

# Finding the Appropriate Scale for Forest Management Coordination Across Multiple Ownerships to Achieve Landscape Scale Goals: A Starting Point Discussion

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## **Purpose**

This paper is a brief statement of initial thoughts on how significant landscape level forestry management can be undertaken by defining the "optimum" geographic scale for initiating management across multiple ownerships.

## **Problem Statement**

This paper addresses the issue of how best to *facilitate management across mixed ownerships at a geographic scale capable of achieving meaningful landscape level forestry goals.*

The nature of this issue lies in the matter of scale. Forest planners and managers are increasingly adopting a landscape scale perspective with its "owner neutral" viewpoint to appropriately envision forest dynamics, planning, and change. However, this broad, unified view of the forest quickly fragments into a highly intermingled ownership pattern, which includes thousands of individual non-industrial forestland owners, and is further confounded by the reality that most management activities are implemented at the stand or site-specific level.

At the root of this paper are two premises. First, planning at the landscape level, across ownership lines, is seen as not only desirable but essential to the appropriate management of forests. Second, actual management at the landscape scale across ownership lines, if not impossible, is unlikely to occur without (equally unlikely) drastic changes in legislation. In order to bring landscape level thinking into the arena of practicable on-the-ground application, a smaller geographic scale must be involved at which level projects can more readily be designed and implemented to achieve landscape planning objectives.

## **Analysis**

Among the key factors that affect forest management across multiple ownerships are:

- **Scale:** The level of substantive involvement by an entity in landscape scale forestry issues, in good part, depends upon the amount of land owned by the entity and over what geographic extent it lies. As a result, (within Minnesota) the MnDNR arguably has the broadest concern followed by the USFS, large private industrial forest owners (in terms of having lands stretched across a wide range of territory), and private environmental organizations that own land (again stretched across a wide geographic

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<sup>1</sup> An earlier version of this paper was reviewed by several people who contributed comments and text which are included in this version. They are: Eli Sagor (University of Minnesota Extension Service), Chad Skally (Minnesota Forest Resources Council), and Jenny Brown (The Nature Conservancy).

extent). Counties, despite having relatively large tracts of forest land, have a lower level of concern because they are effectively constrained by county boundaries. Similarly, tribes, most of which have smaller forests, are also geographically constrained. Non-industrial private forestland (NIPF) owners, who collectively own almost half of Minnesota's forestland, are often greatly under represented in landscape planning initiatives because they individually own such a small proportion of the planning area.

- **Management Mandate:** The difference in mandates and obligations regarding management is significant. The broadest mandate (and most complicated set of obligations) rests with the USFS followed by the MnDNR. Counties would be next. Tribes and, especially, private corporations have the least complicated and most focused mandates and obligations. NIPF owners comprise such a large and diverse group that it is impossible to state a common management objective (few if any have a "mandate" to manage) for all or even most of them across a broad geographic area.
- **Sovereignty:** Within the realm of forestry management all entities are independent of one another. No one has the legal authority to force another to act in a certain way. Thus, all coordinated actions are based on identifying mutually satisfactory objectives to which the parties can voluntarily agree.
- **Timing:** Each entity operates on its own timetable for strategic and tactical planning. Seldom, if ever, will they perfectly align.
- **Capacity:** The ability of an individual entity to undertake management activities varies widely between and within organizations. This is a matter of financial and human resources, organizational structure, and political/organizational will. Further, entities with the capacity to influence the planning and management activities of others need not own land to do so.

The impact of these factors on landscape level management is indicated in Figure 1.

