



The cooperation of private forest owners on scales larger than one individual property: international examples and potential application in the United States

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Abstract

A relatively small number of non-industrial private forest (NIPF) owners in the United States has recently expressed interest in cooperating with one another at scales broader than their individual properties. There are many good reasons to do so, which would enhance their individual ownership benefits, as well as the suite of greater public benefits that accrue from a privately owned forest landscape. An Internet and literature review of private forest owner cooperation in temperate nations with developed economies resulted in a broad array of evidence of longstanding and successful activities from 19 countries. Forms of cooperation and resulting activities vary, ranging from low levels of commitment for purposes of information/education, to more structured participation for financial and marketing purposes. Likewise, the origins of cooperation differ from country to country, though common elements emerge (e.g. the role of government, reaction to a stimulus or threat). This review and analysis of private forest owner cooperation provides examples of tactics and successful results that contribute towards the development of potential cooperation of private forest owners in places where such activity is contemplated.

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1. Introduction

A relatively small segment of non-industrial private forest [NIPF] owners within the United States has expressed recent interest in the idea of developing cooperative planning and management strategies on scales that exceed individual property boundaries. This cooperative concept is attractive for several reasons. First, it represents a willingness to cooperate with other

landowners at a landscape scale in return for an opportunity to realize a host of tangible and intangible benefits. Next, many of the landowners that are attracted to working with other like-minded owners on forestry projects are sensitive to the conservation of natural resources and to principles that sustain ecological processes as well as the flow of renewable natural resources. These landowners often pursue some form of green certification. Other landowners share an interest in contributing to their local economy by supplying wood products for both primary and secondary processing. Finally, some landowners are

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reaching out for an improved method to share information and experiences or enhance their collective voice in the policy arena.

Various international models of landowner cooperation already exist. In other countries, private landowner cooperation has been successful for decades and some cooperative forests with hundreds of shareholders have been sustainably managed in European and Scandinavian countries for centuries. Elements of these cooperative models might be applicable, indeed attractive, especially in regions of the United States where the forest landscape ownership pattern is dominated by either private families or individuals.

The goals of this study are to review examples of forest owner cooperation and to look for elements that might apply to NIPF landowners in the United States. This search for forestry cooperative examples was limited to countries with temperate forests that have growth rates and levels of productivity similar to typical private forest ownerships in the United States. In addition, in some countries, cooperative shareholders do not own or otherwise have a stake in an individual piece of the land. Examples of these collective or cooperative forests were excluded from consideration. Furthermore, examples of forests that are managed cooperatively on a *subsistence* basis are not generally relevant to landowners in the United States, most of whom are relatively affluent (e.g. It is estimated that the median annual household income for Massachusetts forest owners is \$65 000 and 1/3 of the Massachusetts landowner incomes are greater than \$100 000). Clearly, subsistence level management and forms of shareholder management, while interesting, are not applicable to the typical NIPF owner in the United States who maintains pride in forestland ownership and is protective of landowner rights and privileges.

As private forest owners continue to develop cooperative organizations in the United States, much can be learned from international examples that are diverse, successful, and have withstood the test of time.

1.1. Why cooperate?

Nationally, private individuals, partnerships, and other non-corporate entities own 39% of the forestland in the United States (Birch, 1996). In many states, this proportion is much higher. In Massachu-

setts as well as other Northeastern states (that contain relatively small amounts of Federal or industrial ownership) nearly 75% of the forestland is owned by private individuals and partnerships.

NIPF owners indicate that their goals and objectives are frequently based on non-monetary benefits such as wildlife habitat, aesthetics, outdoor recreation, and privacy (e.g. Birch, 1996; Alexander, 1986; Rickenbach et al., 1998; Tyson et al., 1998; Bourke and Luloff, 1994; Jones et al., 1995; Finley, 2002; Kingsley, 1976; Egan, 1998). All of these benefits can be enhanced by planning and managing forests at spatial scales that are larger than an individual property. This is especially true in regions where the average private ownership size is small (e.g. 4 ha in Massachusetts; 9 ha throughout New England; Birch, 1996).

NIPF owners who are also interested in timber management can benefit from the ability to cooperatively:

- Assemble larger, more marketable volume and variety of forest products;
- Share access, landings or log decks and minimize disturbed forest soils or roadside sites;
- Negotiate forest product price within the marketplace; as well as
- Share information, equipment and contractors. The economy of scale will potentially lower harvest cost and increase harvest profits.

Cooperation offers benefits to multiple small landowners that are similar to those that large landowners enjoy. Cooperation can enhance the protection, quality and connectivity of wildlife habitat. Cooperation can connect and improve recreational opportunities, enhance privacy, and help landowners to communicate and protect properties within the landscape from development. Cooperation can improve timber management by eliminating the constraining effects of property boundaries and (small) parcel size.

Cooperation among NIPF owners may result in greater landscape-level social benefits. When NIPF owners dominate forest landscapes, cooperation may be important to ensure these benefits upon which society has come to depend. Wildlife habitat, abundant and potable surface and ground water supplies, a scenic backdrop to a rural tourism industry, outdoor

recreation opportunities, carbon sequestration, and a source of wood products and employment are just a few of the benefits provided by the mosaic of small, independent NIPF ownerships that occur together at a larger landscape scale. A sustainable flow of these social benefits can be best protected in perpetuity when landscape scale forest ecosystem patterns and processes (e.g. natural disturbance and response, migration, balanced predator: prey relationships, hydrologic and nutrient cycling, exchange of genetic materials) are allowed to proceed in a natural, unimpeded way (e.g. Costanza et al., 1992; Allen and Hoekstra, 1992; Woodley et al., 1993). Soil formation, erosion control, hydrologic function, biogeochemical cycles, large woody debris accumulation and decomposition, and faunal metapopulation migrations are just a few examples of ecosystem processes and functions that do not start and stop at property boundaries. The ability to conserve and protect ecosystem processes is only possible when natural resources are considered and conserved at scales that are much larger than the individual property. While it may not yet be clear to what extent management between and among properties *needs* to occur, and which model NIPF cooperative ventures will follow (e.g. regulatory, voluntary, rigid or flexible), at least some baseline level of cooperation that enhances communication and planning at larger spatial and temporal scales is needed in order to conserve society's natural resources—all of which are measured and function at landscape scales that exceed the size of the typical NIPF property.

