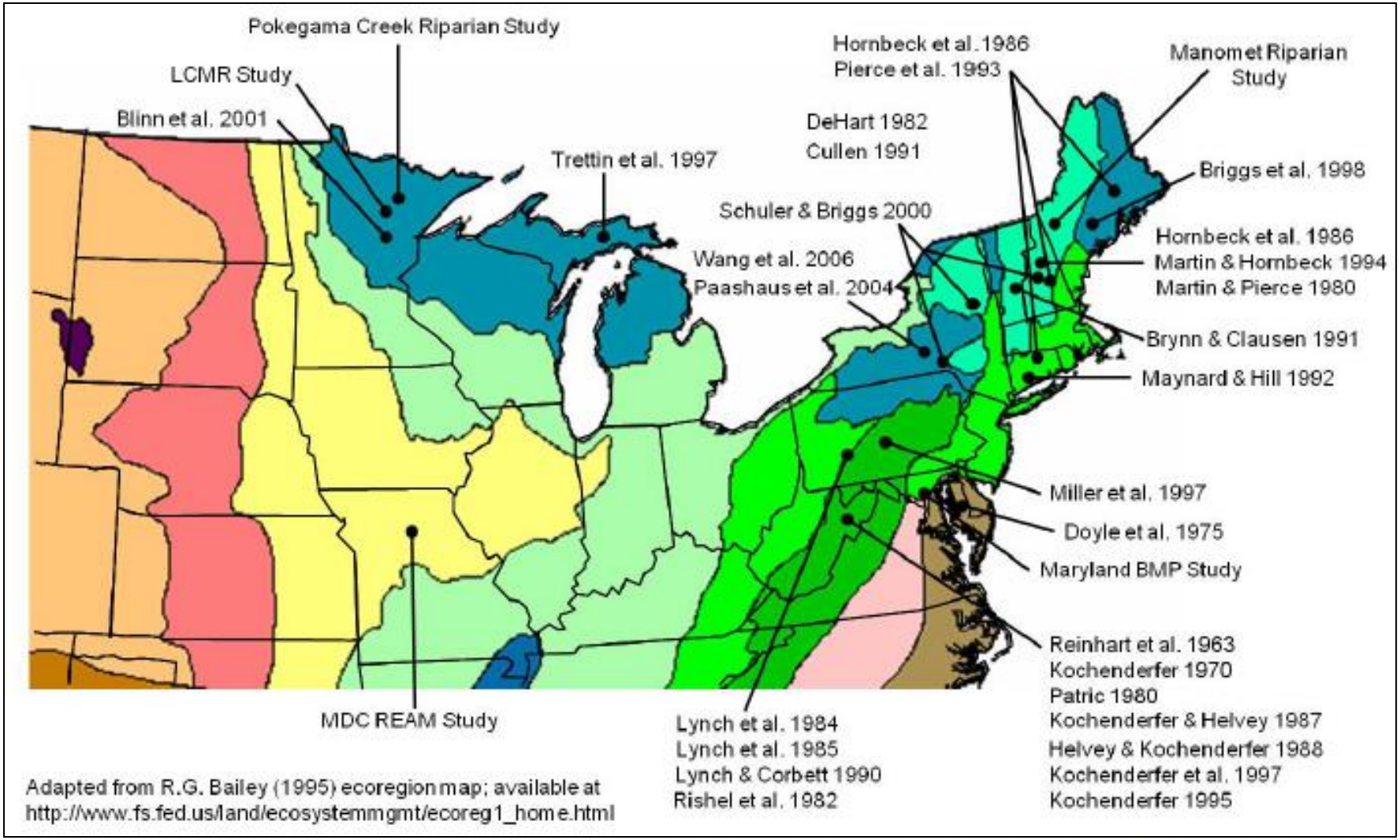
Forestry BMP Effectiveness Studies in the Southeastern United States

(NCASI Special Report No. 12-01)



