

# Indicator 4.20:

U.S. Forest Sustainability Indicators <https://www.fs.fed.us/research/sustain/>

## **Proportion of forest management activities that meet best management practices, or other relevant legislation, to protect water related resources such as riparian zones, water quality, quantity, and flow regulation**

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### What is the indicator and why is it important?

Forestry best management practices (BMPs) to protect water resources are a set of preventive measures designed to control or reduce movement of sediment, nutrients, pesticides, or other pollutants from soils to receiving water bodies. When properly implemented, forestry BMPs prevent impairment of water bodies from silvicultural practices and other forest management activities. Since the protection of water quality primarily involves the management of soil conditions, the information presented in this indicator can also be applied to Indicator 18, which assesses BMPs focused on soil protection.

### What does the indicator show?

The National Association of State Foresters (NASF) has conducted periodic surveys of State non-point source (NPS) pollution control programs for silviculture. The sixth survey in the series was published in 2013 (NASF 2013). All 50 States and Washington, D.C., responded to the survey, but only 32 States reported forestry BMP monitoring statistics for this survey. Eleven States indicated ongoing BMP monitoring without the availability of statistics, while seven States stated that they have no forestry BMP monitoring, primarily due to minimal forested acres and low levels of silvicultural management. In 2013, the average overall use of silvicultural BMPs by responding States was 91 percent, the same as the median value in 2004 (NASF 2004; table 20-1). Best management practice categories include prescribed burns, forest roads, log landings, stream crossings, chemical site preparation, pesticide use, and wetlands. Additional prior reports of forestry BMP monitoring include Schilling and others (2009), who reported that the national estimated forestry

BMP implementation rate in 2009 was 89 percent. The Southern Group of State Foresters now publishes periodic BMP implementation survey reports. Data for the Southern Group were obtained from the Southern Group report (SGSF 2012), and data for the Western United States were obtained from the Council of Western State Foresters 2007 report, summarizing BMP implementation and effectiveness monitoring (CWSF 2007). Although BMP effectiveness for individual States was not reported, BMP implementation rates for the nine reporting Western States ranged from 75 to 97 percent.

The U.S. Department of Agriculture Forest Service has a national BMP program tracking whether site-specific BMP prescriptions were implemented as planned or designed. The Forest Service National BMP Monitoring Summary Report for fiscal years 2015–2016 (in press) documented that 84.5 percent of the monitored sites/projects implemented BMPs to varying degrees (38 percent were fully implemented). The report also documents that 78.4 percent of BMPs were at least marginally effective at protecting water quality.

### What has changed since 2010?

The NASF 2013 survey demonstrates that, while forestry BMP implementation changes slightly from year to year for individual States, overall BMP use nationwide has remained relatively constant at levels of approximately 91 percent.

### Are there important regional differences?

Reported State BMP implementation is slightly higher in the West and South than in the East.

Table 20-1—Overall rates of forestry best management practice use by State and National Association of State Foresters regions. Blank entries indicate no response or no data available.

Overall rate of BMP use (percent)											
NASF Northeastern Region				NASF Southern Group				NASF Western Council			
State	Time 1 <sup>1</sup>	Time 2 <sup>2</sup>	Time 3 <sup>5</sup>	State	Time 1 <sup>3</sup>	Time 2 <sup>3</sup>	Time 3 <sup>5</sup>	State	Time 1 <sup>1</sup>	Time 2 <sup>3</sup>	Time 3 <sup>5</sup>
CT		50 (est)	---	AL	97 (2009)	97 (2010)	97	AK	92	89	98
DC				AR	86 (2008)	89 (2011)	87	AZ		50 (est)	NR
DE	99	50 (est)	NR	FL	98 (2009)	99 (2011)	99	CA	95	94	93
IA	25-50	50 (est)	---	GA	94 (2009)	95 (2011)	97	CO	80	50 (est)	87
IL		84 (est)	NR	KY	562	682	94	GU			
IN	~80	88	84	LA		962	96	HI		50 (est)	NR
MA	85	50 (est)	NR	MS	93 (2007)	93 (2010)	91	ID	92	96	99
MD		81	86	NC	82 (2003)	85 (2008)	85	KS		50 (est)	---
ME	76	75	90	OK	92 (2006)	92 (2010)	95	MT	95	97	98
MI		84 (est)	91	PR				ND	100	50 (est)	---
MN		71	83	SC	96 (2005)	97 (2008)	91	NE		50 (est)	---
MO		82 (est)	NR	TN		89 (2007)	84	NV		50 (est)	NR
NH		61	---	TX	92 (2008)	94 (2011)	95	NM		75	---
NJ		50 (est)	NR	VA	83 (2010)	86 (2011)	90	OR	96	96	95
NY		77(1998)	NR					SD		92	96
OH	80	84 (est)	80					UT		85	84
PA		85 (est)	---					WA		80	88
RI		50 (est)	NR					WY	94	97	94
VT	70	61(1988)	82								
WI	86	96	90.8								
WV		85	94								
Median	80		86	Mean	87 (2008)	93 (2013)	92 (2013)	Median	95	80 <sup>4</sup>	93

--- = BMP monitoring not conducted.

BMP = best management practice; CWSF = Council of Western State Foresters; NASF = National Association of State Foresters; SGSF = Southern Group of State Foresters.

NR = BMP monitoring conducted but not reported.

<sup>1</sup>NASF 2004; <sup>2</sup>Schilling and others 2009; <sup>3</sup>SGSF 2012; <sup>4</sup>CWSF 2007; <sup>5</sup>NASF 2013.

# Why can't the entire indicator be reported at this time?

Information for this indicator is dependent on State-level survey responses. BMPs are developed at the State level and may differ considerably both in their specific requirements and in their overall level of protection. In addition, the precision involved in forestry BMP monitoring and reporting likely varies among States, including whether public lands are included. The USDA Forest Service BMP monitoring program adds information to State reporting, although the program tracks BMP implementation at sites or projects where BMPs are planned, rather than overall BMP implementation at all sites.

## References

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