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Full Length Research Paper

Non-financial tax compliance: Elements of management plans required by Michigan's Commercial Forest Act

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Michigan's Commercial Forest Act is a property tax incentive program designed to allow public access to private land and a continuous timber supply. The tax program requires compliance with non-financial provisions including preparation of a forest management plan. The purpose of this study was to determine compliance with the management plan provision among enrolled landowners. Management plans sampled from non-industrial private forest (NIPF) landowners in Michigan's western Upper Peninsula rarely contained all of the management plan requirements, yet seemed to capture the intent of the law. We categorized management plans as either "basic" or "thorough" based upon the number of requirements and additional information present within management plans. Additional management plan information, such as wildlife habitat and aesthetics, appeared to enhance opportunities associated with public access on listed lands.

Key words: Non-industrial private forest (NIPF), property tax, incentive, timber harvest, compliance, evasion.

INTRODUCTION

The study of tax compliance and evasion is typically concerned with the payment of tax revenue to the taxing authority (Feldman and Slemrod, 2007; Chau and Leung, 2009; Kirchler et al., 2009). However, some forest property tax programs include specific provisions that must be fulfilled if an individual or corporation is enrolled in a tax program. In this study, we examine compliance with a specific provision of Michigan's Commercial Forest Act. Michigan's Commercial Forest Act is a property tax incentive program for private forest landowners who devote their property to commercial forestry. The law was first enacted in 1925 and today, covers one million hectares and is used by 1,700 landowners, both large industrial enterprises and non-industrial private landowners. Commercial Forest Act lands must include open access to the public for hunting, fishing, and trapping, must be at least 40 acres of contiguous forest, and have a forest management plan that includes a harvesting schedule. This forest management plan must contain specific required information, termed "requirements" (Michigan DNRE, 2009a). The law provides public benefits through a continuous flow of timber as well as specific recreational opportunities. Enrolled landowners are rewarded with a reduced annual property tax rate of $ 1.20 per acre (Michigan DNRE, 2009b). These tax benefits can be the driving force behind improved forest land management; however, landowners must be in compliance with the non-financial provisions if the public is to receive the benefits provided by the Act.

Many Minnesota landowners participating in the Forest Stewardship Program stated that incentives to reduce property taxes are of substantial value to non-industrial private forest (NIPF) landowners (Baughmann and Updegraff, 2002). Property tax incentives increased the likelihood that NIPF landowners would actively manage their property (Potter-Witter, 2005). The plans themselves, written by trained personnel, are a vital tool for providing information to NIPF landowners (Thrift et al., 1997). These incentives and results are important factors in local timber supply since timber production is often not the principal objective of NIPF landowners (Alig et al., 1990). Given the overall importance of forest

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Table 1. Requirements of a management plan and percentage of plans containing those requirements (n =32).

Requirement	Percentage of plans with requirement
Landowner's name	100
Landowner's address	97
Landowner's phone	94
Plan writer's name	100
Plan writer's address	81
Plan writer's phone	88
Plan writer's signature*	47
Legal land description and acreage	100
Landowner's objectives	56
Narrative overview of property	84
Soils	44
Cover type map	97
Management summary table and timeline	47
Completion date and time period	97
Provisions for keeping record of silvicultural practices	34
Provision for changes due to unexpected events	34

* = not considered in analyses because many plans were copies; filed originals may have been signed, but not the copies.

management plans in Michigan's Commercial Forest Act, the purpose of this study was to determine if management plans written for enrolled property comply with the requirements of the law and if they also included additional management information. The study included only small non-industrial parcels in the western Upper Peninsula of Michigan.

METHODS

In 2008 and 2009, management plans for NIPF lands in Baraga, Houghton, Marquette, and Ontonagon Counties of the western Upper Peninsula of Michigan enrolled in Michigan's Commercial Forest Act were randomly selected from Michigan Department of Natural Resources and Environment online map of lands listed in the Commercial Forest Act (Michigan DNRE, 2010). Sections of land were randomly selected and all legal land descriptions were recorded of all non-industrial private commercial forest parcels in the section. In order to ensure ownership was non-industrial, the respective county's plat book was cross referenced and the landowner's name was examined and recorded. Mailing addresses were obtained from the equalization departments of county courthouses. 95 letters with pre-addressed return envelopes were sent to the landowners requesting a copy of their forest management plan and 32 usable plans were received, a 33.7% response rate, which is a reasonably good response rate for this type of survey. A second letter was sent to selected landowners who did not respond to the first letter. This sample may be biased towards landowners who are more inclined to respond. Management plans were reviewed for the 17 requirements specified by regulation (Michigan DNRE, 2009a). The signature of the plan writer on the plan is required by law, but was not considered in this study because the management plans that were received were the landowners' personal copies and not submitted plans. We also recorded additional information contained in each forest management plan beyond those required through DNRE regulations. Pearson correlation coefficients were determined for the relationship between plan requirements and additional information (Steel and Torrie, 1960).