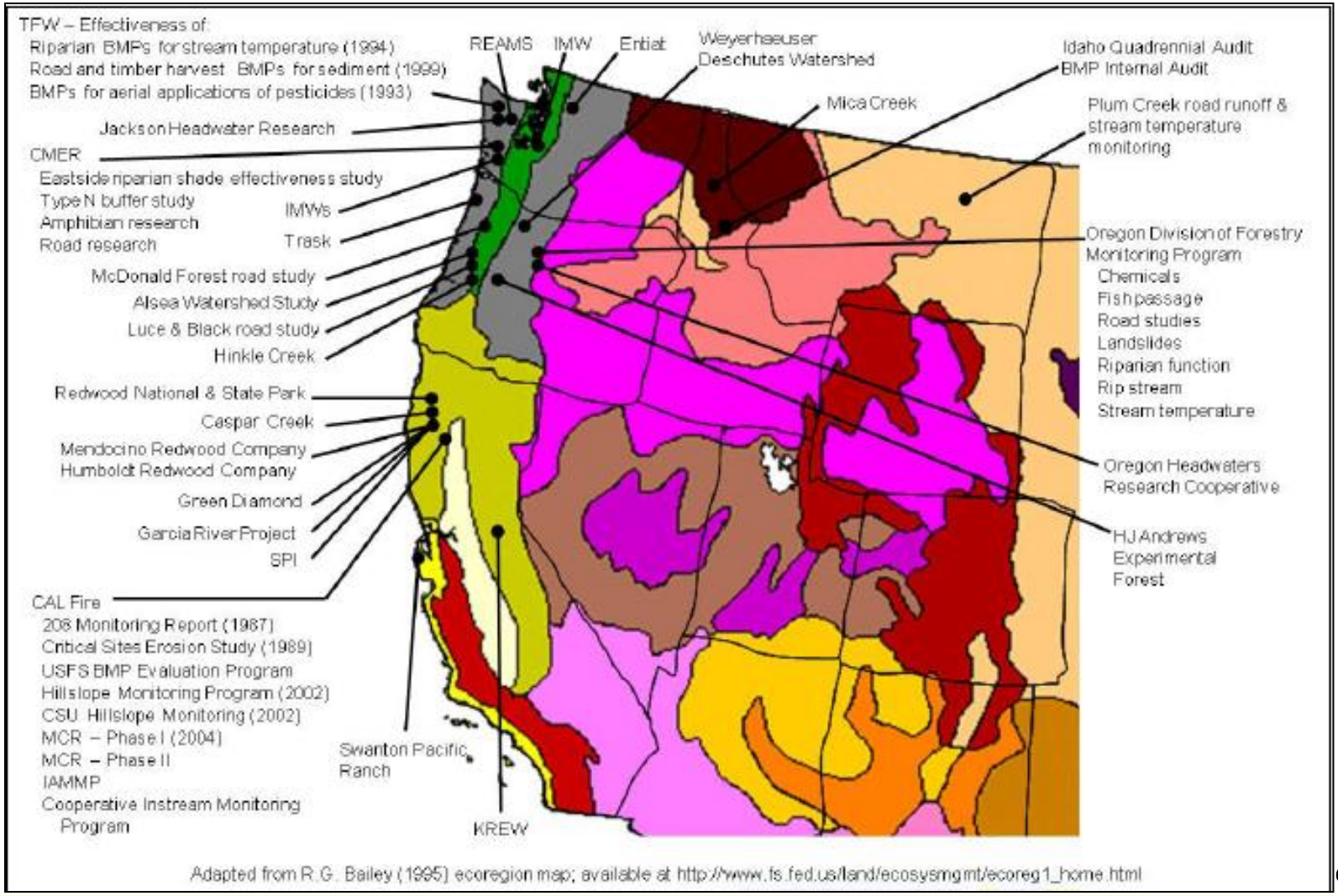
Forestry BMP Effectiveness Studies in the Northeastern United States

(NCASI Special Report No. 12-01)



