

Sustainable Soil and Water Quality Practices on Forest Land

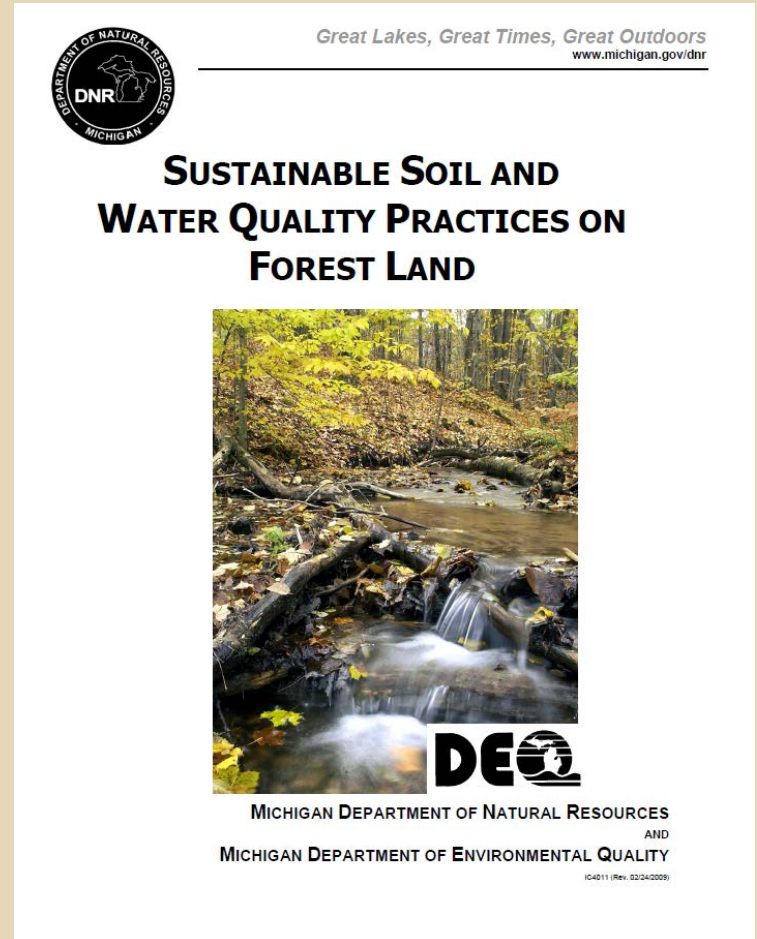


David Price, MI DNR FRD

AKA: MI Forestry BMP Guide



- First published in 1994
- Updated in 2009



Issues Affecting Water Quality



- Use of the BMPs is voluntary
- Use can help prevent non-point source pollution of aquatic systems
 - Soil erosion and sedimentation into streams, lakes, ponds, or wetlands
 - Fuel and lubricant contamination of surface or groundwater

PA 451 Environmental Law



BMPs can help operators meet environmental protection regulations:

- Part 31 – Water Resources Protection
- Part 91 – Soil Erosion and Sedimentation Control
- Part 301 – Inland Lakes and Streams
- Part 303 – Wetlands Protection
- Part 305 – Natural Rivers

PA 451 Environmental Law



- Use of BMPs does not obviate the need for obtaining DEQ permits where and when required.



BMP Guide Content



- Fuels, Lubricants, and Spills
 - Spill response plans and spill kits
 - Waste and contaminated soils
 - Fueling areas
 - Reporting



BMP Guide Content



- Timber Harvest Planning
 - Identify environmentally sensitive areas: streams & RMZs, slopes, spring seeps, and wetlands
 - Plan locations for roads, trails, and landings to avoid or minimize adverse impacts
 - Consider timing of operations

BMP Guide Content



- Riparian Management Zones
 - RMZ identification and width
 - RMZ maintenance specifications
 - RMZs with trout streams
 - Management for shade intolerant species
 - Natural Rivers/Wild and Scenic Rivers
 - Vernal pools, spring seeps, and intermittent streams

BMP Guide Content



- Forest Roads
 - Planning and placement
 - Construction specifications
 - Winter roads
 - Sedimentation control measures
 - Road management
 - Road closures



BMP Guide Content



- Water Diversion Devices
 - Water Bars (permanent or temporary)
 - Broad-based Dips
 - Diversion Ditches
 - Cross Drainage Culverts



BMP Guide Content



- Stream Crossings
 - DEQ Permit requirements
 - Portable/Temporary Bridges
 - Culvert sizing and placement
- More in-depth discussion later

BMP Guide Content



- Rutting
 - Rutting prevention measures
 - Rutting thresholds
 - Rutting restoration measures



BMP Guide Content



- Landings
 - Specifications for location
 - Specifications for construction



BMP Guide Content



- Skid Trails
 - Specifications for location and use
 - Specifications for closing



BMP Guide Content



- Wetlands
 - DEQ permit requirements
 - Exemptions for forest road permits
 - Specifications for construction of roads
 - Deep and thin organic soils
- More in-depth discussion later

BMP Guide Content



- Site Preparation and reforestation
 - Mechanical preparations
 - Prescribed burning
 - Chemical and pesticide treatment
 - Wildfire soil erosion control measures and restoration



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Stream Crossings



- A DEQ Part 301 permit is required for all perennial and intermittent streams
 - A stream must have a defined bed, bank, and evidence of continued flow or occurrence of water
- A DEQ Part 31 permit is needed for streams where the drainage area is greater than 2 square miles.