RESULTS AND DISCUSSION

Although no management plan contained every requirement listed in the Commercial Forest Act regulations (Table 1), none appeared to deviate from the spirit of the law, blatantly deviating from compliance with the plan guidelines. Some of the requirements that were most frequently absent from management plans included information regarding provision for making changes to the management plan in light of unexpected circumstances, provision for recording silvicultural activities that take place, soils information, and a table which summarizes prescribed management practices and their scheduled timeframes. We provide two examples to justify our conclusion: plans comply with spirit of the law. First, a management summary table would have contained information which was often described in other portions of the management plan, yet preparers often neglected to provide such information in a summarized table. Secondly, while specific soils information was omitted, the harvesting prescriptions were clearly following best management practices which were designed to protect soils and streams – soils were considered. Essentially, the management plans sampled complied with the intent of the law, but not the letter of the law.

Figure 1 shows the number of management plans with the number of requirements present in the plans and Figure 2 shows the same for additional information. The

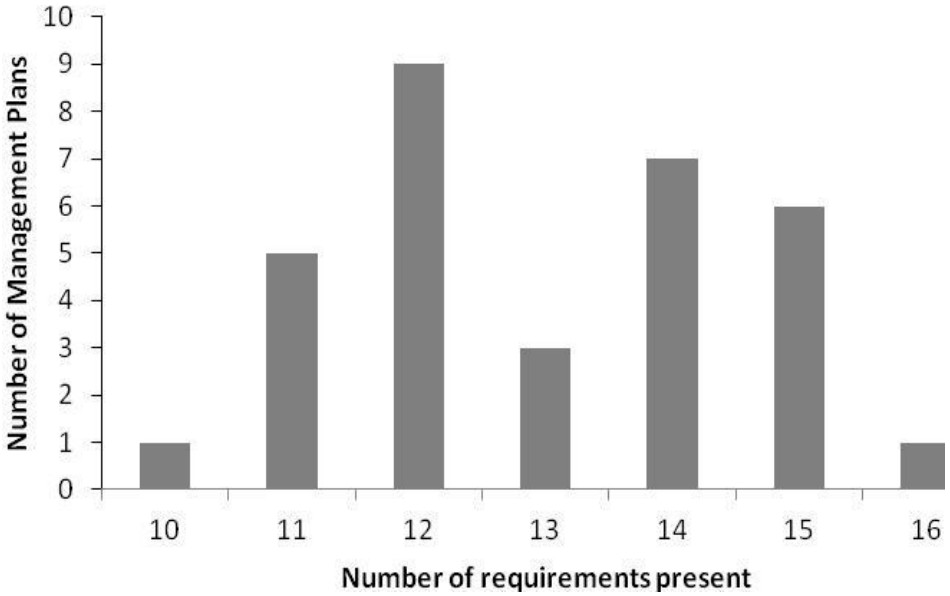

Figure 1. Number of requirements present in management plans.

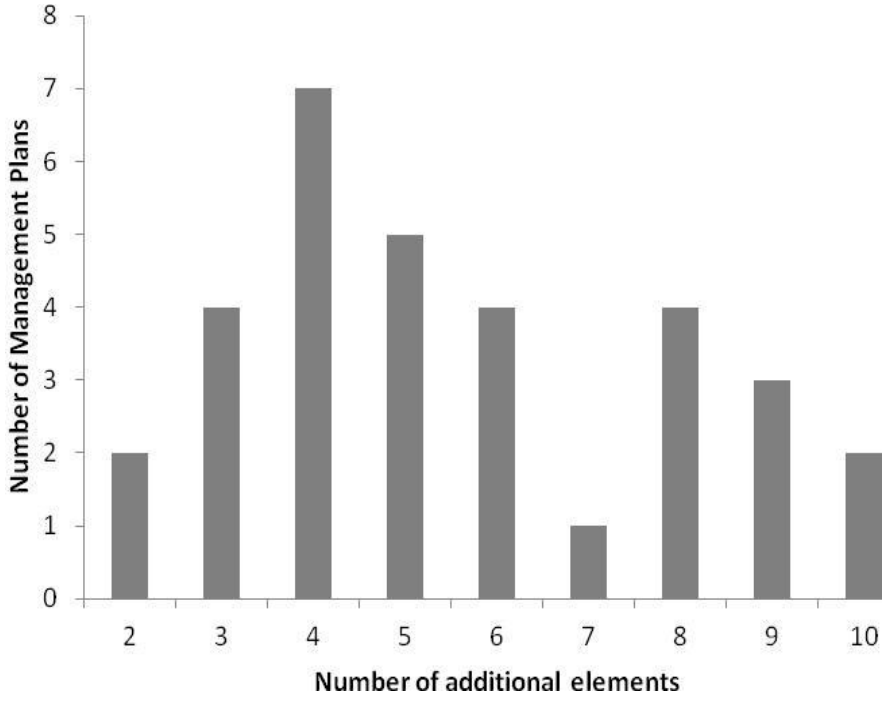

Figure 2. Number of additional elements in management plans.