Forestry BMP Effectiveness Studies in the Western United States

(NCASI Special Report No. 12-01)



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While State BMPs Differ, Goals are Similar – Pollution Reduction

- Variable prescriptions reflect variation in factors that influence erosion rates:
  - Forest types
  - Topography
  - Soil erodibility and infiltration
  - Precipitation amount, intensity and form
- As well as the interaction of state legal, political and socioeconomic factors:
  - Forest ownership
  - Forest certification programs
  - Support for research and education
  - Risk tolerance

BMP Research Has Resulted in a Common Set of Guiding Principles

(NCASI Tech. Bull. #966)

- Minimizing compaction and extent of bare soil
- Separating exposed soils from surface waters
- Separating fertilizer and herbicide applications from surface waters
- Inhibiting hydraulic connections between soil and surface waters
- Providing forested buffers around watercourses
- Designing stable roads and watercourse crossings

Certification Programs Require Landowners to Implement Forestry BMPs

- 2010-2014 Sustainable Forestry Initiative Standard
  - Performance Measure 3.1 requires participants who manage land to *"meet or exceed all applicable federal, provincial, state and local water quality laws, and meet or exceed BMPs developed under – Canadian or U.S. EPA – approved water quality programs"*.
  - Indicator 3.1.4 also requires participants to monitor overall best management practices implementation

Certification Programs Require Landowners to Implement Forestry BMPs

- 2010-2015 American Tree Farm Standard
  - Performance Measure 4.1 states that "*Forest owner must meet or exceed practices prescribed by State Forestry Best Management Practices (BMPs) that are applicable to the property"*.
- 2010 Forest Stewardship Council Standard
  - Indicator 6.5.b requires that "*Forest operations meet or exceed Best Management Practices (BMPs) that address components of the Criterion where the operation takes place*".

SFI Requires BMPs for Wood Procurement Entities

- Objectives 8-10 and 14-20 ensures that SFI participants procure fiber from legal and responsible sources, regardless of whether it is from certified or uncertified forests
- Performance Measure 10.1.1 requires participants who procure wood to have a *"Program for the purchase of raw material from … wood producers that have completed training programs and are recognized as qualified logging professionals"*

Trends in Forestry BMP Implementation

- Trend data at the regional and national levels show generally high and increasing levels of implementation
- Ice et al. (2010) used volume of timber harvested in each state to adjust contributions to a national implementation average
  - National forestry BMP implementation rate estimated to be 89%