Finally, in addition to the maintenance of sustained greater social ecosystem benefits, cooperation on NIPF lands will make individual properties more effective local sources of the wood products needed to meet current demands. The reduction in wood products harvested from US federal lands reflects the response of the government to society's desires for wilderness as well as other natural resource benefits. In some parts of the United States, industrial lands represent a significant local source of wood products, however, NIPF lands represent the best way to complement wood production in order to meet and be responsible for national consumptive needs (Haynes, 2002).

Forest preservation and the reduction of timber production in the United States can result in undesirable environmental degradation elsewhere. Sohngen

et al. (1999) estimate that for every 20 ha of forest that is *not* contributing timber to meet domestic consumption, 1 ha of previously inaccessible forest in a developing (usually tropical) country is tapped to provide the wood products to meet United States demand. The shift from harvesting wood products locally to the purchase of imported wood products from developing countries (that lack forest harvesting regulations needed to protect soils, habitat, air quality) represents an unconscious shift in the responsibility and effects of the production of wood products. Berlik et al. (2002) estimate that only 3% of Massachusetts' wood consumption is met by the harvest of timber from local forests. Enhanced and judicious management of local forests for timber and other natural resources could represent a larger proportion of domestic consumption while minimizing uncontrolled and undesired environmental effects elsewhere. In the words of Ottitsch (2001): 'co-operative forms of management activities are one way to achieve sustainability at the landscape level, which is stressed in the contemporary discussion on forest sustainability'.

Depending on the country and source of information, NIPF management is also referred to as 'small-scale forestry', 'farm forestry', 'woodlot management', 'community forestry', or 'forest stewardship'. In addition, units and definitions of these different ownership categories vary and make direct comparisons or summary statistics difficult, at best. For example, in Germany the area and number of parcels in this NIPF category is reported for parcels >2.5 ha, whereas in other countries the threshold is often lower (i.e. forest is still considered NIPF if it is as small as 1 ha or less). Indeed, even definitions of 'forest' vary considerably from country to country (Kittredge, 1996). For the purpose of this discussion, 'private forest owners' are non-industrial in their land ownership goals and behavior because by definition they do not directly own processing facilities and their principal responsibilities are not to stockholders.

2. Methods

A profile was developed for each country based on a sufficient critical mass of information on private owner cooperation. Information was gathered and

organized into a database (340 data entries) for subsequent analysis. Four approaches were used to gather information on forest owner cooperation:

- a. Published literature citations were reviewed from 1988 to 2001 in Forestry Abstracts (<http://tree.cabweb.org/Journals/forabst.htm>). The original literature was subsequently acquired either through libraries or direct contact with the author(s).
- b. The Internet and relevant web sites provided access to information about private forest owner cooperation.
- c. Over 150 email messages were sent to Extension Forestry contacts in 22 different countries (i.e. IUFRO Extension Working Party S6.06-03) requesting information on private forest owner cooperation.
- d. In April 2002, I spent 2 weeks in Sweden and visited:
 - 4 of the 6 major forest owner associations;
 - Representatives of the Swedish Forestry Board;
 - Representatives of the forestry research community (Skogforsk); and
 - A variety private forest landowners.

This visit provided an excellent opportunity to review firsthand some of the most successful and effective forest owner cooperative associations in the world.

Some of the best sources of information are unpublished and were acquired through personal communication or on the Internet. Information about private forest owner cooperation does not always find its way into the published forestry research literature as cited in Forestry Abstracts. Sometimes private forest owner cooperatives can be found on the Internet, however, actual information may be limited. To further complicate the compilation of this database, the Internet presentations are obviously designed and intended primarily for land owner association members or potential members, and may not always be presented in English.

The results of this review most likely provide a reasonable and comprehensive international overview of the major NIPF landowner cooperation models. During the course of the search, no other analogous published overview on this subject was identified. Importantly, this subject is not static. New organiza-

tions are emerging, especially in several Eastern European countries that are in transition.

3. Results

3.1. Extent of cooperation

More than an estimated 3.6 million private forest owners participate in some form of cooperative association in 19 different countries (Australia, Austria, Belgium, Canada, Finland, Sweden, Denmark, Germany, France, Japan, South Korea, Switzerland, Netherlands, United Kingdom, Ireland, New Zealand, Norway, Lithuania, Slovenia). The cumulative area of these ownerships is estimated to be 28.3 million ha. These estimates of area and membership are derived from estimates of participation developed at the level of individual countries, and thus need to be interpreted carefully.

It is difficult to generate definitive estimates of the number of participants and their ownerships for several reasons. First, the type of cooperation can vary considerably between different countries. For example, some organizations count municipalities, churches or other large multi-member organizations (as a single member). Additionally, data were provided from different years, and finally, the criteria for membership can vary from one country or organization to another. For these reasons, it is important to discuss only the largest scale trends and issues, and avoid calculating specific conclusions or effects.

