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**Testimony on LD 1347 --
An act to require a silvicultural basis for harvesting
which produces understocked stands**

Forest Practices Task Force
Maine Division of the Society of American Foresters
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Introduction

The Society of American Foresters is the national organization of professional foresters, with approximately 18,000 members nationwide. We formed a Task Force on Forest Practices in October, 1994, in anticipation that legislative proposals to amend the Forest Practices Act would be forthcoming. Recognizing that forestry issues are complex and that legislative deliberations are often dominated by polarized positions of special interests, we sought to create a deliberative process through which we could offer independent, nonpolitical advice to the legislature on these difficult and often divisive issues.

The comments below represent the deliberations of our Task Force and are generally endorsed by the entire Maine Division membership of 340 foresters. The Task force is composed of 14 individuals representing a broad cross-section of professional foresters in Maine. Five members of the Task Force are employed by forest industry, one works for a large non-industrial landowner, three work for public agencies, three are self-employed consultants, and two are academics. Through SAF, we are acting independently of our employers to represent what we believe is in the best interest of forestry in Maine.

SAF members share the public's concern over forest practices and sustainable forest management. We believe that growing pressures on Maine's forests demand that Maine's government play an important leadership role in forestry issues. We believe that LD 1347 is a well-meaning, but narrowly focused, effort to address concerns of Maine citizens about forest practices. If the legislature concludes that further regulation of silvicultural practices is in the public interest, some of its concepts may have merit. We would prefer, however, that concerns related to the present Forest Practices Act be addressed by the Maine Council on Sustainable Forest Management (recently established by Governor King), within the broader context of forest sustainability. Our rationale is presented below.

Current Forest Practices Act (FPA)

The main purposes of the current FPA (which went into effect in 1991) were to prevent large, contiguous clearcuts, and to require that the forest regenerate after harvest. Rules were designed to address concerns about the visual impact of harvesting, and to help mitigate negative effects of clearcutting on certain types of wildlife habitat. The preamble of the FPA mentions broader goals such as sustainable timber supply and age diversity, but the specific mandates for implementation (accomplished in rule-making) require only "performance standards for clearcuts" and "regeneration after harvests."

Evidence of harvesting activity since 1991 indicates that the FPA has been effective in reducing clearcutting, although other factors undoubtedly have also contributed. The *total area* harvested has gone up, not down, however, since the FPA's enactment. This is a natural consequence of a relatively stable demand for wood by Maine mills coupled with the decline in clearcutting. Since the act, a higher percentage of this wood is coming from unregulated partial

cuttings (harvests that leave more than 30 square feet of basal area).

One should not conclude that the quality of silviculture in Maine has improved simply because there is less clearcutting and more partial cutting since the FPA was enacted. Both methods of harvesting have a well-established role in silviculture, and both methods can be misapplied. There is nothing inherently "good" or "bad" about either harvesting practice from a silvicultural standpoint. The silvicultural "quality" of a particular harvest must be determined on a site-specific, case-by-case basis.

The current FPA has little basis in the science of *silviculture*¹, other than its requirement for regeneration. Regeneration standards adopted during rule-making are minimal, however. They merely ensure that harvested stands will regenerate to commercial trees. There is no requirement that certain tree species in the harvested stand be maintained in the next generation.

How would LD 1347 change the FPA? What problem does it attempt to address?

LD 1347 would add silvicultural requirements to the current FPA. It would prevent any harvest that leaves the residual stand (i.e., the trees left after a timber harvest) in an "understocked" condition, unless (a) the harvest is "silviculturally necessary" (based on rules to be adopted by the DOC Commissioner) as documented in a management plan by a licensed forester, or (b) the harvested area is planted within two years. It would also require that stands regenerate to similar forest types after harvesting (i.e., softwood stands would remain softwood, etc.) The scientific validity of the statute's proposed definitions of understocking are discussed below, under "technical comments."

According to 1993 data in the recent Maine Forest Service FPA assessment, LD 1347 would extend regulations to approximately 180,000 acres per year (45% of the partially harvested area, slightly over 1% of the forested area in Maine), in addition to the 51,400 clearcut acres already regulated. Thus, this proposal would have substantial and widespread impacts on how Maine's forests would be managed, just as the current FPA has had.

Should all harvests be required to meet silvicultural standards?

Clearly, SAF members believe that it's in the public interest to encourage good silviculture throughout the state. However, the question posed by LD 1347 is more specific: Would regulations that "outlaw" some harvests with no silvicultural basis provide an effective way to achieve this goal?

Individually, our 400+ members throughout the State hold divergent opinions on this issue, ranging from enthusiastic support of higher standards to adamant opposition. Before Maine SAF can unite in advocacy of a formal position, our by-laws require "a thorough study" in which "each alternative and its consequences must be thoroughly explored." Although we have not had the time nor resources to conduct an exhaustive study, we will attempt to summarize the results of

¹ *Silviculture* is the science and art of manipulating forest vegetation to achieve a particular goal. Its purpose is to maintain forest stands in a continually productive condition, by controlling *stocking* (i.e., how many trees of certain sizes are left after a harvest or other treatment), *species composition*, and *quality* (i.e., the tree's suitability for various forest products or wildlife habitat). In Maine forestry, this is usually accomplished in conjunction with a harvesting operation, although tree planting, brush-saw thinning, pruning, and other practices are also used.

our Task Force deliberations by posing some questions which the Committee should consider.