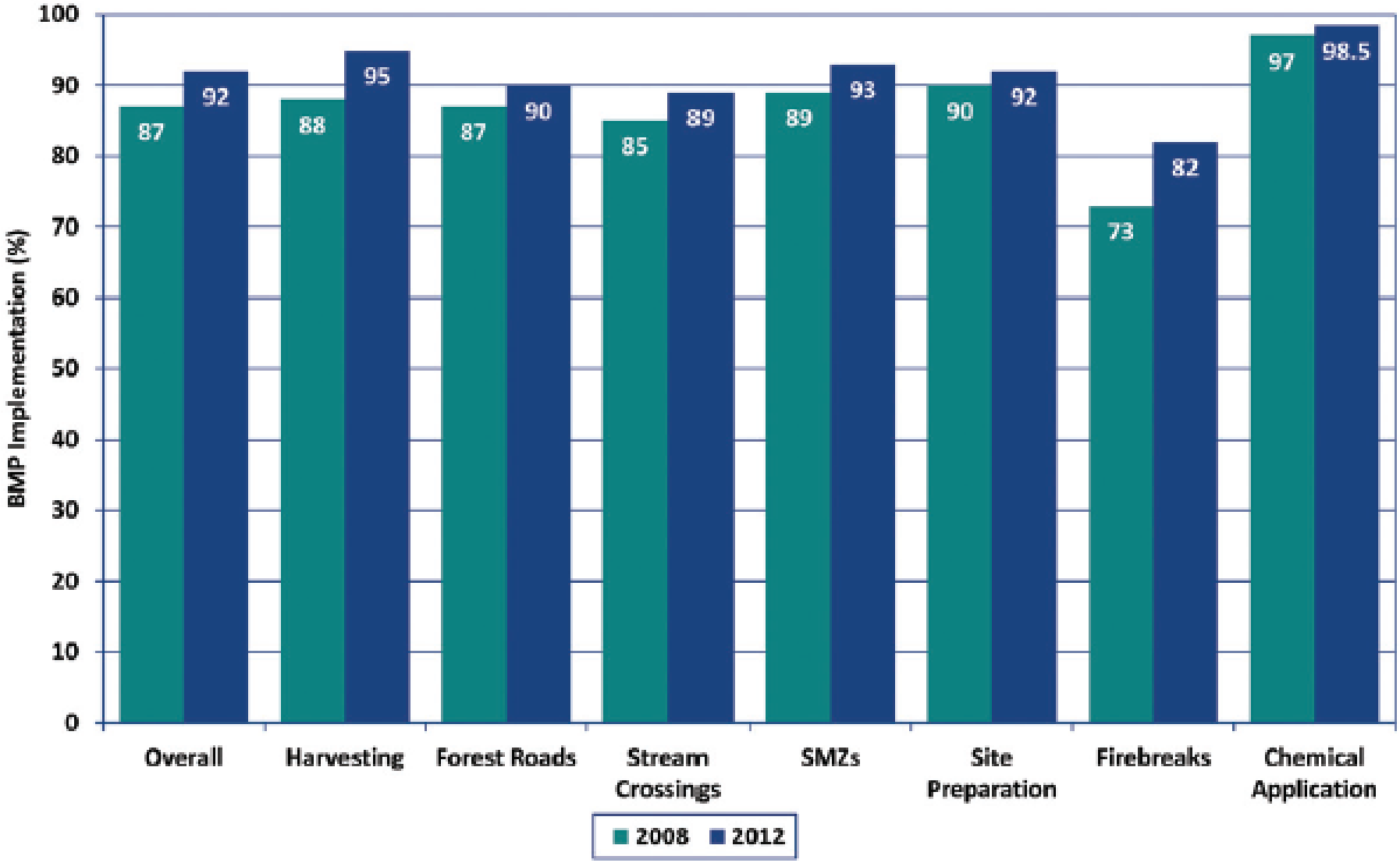
Southern Group of State Foresters BMP Implementation Monitoring

- Beginning in 1997, southern region states implemented a BMP monitoring protocol titled *Silviculture Best Management Practices Implementation Monitoring – A Framework for State Forestry Agencies (Framework).*
- Currently, all states in the region are in conformance with the Framework

