



# Silviculture Best Management Practices

## 2017 Implementation Survey Report



**Florida Department of Agriculture and Consumer Services**  
**Adam H. Putnam, Commissioner**

# **Results of Florida's 2017 Silviculture BMP Implementation Survey**

Conducted by:

Florida Department of Agriculture and Consumer Services  
Florida Forest Service

In Cooperation with  
Florida Forest Landowners and Forest Land Managers

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## EXECUTIVE SUMMARY

In 2017, the Florida Department of Agriculture and Consumer Services Florida Forest Service (FFS) completed the nineteenth Survey on Silviculture Best Management Practices (BMPs). By delegation from the Florida Department of Environmental Protection, the FFS is the lead agency for statewide development, implementation, and monitoring of silviculture BMPs. This Survey fulfills the implementation monitoring element of the FFS responsibility for controlling silviculture related sources of nonpoint pollution.

The Silviculture BMP Implementation Survey was initiated in 1981 and has since been conducted biennially. The principal purpose of the Survey is to determine the level of implementation with Florida's Silviculture BMPs. The Survey is conducted throughout Florida from a random sample of recent forestry operations. Both public and private forest lands that meet the selection criteria are eligible for the Survey.

The Survey process is consistent with the Southern Group of State Foresters' *Silviculture Best Management Practices Implementation Monitoring - A Framework for State Forestry Agencies* (June 2002). In addition, results from a BMP Effectiveness Study published in 2001 and 2004 (References), used the Survey as a measure of BMP implementation and stream bio-assessment techniques to measure water quality. These stream bioassessment studies concluded that where silviculture BMPs were properly applied (as measured by the Survey), water quality, aquatic habitat and overall stream ecosystem health were protected.

The 2017 BMP Implementation Survey evaluated 3,074 practices on 163 individual forestry operations (sites). This cooperative effort involved 108 individual public and private landowners and covered 34,492 acres in 44 Florida counties. Eighty-two sites were on private non-industrial forestland, 55 on industrial forestland, and 26 on public forestlands.

The 2017 Survey reported no instances of noncompliance that constituted a significant risk to water quality.

For the 2017 Survey, no site scored below 86% in overall BMP implementation. Ninety-six percent of the sites scored 100% implementation for applicable BMPs, an increase of 6% from the 2015 survey. The range of compliance scores was 86% to 100%, and the average for overall BMP compliance was 99.6%, a slight increase from 99.3% in 2015. The average compliance for the 36-year period since 1981 is 95%, and a total of 5,859 individual forestry operations have been surveyed during the period of record.



## **INTRODUCTION**

Florida's Silviculture Best Management Practices (BMP) Program was established as a result of the 1972 Federal Water Pollution Control Act (a.k.a. Federal Clean Water Act). This program is directed at controlling nonpoint source (NPS) pollution associated with forestry operations, through the use of BMPs. Under delegation by the Department of Environmental Protection's State Water Quality Program, the Florida Forest Service (FFS) is responsible for the development, implementation, and monitoring of forestry BMPs in Florida. The purpose of this report is to present the results of the most recent implementation monitoring, as determined by the 2017 BMP Implementation Survey.

### **BMP Development**

Florida's first Silviculture BMP Manual [1] was published in 1979 and was revised multiple times over the years, the most recent being in 2008. The BMP revision process is conducted by a 22 member Technical Advisory Committee appointed by the Commissioner of Agriculture and composed of representatives from state and federal government, forest industry, private non-industrial landowners, conservation/environmental groups and academia [2]. The BMP Manual [3] contains 150 individual practices within fourteen BMP categories, including "Special Management Zones" and "Wetlands" that protect overall ecosystem integrity and wildlife habitat, as well as water quality. In addition, the Technical Advisory Committee continues to meet biennially to consider revisions to the Manual and provide input and guidance for the overall BMP program. The most recent Technical Advisory Committee meeting was May 11, 2017 at which time a BMP status and progress report was presented.

### **BMP Implementation**

Implementation of silviculture BMPs in Florida is primarily done under an educational format, designed to transfer BMP technology to forest practitioners through workshops and field demonstrations. The implementation program is ongoing, with workshops routinely provided upon request or as deemed necessary based on monitoring results. Currently, FFS BMP foresters conduct twenty to thirty workshops/demonstrations annually, involving over 600 participants per year. In addition, the FFS provides BMP training directly to loggers through the Florida Forestry Association's Master Logger Program. To date, approximately 476 loggers have attended this training and become Master Loggers.

### **BMP Monitoring**

Since 1981, the Florida Forest Service has monitored forestry operations for compliance with BMPs by conducting biennial Surveys. The Survey evaluates a random sample of forestry operations for compliance with all applicable BMPs. Forestry operations that meet specific criteria on both public and private lands are eligible for the Survey. For the period of record (1981 to 2017), the FFS has evaluated over 5,800 individual forestry operations and recorded statewide compliance rates ranging from 84% (1985) to 99.6% (2017). For the period of record, the cumulative statewide average for overall compliance with silviculture BMPs is 95%.

The 2017 Survey was the nineteenth statewide BMP monitoring effort since 1981. In addition, a BMP Effectiveness Study was initiated in 1996, using the Survey as a measure of BMP implementation and Florida's Stream Condition Index [4] as the principal measure of water quality. The study evaluated BMP effectiveness during silviculture operations such as clearcut harvesting, intensive mechanical site preparation and forest chemical (herbicides and fertilizer) application. Upon completion, the results of the study showed that properly applied silviculture BMPs were effective in protecting water quality, aquatic habitat and overall stream ecosystem health [5, 6]. Several additional forestry BMP studies have been conducted since then looking specifically at fertilizer application and its impact on ground water and surface water. These studies have also shown that properly implemented BMPs protect both ground water and surface water from contaminants associated with fertilizer use [7,8].

## **SURVEY PROCEDURE**

### **Sampling Intensity and Site Selection**

The BMP Implementation Survey is conducted in Florida counties where any level of bona-fide silviculture activity is reported or observed.

As in previous Surveys, each county within the 2017 sample area was assigned a sampling goal (number of Survey sites) proportionate to that county's average annual timber removal [9]. Thus, the more timber removed, the higher the goal assigned to the county. For example, the high level of timber removal in Taylor County resulted in a goal of 11 sites; whereas Bradford County's relatively low timber removals resulted in a goal of one site. In addition, in order to sample as much of the state's geographic area as possible, counties showing any significant timber harvest activity, were assigned a goal of at least one site. This resulted in a total goal of 210 sites for the 2017 Implementation Survey [Appendix Table 1].

Candidate sites for the 2017 Survey were selected using the following criteria: (1) the operation must be bona-fide silviculture, (2) the silviculture treatment being evaluated must have occurred within the past two years, and (3) some part of the treatment must have occurred within 300 feet of a stream, sinkhole or lake (2 acres or larger), or within a wetland type listed in the BMP Manual. These criteria provide for Survey sites where the greatest potential for forestry-related non-point source (NPS) pollution exists, and where any such impacts are still discernible and measurable at the time of the Survey.

Sites for the 2017 Survey were selected by FFS personnel, from fixed-wing aircraft, flying randomly selected township and range lines at altitudes ranging from 1500-1800 feet. This pattern was flown for each county until the established goal was attained to minimize sample bias and to maximize the diversity of ownerships and physiographic areas within the sample. In areas where aircraft were not available, candidate sites were selected from the ground, assigned a number, and then drawn randomly. By these methods, candidate sites were identified in 44 counties in the spring/summer/fall of 2017. Upon verification of ground conditions on candidate sites, 163 sites in 44 counties were confirmed as meeting the qualifying criteria.

In addition to the 163 sites identified as bona-fide Silviculture, FFS personnel also observed sites which appeared to be forestry operations but after close inspection on the ground, were determined to be associated with a non-forestry land use.

## **Site Evaluation**

After being selected and verified for the Survey, each site was evaluated for compliance with all applicable BMPs. The evaluation was conducted in the field by the BMP foresters who were responsible for contacting landowners prior to visiting each site to secure access and to solicit their participation in the Survey.

Actual field evaluations were only conducted on those sites that met the selection criteria and where silviculture activities were bona-fide. Timber harvesting associated with land clearing operations intended for development or other non-forestry land uses were not included in the Survey. The process of evaluating each site involved observing as much of the treated area as possible and completing a Survey field questionnaire [Appendix Table 2]. The questionnaire consists of 150 specific, “YES or NO” questions directly related to BMP implementation. All answers were based on physical on-site evidence with no assumptions made about future activities.

BMP implementation was evaluated and scored at three levels on each site: (1) individual practice(s); (2) categories of practices; and (3) overall. For an individual practice, implementation was recorded as either a Yes, No or Not Applicable. For categories of practices, such as Forest Roads or Stream Crossings, and for the overall score, implementation was expressed as a percent of all applicable BMPs in that category. Hence, each Survey site was given a compliance score between 0% and 100% for each applicable BMP category and for the overall site.

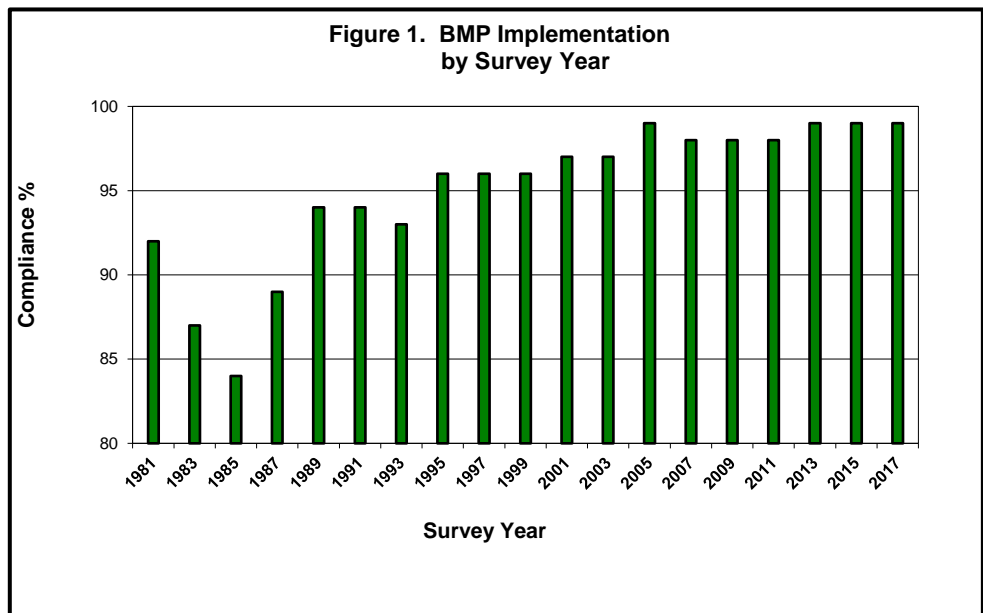
In addition, each incidence of non-compliance at the practice level was further evaluated in terms of "significant risk" to water quality. Significant risk is defined as *"a situation or set of conditions where noncompliance with BMPs has resulted, or may result, in the measurable and significant degradation of physical, chemical, or biological integrity of water quality, to the extent that it presents an imminent and substantial danger to the designated beneficial use"*. Where a significant risk has been identified, the observer makes recommendations to the landowner, logger, or contractor for corrective measures. After a reasonable period of time, a follow up site evaluation is made to assess compliance with these measures. Willful noncompliance with recommendations will initiate referral to the appropriate regulatory agency for enforcement action.