1. Is there solid evidence and a public consensus that "outlaw" harvests (i.e., with no silvicultural basis) are creating a public harm?

Most foresters and citizens can recount examples of poorly executed timber harvests. Usually, these occur when short-term financial gain or wood supply needs of a mill overrule prudent long-term silviculture. Such practices can reduce the future productivity of the affected lands, especially if the harvesting is linked with land speculation and subdivision where there is no long-term stewardship. Others result when unscrupulous loggers take advantage of naive landowners who fail to involve professional foresters in their decision-making.

Although these instances are unfortunate, one can argue that losses are borne largely by the landowner. As long as the harvests don't violate environmental laws, the *public* harm, if any, probably takes the form of short-term visual impacts. Future timber supplies can also be reduced if substantial numbers of immature trees are harvested, or if resulting regeneration is poorly stocked with low-value tree species.

To the extent that such harvesting occurs because landowners don't fully understand their options, the provision in LD 1347 requiring the input by foresters (at least when standards would be exceeded) could help. In this sense, LD 1347 would serve as sort of a consumer protection act, by stating "if you want to keep your woodlot productive and don't want to consult a forester, you should follow these standards."

2. Would the proposed regulations materially improve the silviculture being practiced on a substantial acreage in the State, or would they merely add regulatory requirements to lands already under good silvicultural management?

Here, it's likely that LD 1347, like any broad-brush approach, would result in some of both. In cases where landowners might unwittingly accept substandard harvesting (by falsely assuming the present FPA mandates good silviculture), LD 1347 might help somewhat, although high-grading could still occur as long as the residual stand basal areas were met. In other cases where foresters have legitimate silvicultural reasons to create an "understocked" condition, the act would result in little change in practice. The difference would be the extra time and cost required to prepare the documentation justifying the harvest. Lacking definitive data on how common each situation is, it is difficult to judge whether the costs of the latter would justify the benefits in the former.

It is also possible that landowners or foresters, in order to avoid the expanded regulations, would simply elect to harvest to the standards, when a better silvicultural result would be obtained by harvesting differently. Landowners who are unable or unwilling to hire a forester may decide not to harvest at all, for fear of violating the law.

3. Assuming the regulations were implemented, what specific public benefits (increased future timber supply, landowner education, etc.) would accrue?

To answer this question effectively, first we need to know how much land would be affected positively. The recent release of the MFS study is an important step forward. It suggests that examples of truly substandard silviculture are uncommon -- between 8 and 15% of the partial cuts apparently fall into this category (32,000 to 60,000 acres, from Table 2, MFS report).

Various interpretations can be placed on the fact that over 180,000 acres (47% of the

partial cuts) fall into the "moderately stocked" category. The MFS reports that much of this acreage remains stocked with "healthy" residual stands, based on a combination of both logging and silvicultural criteria. For stands in the mixedwood and softwood forest types (except white pine stands), such stocking levels are somewhat below the proposed standards in LD 1347.

It is important to emphasize that these proposed standards are meant to apply only to thinnings -- harvests designed to maintain or improve the volume growth per acre of the residual stand. Thinning is only one of many silvicultural practices, however. We cannot tell precisely from the MFS study how much of this "moderately stocked" acreage was deliberately created by foresters to accomplish other silvicultural objectives² such as stand regeneration. Such harvests in mature stands will almost always *result* in stand regeneration of some kind, regardless of their intent. Because they are stocked above 30 square feet of basal area (and are thus not "clearcut" according to the present FPA), the current regeneration standards for new seedlings and saplings currently do not apply to such harvests. (Regeneration requirements are considered to be met by the residual stand of larger trees.) By regulating all understocked harvests including FPA clearcuts, LD 1347 could extend regeneration requirements to most harvests that result in stand regeneration. This would require amending the FPA regeneration rules, however.

4. What would the costs of such regulations be, both to the affected landowners and to the State government (enforcement)?

Costs imposed by LD 1347 would include the time required by foresters to prepare silvicultural justifications for any planned harvest that would go below the adequate-stocking standards. Other mandates in the bill could require foresters to collect more data than is now common, mainly to ensure that they are obeying the law. These costs would ultimately be borne by the landowner. Proponents of LD 1347 believe that benefits accruing to the landowner and the public -- mainly through improved productivity and more site-specific harvest treatments -- would outweigh these costs.

The proposed regeneration standards in LD 1347 could result in substantial costs to the landowner if planting or other silvicultural treatments were necessary to ensure that post-harvest stands regenerate to the same species that were harvested.