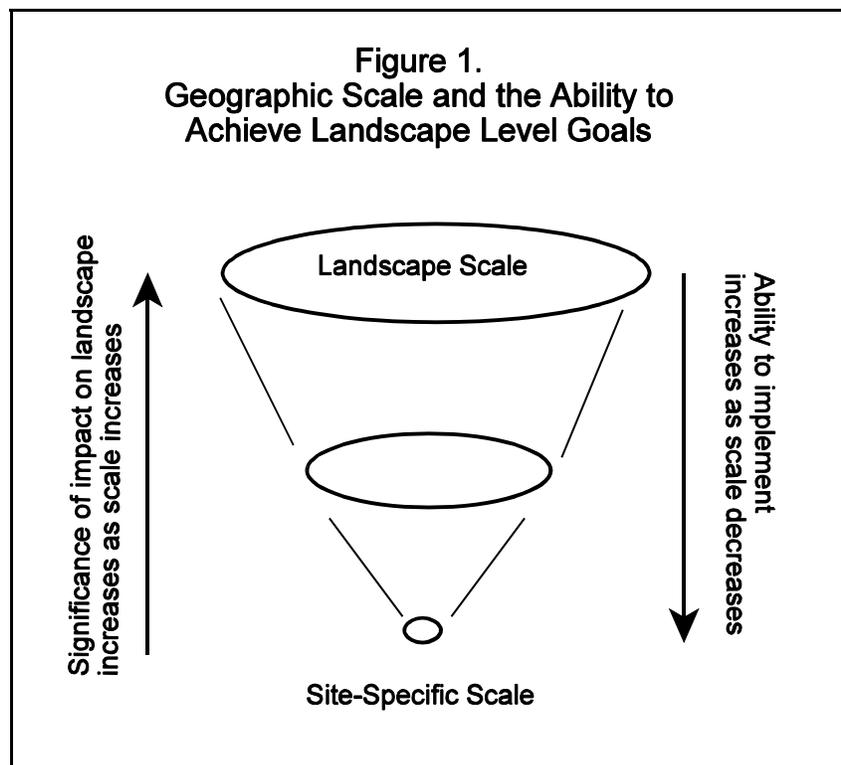


Figure 1 suggests that:

- The ability to achieve landscape level forestry objectives increases with the scale of the geographic area being jointly managed.
- The ease with which joint management (action) can be undertaken increases as the size of the area being managed decreases.
- A “middle geographic scale” exists at which the management objectives of various entities overlap and at which multiple entities possess the capacity to reasonably and easily undertake actions that have sufficient impact on the broader forested landscape.

Table 1 reviews coordinated multiple ownership forest management at three different geographic scales in terms of the attributes of each scale and its impact on achieving landscape level forestry goals.

<b>Table 1. Impacts and Attributes of Multiple Ownership Forest Management at Different Geographic Scales</b>		
<b>Geographic Scale</b>	<b>Impact at Landscape Scale</b>	<b>Attributes</b>
Landscape [10s - 1,000s of square miles]	Broad and significant.	Multi-county in scope; multiple ownerships (type and number of each); long planning and implementation processes; major policy implications for participants; institution to institution dealings.
Middle [15-40,000 acres]	Individually moderate – several can quickly magnify impact.	Up to multiple townships in scope; several ownerships involved; moderately long planning process during which some implementation can begin; policy implications can be attached to this area without broader application; inter-institution dealings driven by involved staff.
Site [<640 acres]	Negligible.*	Stand or multiple stand in scope; as few as two ownerships involved; no formal planning — coordination is on implementation basis; minor if any policy implications; staff to staff dealings (usually field level).

\* This is not to diminish the value of such actions, only to state that the impact of stand level actions are imperceptible at the broader geographic scale.

## The Central Question and an Answer

### What is the “middle scale”?

Part of the answer to this question is found by first reviewing examples of management activities that occur on either end of the landscape spectrum. The Minnesota Forest Resource Council’s (FRC) Landscape Planning effort is a true cross-ownership landscape level activity. Under this program citizen based committees are conducting long range strategic planning and coordination across all ownerships in each of six forested landscape regions of the state. These regions vary in size from four to eight million acres. The committees assemble assessment information, conduct analysis, establish voluntary management goals, and develop strategies to

achieve the goals.

Large scale but still single ownership planning processes are undertaken by all major public and private forest owners. These include the U.S. Forest Service planning for its two national forests, the Minnesota Department of Natural Resources planning at the ecological subsection scale, counties, tribes, and private industrial forest owners. Given the size of most holdings these plans impact the landscape scale but none require coordination across ownership lines.