## DISCUSSION OF RESULTS

For the 2017 BMP Implementation Survey, FFS personnel evaluated 3,074 practices, on 163 individual forestry operations in 44 Florida counties. Of the individual practices evaluated, 3,063 (99.6%) were found to be in 100% compliance with BMPs. This level of implementation is a slight increase of 0.30% from the 2015 Survey results. (Figure 1).

### Statistical Analysis

As in previous Surveys, the practices evaluated represent only a sample of all forestry operations that met the qualifying criteria for 2017. In that regard, the Survey represents an estimate of the actual compliance with



silviculture BMPs. Based on the sampling procedure employed [10], the statistical properties below are attributable to the Survey data and express the quality of the estimate:

#### Estimate of Implementation (f):

$f = \text{BMPs in compliance} / \text{BMPs evaluated}(n)$

$f = 3063/3074$

$f = 0.9964$

#### Standard Error (se):

$se = \sqrt{f(1-f)/n}$

$se = \sqrt{0.996(1-0.996)/3074}$

$se = 0.001$

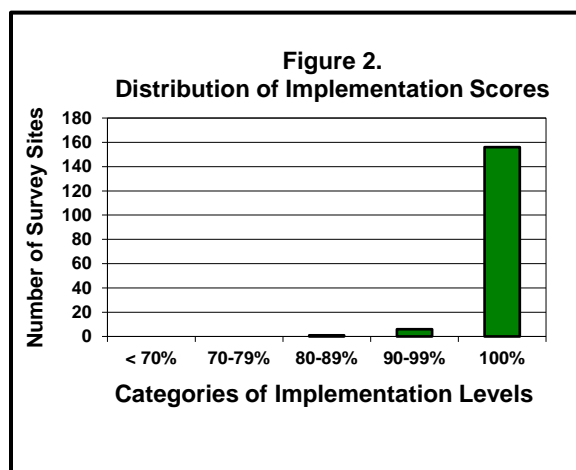
#### 95% Confidence Interval (ci):

$ci = f \pm 2 se$

$ci = .996 \pm 2 (.001)$

$ci = 99.4\% - 99.8\%$

For 2017, the estimate of BMP implementation (f) for the 44 county area is 99.6%, with an estimated standard error (se) of 0.001. Using the 95% confidence interval (ci), the data indicates that 95% of the time it is reasonable to expect compliance with BMPs to be at least 99.4% but not more than 99.8%.



Implementation scores for individual Survey sites in 2017 ranged from a low of 86.7% to a high of 100%. Figure 2 indicates the distribution of scores for individual Survey sites within several categories of implementation levels.

Scores for individual BMP categories ranged from 99.8% for Forest Roads to 100% for Canals, Fireline Construction, Pesticide and/or Fertilizer Use, Wet Weather Operations, Wetlands, Stream Crossings, Timber Harvesting, Emergency Operations, and Public Lands. (Appendix Table 2).

The total number of individual practices evaluated in 2017 decreased by 11% from the 2015 Survey due to a decrease in the number of actual sites sampled. However, increases in the number of practices evaluated within individual BMP categories were noted for Canals (29 to 44), and Emergency Operations (3 to 7).

### Site Characteristics

As in all previous Surveys, pine flatwoods with poorly drained soils, which characterize a large portion of Florida's landscape, dominated the physiographic types evaluated in 2017. Eighty-nine percent of the sites evaluated were pine plantations, 7% of the sites were reported as natural pine/hardwood mix, and 3% wetlands. Soil erodibility was reported as high on 2% of the Survey sites, while 89% of the sites reported low erosion potential. The primary tree species harvested on the Survey sites was slash pine (68%), followed by loblolly pine (25%), longleaf (3%), hardwoods (11%) and cypress (3%). Compared to the 2015 Survey, hardwood removals decreased by 44% and cypress harvesting decreased by 40%.

Similar to past Surveys, perennial and intermittent streams dominated the water resource features associated with the 2017 Survey sites at 89%. Wetland dominant terrain was identified on 3% of the sites. No lakes or sinkholes were noted. Also, seventy-three per cent of the 2017 Survey sites involved clearcut harvesting operations, mostly in intensively managed pine plantations. Selective harvesting and seed tree operations were evaluated on 11% of the sites. There were nine salvage harvest sites evaluated resulting from insect and wildfire damage.

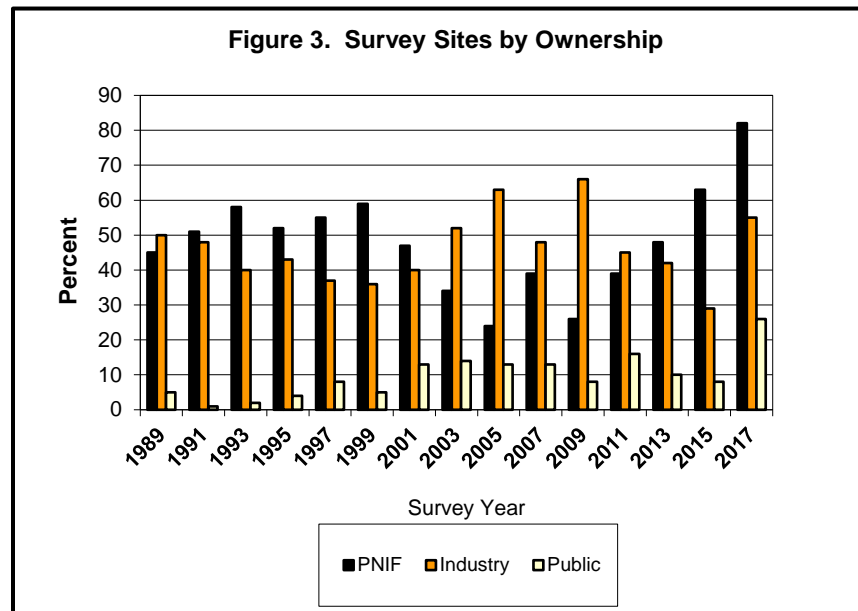
The 2017 Survey also collected information pertaining to logger training. On sites where timber harvesting was evaluated, 95% of the loggers were Florida Master Loggers, 2% were Georgia Master Timber Harvesters, and 3% were Alabama Pro Loggers. In addition, information was collected concerning wood flow to paper mills, sawmills, veneer plants and pole treatment facilities. The results show 51% of the timber harvested was delivered to pulp and paper mills, 40% to chip 'n saw mills, 2% to veneer facilities, and 7% to pole treatment plants.



## Forestland Ownership

For 2017, 50% of the Survey sites were located on private non-industrial forest lands (PNIF), 34% on forest industry lands, and 16% on public lands. This represents a shift in the distribution of sites by ownership, particularly with respect to the private non-industrial sector. Since 2015, industry land has made a turnaround and showed an increase in activity along with private non-industrial forest land which continues an upward trend (Figure 3).

Public land has also trended upward since 2015, showing a 45% increase in activity. These changes and trends are no doubt linked to changes in land ownership, economic pressures, and market conditions for forest products.

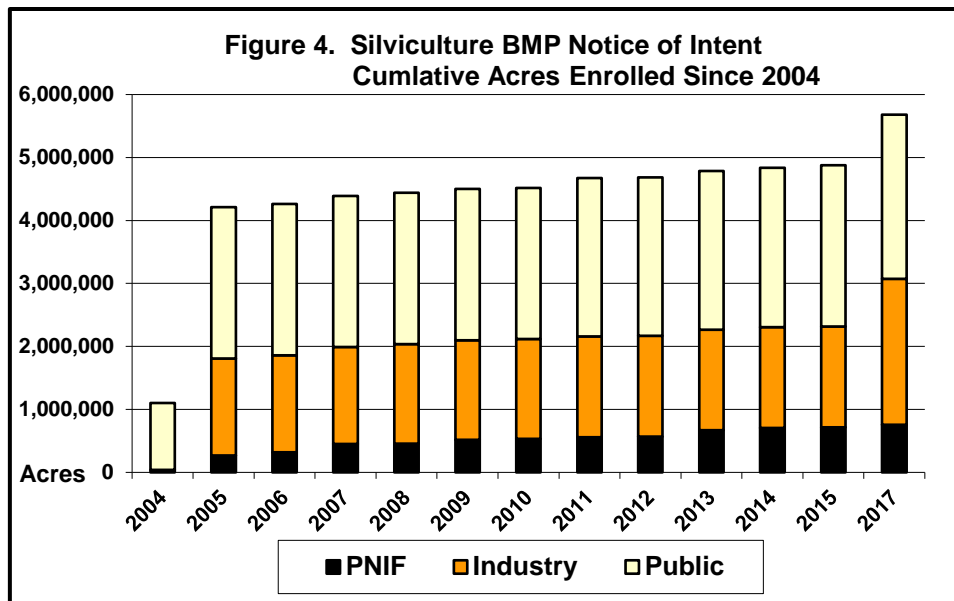


Seventy-two percent of the PNIF landowners that participated in the 2017 Survey indicated that they received some level of technical assistance during their forestry operations. However, the use of technical assistance did not significantly increase overall implementation scores compared to landowners who did not use technical assistance. In addition, overall implementation was not substantially different between ownership categories. BMP implementation indicated that compliance on industry land was 99.9%, private non-industrial forest land was 99.6%, and public land was 99.8.

## Silviculture BMP Notice of Intent

Forestry Rule 5I-6 F.A. C. was adopted on February 11, 2004 and entitles forest landowners to a presumption of compliance with state water quality standards if they file a Notice of Intent (NOI) to implement BMPs during their silvicultural operations. Filing a NOI is completely voluntary, and will increase a landowner's protection against state water quality standards violations, should one occur as a result of silviculture operations.

Both public and private forest landowners can file a NOI by submitting a two-page form to the Florida Forest Service's Hydrology Section in Tallahassee. As of January 2018, the FFS has received NOIs that encompass more than 5.1 million acres, ranging from small private non-industrial landowners to large industrial ownerships (Figure 4).

