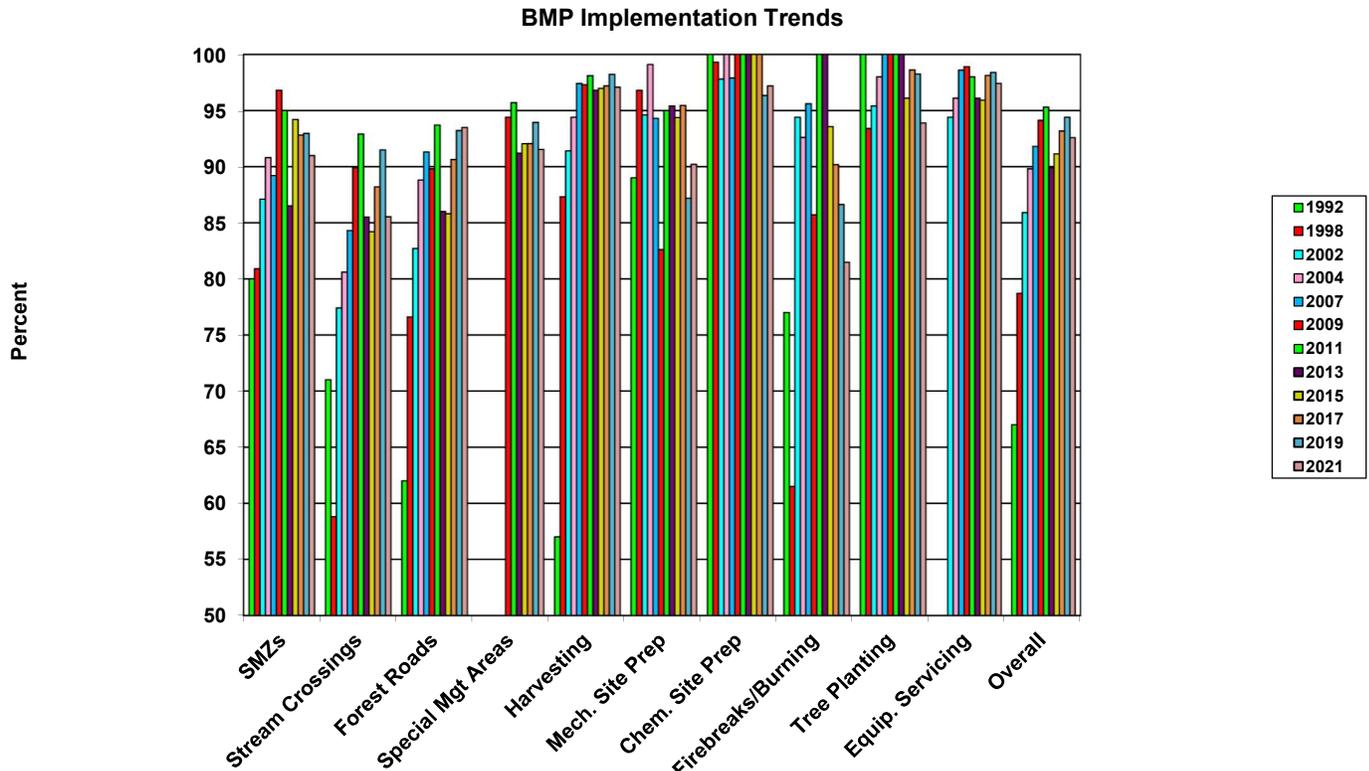




2021 Forestry Best Management Practices Implementation Survey Highlights

General Best Management Practices (BMP) Survey Results

The Georgia Forestry Commission (GFC) has completed its 2021 Forestry BMP Implementation Survey covering 260 randomly selected sites statewide. These 260 sites consist of 50,420+ acres, which include 254.07 miles of forest roads, 109.91 streams miles, and 161 stream crossings. By ownership, 156 of the sites were on non-industrial private forest land (NIPF), 79 sites were corporate land, and 25 sites were public land. **Overall, statewide BMP implementation for GFC's 2021 BMP Survey is 92.58%.** The BMP implementation rate is the percentage of fully implemented BMPs compared to the total number of necessary/applicable BMPs at the tract level, the practice level, and the overall level. This represents just a small 1.82 percentage point drop from GFC's 2019 BMP Survey result of 94.40%. BMP implementation results were also calculated for each applicable category of practice for each tract. Categories of practice include Streamside Management Zones (SMZs), Stream Crossings, Forest Roads, Special Management Areas, Harvesting (outside SMZs), Mechanical Site Prep, Chemical Site Prep, Firebreaks/Burning, Tree Planting, and Equipment Servicing, as well as an Overall category. BMP implementation results for each category are shown in this chart along with the results from the last 11 BMP surveys for comparison where available.



BMP implementation for 2021, shown in lavender on the right side of each category/grouping in the chart, improved for Forest Roads, by just 0.28 percentage points since 2019, to a score of 93.49% in 2021 with no Water Quality Risks (WQRs). Stream Crossings declined from the 2019 survey, by 5.96 percentage points to a score of 85.53% in 2021. Stream Crossings had the highest number of WQRs for 2021, 33 of the total 58 WQRs. Streamside Management Zones (SMZs) maintained a high