Millions of private forest owners in other temperate countries with developed economies participate in some form of cooperation, and these forest owner cooperatives share the following characteristics:

- The cooperation is not limited to information and education.
- Cooperative activities result in the production of millions of cubic meters of wood products that reach the marketplace.
- These owners are motivated to participate for reasons other than subsistence products or activity.

While the concept of landowner cooperation may be a newly emerging trend in the United States among a small minority of enthusiastic private forest owners

(which skeptics may label a short-term fad), it is clear that in other countries, cooperatives form an important core of the fabric of forest land management education, planning and marketing.

3.2. Types of cooperation

Cooperative organizations vary considerably from one country to another. Organizational goals, structure, size and type of cooperation can be classified in the following ways.

3.2.1. Information cooperation (IC)

Landowner members share information, techniques, experiences and advice with one another, but generally operate independently in the management of their land. These organizations typically offer structured educational opportunities, field trips, newsletters, timber market reports, technical advice and ‘advocacy’ or representation of private forest owner interests in the greater policy arena, regionally, nationally or even internationally (e.g. within the European Community). Examples of this type of cooperation can be found in most countries.

3.2.2. Equipment cooperation (EC)

Members share equipment and machinery for harvesting, road building and access, but manage their lands independently of one another. Examples of this type of cooperation can be found in Finland, Slovenia, and the Canadian Provinces of Quebec, New Brunswick and Nova Scotia. While there may be some incidental efforts to cooperate in management activities due to the sharing of equipment, this is not generally the goal of EC.

3.2.3. Financial cooperation (FC)

Members organize primarily based upon the collective marketing of wood products in an effort to achieve a more advantageous position in the marketplace. This model is especially prevalent in Scandinavia, where large organizations with thousands of owners negotiate strong prices with industrial buyers of roundwood. This model is also found in Japan, South Korea, Eastern Canadian provinces, Germany and Austria. In the absence of these (FC) organizations, individual owners would accept the price for roundwood set by the large industrial buyers, with few alternatives.

Ownership rules and structures vary, but the administration and decision-making process of these organizations is generally based upon the cooperative principle of one-member-one-vote. Members commonly own shares in the organization based on the size of their holding, essentially making members ‘stockholders’ in the corporation. Members earn dividends or profits when the ‘company’ does well in the marketplace. This example is in contrast to a private industrial organization (also buyers of roundwood) that returns any profits to stockholders rather than to forest owners. The logical tendency for industrial roundwood buyers is to *minimize* the price paid for wood, so as to *maximize* the profit margin that may be returned to stockholders. Profits in cooperative organizations can be returned to members (landowners) in the form of annual returns or share value growth. Members also benefit from generally higher-than-normal prices in the marketplace or at least their organization sets the baseline for prices in the marketplace through negotiation. Non-members can sometimes sell wood to these organizations, and generally benefit from their influence in the marketplace.

Over time a trend has developed for these financially- or market-based cooperative organizations to consolidate their resources through merger of smaller, more local organizations. For example, Sweden once had dozens of smaller organizations, and currently lists five larger organizations. In addition, these financially-oriented organizations generally capture ‘value-added’ benefits in the marketplace and evolve beyond the negotiated sale of roundwood to industry. Many Scandinavian and Japanese organizations, for example, developed industrial capacity (sawmills). The largest cooperative association in Sweden (Södra) has its own pulp mill with one of the largest capacities in the world (Kittredge, 2003).

These financially-oriented organizations also offer organized information and educational opportunities to members and are representatives of landowner interests in the policy arena. These groups benefit from the power of the economy of scale to purchase in bulk and distribute merchandise and services (e.g. materials, supplies, seedlings, insurance) to members at reduced rates.

In addition to the timber marketing services described above, many of these organizations offer land management services to members, generally on a

fee-for-service basis. This includes inventory and management plan development, timber sale design and administration, reforestation, road design and construction, and other activities. The cooperative organizations maintain a modest staff to provide these services or they connect members with contractors who provide these services. The manager of a prosperous and successful cooperative association in Southern Bavaria stated that the cooperative's goal is to provide '24-7' service to members.

In some countries, this full level of management service is evolving into a method by which land is completely managed by the organization for absentee owners who live in urban areas. This trend of 'urbanization' of landowners is seen in Scandinavia as well as Eastern Canada and Japan. Often, the land is passed between generations, and the new owners have 'left the farm' and live in distant urban areas. Alternatively, the land may change ownership and become acquired by non-residents who seek forest for a retreat. Cooperative associations that offer management services provide a means by which the land remains productive. Landowners can literally sign over the power of attorney to the organization in some cases, leaving management decisions to the cooperative, with important owner approval required for financial transactions (e.g. the sale of timber). This form of 'consignment' or 'absentee' management is anticipated to grow in importance in the future, as absentee ownership increases.

While cooperation within a large financially-oriented association results in the aggregation of wood products from smaller sales, and the provision of 'full' management services to interested individual owners, forest product sales could still be disjointed and not connected in space, or in time, and not efficiently designed or implemented in order to achieve integrated management goals on the land. While owners still are 'working together' in cooperation, this approach does not necessarily indicate truly integrated and cooperative management planning in both space and time at a scale larger than individual ownerships.

3.2.4. Management cooperation (MC)

Landowners manage cooperatively on a spatial and temporal scale, making integrated management decisions and implementing them in the context of their surrounding natural, cultural and economic resources.

This level of activity could be considered equivalent to an ecosystem-based approach to management (Rickenbach et al., 1998; Leak et al., 1997). Few, if any, examples of this type of cooperation can be found anywhere in the world. As impressive as some cooperative associations are, with tens of thousands of members and hundreds of thousands of hectares of forest, virtually no examples could be found of integrated, landscape scale management of NIPF owners across property boundaries. One potential example comes from Australia and the movement of local Landcare groups. These are voluntary groups of landowners and other concerned citizens that are increasingly organized on a catchment basis to implement some form of environmental restoration (e.g. planting trees or shrubbery, erecting fences to direct livestock).