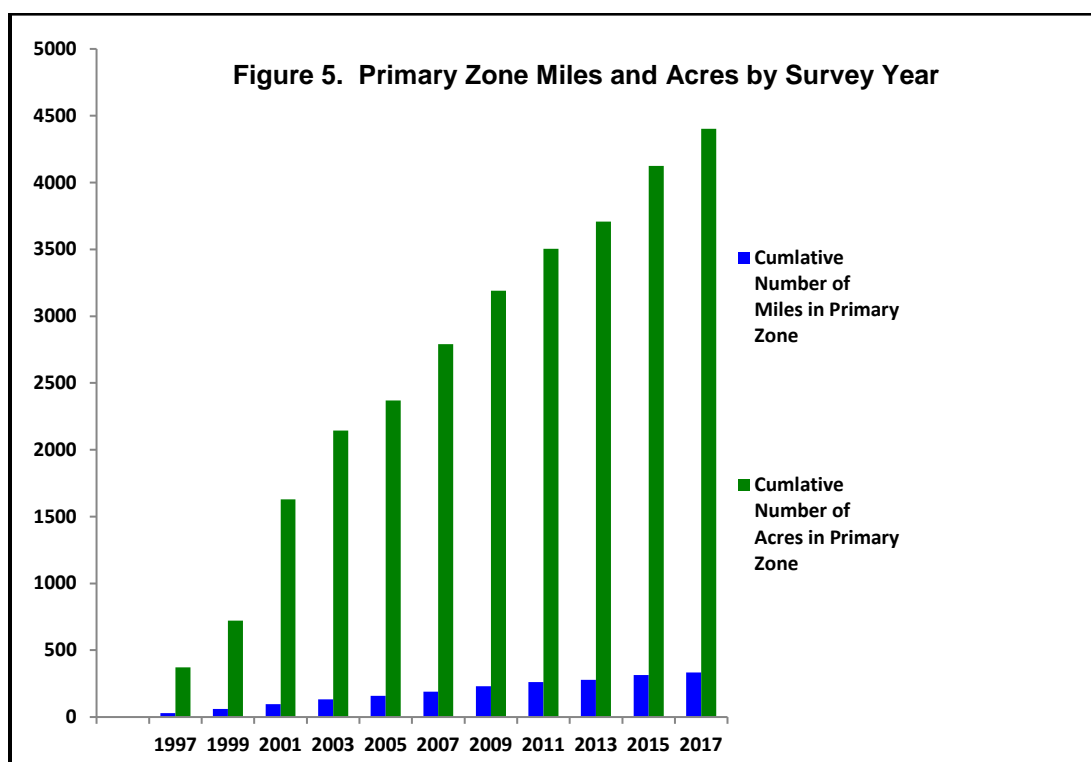


### Special Management Zones

Research has shown that the area immediately adjacent to streams, lakes and other waterbodies is especially important in the overall strategy to protect water quality during silviculture operations. For example, one Florida study reported that increased suspended sediment levels in [forest land] runoff water during the treatment year [was] mostly due to the absence of a protective buffer zone along the drainage [11]. The Silviculture BMP Effectiveness Study mentioned earlier, also showed the importance of stream riparian areas for protecting water quality and for providing habitat requirements for aquatic organisms [5, 6].

In Florida's Silviculture BMP Manual, these riparian areas are referred to as Special Management Zones (SMZ) and apply to all streams, sinkholes, and lakes two acres and larger. In fact, the presence of such water resource features and/or the presence of wetlands are the principal criteria for a forestry operation to qualify as a Survey site. As stated in the Silviculture Best Management Practices Manual, SMZs are designed “...to protect water quality by reducing or eliminating forestry related inputs of sediment, nutrients, logging debris, chemicals and water temperature fluctuations that can adversely affect aquatic communities. SMZs provide shade, streambank stability and erosion control, as well as detritus and woody debris, which benefit the aquatic ecosystem in general. In addition, the SMZ is designed to maintain certain forest attributes that will provide specific wildlife habitat values.”

Implementation of the SMZ includes one or more of the following components: Primary Zone, Secondary Zone, and Stringer. The Primary Zone applies to perennial waters and ranges in width from 35 to 200 feet, depending on stream width and waterbody type. The Secondary Zone and Stringer apply mostly to intermittent waters. For a given waterbody, the total SMZ width is always a minimum of 35 feet, and may extend out to as much as 300 feet. The management criteria that apply within each SMZ component are based on the soil and slope of the site and on the size, nature, and classification of the waterbody involved.



One-hundred percent of all water resource features reported in the Survey were streams. Fifty-two percent perennial streams and forty-eight percent intermittent streams were evaluated for SMZ compliance on 66 sites in the 2017 Survey. As in past Surveys, the perennial stream category was dominated by streams less than 20 feet wide, which require a minimum 35 foot Primary Zone. For 2017, the actual measured Primary Zone widths for these size streams ranged from 35-300 feet, with an average width of 113 feet which is an increase of 14 feet from the 2015 survey. For perennial streams, the Survey reported 18.8 total stream miles meeting Primary Zone requirements. Forest industry lands accounted for 10.4 miles, with PNIF and Public Lands accounting for 4.4 and 4.0 miles, respectively (Figure 5). The total area reported as being under Primary Zone management for 2017 was 279 acres, and sixty-two percent of all SMZs evaluated were on small, first order streams. The average implementation rate for all three SMZ components was unchanged at 99% for 2017 (Table 1). No significant risks to water quality were reported.

Table 1: SMZ Implementation Summary for last six surveys

| SMZ Component             | 2017       | 2015       | 2013       | 2011       | 2009       | 2007       |
|---------------------------|------------|------------|------------|------------|------------|------------|
| Primary Zone              | 100%       | 99%        | 98%        | 97%        | 97%        | 98%        |
| Secondary Zone            | 98%        | 100%       | 97%        | 100%       | 98%        | 98%        |
| Stringer                  | 98%        | 100%       | 98%        | 98%        | 98%        | 99%        |
| <b>Average Compliance</b> | <b>99%</b> | <b>99%</b> | <b>98%</b> | <b>98%</b> | <b>98%</b> | <b>98%</b> |

### Wetland Forestry Operations

Wetland BMPs address forestry operations such as timber harvesting and skidding practices conducted within wetlands, and certain activities adjacent to isolated wetlands such as intensive site preparation and pre-suppression fireline construction. Wetland forestry operations were evaluated on 7% of the sites during the 2017 Survey, unchanged from the 2015 Survey. Twenty-nine percent of the sites were evaluated for wet weather operations.

Eighty-two percent of all sites evaluated for Wetland BMPs in 2017 involved operations conducted in wetland areas less than 200 acres. Within the 44 county area sampled, 129 wetland practices were evaluated on 11 sites and 100% of those were in full compliance with BMPs.

### Forest Roads and Stream Crossings

Historically, the most chronic and long-term sediment problems associated with silviculture are directly attributable to forest roads. Consequently, the proper planning, construction, drainage, maintenance, and application of forest road BMPs help prevent forestry-related water quality problems.

For 2017, Forest Road BMPs were evaluated on 156 sites most of which involved maintenance of existing roads. Of the 612 road practices evaluated, 99.8% were in full compliance with BMPs. Four survey sites (3%) reported newly established roads. New road construction was found to be in compliance with BMPs 99.8% of the time. Likewise, existing drainage structures were evaluated on 117 sites and had a compliance rate of 100%. As in previous surveys, the most common incidence of noncompliance for roads was failure to properly stabilize road banks and critical road segments in addition to cleaning out drainage structures (i.e. culverts, cross ditches, etc.) from major obstructions.

Stream Crossings associated with forestry operations were evaluated on 12% of the Survey sites in 2017. Of the stream crossings evaluated, 55% were culvert installations and the remainder was hard-surface crossings. Of the 166 Stream Crossing practices evaluated in the 2017 Survey, 100% were in compliance with BMPs a slight increase of 1.2% compared to the 2015 Survey.

## **Timber Harvesting, Site Preparation and Planting**

The number of timber harvesting practices evaluated in 2017 totaled 523 on 130 sites. Overall implementation for this category was 100% for the 44 county area surveyed. No significant risks were observed on any of the 130 sites associated with timber harvesting BMPs.

Second only to Timber Harvesting, Site Preparation is the most common and recognizable silviculture operation in Florida forestry. Mechanical site preparation, such as chopping, bedding and pile raking, routinely follows harvesting operations in pine management and often results in a significant amount of bare soil exposure. For that reason, the orientation of such activities with respect to slope and local surface waters is the basis for most BMPs in the Site Preparation category. The intensity and timing of site preparation largely determines the extent of soil exposure, while slope and soil type determine erosion potential.

Florida's Silviculture BMP Manual uses a Site Sensitivity Classification system to describe the susceptibility of a site to erosion and sedimentation. Generally, sites with slopes exceeding 12%, adjacent to the waterbody, are considered most susceptible to erosion and require wider SMZs with restrictions on mechanical site preparation activities. Similar to previous Surveys, only 1% of the 2017 sites fell within this slope class and 74% were classified as having low (<2%) soil erodibility.

Site preparation and tree planting activities were evaluated on 48% of the 2017 Survey sites. Overall implementation for this category was 99.2% for the 44 county area surveyed. Sixty percent of the sites evaluated for site preparation incorporated some type of mechanical operations. Of those sites reporting mechanical site preparation, 42% involved intensive shearing, raking, pile raking, and/or bedding. Chemical site preparation, alone or in combination with mechanical techniques, was reported on 58% of the 2017 sites. Site preparation and planting operations scored 99.2% overall for sites sampled within the 44 county area.

Tree planting activities were evaluated on 79 sites and involved machine planting 51% of the time.

## **Fireline Construction**

The number of sites evaluated for fireline construction was 4 in 2013, 5 in 2015, and 4 in 2017. In addition, the overall implementation rate for this category was 100% in this Survey, unchanged from 2015.

## **Waste Disposal**

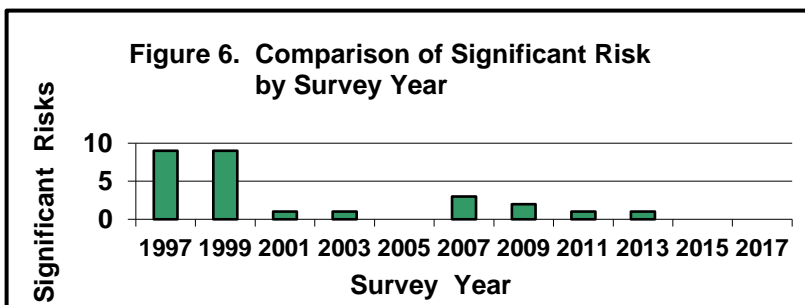
The Waste Disposal category continues to be a high priority for BMP implementation on forestland in Florida. In particular, the proper disposal of forestry related petroleum and chemical products and their containers is an increasingly important surface and ground water concern.

Waste Disposal BMPs were evaluated on 163 sites during the 2017 Survey. Although implementation for this category was 99.7%, two sites (1%) scored less than 80%. Most other instances of BMP noncompliance for this category were solid waste (trash), empty oil containers, and hydraulic fluid containers near log loading decks.



## Significant Risk

Each incidence of BMP noncompliance was further evaluated in terms of Significant Risk to water quality. This element of the Survey was added in 1995 so that high-risk conditions could be identified and corrected. In addition, this evaluation provides a measure of the frequency with which such conditions may occur in conjunction with silviculture operations in Florida. Of the 3,074 practices evaluated, there were no significant risks reported for the 2017 Survey. Figure 6 indicates the number of significant risks, by Survey, since 1997.



## SUMMARY

The 2017 BMP Implementation Survey was the nineteenth since the initial Survey in 1981, marking over 35 years of monitoring. This Survey evaluated 163 individual forestry operations (sites), encompassing 34,492 acres. This brings the total number of Survey sites in Florida to 5,859 since 1981 - the 2017 Survey evaluated 3,074 individual forest practices. Considering all practices in all BMP categories, implementation in 2017 was 99.6% which is a slight increase of 0.30% since the 2015 Survey.

Fifty percent of the 2017 Survey sites were on private non-industrial (PNIF) lands, 34% were on forest industry lands and 16% were on public lands. Since the 2015 Survey, there has been an increase in the number of Survey sites on forest industry lands. In addition, as noted in previous Surveys, BMP implementation between ownership categories was not significantly different for 2017. Overall BMP implementation for forest industry was 99.9%, private non-industrial landowners 99.6%, and public lands 99.8%. The typical Survey site for 2017 was approximately 214 acres with sandy soil and relatively flat topography. The typical silviculture operation included the harvest of slash pine for pulpwood, followed by intensive mechanical site preparation and replanting the site with slash or loblolly pine by conventional machine tree planting equipment.