Enforcement of LD 1347 would be more difficult than the present FPA. Enforcers would need to determine the pre-harvest stand forest type (softwood, mixedwood, hardwood) in order to determine which stocking standards to apply. If a map were not available, one would need to measure stumps as well as standing trees, a significantly more time-consuming activity.

5. Should the biological aspects of silviculture be the only standard to measure and regulate forest practices?

Foresters clearly believe that biological factors such as stocking and regeneration (the criteria used to regulate harvests in LD 1347) should be important considerations of any harvest. However, the practice of silviculture involves far more than forest biology. Economic considerations also play an important role. Any operation carried out in the forest -- whether it be harvesting, planting, or thinning -- costs money, and usually must return something of value to the landowner. Skillful application of silviculture thus involves choosing among the feasible

² Some reasons include: stand regeneration of certain species that cannot tolerate heavy shade; harvest of poor-quality or mature trees in stands where remaining immature or high-quality trees did not meet the stocking thresholds; and many other cases too numerous to list concisely.

biological alternatives that best meet landowner objectives. It is not solely a biological discipline.

Summary

Foresters appreciate the enormous complexity involved with ensuring Maine's forests are managed sustainably. We tend to resist simplistic, regulatory proposals when problems are not clearly defined. Most foresters believe that regulations alone can never ensure good forestry -- they only maintain a minimal "safety net" for society on matters where the public interest clearly outweighs personal freedom. We shouldn't lose sight of the fact that Maine has many forests under exemplary management. These are not the product of regulation -- they result from voluntary initiatives, informed judgement, long-term business decisions, and the stewardship ethic of the landowners and foresters.

We believe the Maine Council on Sustainable Forest Management recently established by the executive order of Governor King, provides the most appropriate mechanism to address forest practices issues in the broader context of forest sustainability. In the event the committee disagrees with our judgement about the timeliness and efficacy of this proposal, however, and wishes to explore ways to enforce a higher silvicultural standard than exists in the current FPA, SAF stands ready to offer our professional expertise at the convenience of the Committee. The following detailed comments on the technical aspects of LD 1347 may be of value in this regard.

Specific Comments on the Technical Aspects of LD 1347

Understocking Standards (trees 5" and larger).

Understocking standards in the bill -- specified as basal areas of trees left in the stand after harvest -- come from silvicultural research of the U. S. Forest Service (somewhat simplified for ease of application). These standards attempt to define simple thresholds, below which the future growth of the stand remaining after harvest would be less than its biological potential. These standards are well accepted and are in widespread, voluntary (but by no means, universal) use by professional foresters throughout the Northeastern United States. The definition of a "clearcut" in the current FPA -- 30 square feet of basal area (unless the post-harvest stand is stocked with trees over 5 feet tall) -- has little silvicultural basis. It merely serves as a simple regulatory threshold.

Regeneration standards (for 1-4" trees).

The regeneration standards in LD 1347 would require that forest types regenerate to similar types after harvest, and would, if enforced, provide an effective way to prevent valuable softwood stands (spruce, fir, hemlock, pine) from changing to less valuable species after harvesting. The current FPA provides no such assurance; it merely requires that stands regenerate to trees of any commercial species. Until the US Forest Service releases the results of their statewide survey (now underway) in 1996, we will not know for sure whether undesirable forest-type conversion is an important concern. Some evidence provided to the SAF Task Force suggests that long-lived, shade-tolerant species such as red spruce, hemlock, and sugar maple are less numerous in small size classes than they are in mature stands.

Ensuring that softwood stands remain softwood after harvest can sometimes require expensive silvicultural treatments such as herbicide release or brush-saw thinning (if the softwood seedlings are present but overtopped by competing hardwoods) or planting (if the species is not present in requisite numbers). These treatments can often be avoided by substituting different harvesting methods (such as shelterwood or selection cutting), but these are not always effective.

Foresters' ability to exceed standards when "silviculturally necessary"

Although the stocking standards proposed by LD 1347 are scientifically supportable under many conditions, there are countless exceptions where foresters decide to harvest differently for valid silvicultural reasons. The complexity of forest conditions and landowner objectives in the State cannot be reduced to a simple "cookbook" set of prescriptive regulations. Professional judgement is essential.

If the proposed standards became law, it is imperative that foresters have discretion to exceed them where do so would produce a better silvicultural result. At the suggestion of the SAF Task Force, LD 1347's sponsors added a provision that would give foresters *some* discretion in certain cases yet to be defined. Such exemptions would be defined by the DOC Commissioner in rule-making, and would require documentation in the form of a management plan.

We agree that documentation of these exceptions would be appropriate, but believe that requiring a full "management plan" (as defined in the existing FPA statute) seems excessive. We further appreciate that some sideboards on "forester discretion" would be appropriate. However, we also believe it would be quite difficult for the DOC Commissioner to promulgate rules that define "silviculturally necessary" circumstances. We have struggled with this issue ourselves, and believe that the resulting list would be either (1) so complex that its enforcement would be impossible, or (2) so general that it would be ineffective in accomplishing the stated purpose of discouraging clearcutting or understocking.