distribution of each is bimodal. This is in accordance with Silverman (1981) where the bandwidth parameters for kernel density estimation were 0.50 and 0.75 for requirements and 0.25 and 0.50 for additional information. Those plans that contained fewer of the requirements and additional information could be considered “basic”, while the management plans that contained a greater number of the elements, both requirements and additional information, could be considered “thorough.” Plans either represented what the plan writer felt was the minimum required for a plan or the plan was developed to encompass either landowner objectives or capture the broader resource base in the forest, even when not formally required.

Table 2. Percentage of management plans with specific additional information (n = 32).

Additional information	Percentage of management plans
Property corners	62.5
Logging history	59.4
Harvest prescription limited	56.3
Wildlife habitat improvement	50.0
Equipment operability	46.9
Whitetail deer habitat	25.0
Timber volumes	25.0
Riparian management mentioned*	21.9
Species specific prescription	18.8
Ruffed grouse habitat	18.8
Harvest prescription = clear cut	15.6
Aesthetics	15.6
Plat map	15.6
Recreation	12.5
Detailed harvest prescription	12.5
Glossary of terms	9.4
Endangered species	6.3

* = only 50% of the properties contained riparian zones.

Information regarding property corners, logging history, harvest plans that recommend removing low value trees first, and strategies for wildlife habitat improvement were the most common types of additional information beyond the requirements in the sampled management plans (Table 2). Property corner information, whether displayed in a map or described through text, is essential for management activities, especially timber harvesting, in order to establish boundaries. This implies that landowners' objectives may be appropriately targeted to comply with the goal of commercial forestry practices within the Commercial Forest Act. However, property corner information was not significantly correlated with the number of requirements ($r = -0.04$, $P = 0.82$) included in the plan or the number of additional information types within a management plan ($r = 0.09$, $P = 0.64$).

Management plans that most precisely defined which trees to remove in a partial harvest were significantly correlated with the number of additional information elements ($r = 0.47$, $P = 0.006$). These plans included substantive descriptions of poor quality trees and crop trees. Thus, the "thorough" management plans also had the most specific timber management plans. Plans with these detailed harvest prescriptions were also significantly correlated with whitetail deer habitat management ($r = 0.30$, $P = 0.092$) and ruffed grouse habitat management ($r = 0.44$, $P = 0.012$).

Wildlife habitat improvement ($r = 0.68$, $P < 0.001$), ruffed grouse habitat ($r = 0.53$, $P = 0.002$), and whitetail deer habitat ($r = 0.69$, $P < 0.001$) were additional information elements that were all significantly correlated with the number of requirements included. The three wildlife elements were commonly included together. Promoting ruffed grouse and whitetail deer habitat enhances sporting opportunities. The association of game species management as key elements in management plans complies with the goal of providing public access for hunting opportunities on lands enrolled in the Commercial Forest Act quite effectively.

Recreation ($r = 0.56$, $P = 0.001$) and aesthetics ($r = 0.56$, $P < 0.001$) were also significantly correlated with the number of additional information elements within management plans. Although aesthetics are clearly not a primary target of Michigan's Commercial Forest Act, enhancing or maintaining the aesthetic value of a forest is often of importance to NIPF landowners (Baughmann et al., 2003). A survey of South Carolina NIPF landowners found that those who desired to promote recreation often ranked hunting and hiking as preferred activities (Thrift et al., 1997). Augmenting aesthetics and recreational opportunities could make Commercial Forest Act enrolled properties more appealing for prescribed public use.

We did not intend to conduct phone interviews, only to collect management plans. However, some property owners called us. Some had lost their plans, one was prompted by the survey to have his plan updated, and some asked if we thought their plans were reasonable. Several property owners who had purchased land already listed as CFA land were surprised to learn about their obligations to the public. A key recommendation would be to expand the sale requirements for CFA land to include a document outlining benefits to and obligations of CFA listed landholders that must be signed by the buyer and returned to the appropriate Michigan DNR (formerly

DNRE) office. These limited phone conversations indicated that people intend to comply with the non-financial provisions of the tax code, but are not consistently aware of the requirements.

Conclusion

Some additional information within management plans, such as those promoting game species habitat, appear to support the broad goals of Michigan's Commercial Forest Act. We found that although plans rarely complied with all requirements associated with the law, the intent of the law was being met by the management plans. Thus, compliance seems to be fuzzy, in that good intent is shown by landowners while detailed legal compliance does not occur.

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