BMP implementation with Special Management Zone criteria was 98.9%, a slight decrease from 2015. For individual SMZ components, compliance with width requirements was 100% for the Primary Zone, 98% for the Secondary Zone, and 98% for Stringers. Seventy-four percent of all Primary Zones were on streams less than 20 feet wide, which require a 35-foot Zone. For 2017, the overall SMZ ranged from 35-300 feet, with an average width of 113 feet. For all stream categories combined, the Survey reported 18.8 total stream miles meeting Primary Zone requirements.

Three percent of the 2017 Survey sites reported wetland activities. Implementation of Wetland BMPs for this Survey was 100%, approximately 0.60% more than in 2015.

Implementation of Forest Road BMPs was 99.8%, and general road planning and construction was reported on 13% of the sites.

Stream Crossings were evaluated on 12% of the 2017 Survey sites, a decrease of 3% since 2015. BMP implementation for Stream Crossings was 100%, with the majority of the sites reporting culvert installed crossings.

For the 2017 Survey, the most frequently reported BMP noncompliance was in the Special Management Zones, Site Preparation/Planting, and Waste Disposal categories. In addition, Sinkholes and Forest Roads showed some level of noncompliance.

The 2017 Survey showed a continuing high implementation rate with silviculture BMPs in Florida. This is attributed to the general attitude and culture that has emerged with Florida forest landowners, loggers, and forest practitioners toward the silviculture BMP program. The high implementation rate is also attributed to the distribution of over 56,000 Silviculture BMP Manuals since 1993, and to the cooperative educational outreach to the forestry community through FFS workshops and demonstrations. In addition, the FFS provides BMP training as part of the Florida Forestry Association's Master Logger Program [13].

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## **APPENDICES**

Table 1: Page 16

Table 2: Page 17-38




Table 1.

**Florida Forest Service**  
**2017 Silviculture BMP Implementation Survey**  
**Goals by County**

| COUNTY       | Survey Site Selection |        | Overall Compliance (%) | Significant Risks (#) | COUNTY     | Survey Site Selection |        | Overall Compliance (%) | Significant Risks (#) |
|--------------|-----------------------|--------|------------------------|-----------------------|------------|-----------------------|--------|------------------------|-----------------------|
|              | Goal                  | Actual |                        |                       |            | Goal                  | Actual |                        |                       |
| Alachua      | 6                     | 6      | 99%                    |                       | Lake       | 2                     | 2      | 100%                   |                       |
| Baker        | 7                     | 7      | 100%                   |                       | Lee        | 1                     | 0      |                        |                       |
| Bay          | 7                     | 2      | 100%                   |                       | Leon       | 4                     | 0      |                        |                       |
| Bradford     | 1                     | 2      | 100%                   |                       | Levy       | 6                     | 6      | 100%                   |                       |
| Brevard      | 1                     | 0      |                        |                       | Liberty    | 4                     | 2      | 100%                   |                       |
| Broward      | 0                     | 0      |                        |                       | Madison    | 6                     | 2      | 100%                   |                       |
| Calhoun      | 6                     | 3      | 100%                   |                       | Manatee    | 0                     | 0      |                        |                       |
| Charlotte    | 1                     | 1      | 100%                   |                       | Marion     | 6                     | 6      | 99.5%                  |                       |
| Citrus       | 1                     | 0      |                        |                       | Martin     | 1                     | 0      |                        |                       |
| Clay         | 5                     | 5      | 100%                   |                       | Monroe     | 0                     | 0      |                        |                       |
| Collier      | 0                     | 0      |                        |                       | Nassau     | 7                     | 7      | 100%                   |                       |
| Columbia     | 5                     | 6      | 97.8%                  |                       | Okaloosa   | 5                     | 4      | 98.5%                  |                       |
| Dade         | 0                     | 0      |                        |                       | Okeechobee | 1                     | 0      |                        |                       |
| DeSoto       | 1                     | 0      |                        |                       | Orange     | 1                     | 0      |                        |                       |
| Dixie        | 9                     | 4      | 100%                   |                       | Osceola    | 1                     | 1      | 100%                   |                       |
| Duval        | 3                     | 3      | 98.3%                  |                       | Palm Beach | 0                     | 0      |                        |                       |
| Escambia     | 5                     | 6      | 98.3%                  |                       | Pasco      | 2                     | 2      | 100%                   |                       |
| Flagler      | 6                     | 7      | 100%                   |                       | Pinellas   | 0                     | 0      |                        |                       |
| Franklin     | 3                     | 3      | 100%                   |                       | Polk       | 2                     | 2      | 100%                   |                       |
| Gadsden      | 4                     | 4      | 100%                   |                       | Putnam     | 5                     | 5      | 100%                   |                       |
| Gilchrist    | 3                     | 3      | 100%                   |                       | St. Johns  | 6                     | 7      | 100%                   |                       |
| Glades       | 2                     | 2      | 100%                   |                       | St. Lucie  | 0                     | 0      |                        |                       |
| Gulf         | 2                     | 3      | 100%                   |                       | Santa Rosa | 7                     | 5      | 100%                   |                       |
| Hamilton     | 5                     | 5      | 100%                   |                       | Sarasota   | 0                     | 0      |                        |                       |
| Hardee       | 1                     | 0      |                        |                       | Seminole   | 1                     | 0      |                        |                       |
| Hendry       | 1                     | 0      |                        |                       | Sumter     | 2                     | 2      | 100%                   |                       |
| Hernando     | 1                     | 1      | 100%                   |                       | Suwannee   | 3                     | 4      | 100%                   |                       |
| Highlands    | 1                     | 0      |                        |                       | Taylor     | 11                    | 8      | 100%                   |                       |
| Hillsborough | 0                     | 0      |                        |                       | Union      | 3                     | 3      | 100%                   |                       |
| Holmes       | 3                     | 3      | 100%                   |                       | Volusia    | 4                     | 4      | 100%                   |                       |
| Indian River | 1                     | 0      |                        |                       | Wakulla    | 3                     | 4      | 100%                   |                       |
| Jackson      | 8                     | 3      | 100%                   |                       | Walton     | 4                     | 2      | 100%                   |                       |
| Jefferson    | 4                     | 2      | 100%                   |                       | Washington | 3                     | 2      | 100%                   |                       |
| Lafayette    | 6                     | 2      | 100%                   |                       |            | 210                   | 163    | 99.6%                  | 0                     |

|  |  |   |
|--|--|---|
| <b>Field Site Number</b><br><br>County: _____<br><br>Site No.: _____ | <b>FLORIDA FOREST SERVICE</b><br><b>SILVICULTURE BEST MANAGEMENT PRACTICES</b><br><br><br><br><b>2017 Implementation Survey Results</b> | <b>Survey Year Number</b><br>(if applicable)<br><br><b>2017-1-163</b> |
|--|--|---|

**Appendix Table 2. OVERALL IMPLEMENTATION SUMMARY**

| BMP CATEGORY<br>(CHECK BOX IF EVALUATED ON THIS SITE) |     | COMPLIANCE BY CATEGORY |           |                |              | NUMBER OF<br>SIGNIFICANT<br>RISKS<br> |
|---|-----|------------------------|-----------|----------------|--------------|--|
|   |     | #<br>"YES"             | #<br>"NO" | TOTAL<br>(Y+N) | %<br>"YES"   |  |
| A. SPECIAL MANAGEMENT ZONES                           | 66  | 352                    | 4         | 356            | 98.9%        |  |
| B. WETLANDS   | 11  | 129                    | 0         | 129            | 100%         |  |
| C. CANALS   | 10  | 44                     | 0         | 44             | 100%         |  |
| D. SINKHOLES  | 7   | 20                     | 1         | 21             | 95.2%        |  |
| E. FOREST ROADS                                       | 156 | 612                    | 1         | 613            | 99.8%        |  |
| F. STREAM CROSSINGS                                   | 20  | 166                    | 0         | 166            | 100%         |  |
| G. TIMBER HARVESTING (Non-Wetlands)                   | 130 | 523                    | 0         | 523            | 100%         |  |
| H. SITE PREPARATION AND PLANTING                      | 79  | 358                    | 3         | 361            | 99.2%        |  |
| I. FIRELINE CONSTRUCTION                              | 4   | 17                     | 0         | 17             | 100%         |  |
| J. PESTICIDE and/or FERTILIZER USE                    | 47  | 144                    | 0         | 144            | 100%         |  |
| K. WASTE DISPOSAL                                     | 163 | 633                    | 2         | 635            | 99.7%        |  |
| L. WET WEATHER OPERATIONS                             | 48  | 52                     | 0         | 52             | 100%         |  |
| M. EMERGENCY OPERATIONS                               | 11  | 7                      | 0         | 7              | 100%         |  |
| N. PUBLIC LANDS                                       | 23  | 6                      | 0         | 6              | 100%         |  |
| <b>TOTALS</b>   |     | <b>3,063</b>           | <b>11</b> | <b>3,074</b>   |              | <b>0</b>   |
| <b>OVERALL COMPLIANCE (%)</b>                         |     |                        |           |                | <b>99.6%</b> |  |

Survey Taken By: \_\_\_\_\_  
 (Print Name) \_\_\_\_\_ (Signature)

Office Phone: ( ) \_\_\_\_\_ Date Survey Completed: \_\_\_\_\_  
 Results communicated to the landowner by: \_\_\_ Letter \_\_\_ Phone \_\_\_ In Person \_\_\_ Email \_\_\_ No Contact Made Yet  
 Certified: 16 Tree Farm 49 SFI 7 FSC 3 Forest Stewardship 88 Submitted BMP Notice of Intent

|  |  |   |
|--|--|---|
| <b>Field Site Number</b><br><br>County: _____<br><br>Site No.: _____ | <b>FLORIDA FOREST SERVICE</b><br><b>SILVICULTURE BEST MANAGEMENT PRACTICES</b><br><br><b>Implementation Survey</b> | <b>Survey Number</b><br><br><b>2017-1-163</b> |
|--|--|---|

**PART I. GENERAL SITE INFORMATION & CHARACTERISTICS:**

1. Owner Name: \_\_\_\_\_ 2. Ownership: 26 PUBLIC 55 INDUSTRY 82 PNIF  
 Address: \_\_\_\_\_  
 \_\_\_\_\_ 3. Email Address: \_\_\_\_\_  
 Landowner Phone No.: ( ) \_\_\_\_\_  
 Contact Name: \_\_\_\_\_ Contact Phone No.: ( ) \_\_\_\_\_
4. Approximate acreage of treated area: 34,492
5. **If PNIF**, technical/professional forestry assistance was provided by (check one):  
4 FFS County Forester 55 Forestry Consultant 11 Industrial Forester 22 Other 21 None
6. Land use **prior** to treatment (predominantly) (check one):  
145 Intensive Forest Management (Planted Pine) 0 Row Crop Farming  
12 Passive Forest Management (Natural Pine/Hardwood Mix) 1 Pasture  
5 Forested Wetland Management (Hardwood Timber) 0 Other
7. **Dominant** Terrain (check one):  
5 Wetlands 31 Uplands 115 Flatwoods 11 Sandhills 1 Pasture/Cropland
8. Principle Soil Texture (check one): 1 Clay 17 Loam 139 Sand 6 Organic (Muck)
9. Name of Soil Type or Series (County Soil Survey Book): \_\_\_\_\_
10. **Estimated** Slope Class of treated area adjacent to predominant waterbody (check one):
- |                       |      |       |        |        |      |
|-----------------------|------|-------|--------|--------|------|
| Organic<br>or<br>0-2% | 3-7% | 8-12% | 13-17% | 18-22% | >22% |
|-----------------------|------|-------|--------|--------|------|
11. Soil Erodibility Class (check one):
- |                                     |                              |                         |
|-------------------------------------|------------------------------|-------------------------|
| <b>145</b><br>Organic<br>A<br>(LOW) | <b>14</b><br>B<br>(MODERATE) | <b>4</b><br>C<br>(HIGH) |
|-------------------------------------|------------------------------|-------------------------|
12. Site Sensitivity Class (SSC) - based on the above soil and slope information:  
*(Refer to Appendices 1-3, pages 40-63 of the 2008 BMP Manual)*
- |            |  |  |  |  |  |
|------------|--|--|--|--|--|
| <b>SSC</b> |  |  |  |  |  |
|------------|--|--|--|--|--|
- \* **A1 = 121    A4 = 0    B1 = 0    B4 = 1    C1 = 0    C4 = 1**  
**A2 = 19    A5 = 0    B2 = 7    B5 = 0    C2 = 2    C5 = 1**  
**A3 = 5    A6 = 0    B3 = 6    B6 = 0    C3 = 0    C6 = 0**