At the other end of the spectrum are private forest management plans devised for individuals who own 40 or more acres of land. A forester from the DNR, a woods product enterprise, or a private consultant provides the landowner with options for managing their land based on owner's desires and the land's characteristics. There is no obligation for these plans to reflect or coordinate with management on surrounding public or private forested lands.

On public lands a site prescription is prepared for every stand that is to be managed (e.g., harvested, thinned, reforested). Prepared by a field forester the prescription reflects the public owner's strategic and tactical plans and may be coordinated with management activities on adjacent lands (usually in terms of road construction and timing of activities). Again, there is no obligation to manage the stands in concert with surrounding owners.

These examples provide bookends to the question: *What is the "middle scale" geographic area at which multiple-ownership forestry management can be initiated and implemented while being most effective?* That is, what is the largest geographic area at which the "real-world" practicality of site-specific scale activities can be applied without facing the barriers of larger scale management initiatives?

Some examples of existing efforts suggest an answer.

- **Cornish Hardwoods Management Area**  
The CHMA covers roughly 15,000 acres in east central Aitkin County. Its ownership is shared equally by Aitkin County and the MnDNR. Although there is no formal agreement, the agencies have agreed on a management program which has been in place for several years. The long term goal is to expand the northern hardwood forest to create an uneven aged, closed canopy, deciduous forest encompassing thousands of acres. Other partners include Aitkin County SWCD, Big Sandy Area Lakes watershed project, USDA North Central Forest Experiment Station, and the National Audubon Society.
- **Finland / Upper Manitou Landscape Collaborative**  
This project covers about 75,000 acres in the Superior Highlands in eastern Lake County. Major owners include Lake County, the State, The Nature Conservancy, a large private firm, and multiple other private entities. This joint effort is in its initial stages. The initial goal is to develop a shared understanding of the desired future condition for the area.
- **Wildlife Management Areas**  
There are any number of WMAs in Minnesota in which the State is the dominant owner and in which other owners, usually counties, cooperate. These WMAs vary in size from several hundred acres to multiple thousands. Often formal agreements between the State and the other owners have been executed to cover the purpose and management of the areas. While these areas are managed for wildlife purposes, the basic organizational and management concept applies to areas that could be managed for forestry. The experience with WMAs also suggests that the management of a number of discrete but sufficiently large enough areas can implement management goals over a broad geographic area.

## **The Management Area Scale**

This middle ground can be labeled the “Management Area Scale” and has the following general attributes:

- **Middle Scale:** The geographic extent of a cooperative Management Area would usually range from 15,000 to 40,000 acres (a congressional township is 22,000 acres).
- **Reason for Designation:** Management areas likely will result from the initiative taken by one, probably the dominant, owner. This initiative could emerge from a strategic planning process, the unique characteristics of the land, or even the terms of a land exchange or acquisition. While there does not have to be a consistent rationale for designation, it will generally lie with a desire to protect, enhance, or sustain the values of a central core patch. These values will include forest products, biodiversity, habitat (and/or a specific species), water quality or quantity, or any number of similar items.
- **Participation:** The owner which drove designation of the Management Area will probably also drive the planning and implementation efforts. Other owners will participate to the degree that their land is involved and to the extent to which their individual objectives will be satisfied through a group effort.

Undertaking cooperative action at the middle Management Area scale will have immediate and cumulative impacts on realizing broad landscape level management objectives. First, Management Areas are, by themselves, significant features on the forest landscape. Second, many Management Areas would be part of the strategic plan of at least one of the cooperating partners and, as such, its management would enhance the effectiveness of that plan over a larger area. Third, the accumulation of Management Area scale projects will begin to represent a sizeable and important (because the areas are targeted) component of the overall landscape.

### Scale Oriented Cooperation

Table 2 suggests how the range of cross-ownership coordination actions varies by geographic scale in a way that respects the sovereignty and varying mandates of the owners while achieving substantive action impacting the forest landscape.