3.3. Origins of cooperation

The following common elements of the origins of forest owner cooperation occur in different countries.

3.3.1. Government involvement

In virtually all cases, government played a role in the development of cooperative organizations. In many cases, these organizations are seen as tools to implement national forest policy on private lands. In Nova Scotia, for example, government funding supported the initiation, but when public funding was withdrawn, the members saw value in continuing their organization, and their creative entrepreneurship enabled them to thrive. Many governments support cooperatives/associations financially (e.g. Japan, Germany, France, Netherlands, Belgium), and they are seen as an effective tool for policy implementation (i.e. promotion/enhancement of sound forest management practices) on small, private lands. Some of this support is direct (e.g. direct subsidy in the form of payment to the organization), or indirect (e.g. government routes subsidies for landowner management actions through the organization, which takes an overhead share). In some cases, government even provides financial incentives to private owners to join their local cooperative organization (e.g. France, Netherlands). Corten et al. (1999) believe that ideally, the forest policy of federal/state government would be most effective if used to create conditions that motivate citizens to take responsibility for using/managing

the environment in a sustainable way – both for their own use as well as to benefit society. Promoting cooperation between private owners removes social obstacles, helps to avoid conflicts and improves efficiency (Corten et al., 1999).

3.3.2. *Response to a problem or stimulus*

In virtually all cases, a problem served as a catalyst for owners to cooperate.

- In most Scandinavian countries, industry domination of the forest product marketplace resulted in low prices and provided the necessary spark. The national need for fuelwood during World War II and government recognition that cooperative organizations could provide a method to address local energy needs were conditions that helped to support cooperative development.
- In South Korea, the acute need for reforestation in rural areas created the impetus for the government to form Village Forestry Associations.
- In France, Belgium, parts of Germany and the Netherlands, the hyper-fragmentation of lands into tiny parcels over time through inheritance motivated the government officials and foresters to start cooperative organizations.
- The apparent neglect of broadleaved woodlands in parts of the UK and the Netherlands spurred nature conservancy organizations and the government to form cooperative organizations.
- In other parts of the UK, Ireland and Japan, the preponderance of overstocked or newly established conifer plantations in need of tending, and a market for smaller wood products, caused governments or landowners to look for organizational solutions to promote action on private lands.
- Interest in collaborating for more influence in the marketplace led owners in the Canadian Maritime Provinces to cooperate with each other.
- An interest in promoting reforestation on private lands led the Québec Provincial government to work with cooperatives. This interest shifted, when a need for local woodworker training and recruiting emerged as an issue, and cooperatives were seen as an effective local solution.
- The heightened awareness of environmental degradation and the need for local volunteer groups led conservationists, government and

industry to collaborate in Australia on the Landcare programs.

- The desire for alternatives to either the large-scale industrial approach to forestry or the equally large scale provincial approach inspired woodlot owners in British Columbia to form organizations for purposes of information, education and support.

3.3.3. *The test of time*

Unlike new ventures into landowner cooperation that are emerging in regions of the United States, the success of landowner cooperation in other countries is measured in decades and centuries. In France, a law authorizing the amalgamation of small parcels dates back 130 years, indicating early recognition of this issue. Local cooperative forestry associations in Korea date back to the 15th century. Although cooperation may take various forms in different countries, and may have been initiated in response to a variety of stimuli, cooperation is not a new phenomenon or a fad. Cooperation in various forms withstands the test of time in many other parts of the world.

3.4. *Other common elements*

3.4.1. *Organizational structure*

An optimal size or economy of scale of operations probably exists, whereby an organization is small enough to maintain local contact and relevance with members, and yet can operate strategically and effectively in both the larger national and international marketplace, as well as in the policy arena. It is possible for a cooperative organization to grow too large and lose touch with membership roots. A structure that includes regional chapters or divisions within the larger organization may improve the situation. In the larger market-driven organizations, ‘local’ coops can handle wood products transactions and feed larger concentration yards, while a larger national/provincial umbrella organization is better prepared to address policy, representation of member interests, and the development of quality educational materials and opportunities.

3.4.2. *Increasing absenteeism*

In Japan, Scandinavia, and parts of Europe, landowner detachment from the land occurs and is the result of migration from farms towards urban centers,

and the acquisition of forests by owners with no previous history of land ownership. In these cases, cooperative organizations can provide an increasingly important service by providing consignment or contract management services. This is a new opportunity for groups that were originally formed by rural farmers seeking a good price for their logs at the side of the road. These cooperative groups have the potential to contribute to local employment and economic development in these rural areas.

3.4.3. Green certification?

Throughout Scandinavia, and recently in Japan, New Brunswick, Québec, and Nova Scotia, cooperative associations are beginning to offer various forms of green certification to members under group or umbrella agreements with green certifiers. Group certification represents a financial advantage to interested landowners because the organization can share the high costs of green certification. In some of the newest groups, green certification principles seem to be one of the incentives to organize (e.g. New Brunswick, British Columbia). Interestingly, a Scandinavian/European approach to certification (PEFC: Pan-European Forest Certification) was initiated through cooperation of various national forest owner associations that sought an alternative to other systems.