## PART II: FORESTRY OPERATIONS :

13. **Timber Harvest System** (Check all that apply): Approximate **Time of Treatment** (Month/Yr.): \_\_\_\_\_  
**Name & Location (City) of Logger:** \_\_\_\_\_

|                             |                        |  |
|-----------------------------|------------------------|--|
| <u>27</u> N/A               | <u>2</u> Seed Tree Cut | <b>FL Master Logger?</b> <u>123</u> Yes ___ No         |
| <u>123</u> Clearcut         | <u>9</u> Salvage Cut   | <b>AL Pro Logger?</b> <u>4</u> Yes ___ No              |
|                             |                        | <b>GA Master Timber Harvester?</b> <u>2</u> Yes ___ No |
| <u>17</u> Selective Cut     | <u>10</u> Row Thinning |  |
| <u>8</u> Fuel Wood Chipping |                        |  |

Name of Receiving Mill: 136 Pulpwood 108 Sawmill (Chip n Saw) 6 Veneer 19 Poles

14. **Site Preparation System** (Check all that apply): **Approx. Time of Treatment** (Month/Yr.): \_\_\_\_\_

**Name & Location (City) of Contractor:** \_\_\_\_\_

|  |   |
|--|---|
| <u>79</u> N/A                              | <u>45</u> Chemical Treatment (Pre-Plant)        |
| <u>26</u> Non-Intensive Mechanical         | <u>2</u> Chemical Treatment (Post-Plant)        |
| <u>9</u> Chemical Treatment (Pre and Post) |   |
| <u>61</u> Intensive Mechanical             | <u>3</u> Burn <u>0</u> Timber Stand Improvement |

15. **Regeneration System** (Check all that apply): **Approx. Time of Treatment** (Month/Yr.): \_\_\_\_\_  
**Name & Location (City) of Contractor:** \_\_\_\_\_

|   |                                |
|---|--------------------------------|
| <u>104</u> N/A                          | <u>16</u> Hand Planting        |
| <u>30</u> Conventional Machine Planting | <u>1</u> Aerial/Ground Seeding |
| <u>6</u> V-blade Planter                | <u>6</u> Natural Regeneration  |

16. **Primary merchantable timber species harvested** (Check all that apply):

|                         |                             |                     |
|-------------------------|-----------------------------|---------------------|
| <u>26</u> N/A           | <u>5</u> Longleaf Pine      | <u>6</u> Cypress    |
| <u>108</u> Slash Pine   | <u>2</u> Other Pine species | <u>5</u> Sand Pine  |
| <u>40</u> Loblolly Pine | <u>21</u> Hardwood species  | <u>1</u> Eucalyptus |

17. **Forest species planted** (Check all that apply):

|                         |                             |                     |
|-------------------------|-----------------------------|---------------------|
| <u>109</u> N/A          | <u>9</u> Longleaf Pine      | <u>0</u> Cypress    |
| <u>34</u> Slash Pine    | <u>0</u> Other Pine species | <u>3</u> Sand Pine  |
| <u>15</u> Loblolly Pine | <u>0</u> Hardwood species   | <u>0</u> Eucalyptus |

18. Are **Forested Wetland Roads and/or Stream Crossings** to be evaluated on this site? Yes 23 No 138

➔ If yes, did the landowner obtain the proper **permit** for installation? 5 Yes 3 No\* 155 N/A

\*1 If the answer to this question is "No", take this opportunity to explain to the landowner that permanent and temporary stream/wetland crossings are subject to permitting under the **Environmental Resources Permit Rule (ERP)** administered by the Water Management Districts. Requirements and criteria for crossings may vary between Water Management Districts. Advise the landowner to contact the WMD in his/her area (see **Appendix 13**) for information and/or permit applications prior to future projects involving crossings.

➔ All evaluated forestry operations complete? 140 Yes 23 No

19. **Emergency Operations?** 11 Yes 151 No

If Yes (Check all that apply): 3 Wildfire 2 Natural Disaster 6 Insects 0 Disease 0 Other

**PART III. WATERBODY CHARACTERISTICS** Site Sensitivity Class (SSC):     N/A      
 (If a wetlands operation check "N/A" and go to Part IV): \*2

20. Name of waterbody, if known:     66 Waterbodies: 30 Named and 36 Unnamed    

21. If stream, indicate Stream Order (Circle one):      1st      2nd      3rd      4th      Higher      Unanswered  
**Total .....** (41)    (11)    (5)    (1)    (3)    (5)

22. Indicate type & size of waterbody found on this site and its SMZ requirement:  
 (Refer to pages 7-14 and Appendix 1 of 2008 BMP Manual)

| TYPE OF WATERBODY<br>(Check All That Apply)  |    | STREAM WIDTH         |        |      | CLASS   |          |             | SMZ WIDTH (Feet) |                |                              |                          |                |     |
|--|----|----------------------|--------|------|---------|----------|-------------|------------------|----------------|------------------------------|--------------------------|----------------|-----|
|  |    |                      |        |      |         |          |             | REQUIRED         |                | AVERAGE ACTUAL               |                          |                |     |
|  |    | <20'                 | 20-40' | >40' | OFW (2) | ONRW (2) | CLASS I (2) | PRIMARY ZONE     | SECONDARY ZONE | PRIMARY ZONE<br>NON-STRINGER | PRIMARY ZONE<br>STRINGER | SECONDARY ZONE | SMZ |
|  |    | Check All That Apply |        |      |         |          |             |                  |                |                              |                          |                |     |
| Perennial Stream   | 34 | 25                   | 3      | 2    | 4       | 0        | 0           |                  |                | 113                          |                          | 62             | 130 |
| Perennial Lake (1)   | 0  |                      |        |      |         |          |             |                  |                |                              |                          |                |     |
| Perennial Sinkhole   | 0  |                      |        |      |         |          |             |                  |                |                              |                          |                |     |
| Intermittent Lake (1)  | 0  |                      |        |      |         |          |             |                  |                |                              |                          |                |     |
| Intermittent Stream  | 32 |                      |        |      |         |          |             |                  |                |                              |                          |                |     |
| Intermittent Sinkhole  | 0  |                      |        |      |         |          |             |                  |                |                              |                          |                |     |
| Measure or estimate total linear water "frontage" under "Primary Zone" treatment:<br>(The Primary SMZ length may be determined using an aerial photo or a "to-scale" map of the treated area.) |    |                      |        |      |         |          |             |                  |                | 99,392 Feet (18.82 Miles)    |                          |                |     |

ΣX1: Sum of all Primary Zone Widths

ΣX2: Sum of all Secondary Zone Widths

n1: Total Number of SMZ sites

n2: Total Number of Secondary Zone Sites (added on to primary zone and stringer - width depends on soil and slope %)

$$\frac{\sum X_1}{n_1}$$

$$\frac{\sum X_2}{n_2}$$

$$\frac{\sum X_1 + \sum X_2}{n_1}$$

Primary Zone:  $\frac{\sum X_1}{n_1}$  Secondary Zone:  $\frac{\sum X_2}{n_2}$  Total SMZ:  $\frac{\sum X_1 + \sum X_2}{n_1}$

(1) **Lakes 2 acres or larger.**

(2) **Refer to Appendix 4 for partial listing of "Special Waters".**

Complete listing of OFWs is available from WMD offices listed in **Appendix 13** or from the Florida Department of Environmental Protection, 2600 Blair Stone Rd., Tallahassee, FL, 32399-2400.

23. Are Primary Zone Exceptions being applied for perennial waterbodies on site? Yes   1   No   48    
 (Evaluate compliance in **SMZ** section).

24. Total area designated as "**Primary SMZ**":  
 (Linear Water Frontage x Primary Zone Width/43,560)

**279 Acres**

\*2 **NOTE:** Attach an additional copy of **Part III and Section A, Part IV** of the Survey for each waterbody adjacent to the operation evaluated on this site.



# FLORIDA FOREST SERVICE SILVICULTURE BMP IMPLEMENTATION SURVEY

## (PART IV: BMP APPLICATIONS)

|   |           |
|---|-----------|
| <b>A. SPECIAL MANAGEMENT ZONES (SMZs): *</b><br><i>(Refer to pages 3-14 of 2008 BMP Manual) (If N/A, Circle and move on to NEXT CATEGORY)</i> | <b>66</b> |
|---|-----------|

\* **NOTE:** Attach additional copies of Part III & Section A, of Part IV of the Survey for each waterbody evaluated on this site.

| PRIMARY ZONE<br>(Applies to Perennial Streams, Lakes, and Sinkholes)<br>(If N/A, Circle and move on to NEXT PRACTICE) | N/A | IN COMPLIANCE?<br>(Circle Y or N) |           | Significant Risk |
|---|-----|-----------------------------------|-----------|------------------|
| 1. Width of the Primary Zone meets the minimum required for waterbody size & type?                                    | N/A | 36                                | 0         |                  |
| <b>WAS TIMBER HARVESTING CONDUCTED <u>WITHIN</u> THE PRIMARY ZONE?</b><br>(If "No" Skip Questions 2-6)                |     | <b>YES</b>                        | <b>NO</b> |                  |
| 2. Timber harvesting limited to selective cutting only? (N/A if clearcut exception applied).                          | N/A | 1                                 | 0         |                  |
| 3. Selective harvesting maintained at least 50% of the fully stocked stand?   | N/A | 1                                 | 0         |                  |
| 4. Residual stand "mirrored" previous stand or was at least 10% pine?   | N/A | 2                                 | 0         |                  |
| 5. Avoided re-entering a previously harvested Primary Zone to conduct additional harvesting ?                         | N/A | 2                                 | 0         |                  |
| 6. Left all trees uncut in stream channel and on immediate stream banks?  | N/A | 2                                 | 0         |                  |
| 7. Kept mechanical site preparation out of the Primary Zone?  | N/A | 16                                | 0         |                  |
| 8. Limited pesticide application within Primary Zone to approved methods?   | N/A | 7                                 | 0         |                  |
| 9. Limited fertilizer application within Primary Zone to approved methods?  | N/A | 3                                 | 0         |                  |
| 10. Kept log loading decks, landings, and log bunching points out of the Primary Zone?                                | N/A | 22                                | 0         |                  |
| 11. Avoided new road construction within the Primary Zone, except for designated stream crossings?                    | N/A | 10                                | 0         |                  |
| 12. Restricted site preparation burns to slopes with <18%?  | N/A | 0                                 | 0         |                  |
| 13. Kept main skid trails out of Primary Zone, except for designated stream crossings?                                | N/A | 18                                | 0         |                  |
| 14. Kept pre-suppression plowed firelines out of the Primary Zone?  | N/A | 1                                 | 0         |                  |
| 15. Located fertilizer transfer/loading areas outside of the Primary Zone?  | N/A | 4                                 | 0         |                  |