<b>Table 2. Cross-Ownership Forest Management Activities by Geographic Scale</b>	
<b>Geographic Scale</b>	<b>Types of Cooperative Activities</b>
Landscape	Set overall tone/atmosphere for forestry planning and management; foster common management perspectives; encourage communication; share ideas and information; identify potential projects for coordination; education; monitoring and assessment. Most likely driven by State (through MnDNR and FRC) because of its overarching geographic area of concern and its mandates.
Management Area	Formalized coordinated plans (or jointly adopted plans); coordinated implementation schedules for area; shared management responsibilities.
Site	Variety of discrete cooperative management actions on the ground.

The following summarizes how the suggested multiple-level forest planning arrangement responds to the factors presented at the beginning of the paper:

- **Scale:** This approach recognizes the different geographic levels of interest and involvement of the respective ownerships. Entities become involved at the level at which their ownership is most directly affected; involvement above that level usually will depend upon initiative of individual staff (or the ability of larger entities to persuasively gain it).

- **Management Mandate:** The differences in mandates and obligations are recognized. Management coordination will occur where these intersect geographically.
- **Sovereignty:** The independence of each entity is respected and not impinged upon. Participation is voluntary (the goal of the larger scale activities is to create an environment in which voluntary cooperation is encouraged, supported, and enhanced).
- **Timing:** No attempt is made to force different entities to synchronize their strategic planning efforts. Management Area level planning is driven by one owner, operating at its schedule; others join in using the level of planning available to them at the time.
- **Capacity:** The ability to undertake a Management Area plan is enhanced because it does not require the same level of institutional activity that broader scale actions do. Management Area plans are of a scale that allows field level actions to be easily coordinated to produce landscape level impacts.

### **Individually and Jointly Working Toward the Middle Scale**

The logical question that follows this discussion is “So, what do we do next?” The following is a beginning list of possible actions organized by ownership.

#### **Non-Industrial Private Forest Owners**

- # Prepare forest stewardship plans for their property. In the process, consult with major industrial and public forest owners to identify their larger, landscape scale management concerns and directions which can be incorporated into the stewardship plan.
- # Participate in or create a Forest Owners’ Cooperative. Many owners of small parcels (as small as 5 acres) in Minnesota have begun to work with their neighbors on forest stewardship activities. Coordinating with others across a larger land base makes many forest improvement activities economically feasible, increases marketing opportunities for forest products, and allows landowners to access more information to inform their decisions. Groups of this nature have begun in Aitkin, Todd, Pine, and Cook Counties in Minnesota and throughout Wisconsin.

#### **Private Industrial and Public Forest Owners**

- # Prepare management plans for their lands incorporating landscape level perspectives, analysis, and management directives. In doing so, seek to incorporate or reference the landscape level management directives of other major forest owners. Share these plans with other owners so they may utilize common concepts and initiatives in their plans.
- # Identify middle scale management areas within which joint management may occur as per the principles described in this paper. Seek to implement management in conjunction with other ownerships (either as lead or as participant).

#### **The State (separate from its direct land management activities)**

- # The MnDNR occupies the ideal position to foster a common management perspective to forest management in the state, an activity it has been doing well in recent years. Without attempting to mandate or legislate, the MnDNR has and can continue to encourage all major landowners to incorporate similar forestry outlooks (e.g., landscape principles, ecological system or habitat based forestry, etc.) so as to facilitate cooperation and coordination between different entities.
- # The State through support for such activities as the Forest Resource Council can

actively promote specific landscape level planning and implementation across ownership lines.

- # The MnDNR can undertake demonstration projects (various types and at various scales) that explore management activities that effect desired objectives at the landscape scale.

### **Non-Forest Owners Interested in Forest Management**

There are a number of organizations (e.g., Audubon, The Nature Conservancy, Ruffed Grouse Society, Minnesota Deer Hunters Association) that may not own land (or much of it) but are still actively concerned about forest management, in general and for specific areas.

- # Participate in any of the planning activities above, especially those involving public lands and processes.
- # Participate in specific management projects with funding and forms of support.
- # Provide information to landowners regarding how the landowner can further the objectives of the organization within the context of landscape level management outlook.