3.5. Effectiveness of cooperation

3.5.1. No silver bullet

Even in countries where they have been successful for decades, cooperative organizations do not appeal to all landowners. In Finland, where all landowners are required by law to contribute to cooperatives, a 75% participation rate exists (Koistinen, 1998). In Sweden, impressive organizations of thousands of owners still only attract roughly half the NIPF owner population (Kittredge, 2003). In Japan, approximately two-thirds of potential owners, and three-fourths of potential land are enrolled in a cooperative (National Federation of Forest Owners' Cooperative Associations, Japan, 1991). In the Southern German state of Bavaria, 24% of all potential owners, and 68% of the potential NIPF land is enrolled (Beck and Spiegelhoff, 1997). Obviously, cooperatives do not have universal appeal. This suggests that cooperative approaches are not the proverbial one-size-fits-all solution to energiz-

ing forest owners. What keeps some owners from participating?

- Disinterest in their woods in general (due to absentee ownership, recent acquisition through inheritance, preference for urban lifestyle/values).
- Disinterest in the financial aspects of their woods, contrasted with the primary financial motivations of many cooperatives.
- Distrust of an organization or of the profession of forestry. Dislike of or personality differences with the local cooperative leaders.
- Belief that they can manage their land better on their own; achieve greater returns independently.
- Ability to 'free ride' and indirectly receive sufficient benefits of cooperatives without actually joining/participating (e.g. cooperatives influence on prices in general; cooperatives political influence representing interests of private owners).
- Lack of mature timber and hence no market incentive to participate (e.g. owners of plantations in Australia, Japan, Korea, UK, Ireland).
- Forestry needs/interest are currently met or satisfied by a different model (e.g. work directly with a mill/industrial timber buyer; work directly with a private consulting forester; work directly with a public sector forester).
- Perceived 'costs' of participating (e.g. fees, time, possible obligation to sell wood to the cooperative) do not outweigh the perceived 'benefits' (e.g. economies of scale in the marketplace).

The number of participants and hectares of forest alone cannot measure the effectiveness of forest owner cooperative associations. Some of the benefits of cooperation 'lift all boats', so to speak, regardless of membership. For example, the presence of a cooperative in the marketplace can have a positive effect on the price of wood for everyone and forest owner associations can improve forest owner education and political representation.

Cooperation does not exist in all countries. In spite of a 12-year literature review/library search, a relatively comprehensive review of the Internet, and email requests for information, it was difficult to find examples in countries like Spain, Italy, Luxembourg, Greece, and a number of former Eastern European countries that are now so-called countries in transition

(e.g. Czech Republic, Latvia, Slovakia, Bulgaria, Hungary, Slovenia). In some cases, this might be due to a relatively small amount of land in private hands (e.g. Greece) or that forest is held in communal or common property models (e.g. mountainous regions of Italy and Spain). These countries in transition have forest reverting to various levels of private ownership and economies that are in various stages of development. The absence of information may of course be due to a language barrier or the need for additional research.

Suda et al. (1999) review obstacles to cooperation in Bavaria, simply in terms of roundwood transportation from multiple holdings. They describe the following obstacles to cooperation that need to be overcome:

- Perspective or personality of owners. Most owners are protective of their own property and might be reluctant to think and act as a group.
- Communication and the differences between beliefs and knowledge. Objective information is needed to enable the forest owner to make an informed decision.
- Rights and policy or regulations (particularly pertaining to environmental protection) may represent an obstacle to cooperation (e.g. rare species protected habitat or concerns about wetlands or water quality may limit landowner abilities to cooperate). However, landowners with an interest in rare species may indeed be inspired to cooperate.
- Economic benefits of management: some owners place a high priority on managing for financial benefits and others do not.
- Physical structure of the ownership. The average Bavarian owner has 4 ha of woods, in perhaps 2 or 3 parcels.
- Technical differences. It can be difficult to organize the actual timing of harvest, machinery capabilities, access and products.

Some of these obstacles to cooperation are of course easier to solve than others. A number of them can simply be solved through information and education (e.g. communication, economic information, and training, or demonstration).

In addition, if landowners are relatively affluent and do not depend on income from their property

annually, they have the luxury of choosing to harvest when they wish to meet specific needs, and thus they may time their entrance into the marketplace. Owners in a cooperative may be committed to sell timber in order to have the organization meet its contractual obligation to buyers. This notion of timing may be an obstacle to some.

‘General landowner distraction or apathy towards their woodlands’ may be one additional barrier. Many owners, especially the increasing number of absentee, non-resident landowners, have little time or energy to devote to their woodlands because they are fully occupied by the other requirements of daily life that compete for their attention (Finley, 2002).

3.5.2. Examples of effectiveness

Examples of forest owner cooperation can be found in forestry literature, however, few describe specific cases or address tangible and non-tangible benefits. Forest economics research sheds some light on cooperation vs. independent actions. For example, economic research on private forest management in Norway has indicated that the net present value (NPV) of forest increases with cooperative management, in that the larger administrative units tend to have higher NPV due to the efficiency of larger administrative units, and an improved ability to accommodate environmental constraints (Hoen et al., 2000). Another study compared harvest levels from 259 individual properties with the theoretical cooperative management of them. Harvest levels increased by 8.1% because cooperation increased the access to wood products and distributed harvesting actions over time and space (Hoen et al., 2000). Other economic studies document increased efficiency in cases where the same amount of timber was produced but cooperation lowered costs by 20% (Hoen et al., 2000). According to Corten et al. (1999): ‘Research shows that forest enterprises that are members of cooperative forest groups achieve better economic results (an average of US\$100 more per hectare/year) than those which are not associated’.

The description of the role of cooperatives in Austria (Hobarth, 2002) reflects their *relative* effectiveness but is less specific about *measured* benefits: ‘Forestry cooperatives serve as the local nuclei of operative performance, which can develop their full efficiency

in cooperation with forestry associations and their organizational units on local, district and provincial levels’.