|  |     |              |   |   |
|--|-----|--------------|---|---|
| 16. Cleaned spray equipment from pesticide and fertilizer applications outside of Primary Zone?  | N/A | 17           | 0 |   |
| <b>SUBTOTALS</b> (Enter on top of table on next page)  |     | 142          | 0 |   |
| <b>PRIMARY ZONE EXCEPTIONS</b><br><b>(Continued)</b><br>(If N/A, Circle and move on to NEXT PRACTICE)<br><i>Refer to Appendix 11, pages 105-107 of the 2008 BMP Manual for explanation of Exceptions</i> |     | N/A          |   |   |
| <b>Enter Subtotals from previous page ⇒</b>  |     | 142          | 0 |   |
| 17. Exception #1, "SMZ Greater Than 10% of Tract Area," correctly applied?   | N/A | 0            | 0 |   |
| 18. Exception #2 "Managed Pine Timber," correctly applied?   | N/A | 1            | 0 |   |
| 19. Exception #3a "Add-On," correctly applied?   | N/A | 0            | 0 |   |
| 20. Exception #3b "Stand Quality Improvement," correctly applied?  | N/A | 0            | 0 |   |
| <b>SECONDARY ZONE</b><br>(If N/A, Circle and move on to NEXT PRACTICE)   |     | N/A          |   |   |
| 21. Kept mechanical site preparation out of the Secondary Zone?  | N/A | 22           | 2 |   |
| 22. Kept log loading decks and landings out of the Secondary Zone?   | N/A | 37           | 0 |   |
| 23. Avoided new road construction within the Secondary Zone, except for designated stream crossings?   | N/A | 12           | 0 |   |
| 24. Restricted site preparation burns to <18% slope?   | N/A | 0            | 0 |   |
| 25. Kept main skid trails out of the Secondary Zone, except for designated stream crossings?   | N/A | 32           | 0 |   |
| 26. When possible, avoided pre-suppression plowed firelines within the Secondary Zone?   | N/A | 1            | 0 |   |
| 27. Cleaned spray equipment from pesticide and fertilizer applications outside of Secondary Zone?  | N/A | 16           | 0 |   |
| <b>STRINGER</b><br><b>(Applies to Intermittent Streams, Lakes 2 Ac.+, and Sinkholes)</b><br>(If N/A, Circle and move on to NEXT PRACTICE)  |     | N/A          |   |   |
| 28. Provided a continuous and connected canopy?  | N/A | 30           | 1 |   |
| 29. Left all trees in stream channel/banks?  | N/A | 29           | 1 |   |
| 30. Minimized disturbance to stream banks?   | N/A | 30           | 0 |   |
| <b>TOTALS</b>  |     | 352          | 4 | 0 |
| <b>COMPLIANCE FOR CATEGORY (%)</b>   |     | <b>98.9%</b> |   |   |

|   |     |  |   |                  |
|---|-----|--|---|------------------|
| <b>B. OPERATIONS OCCURRING WITHIN FORESTED WETLANDS</b><br><i>(Refer to pages 17-21 of the 2008 BMP Manual) (If N/A, Circle and move on to NEXT CATEGORY)</i> |     |  |   | 11               |
| <b>GENERAL WETLAND BMPs</b><br>(If N/A, Circle and move on to NEXT PRACTICE)  | N/A | <b>IN COMPLIANCE?</b><br>(Circle Y or N) |   | Significant Risk |
| 1. Maintained hydrologic conditions/drainage of wetlands?   | N/A | 11                                       | 0 |                  |
| 2. Kept waterbodies located within the wetland free of logging debris?  | N/A | 3  | 0 |                  |
| <b>WETLAND ROADS AND CROSSINGS</b><br>(If N/A, Circle and move on to NEXT PRACTICE)   | N/A |  |   |                  |
| 3. Minimized number of wetland crossings?   | N/A | 5  | 0 |                  |
| 4. Permanent roads only for purposes allowed in the BMP Manual (Page 18)?   | N/A | 5  | 0 |                  |
| 5. Avoided constructing above-grade fill roads?   | N/A | 3  | 0 |                  |
| 6. Fill road properly culverted to allow adequate storm flow, normal sheet flow, etc.?  | N/A | 1  | 0 |                  |
| <b>HARVESTING IN WETLANDS WHERE CYPRESS IS PREDOMINANT</b><br>(If N/A, Circle and move on to NEXT PRACTICE)   | N/A |  |   |                  |
| 7. Left cypress as leave trees?   |     | 2  | 0 |                  |
| 8. Leave trees represent the upper limit of the range for wetland harvest units? (i.e. <200A or ≥ 200A)   |     | 3  | 0 |                  |
| 9. Pond cypress trees cut at the approximate average high water mark?   |     | 2  | 0 |                  |
| <b>SUBTOTALS</b> (Enter at top of table on next page)   |     | 35                                       | 0 | 0                |

| <b>OPERATIONS OCCURRING WITHIN FORESTED WETLANDS</b><br><b>(Continued)</b><br><i>(Refer to pages 17-21 of the 2008 BMP Manual)</i>   |     | <b>IN COMPLIANCE?</b><br><b>(Circle Y or N)</b> |   | <b>Significant Risk</b> |
|--|-----|---|---|-------------------------|
| <b>Enter Subtotals from previous page⇒</b>   |     | 35  | 0 | 0                       |
| <b>HARVESTING PRACTICES</b><br>(If N/A, Circle and move on to NEXT PRACTICE)   | N/A |   |   |                         |
| <b>OCCURRING WITHIN A WETLAND AREA</b><br><b><u>LESS THAN 200 ACRES IN SIZE:</u></b>   | N/A |   |   |                         |
| 10. If leave tree option applied, left 3-5 "leave trees" per acre?   | N/A | 4   | 0 |                         |
| 11. If 10% harvesting option applied, left 10% of the harvest area as selectively cut?   | N/A | 2   | 0 |                         |
| 12. Retained all snags that safety and harvesting operations allowed?  | N/A | 4   | 0 |                         |
| <b>OCCURRING WITHIN A WETLAND AREA</b><br><b><u>GREATER THAN OR EQUAL TO 200 ACRES:</u></b>  | N/A |   |   |                         |
| 13. Left 1-2 "leave trees" per acre in the older age class?  | N/A | 4   | 0 |                         |
| 14. Retained all snags that safety and harvesting operations allowed?  | N/A | 4   | 0 |                         |
| 15. Limited clearcut size to 160 acres or less?  | N/A | 4   | 0 |                         |
| 16. Left a 200 ft. selectively cut buffer with an average tree height of at least 20 ft. between clearcut areas?   | N/A | 3   | 0 |                         |
| 17. Are multiple clearcuts within any 160 acre block separated by a 100 ft. buffer? (Buffer may be selectively cut. No additional leave trees are required.)                 | N/A | 1   | 0 |                         |
| <b>OCCURRING IN SMALL ISOLATED WETLANDS (&lt;2 AC.):</b>   | N/A |   |   |                         |
| 18. Left at least 20% unharvested where 5 or more isolated wetlands < 2 acres each exist within a harvest unit?  | N/A | 2   | 0 |                         |
| 19. Have previously harvested isolated wetlands reached an average tree height of at least 20 feet prior to re-entry to harvest remaining isolated wetlands in harvest unit? | N/A | 0   | 0 |                         |
| <b>HARVESTING OCCURRING WITHIN A <u>FLOWING WETLAND?</u></b><br>(If N/A, Circle and move on to NEXT PRACTICE)  | N/A |   |   |                         |
| 20. Extended SMZ 50 feet into the flowing wetland?   | N/A | 2   | 0 |                         |
| 21. Clustered <b>leave trees</b> along centerline of flow-way?   | N/A | 2   | 0 |                         |
| <b>SUBTOTALS</b><br><b>(Enter at top of table on next page)</b>  |     | 67  | 0 | 0                       |

| <b>OPERATIONS OCCURRING WITHIN FORESTED WETLANDS</b><br><b>(Continued)</b><br><i>(Refer to pages 17–21 of the 2008 BMP Manual)</i>   |     | <b>IN COMPLIANCE?</b><br><b>(Circle Y or N)</b> |   | <b>Significant Risk</b> |
|--|-----|---|---|-------------------------|
| <b>Enter Subtotals from previous page⇒</b>   |     | 67  | 0 | 0                       |
| <b>SKIDDING</b><br>(If N/A, Circle and move on to NEXT PRACTICE)   | N/A |   |   |                         |
| 22. Minimized number of <b>MAIN</b> skid trails within wetland area?   | N/A | 10  | 0 |                         |
| 23. Avoided <b>widespread</b> and <b>excessive</b> rutting?  | N/A | 10  | 0 |                         |
| 24. Concentrated skid trails in <b>organic</b> wetland soils?  | N/A | 9   | 0 |                         |
| 25. Used low ground pressure equipment or specialized harvesting techniques when wet harvesting conditions were unavoidable?   | N/A | 7   | 0 |                         |
| 26. When possible, limited forestry operations in wetlands to dry conditions or low-water conditions?  | N/A | 9   | 0 |                         |
| <b>MAT (SHOVEL) LOGGING</b><br>(If N/A, Circle and move on to NEXT PRACTICE)   | N/A |   |   |                         |
| 27. Width of skid trail mats minimized to no more than 20 feet (on the average)? (Exceptions apply to equipment passage.)  | N/A | 3   | 0 |                         |
| 28. Skid trail mats are no closer than 200 feet apart (on the average)? (If tracked machines used under excessively wet conditions: spacing reduced to 50 feet; and area of mats does not exceed 25% of harvest area.) | N/A | 3   | 0 |                         |
| 29. Timber for mats laid down in direction of the trail?   | N/A | 4   | 0 |                         |
| 30. Was the appropriate number of layers used to prevent site disturbance?   | N/A | 3   | 0 |                         |
| 31. Merchantable timber used in skid trail mat removed after logging operation?  | N/A | 4   | 0 |                         |
| 32. Skid trail mats used for stream crossings, consistent with Stream Crossing Section? (See Stream Crossing Section of BMP Manual )   | N/A | 0   | 0 |                         |
| <b>TOTALS</b>  |     | 129   | 0 | 0                       |
| <b>COMPLIANCE FOR CATEGORY (%)</b>   |     | <b>100%</b>                                     |   |                         |