score at 90.98%, a small drop of 1.98 percentage points from 2019. However, the SMZ category had the second highest number of WQRs for 2021, 18 of the total 58 WQRs. Special Management Areas had a small drop of 2.41 percentage points to 91.53%, with 6 WQRs. Timber Harvesting maintained a very good score of 97.08% in 2021 with a small drop of just 1.14 percentage points and only 1 WQR. Mechanical Site Prep showed an improvement of 3.02 percentage points from 2019, to 90.20% in 2021 with no WQRs. There was also a small 0.85 percentage point improvement from 2019 in Chemical Site Prep to 97.19% in 2021 with no WQRs. Tree planting maintained a strong score of 93.89% with no WQRs, but the score did decline by 4.36 percentage points from 2019. BMP implementation for Firebreaks/Burning outside SMZs in 2021 was 81.47%. While this is a 5.15 percentage point drop from 86.62% in 2019, the score is still adequate and included no WQRs. Equipment Servicing maintained a very good score of 97.41% in 2021 with no WQRs. All the categories have at least some minor room for improvement, as well as continued education. However, the main categories where educational efforts need to concentrate seem to be Stream Crossings, SMZs, and Special Management Areas, due to their relatively higher numbers of actual WQRs. Firebreaks/Burning also need some attention due to a lower relative implementation score, but with an adequate score maintained and no WQR found, this category appears to be relatively less problematic.

Educational Opportunities

BMP implementation for Stream Crossings, SMZs, Special Management Areas, and Firebreaks/Burning are the categories with either higher occurrences of WQRs or lower implementation scores, so our education plans will be focused on those categories. We will continue to push for additional improvements in all categories where possible, and for continued good compliance in those categories near or at the top. Primary educational opportunities include:

- Stream Crossings
 - ✓ Stream crossing approach design and stabilization
 - ✓ Proper removal and rehab of temporary crossings
 - ✓ Culvert crossing design, installation, and planning
 - ✓ Basic stream crossing design needs, including storm flow and aquatic migration requirements
 - ✓ Temporary portable bridge use
- Streamside Management Zones (SMZs)
 - ✓ Keeping logging debris out of stream channels
 - ✓ Proper water diversions for firebreaks when tied in at the SMZ margins
 - ✓ Water diversion for roads not directing surface flows into adequate filter zones
 - ✓ Lack of stabilization for skid trails or log decks within an SMZ
 - ✓ SMZ width and/or residual basal area
 - ✓ Keeping mechanical site prep fully out of SMZs
 - ✓ Minimizing soil disturbance in SMZs
- Special Management Areas
 - ✓ Stabilizing canal/ditch crossings
 - ✓ Avoidance of mechanical site prep in close proximity with floodplain features
- Firebreaks/Burning
 - ✓ Proper firebreak planning and water diversion installation
 - ✓ Proper tie-in with roads and other sensitive areas such as SMZs and ephemeral areas
- Forest Roads Outside of SMZs
 - ✓ Proper water diversion design and placement
 - ✓ Proper closeout needs following harvest activities
- Timber Harvesting Outside of SMZs
 - ✓ Skid trail stabilization requirements
 - ✓ Minimizing rutting on saturated soils
 - ✓ Minimizing harvests on wetland sites during wet weather
- Mechanical Site Preparation Outside of SMZs
 - ✓ Avoidance of bedding directing surface runoff to roads and road-ditches
 - ✓ Following the contour for intensive methods
- Artificial Regeneration Outside of SMZs
 - ✓ Machine planting on the contour
 - ✓ Avoidance of pine establishments on restricted wetlands
- Equipment Washing and Servicing
 - ✓ Proper disposal of oils, lubricants, and containers

Where's the room for improvement?

Results from this survey point to some improvements and declines. Some continued issues remain with Stream Crossings and SMZs, and to a lesser extent with Special Management Areas. Also, some decline has been noted for Firebreaks/Burning outside SMZs, but with relatively low risks to water quality to this point. As mentioned in the past, problems are likely intensified by smaller tracts, parcelization, changes in ownerships, and access needs. The 2021 survey indicates similar issues associated with continued parcelization of lands that we have seen in past surveys, especially former timber company lands or lands previously managed more closely. Smaller properties result in more roads and stream crossings for access by multiple landowners, resulting in more chances to make mistakes, especially when resources and/or knowledge about proper land management and BMPs may be in short supply. Parcelization potentially results in:

- Change of management levels and objectives, due to economics and smaller landowners often not having the resources and/or knowledge for proper land management including BMPs
- Tracts broken into smaller parcels with multiple landowners having a range of knowledge, resources, and objectives

Some past BMP surveys indicated as tract size decreases, so does the percentage of BMP implementation. While the 2021 survey does not show a definite trend in that regard, it does indicate that as tract size goes down, the number of actual Water Quality Risks (WQRs) per acre tend to increase. While the overall number of WQRs and the overall rate of WQRs/acre for the 2021 survey were found to be low and concentrated on a relatively small number of sites, a trend was seen related to tract size. The 2021 survey shows the number of WQRs/acre for three tract size categories, including small tracts (<100 acres), medium tracts (101 to 200 acres), and large tracts (+200 acres). Small tracts had an average of 0.002 WQRs/acre. Medium tracts averaged 0.001 WQR/acre, and large tracts averaged 0.0004 WQR/acre. Basically, tracts less than about 100 acres (small tracts) had about twice the rate of WQR/acre of tracts 101 to 200 acres (medium tracts). While small tracts had about five times the rate of WQR/acre of tracts 201 acres and above (large tracts).

What's the good news for the 2021 survey?

The overall BMP Implementation score is good at 92.58%. This includes small improvements for some categories and maintenance of very good to fair scores for others. The percentage of stream and road mileages in full compliance was found to be 93.90% and 96.46% respectively. While there was an increase in total WQRs from 34 in 2019, to 58 in 2021, the relatively few WQRs found were all again concentrated on just a small number of sites, as has been the norm for most of the last 10 to 15 years, indicating the vast majority of forestry sites have no WQRs. While there were some declines in BMP implementation in some individual categories, those particular categories still continued to have good to fair scores ranging from about 82% to 97%, with little water quality risk. In conclusion, the overall trend continues to be good as of the end of 2021. Further details can be found in the full 52-page report on the 2021 Forestry BMP Survey from the GA Forestry Commission.