3.6. *Benefits of cooperation*

While the type and relative effectiveness of cooperation varies, this review revealed the following examples of potential benefits to cooperation:

- Share contractors.
- Share equipment.
- Purchase supplies in bulk.
- Share professional services – e.g. mapping, management planning, boundary surveys.
- Fire protection/detection/fuel reduction.
- Road construction/access/maintenance.
- Recreation planning.
- Joint marketing of wood.
- Recreational access/leasing.
- Lobbying/political awareness.
- Habitat planning (e.g. owners of land less than 115 ha in Austria or 120 ha in Germany are automatically enrolled into hunting associations, which regulate hunting activities and distribute the proceeds from hunting leases. Indeed for red deer, which has a home range much larger than the typical ownership, several hunting associations cooperate at the regional level in terms of hunting pressure and habitat management).
- Shared knowledge/assistance/experience (e.g. compare experiences with a given contractor. While many countries may provide information to owners through a public sector agency, if management implementation is carried out through private sector contractors, it would be an ethical conflict for these public servants to pass on judgments about the quality of work).
- Information/educational opportunities.
- Insurance pool.
- Financial assistance (e.g. cooperatives in South Korea make loans at reasonable rates to owners).
- Pooled, improved access to government and private sector grants (e.g. the Landcare group experiences in Australia).
- ‘Consignment’ or absentee full-service management, for landowners who choose to not participate directly.

- Physical consolidation of very small parcels to enable an effective management unit in fragmented landscapes (e.g. the groupings of parcels in France, Germany and the Netherlands).
- Generate a sufficient critical mass of land and owners to qualify for green certification under an umbrella or group scheme.
- Development of a regional or local ‘brand’ for wood products, thereby creating a market niche and potentially greater value.
- Organization/motivation of afforestation or reforestation efforts.
- Provide forest protection functions (e.g. vs. avalanche in mountainous regions like Switzerland and Japan).

This spectrum or potential list of cooperative benefits may be limited in size only by the creativity of the owners and the organization. The potential benefits depend on the local circumstances, so all of the benefits of course would not be generated in all cases. However, it is useful to record the diverse number of ways in which cooperation exists and succeeds.

Although the list of potential cooperative benefits is long, most of this review from around the world revealed information/education and financial benefits. Few cooperative organizations seem to be involved in generating other less tangible outcomes (e.g. recreation potential) at larger spatial scales.

While the benefits of cooperation are many and varied, there are also potential problems associated with it. Unless landowners see continued benefit from membership, their interest may wane. Why belong, participate, and pay if they only harvest every 10–12 years? Some landowners question why they should tie up financial resources in the form of shares whose value may not grow as aggressively as alternate financial instruments. In areas with excellent information/education services provided by the public sector, some owners question why they should join. Furthermore, the presence of more than one organization dedicated to landowner service (i.e. public agencies and private cooperatives) may create a sense of perceived or real competition, which may confuse or divide landowners. Also, as cooperatives in some countries grow in size and scope, they take on the industrial capacity to process wood. Due to economies

of scale, larger mills are more efficient and productive, and small, family-run local mills may suffer under competitive strain. Likewise, larger cooperatives required a more structured, corporate organization that may alienate members at the grassroots level. In spite of a long list of potential benefits, cooperation is not without potential problems.

4. Prognosis for application in the United States

Forestry cooperative models are widely adopted and effective in countries with ownership patterns, overall economies, and forest conditions similar to those found in the United States. In many other countries, it is generally believed that some form of cooperation is a desirable and advantageous model that will produce or protect public benefits. Watershed function, wildlife habitat, outdoor recreation opportunities, scenic ambience for tourism, and effective access for timber harvest all benefit from multiple small ownerships being managed more efficiently. Cooperation is especially relevant in landscapes dominated by small private ownerships that provide significant public benefits at the landscape scale. Cooperation can potentially provide a wide variety of benefits to individual owners, so, what would it take to make it work in the United States? Furthermore, which model or attributes of cooperation will be most readily acceptable?

Cooperation could, for example, help address the following common NIPF dilemma. Large volumes of low quality wood products exist throughout the United States that are too far from markets or difficult to access (Sanders and Scholz, 1993). Under those circumstances, harvest may be marginally profitable or unprofitable. As a result, thinning to reduce fuel accumulation in fire-prone ecosystems, or to produce more valuable timber may not be implemented. Alternatively, landowners may harvest in environmentally damaging ways to enhance the profitability of a marginal sale. Neither of these decisions produces a positive public benefit.

4.1. Need to understand current management models

In order to understand how models of cooperation might apply in the United States, it is important to understand the *current situation* of NIPF owners and

management. In the United States, a variety of management models currently exist (Fig. 1).

Model A is typical of many owners who take a *laissez faire* approach and essentially ‘do nothing’ (Kittredge and Kittredge, 1998). Model B represents owners who sell timber to a logger periodically, but have no management plan and do not rely on professional forestry services for decision-making. Decisions made under model B are typically spontaneous, or made without a full understanding of alternatives and consequences.

Model C can be quite similar to Model B, but it could involve professional forestry services, if the sawmill employs a forester. However, a potential conflict of interest exists, because the sawmill forester can be more concerned with the sawmill’s interests than those of the landowner.

Model D landowners take the step of hiring a private consulting forester to provide professional services and to represent them in the sale of timber. In some states, Model E is prevalent, whereby public-sector county foresters (employed by the state forestry agency) provide management assistance. This free service generally does not include management plans or representation in the sale of timber. Therefore, at some point private consulting foresters can be part of Model E.