| <b>C. OPERATIONS ADJACENT TO CANALS</b><br>(Refer to pages 22-23 of the 2008 BMP Manual) (If N/A, Circle and move on to NEXT CATEGORY) |            |  |   | <b>10</b>               |
|--|------------|--|---|-------------------------|
| <b>GENERAL BMPS</b><br>(If N/A, Circle and move on to NEXT PRACTICE)   | <b>N/A</b> | <b>IN COMPLIANCE?</b><br>(Circle Y or N) |   | <b>Significant Risk</b> |
| 1. During normal silvicultural operations, avoided heavy equipment operation within canal?   | N/A        | 10                                       | 0 |                         |
| 2. Established canal crossing(s) only when necessary?  | N/A        | 3  | 0 |                         |
| 3. Installed canal crossing(s) properly? (See Stream Crossing Section)   | N/A        | 3  | 0 |                         |
| 4. Left canal free of <b>excessive</b> logging slash?  | N/A        | 9  | 0 |                         |
| 5. Avoided direct surface water discharge into a canal as the result of site preparation activities?                                   | N/A        | 4  | 0 |                         |
| 6. Avoided damage to the canal bank?   | N/A        | 10                                       | 0 |                         |
| 7. Avoided discharging pesticides (not approved for aquatic use), fertilizer, or other pollutants into canal?                          | N/A        | 5  | 0 |                         |
| <b>CANAL MAINTENANCE</b><br>(If N/A, Circle and move on to NEXT PRACTICE)  | <b>N/A</b> |  |   |                         |
| 8. Minimized canal maintenance activities?   | N/A        | 0  | 0 |                         |
| 9. Canal re-dredging conducted during periods of low flow?   | N/A        | 0  | 0 |                         |
| 10. Minimized disturbance to canal banks to retain as much "streamside" vegetation as possible?  | N/A        | 0  | 0 |                         |
| 11. Applied proper erosion/sediment control practices where necessary?   | N/A        | 0  | 0 |                         |
| 12. Road maintenance adjacent to canal conducted properly?<br>(i.e. Road spoil discharged <b>away</b> from canal-side of road.)        | N/A        | 0  | 0 |                         |
| <b>TOTALS</b>  |            | 44                                       | 0 | 0                       |
| <b>COMPLIANCE FOR CATEGORY (%)</b>   |            | <b>100%</b>                              |   |                         |

|   |            |  |   |                         |
|---|------------|--|---|-------------------------|
| <b>D. OPERATIONS ADJACENT TO SINKHOLES</b><br>(Refer to page 24 of the 2008 BMP Manual) (If N/A, Circle box and move on to NEXT CATEGORY) |            |  |   | <b>7</b>                |
| <b>GENERAL SINKHOLE BMPs</b><br>(If N/A, Circle and move on to NEXT PRACTICE)   | <b>N/A</b> | <b>IN COMPLIANCE?</b><br>(Circle Y or N) |   | <b>Significant Risk</b> |
| 1. Avoided placing logging debris, trash or waste into sinkhole or in drainage feature flowing into sinkhole?                             | N/A        | 7  | 0 |                         |
| 2. Avoided mechanical operations ( harvest or site preparation), fertilization, and pesticide use within sinkholes?                       | N/A        | 6  | 1 |                         |
| 3. Avoided altering adjacent land surface to discharge into sinkhole?   | N/A        | 7  | 0 |                         |
| <b>TOTALS</b>   |            | 20                                       | 1 | 0                       |
| <b>COMPLIANCE FOR CATEGORY (%)</b>  |            | <b>95.2%</b>                             |   |                         |

|  |     |              |   |            |  |
|--|-----|--------------|---|------------|--|
| <b>E. FOREST ROADS</b><br>(Refer to pages 25-27 of the 2008 BMP Manual)  |     |              |   | <b>156</b> |  |
| <b>NEW ROAD PLANNING &amp; CONSTRUCTION BMPS</b><br>(If N/A, Circle and move on to NEXT PRACTICE)  |     |              |   | <b>N/A</b> | <b>IN COMPLIANCE?</b><br>(Circle Y or N) |
| 1. Carefully planned location and desired drainage features before construction?   | N/A | 4            | 0 |            |  |
| 2. Avoided construction operations during wet conditions?  | N/A | 4            | 0 |            |  |
| 3. Road properly designed for traffic load and use?  | N/A | 4            | 0 |            |  |
| 4. Properly balanced cut/fill ratio?   | N/A | 2            | 0 |            |  |
| 5. Fill road shoulders properly sloped?  | N/A | 1            | 0 |            |  |
| 6. Road banks properly stabilized?   | N/A | 2            | 0 |            |  |
| 7. Critical segments of road stabilized?   | N/A | 4            | 0 |            |  |
| <b>ROAD DRAINAGE</b><br>(If N/A, Circle and move on to NEXT PRACTICE)  |     |              |   | <b>N/A</b> |  |
| <b>Drainage Structures Evaluated (check all that apply):</b> <u>47</u> Cross-drain culverts <u>0</u> Cross-ditches <u>78</u> Road Ditches<br><u>17</u> Water Bars <u>0</u> Ditch Plugs <u>20</u> Water Turnouts <u>28</u> Low Water Hard Surface Crossing (LWHS) |     |              |   |            |  |
| 8. Drainage structure installed properly?  | N/A | 116          | 0 |            |  |
| 9. Road surface drainage directed away from waterbodies/wetlands?  | N/A | 117          | 0 |            |  |
| <b>ROAD MAINTENANCE</b><br>(If N/A, Circle and move on to NEXT PRACTICE)   |     |              |   | <b>N/A</b> |  |
| <b>Drainage Structures Evaluated (check all that apply):</b> <u>47</u> Cross-drain culverts <u>1</u> Cross-ditches <u>77</u> Road Ditches<br><u>18</u> Water Bars <u>0</u> Ditch Plugs <u>19</u> Water Turnouts <u>28</u> Low Water Hard Surface Crossing (LWHS) |     |              |   |            |  |
| 10. Drainage structures free of major obstructions?  | N/A | 118          | 1 |            |  |
| 11. Closed or restricted traffic on roads whenever possible?   | N/A | 153          | 0 |            |  |
| 12. Stabilized critical segments?  | N/A | 87           | 0 |            |  |
| <b>TOTALS</b>  |     | 612          | 1 | 0          |  |
| <b>COMPLIANCE FOR CATEGORY (%)</b>   |     | <b>99.8%</b> |   |            |  |

|  |     |  |   |                         |
|--|-----|--|---|-------------------------|
| <b>F. STREAM CROSSINGS</b><br><i>(Refer to pages 28-30 of the 2008 BMP Manual) (If N/A, Circle and move on to NEXT CATEGORY)</i> |     |  |   | 20                      |
| <b>GENERAL STREAM CROSSING BMPs</b><br>(If N/A, Circle and move on to NEXT PRACTICE)   | N/A | <b>IN COMPLIANCE?</b><br>(Circle Y or N) |   | <b>Significant Risk</b> |
| 1. Minimized number of stream crossings on site?   | N/A | 20                                       | 0 |                         |
| 2. Crossed the stream perpendicular to the flow?   | N/A | 19                                       | 0 |                         |
| 3. Located stream crossing(s) on narrow section of stream?   | N/A | 19                                       | 0 |                         |
| 4. Located crossing(s) on straight segment(s) of stream?   | N/A | 19                                       | 0 |                         |
| 5. Stabilized erodible fill material and other areas normally exposed to flowing water?  | N/A | 12                                       | 0 |                         |
| 6. Avoided construction during high water conditions?  | N/A | 11                                       | 0 |                         |
| <b>CULVERTS</b><br>(If N/A, Circle and move on to NEXT PRACTICE)   | N/A |  |   |                         |
| 7. Culvert properly installed?   | N/A | 11                                       | 0 |                         |
| 8. Culvert size adequate to accommodate normal flow?   | N/A | 11                                       | 0 |                         |
| 9. Repaired or replaced damaged culverts?  | N/A | 2  | 0 |                         |
| 10. Kept culvert openings free of debris and/or obstructions?  | N/A | 11                                       | 0 |                         |
| 11. Temporary culvert size sufficient for expected seasonal flow conditions?   | N/A | 3  | 0 |                         |
| 12. Temporary culvert removed immediately after operation?   | N/A | 0  | 0 |                         |
| <b>SUBTOTALS</b><br>(Enter at top of table on next page)   |     | 138                                      | 0 | 0                       |

|  |     |  |   |                         |
|--|-----|--|---|-------------------------|
| <b>STREAM CROSSINGS</b><br><b>(Continued)</b><br><i>(Refer to pages 28-30 of 2008 BMP Manual)</i>  |     | <b>IN COMPLIANCE?</b><br>(Circle Y or N) |   | <b>Significant Risk</b> |
| <b>Subtotals from previous page⇒</b>   |     | 138                                      | 0 | 0                       |
| <b>HARD-SURFACE CROSSING BMPs</b><br>(If N/A, Circle and move on to NEXT PRACTICE)   | N/A |  |   |                         |
| <b>TYPE OF ARMORING MATERIAL USED FOR HARD-SURFACE CROSSINGS ON THIS SITE:</b><br><u>2</u> None Used <u>2</u> Limerock <u>5</u> Gravel <u>0</u> Concrete <u>1</u> Logs <u>0</u> Slag <u>0</u> Other: _____ |     |  |   |                         |
| 13. Used non-petroleum based material for armoring?  | N/A | 6  | 0 |                         |
| 14. Stream bottom/banks appropriate for this type of crossing?   | N/A | 7  | 0 |                         |
| 15. Used clean material with size, weight, and texture of armoring material suitable to stream flow?   | N/A | 7  | 0 |                         |
| 16. Avoided stream impoundment with crossing installation?   | N/A | 7  | 0 |                         |
| 17. Removed temporary materials after completion of operation?   | N/A | 1  | 0 |                         |
| <b>TOTALS</b>  |     | 166                                      | 0 | 0                       |
| <b>COMPLIANCE FOR CATEGORY (%)</b>   |     | <b>100%</b>                              |   |                         |

|   |            |  |   |                         |
|---|------------|--|---|-------------------------|
| <b>G. TIMBER HARVESTING OPERATIONS (NON-WETLANDS)</b><br>(Refer to page 31 of the 2008 BMP Manual) (If N/A, Circle and move on to NEXT CATEGORY)  |            |  |   | <b>130</b>              |
| <b>SKIDDING &amp; SKID TRAIL BMPs</b><br>(If N/A, Circle and move on to NEXT PRACTICE)  | <b>N/A</b> | <b>IN COMPLIANCE?</b><br>(Circle Y or N) |   | <b>Significant Risk</b> |
| 1. <b>To the extent possible</b> , located skid trails along the contour?   | N/A        | 91                                       | 0 |                         |
| 2. When contour skidding was not possible, skid wood uphill instead of down?  | N/A        | 34                                       | 0 |                         |
| 3. When skidding up slopes, avoided long continuous skid trails?  | N/A        | 33                                       | 0 |                         |
| 4. Installed appropriate drainage structures properly?  | N/A        | 25                                       | 0 |                         |
| 5. Stabilized critical segments as needed?  | N/A        | 42                                       | 0 |                         |
| 6. Concentrated skid trails in <b>organic soils</b> ?   | N/A        | 15                                       | 0 |                         |
| 7. Dispersed skid trails in <b>mineral soils</b> ?  | N/A        | 128                                      | 0 |                         |
| <b>SLASH DISPOSAL</b><br>(If N/A, Circle and move on to NEXT PRACTICE)  | <b>N/A</b> |  |   |                         |
| 8. Removed logging slash from intermittent and perennial streams and lakes?   | N/A        | 27                                       | 0 |                         |
| 9. Avoided pushing and piling logging slash <b>into</b> cypress ponds or strands, swamps, marshes, grassy ponds, or waterbodies such as streams, lakes, sinkholes or similar water resource features? | N/A        | 128                                      | 0 |                         |
| <b>TOTALS</b>   |            | 523                                      | 0 | 0                       |
| <b>COMPLIANCE FOR CATEGORY (%)</b>  |            | <b>100%</b>                              |   |                         |