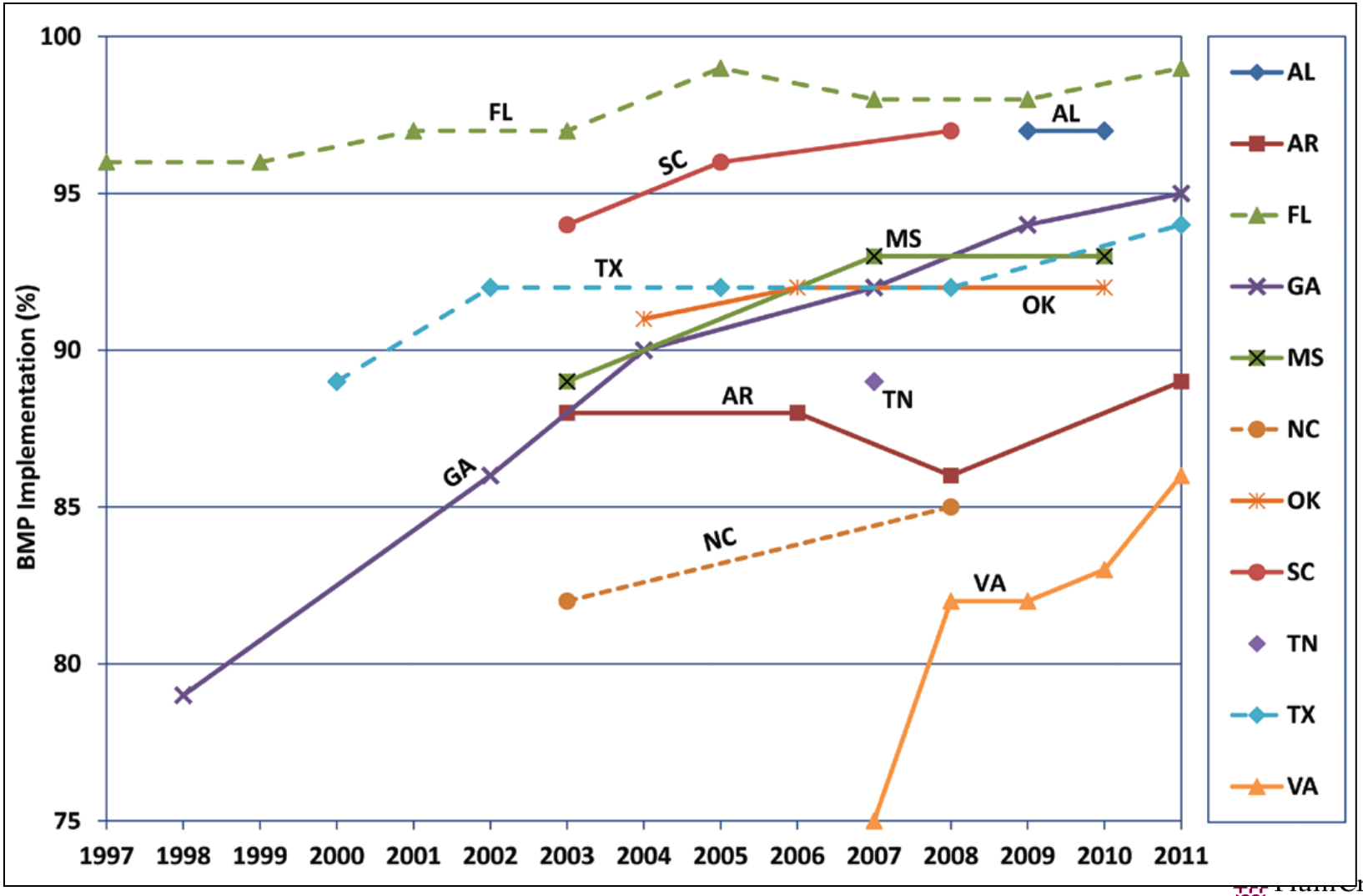
SGSFs BMP Implementation Monitoring - Framework

- The Framework calls for the evaluation of seven BMP categories:
  - Harvesting
  - Forest Roads
  - Stream Crossings
  - Streamside Management Zones
  - Site Preparation
  - Firebreaks
  - Chemical Application
- Evaluated at three levels: individual BMP practice, BMP category, and overall rate of BMP implementation

Regional BMP Implementation by Category 2008 vs. 2012



BMP Implementation Trends for Southern States



Understanding BMP Implementation Rates

- BMP evaluations are designed to highlight potential post-harvest problems and are not a direct measure of water quality impacts
- Failure to properly implement an individual or group of BMPs does not necessarily lead to water quality impacts
- States specifically identify BMP failures that are *'significant risks to water quality'*.
  - Alabama found five risks to water quality in 2009-2010
  - Florida's 2009 survey reported only two instances

In Texas, Forest Certification Positively Influences BMP Implementation Rates

- ATF certified sites and had an implementation rating of 96.5%; while implementation for eligible non-members was 87.6%
- Implementation higher on harvest sites in which receiving mills are SFI certified (96.2% vs. 86.4%)
- Implementation for landowners with forest management plans was 96.7%, compared to 83.6% for landowners without management plans

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