It could be argued that landowners in the United States already acting in models D and E have less incentive to join cooperative activities. If they perceive that their needs are already being met, they could be skeptical of change. While difficult to estimate, it is

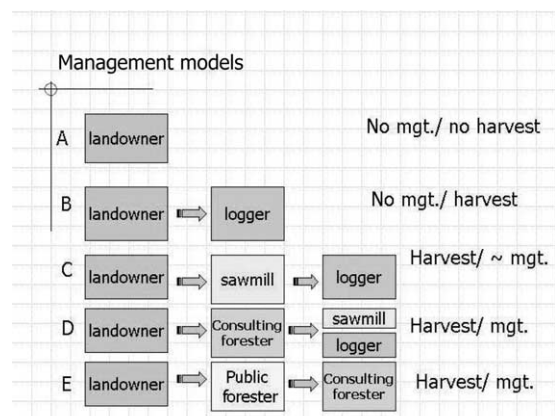


Fig. 1. NIPF management models in the United States.

likely that less than half of the NIPF owner population is participating in models D and E (Birch, 1996).

One example of models D and E includes the American Tree Farm System, organized by the American Forest and Paper Association for over 60 years. There are roughly 65 000 private forest owners (representing almost 10.5 million ha) enrolled in the Tree Farm system, which requires a management plan and periodic inspection of the enrolled forest land (American Tree Farm System, 2001). Benefits of this system include an informative forest landowner magazine subscription, sign and invitations to seminars and workshops. Compared to 9.9 million private forest landowners nationwide, however, Tree Farmers represent less than 1% of possible participants.

In a second example, in 20 Northeastern states, the USDA Forest Service sponsors the Forest Stewardship Program. Federal cost-sharing funds (partial reimbursements) are paid to eligible private owners through each state forestry agency to help cover the expense of management plan development, and implementation of a variety of practices to enhance wildlife habitat, recreation, aesthetics and timber management. After 10 years of financial incentives, only 3.4 million ha of NIPF lands or 7% of the 46 million NIPF ha in this 20-state area (USDA Forest Service, 2000) are enrolled in the Forest Stewardship Program.

In Massachusetts, the Forest Use Property Tax Program provides a 95% reduction in assessed property value to landowners who own more than 4.5 ha and develop a 10-year forest management plan. Approximately 20% of eligible landowners take advantage of this opportunity (DEM, 2000).

While it is not clear how many NIPF owners engage in models D and E, evidently most private forest owners do not seem to adopt the traditional approaches to management offered by either government or industry. Indeed model A, B and C landowners might have consciously or subconsciously rejected models D and E, and some innovative or new form of cooperation might be just what they seek. Satisfied owners acting under models D and E may question the need to engage in cooperation, however, others may see benefits. In fact, the advantages of cooperation can be so convincing that even dedicated Model D and E landowners could realize gains. Clearly, it is important to understand the

potential ‘audience’, their needs, and their perceptions of cooperation.

4.2. *Appropriate or applicable cooperation types*

Private forest land owners have already made the individual decision to be involved or uninvolved, in management. Are there types of cooperation that would be more acceptable or appropriate for different types of owners?

Although there are truly impressive examples of Information Cooperation (IC), Equipment Cooperation (EC), and Financial Cooperation (FC), there is little evidence of real integrated Management Cooperation (MC) in any of the examples found around the world. There might be some MC as a byproduct of FC (e.g. owners A and B are selling timber this month, and adjacent owner C decides to harvest, as well, to put together a truckload) or EC (e.g. owner A builds a road to access timber, and owners B and C extend the road to their properties), but it was difficult to find evidence of MC where it was the stand-alone goal. Indeed, some cooperative management associations maintain an organizational goal to defend landowner rights. Even the Finns, with decades of experience with an impressive structure of Local Forest Management Associations (LFMAs) observe that an actual MC-level of cooperation does not occur often within an area even though there are benefits to be realized (Koistinen, 1998). Obviously, there can be a greater likelihood of MC cooperation *if* landowners are working together at the levels of IC, EC and FC. Maybe if one is interested in having NIPF-dominated landscapes managed with more integrated MC between properties [which would be a laudable goal from the standpoint of habitat conservation, water quality, regional recreation and other ecosystem services], the best thing is to promote IC/EC/FC, and let MC evolve from them. Functional cooperation on the basis of Information, Equipment and Finance would conceivably create the right circumstances of trust, communication, and the perception of common bonds and benefits to allow more integrated Management Cooperation to flourish.

Do American landscapes dominated by NIPF ownerships really *need* fully integrated Management Cooperation? It may be sufficient that private owners at least communicate with one another – albeit

informally, rather than work together in some form of truly cooperative joint management. Greater social goods and services from privately dominated forest landscapes may be sufficiently protected via Information, Equipment, and Financial forms of cooperation; a regulatory environmental safety net (i.e. land use zoning and forest cutting practice regulations); as well as some portion of public forest land ownership (either in fee or through an easement). If integrated ecosystem-level Management Cooperation (MC) is not practiced in other places around the world with decades of cooperative experience, can it realistically be expected to work in the USA?

The role of Information Cooperation (IC) grows significantly as NIPF owners become increasingly ‘detached’ from their land through absentee ownership, urban residency, and a new generation of younger owners with less interest/experience in management. Instead of traditional forms of Information delivery (e.g. public sector county Cooperative Extension offices and county foresters, which have been used for decades in the US), or Information from a private consulting forester (potentially perceived as having a conflict of interest being primarily concerned with the production of wood as a means of generating income, or consultants being disinterested in smaller properties with little commercial timber potential), Information delivery in this ‘age’ could be better conducted through owner cooperatives/associations. In this case, landowners are the purveyors of Information/Education (I/E). These cooperative groups or associations could tap into the public sector for objective technical assistance on an as-needed basis, depending on locally generated needs/interests. Also, these coops could tap private sector management expertise to address their needs. Importantly, private sector I/E coops are in a position to evaluate performance of private consultants/loggers/mills/the marketplace, where public servants are not allowed to tread. The opportunity for I/E cooperation between landowners is now enhanced and has more potential than ever before due to the Internet. [Belin \(2002\)](#) and [White \(2001\)](#) both estimate that as many as 75% of NIPF owners in Massachusetts, Vermont and New Hampshire are on-line. According to surveys, though, landowners do not get tree/forest information there, because it isn’t ‘local’, is too

generic, and is not perceived to pertain to ‘their’ conditions.