|  |     |                                   |   |                  |
|--|-----|-----------------------------------|---|------------------|
| <b>H. SITE PREPARATION &amp; FOREST TREE PLANTING OPERATIONS</b><br><i>(Refer to page 32 of the 2008 BMP Manual) (If N/A, Circle and move on to NEXT CATEGORY)</i>             |     |                                   |   | 79               |
| <b>GENERAL SITE PREPARATION BMPS</b><br>(If N/A, Circle and move on to NEXT PRACTICE)  | N/A | IN COMPLIANCE?<br>(Circle Y or N) |   | Significant Risk |
| 1. Applied appropriate site preparation techniques for the site?   | N/A | 78                                | 1 |                  |
| 2. Kept intensive mechanical site preparation out of wetlands?   | N/A | 67                                | 0 |                  |
| 3. <b>To the extent possible</b> , drum chopping conducted perpendicular to waterbody?   | N/A | 16                                | 0 |                  |
| 4. Windrows and soil beds arranged parallel to waterbodies and/or wetlands in order to provide a barrier to overland flow, prevent concentration of runoff and reduce erosion? | N/A | 56                                | 2 |                  |
| 5. Kept equipment blade above the soil surface when shearing or pushing and piling debris?   | N/A | 66                                | 0 |                  |
| 6. Avoided pushing and piling logging debris <b>into</b> cypress ponds, strands, marshes, streams, lakes or similar water resource features?                                   | N/A | 75                                | 0 |                  |
| <b>TOTALS</b>  |     | 358                               | 3 | 0                |
| <b>COMPLIANCE FOR CATEGORY (%)</b>   |     | <b>99.2%</b>                      |   |                  |

|   |     |  |   |                         |
|---|-----|--|---|-------------------------|
| <b>I. FIRELINE CONSTRUCTION</b><br><i>(Refer to page 33 of the 2008 BMP Manual) (If N/A, Circle and move on to NEXT CATEGORY)</i>   |     |  |   | 4                       |
| <b>GENERAL BMPS</b><br>(If N/A, Circle and move on to NEXT PRACTICE)  | N/A | <b>IN COMPLIANCE?</b><br>(Circle Y or N) |   | <b>Significant Risk</b> |
| 1. Used existing barriers (roads, waterbodies, etc.) as firelines where practical?  | N/A | 4  | 0 |                         |
| 2. Used alternatives to plowed lines such as foam, harrowing, wet lines, permanent grass, when feasible?  | N/A | 3  | 0 |                         |
| 3. Avoided plowing lines through wetlands, marshes, and savannas?   | N/A | 2  | 0 |                         |
| 4. Minimized plow depth?  | N/A | 2  | 0 |                         |
| 5. When crossing waterbodies, raised the equipment and avoided connecting the line directly to the waterbody?   | N/A | 0  | 0 |                         |
| 6. Avoided firelines which act as drainage systems, particularly those that might connect or drain isolated wetlands?   | N/A | 2  | 0 |                         |
| 7. <b>To the extent possible</b> , constructed firelines on land contours?  | N/A | 4  | 0 |                         |
| 8. Stabilized critical segments of firelines with appropriate drainage structure when necessary?  | N/A | 0  | 0 |                         |
| <b>Structures Evaluated (check all that apply):</b> <u>2</u> None Applied <u>0</u> Cross-ditches <u>0</u> Water Turnouts<br><u>0</u> Water Bars <u>0</u> Vegetation <u>0</u> Other: _____ |     |  |   |                         |
| <b>TOTALS</b>   |     | 17                                       | 0 | 0                       |
| <b>COMPLIANCE FOR CATEGORY (%)</b>  |     | 100%                                     |   |                         |



|   |            |  |                         |           |
|---|------------|--|-------------------------|-----------|
| <b>J. PESTICIDE &amp; FERTILIZER USE</b><br>(Refer to page 34-35 of the 2008 BMP Manual) (If N/A, Circle and move on to NEXT CATEGORY)  |            |  |                         | <b>47</b> |
| <b>PESTICIDE USE BMPS</b><br>(If N/A, Circle and move on to NEXT PRACTICE)  | <b>N/A</b> | <b>IN COMPLIANCE?</b><br>(Circle Y or N) | <b>Significant Risk</b> |           |
| Pesticide(s) used: <u>5</u> Arsenal <u>39</u> Chopper <u>25</u> Garlon <u>5</u> Oust <u>0</u> Velpar L <u>0</u> Velpar ULW <u>0</u> Razor Pro <u>4</u> Accord<br><u>1</u> Polaris <u>0</u> Tahoe <u>15</u> Escort <u>8</u> Oustar <u>1</u> Roundup <u>3</u> Other<br>This is a: <u>34</u> Pre-planting Treatment <u>0</u> Post-planting Treatment <u>11</u> Pre & Post <u>0</u> Timber Stand Improvement (TSI)<br><u>3</u> None |            |  |                         |           |
| 1. Directed pesticide only to the targeted area?  | N/A        | 47                                       | 0                       |           |
| 2. Pesticide containers removed from site?  | N/A        | 47                                       | 0                       |           |
| 3. Cleaned spray equipment away from waterbodies and wetlands?  | N/A        | 46                                       | 0                       |           |
| <b>FERTILIZER USE BMPS</b><br>(If N/A, Circle and move on to NEXT PRACTICE)   | <b>N/A</b> |  |                         |           |
| Fertilizer(s) applied: <u>  </u> Diammonium Phosphate (DAP) <u>1</u> Urea <u>1</u> Triple Super Phosphate (TSP)<br>This is a (Check One): <u>  </u> Pre-Planting Treatment <u>  </u> Post-Planting Treatment <u>  </u> Pre & Post <u>  </u> None  |            |  |                         |           |
| 4. Timing of fertilizer application conducive to maximizing effectiveness of nutrient uptake?   | N/A        | 2  | 0                       |           |
| 5. Fertilization does not exceed application limits given on page 35 of BMP Manual?   | N/A        | 2  | 0                       |           |
| <b>TOTALS</b>   |            | 144                                      | 0                       | 0         |
| <b>COMPLIANCE FOR CATEGORY (%)</b>  |            | <b>100%</b>                              |                         |           |

|   |  |  |  |  |   |                         |
|---|--|--|--|--|---|-------------------------|
| <b>K. WASTE DISPOSAL</b><br><i>(Refer to page 36 of the 2008 BMP Manual)</i>  |  |  |  | <i>(If N/A, Circle and move on to NEXT CATEGORY)</i> |   | <b>163</b>              |
| <b>USED OIL DISPOSAL BMPS</b><br><i>(If N/A, Circle and move on to NEXT PRACTICE)</i>   |  |  |  | <b>N/A</b>   | <b>IN COMPLIANCE?</b><br><i>(Circle Y or N)</i> | <b>Significant Risk</b> |
| 1. Used oil properly collected and stored <b>temporarily</b> on-site during equipment maintenance and removed after operation?          |  |  |  | N/A  | 154   | 0                       |
| 2. Avoided discharging used oil or pollutants on the ground, in sinkholes, wetlands, or waterbodies (including canals)?                 |  |  |  | N/A  | 163   | 0                       |
| <b>SOLID WASTE DISPOSAL BMPS</b><br><i>(If N/A, Circle and move on to NEXT PRACTICE)</i>  |  |  |  | <b>N/A</b>   |   |                         |
| 3. Kept solid waste out of streams, waterways and wetlands?   |  |  |  | N/A  | 160   | 0                       |
| 4. Removed trash, litter, solid waste, chemical containers, fluids, hoses, batteries, and tires from site upon completion of operation? |  |  |  | N/A  | 156   | 2                       |
| <b>TOTALS</b>   |  |  |  |  | 633   | 2                       |
| <b>COMPLIANCE FOR CATEGORY (%)</b>  |  |  |  |  | <b>99.7%</b>                                    |                         |

|  |     |  |   |                         |
|--|-----|--|---|-------------------------|
| <b>L. WET WEATHER OPERATIONS</b><br><i>(Refer to page 37 of the 2008 BMP Manual) (If N/A, Circle and move on to NEXT CATEGORY)</i> |     |  |   | 48                      |
| <b>GENERAL BMPS</b><br><i>(If N/A, Circle and move on to NEXT PRACTICE)</i>  | N/A | <b>IN COMPLIANCE?</b><br>(Circle Y or N) |   | <b>Significant Risk</b> |
| 1. When possible, avoided heavy equipment operation during flooded or wet soil conditions?   | N/A | 48                                       | 0 |                         |
| 2. When wet conditions are unavoidable, used low ground pressure equipment or alternatives to conventional skidding?               | N/A | 3  | 0 |                         |
| 3. Avoided operating heavy equipment in floodplains with standing or flowing floodwater?   | N/A | 1  | 0 |                         |
| <b>TOTALS</b>  |     | 52                                       | 0 | 0                       |
| <b>COMPLIANCE FOR CATEGORY (%)</b>   |     | <b>100%</b>                              |   |                         |

|   |            |   |   |                         |
|---|------------|---|---|-------------------------|
| <b>M. EMERGENCY OPERATIONS (Including wildfires, hurricanes, tornadoes, etc.)</b><br><i>(Refer to page 38 of the 2008 BMP Manual) (If N/A, Circle and move on to NEXT CATEGORY)</i> |            |   |   | <b>11</b>               |
| <b>WILDFIRE/NATURAL DISASTERS/INSECTS &amp; DISEASE OUTBREAKS</b><br><i>(If N/A, Circle and move on to NEXT PRACTICE)</i>   | <b>N/A</b> | <b>IN COMPLIANCE?</b><br><i>(Circle Y or N)</i> |   | <b>Significant Risk</b> |
| 1. Sensitive segments of firelines stabilized as necessary after emergency operation?   | N/A        | 3   | 0 |                         |
| 2. Sensitive segments of skid trails stabilized as necessary after emergency operation?   | N/A        | 1   | 0 |                         |
| 3. Stream crossings stabilized as necessary after emergency operation?  | N/A        | 0   | 0 |                         |
| 4. Pesticide use within the SMZ conducted according to the label and limited to the extent necessary to protect and maintain forest health?   | N/A        | 0   | 0 |                         |
| 5. Sensitive segments of access roads stabilized as necessary after emergency operation?  | N/A        | 3   | 0 |                         |
| 6. Mechanical site prep within the SMZ limited to only those techniques which are necessary to return the site to a productive, protective condition?                               | N/A        | 0   | 0 |                         |
| 7. Salvage harvesting within the SMZ limited to the extent necessary to protect and maintain forest health?   | N/A        | 0   | 0 |                         |
| 8. Were exceptions to the Wetland and Special Management Zone (SMZ) leave tree criteria properly implemented for areas with an exotic/invasive tree infestation?                    | N/A        | 0   | 0 |                         |
| <b>TOTALS</b>   |            | 7   | 0 | 0                       |
| <b>COMPLIANCE FOR CATEGORY (%)</b>  |            | <b>100%</b>                                     |   |                         |

|  |     |  |   |                  |
|--|-----|--|---|------------------|
| <b>N. PUBLIC LANDS</b><br><i>(Refer to page 16 of the 2008 BMP Manual)</i>   |     |  |   | 23               |
| <b>BMPs</b><br>(If N/A, Circle and move on to NEXT PRACTICE)   | N/A | <b>IN COMPLIANCE?</b><br>(Circle Y or N) |   | Significant Risk |
| 1. Areas within SMZ designated as Primary Zone managed as no cut unless for ecological restoration or habitat enhancement? | N/A | 6  | 0 |                  |
| <b>TOTALS</b>  |     | 6  | 0 | 0                |
| <b>COMPLIANCE FOR CATEGORY (%)</b>   |     | 100%                                     |   |                  |