

NA/NAASF Base Indicators of Forest Sustainability and Associated Metrics¹

These indicators and metrics span the Montreal Process criteria and are recommended for use in NA-wide and State forest sustainability assessments.

Criterion 1. Conservation of Biological Diversity

- 1. Area of total land, forest land, and reserved forest land**
 - 1.1 Forest and total land area
 - 1.2 Forest density
 - 1.3 Forest land and population
 - 1.4 Reserved forest land
 - 1.5 Urban forest
- 2. Forest type, size class, age class, and successional stage**
 - 2.1 Forest cover type groups
 - 2.2 Size class
 - 2.3 Age group
 - Successional stage (*text document; no data/graphs*)
- 3. Extent of forest land conversion, fragmentation, and parcelization**
 - 3.1 Fragmentation (*text report with links; no data/graphs*)
 - 3.2 Forest land developed
 - 3.3 Net change in forest land
 - 3.4 Additions to and conversions from forest land
 - 3.5 Forest parcel sizes
- 4. Status of forest/woodland communities and associated species of concern**
 - 4.1 Forest and woodland communities
 - 4.2 Forest-associated and all species
 - 4.3 Forest-associated species of concern by taxonomic group
 - 4.4 Bird populations

Criterion 2. Maintenance of Productive Capacity of Forest Ecosystems

- 5. Area of timberland**
 - 5.1 Amount of timberland
- 6. Annual removal of merchantable wood volume compared with net growth**
 - 6.1 Net growth and removals
 - 6.2 Type of removals

Criterion 3. Maintenance of Forest Ecosystem Health and Vitality

- 7. Area of forest land affected by potentially damaging agents**
 - 7.1 Tree mortality and damage type
 - 7.2 Wildfire
 - 7.3 Drought
 - 7.4 Insects, diseases, plants, and animals

Criterion 4. Conservation and Maintenance of Soil and Water Resources

- 8. Soil quality on forest land**
 - 8.1 Soil pH
 - 8.2 Total soil carbon
 - 8.3 Estimated bare soil
 - 8.4 Bulk density
 - 8.5 Calcium-aluminum ratio
- 9. Area of forest land adjacent to surface water, and forest land by watershed**
 - 9.1 Forested riparian area
 - 9.2 Forest land by watershed
- 10. Water quality in forested areas**
 - 10.1 Water quality in forested areas (*text report with links, no data/graphs*)
 - 10.2 Stream miles impaired by percentage of watershed forested

Criterion 5. Maintenance of Forest Contribution to Global Carbon Cycles**11. Forest ecosystem biomass and forest carbon pools**

- 11.1 Forest ecosystem biomass
- 11.2 Forest carbon pools
- 11.3 Forest carbon by forest type
- 11.4 Change in forest carbon

Criterion 6. Maintenance and Enhancement of Long-Term Multiple Socioeconomic Benefits to Meet the Needs of Societies**12. Wood and wood products production, consumption, and trade**

- 12.1 Value of wood-related products
- 12.2 Production of roundwood
- 12.3 Production and consumption of roundwood equivalent
- 12.4 Recovered paper
- 12.5 Bioenergy (*text report with links; no data/graphs*)
 - Trade or wood flow (*text document; no data/graphs*)
 - Nontimber forest products (*text document; no data/graphs*)

13. Outdoor recreational participation and facilities

- 13.1 Participation in outdoor recreation
- 13.2 Federal land open to recreation
- 13.3 Recreational facilities on State land
- 13.4 Trails
- 13.5 Campgrounds
- 13.6 Recreational facilities in national forests

14. Investments in forest health, management, research, and wood processing

- 14.1 USDA Forest Service Northeastern Area State and Private Forestry funding
- 14.2 State forestry agency funding
- 14.3 Funding for forestry research at universities
- 14.4 USDA Forest Service Research funding
- 14.5 Capital expenditures by manufacturers of wood-related products

15. Forest ownership, land use, and specially designated areas

- 15.1 Forest land ownership
- 15.2 State lands
- 15.3 Protected land
- 15.4 Private land with public conservation easements
- 15.5 Forest land in tax reduction programs
- 15.6 Forest certification

16. Employment and wages in forest-related sectors

- 16.1 Wood-related products manufacturing employees
- 16.2 State forestry employees
- 16.3 USDA Forest Service employees
- 16.4 Wood-related products manufacturing payroll and wages
- 16.5 State forestry salaries

Criterion 7. Legal, Institutional, and Economic Framework for Forest Conservation and Sustainable Management**17. Forest management standards/guidelines**

- 17.1 Types of forest management standards/guidelines
- 17.2 Voluntary and mandatory standards/guidelines
- 17.3 Monitoring of standards/guidelines

18. Forest-related planning, assessment, policy, and law

- 18.1 State forest planning
- 18.2 Private nonindustry forest planning
- 18.3 National forest planning
- 18.4 State forest assessments
- 18.5 Forest laws and policies
- 18.6 State forest advisory committees

¹ No priority is implied in the numeric listing of the criteria, indicators, and metrics.