Stream Crossings



- Expedited DEQ General Permits possible for:
 - Clear span bridges
 - Small culverts (6' dia. x 30' or less)
 - Snow Road Stream Crossings for Forestry Operations (Temp culverts 3' dia. x 30' or less)
- Don't require public notice or on-site review.

Stream Crossings



- Expedited DEQ Minor Project Permits possible for:
 - Large culverts (100' or less in length)
 - Rock ford stream crossings for commercial forestry operations (Drainage area less than 2 mi²)
- Don't require public notice.

Stream Crossings



A temporary/portable bridge is the preferred method of crossing medium-sized stream systems



Stream Crossings



- DNR has an inventory of 14 portable bridges available for access to DNR lands
 - Currently seeking authorization for purchasing additional bridges
- Bridges are 13' x 25-50'
- 50 ton load limit
- [Stutts Creek Temp Bridge Install](#)

Stream Crossings



Stream Crossings



Stream Crossings



Stream Crossings

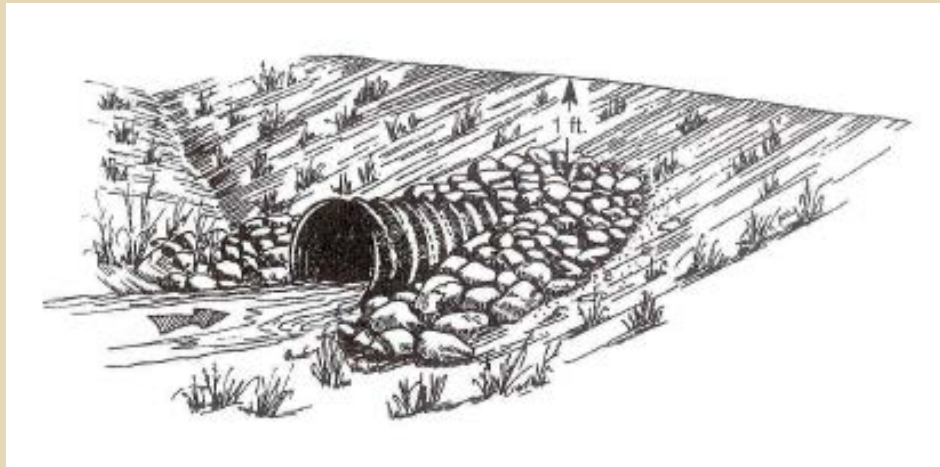


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Stream Crossings



- Culverts are a good option for crossing smaller streams
- Can be either permanent or temporary in nature



Stream Crossings



A poorly installed road culvert



Stream Crossings



Snow road crossings

- A good inexpensive option for forestry operations during the winter.



Stream Crossings



A rock ford can also be a good option for crossing small streams.



Working in Wetlands



A DEQ permit is required for the following activities in a wetland:

- Dredging
- Draining
- Filling
- Construction



Working in Wetlands



The following forestry activities do not require a DEQ permit:

- Silvicultural activities
- Harvesting of forest products
- Construction or maintenance of forest or temporary roads for moving forestry equipment if adverse effects to the wetland are minimized

Working in Wetlands



How NOT to cross a wetland!



Equipment/Crane Mats



Equipment mats are a better option for crossing small wetland drainages.



Equipment Mats



- DNR has 87 4'x16' mats available for use on DNR lands.
 - Seeking authorization to purchase more.



BMP Effectiveness



So how do know if forestry
BMPs are being effectively
implemented in Michigan



BMP Effectiveness



- BMP audits are conducted every 3 years by the Michigan SFI Implementation Committee
- Most recently in 2014.



BMP Effectiveness



2014 Audits were conducted on 36 harvested timber sales located on:

- MI DNR State Forestlands
- USDA National Forestlands
- Private Industrial Forestlands
- Non-Industrial Private Forestlands

BMP Effectiveness



2014 Audits assessed:

- Equipment operation and maintenance
- Road systems
- Stream crossings
- Skidding
- Landings
- Riparian Management Zones
- Wetlands

BMP Effectiveness



Fall 2014 BMP Results by Category

----- BMP Needed -----

Category	applied correctly	acceptable variation	applied incorrectly	not applied	Total of BMP Needed
1 Equipment Operation and Maintenance	97.1%	0.0%	0.0%	2.9%	100.0%
2 Roads (& road retirement)	85.63%	3.44%	7.81%	3.13%	100.00%
3 Stream Crossings	82.74%	5.36%	7.74%	4.17%	100.00%
4 Skidding & Skid Trails	82.14%	7.14%	1.43%	9.29%	100.00%
5 Landings	94.23%	5.77%	0.00%	0.00%	100.00%
6 Riparian Management Zones	91.52%	6.97%	1.21%	0.30%	100.00%
7 Wetlands	92.00%	0.00%	4.00%	4.00%	100.00%
8 Other Considerations	95.35%	4.65%	0.00%	0.00%	100.00%
Overall	88.56%	5.12%	3.60%	2.72%	100.00%

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Questions?



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