4.3. Key elements of cooperation

There are several common elements found in many examples of cooperation that may be relevant for the initiation of landowner organizations in the United States.

‘Threat’ or ‘catalyst’ to inspire landowner interest. In Scandinavia, large domineering industry inspired landowners to cooperate for enhanced market position. In Japan, South Korea, and Australia, landowners responded to a need for reforestation and environmental stabilization. In Norway and parts of the UK, there are overstocked maturing plantations. [Finley \(2002\)](#) identified sprawling residential development as a threat that motivated Massachusetts private owners to consider cooperation. Threats alone, however, cannot mobilize people to cooperate. Trust, tolerance and agreement about the facts, as well as consensus about the best alternative to choose in order to address the threat are all pre-requisites to cooperation among individuals ([Amdam, 2001](#)).

Organizational jump-start. There needs to be a ‘vehicle’ to bring landowners together. Few cooperatives, if any, developed in the absence of government intervention or inspiration. Government involvement probably needs to remain locally-rooted—e.g. Australia’s landcare experience, Korea’s VFA experience. Even in places where the trend is to amalgamate or merge to achieve efficiencies of operation (e.g. Sweden), effective networks of small chapters maintain local relevance. Conservation-oriented non-governmental organizations could play a role in lieu of direct government involvement, and indeed this seems to be happening with some of the fledgling groups in the US. This ‘jump-start’ process may involve underwriting the overhead for a new organization, providing free staffing with public-sector expertise, or providing office and meeting space. Many examples of cooperation continue to receive governmental support after decades of operation (e.g. Japan, Germany, France, Netherlands, Belgium). Given the social benefits that private forest land provides, public investment seems warranted.

Local land trusts and watershed associations achieved significant success recently in parts of the

USA. For example, between 1990 and 2000, the number of land trusts nationally increased by 42% (to over 1200), and the amount of land protected from development by these organizations increased by over 220% (to greater than 2.5 million hectares; *Land Trust Alliance, 2003*). Much of this has been accomplished locally based on non-governmental organizations with ‘shoestring-level’ funding, volunteer staffing, and a paucity of technical expertise (*Land Trust Alliance, 2003; Gray et al., 2001*). Since land trusts and watershed associations are local, and have an interest in land protection and conservation, they might be able to provide organizational support to some level of landowner cooperation.

Be local to be relevant. Most if not all examples of cooperation have roots in a small, local village, or watershed area. While modern communication enables local groups to network with one another and facilitate larger scales of cooperation, this activity probably needs to remain local to remain relevant. This raises the question, however, of absentee ownership, and whether or not ‘local’ is important to someone who may reside hundreds of kilometers away from their land and visit infrequently. Absentee owners may seek some other measure of relevance, if ‘local’ is less important to them. However, distant owners who miss their land may be strongly attracted to the local nature of cooperation.

Accept that there is not universal appeal, and that some landowners may be satisfied with the status quo. Cooperatives are obviously not for everyone. The cooperative approach is not universally adopted, in spite of variable approaches in different countries. It would be a mistake for organizers of new cooperatives to believe that they have the only answer. Likewise, it is important to be judicious about how success of a cooperative is measured. Achievements and benefits will, in some cases, be difficult to measure and all landowners (indeed all of society) may benefit in some cases regardless of their level of participation, due, for example, to a positive influence on timber prices, and advocacy for forest issues.

4.4. Additional recommendations

In an interesting analysis of private owner cooperation in Scotland, *Gemmell (1996)* observed: ‘*partnership is about working together*; it is a way of

organizing the management of a task or objective. It is a relationship for and a means of identifying and implementing common purpose, with a clutch of responsibilities attached, such as sharing the costs, tasks, risks, liabilities, responsibilities, profits and praise’. He further emphasized the importance of ‘Communication and Information as critical in determining how we do business with one another.’

Gemmell (1996) noted the difference between the *products* and *process* of partnership or cooperation. Products like tree planting and trail building are important. They are immediately quantifiable and visible, and can demonstrate success and contribute towards momentum and recruitment of more members. The long-term impacts of ‘process’ (e.g. confidence, community contact, innovation) are more important, however, and result in more benefits.

In *Gemmell’s (1996)* experience, requirements for successful cooperation or partnership of landowners include the *human traits* of: leadership, decision-making skills, attention to strong communication structures; sound ideas, imagination and nerve. ‘The two greatest weaknesses of humans are failures of imagination and failures of nerve’. The latter is probably very important, especially to those uninterested or threatened by change. Finally, operational capacity or the ability to implement ideas is important.

Ottitsch (2001) proposed two recommendations for *fostering cooperative forms of forest management*:

1. ‘Harness the strive for individual profit for the common good’. People appear to be less inclined to act out of social conscience or peer-pressure. It, therefore, seems important to demonstrate to landowners how they can personally benefit through cooperation. The long-term benefits of ecosystem health or community stability might not be as meaningful as enhanced monetary returns, improved recreational benefits, or other tangible outcomes.
2. ‘Develop voluntary and charity services with corresponding official acknowledgement’. Those outcomes of cooperation that do not necessarily offer financial gain will be important for society (e.g. wildlife habitat, biodiversity benefits, water quality). Some form of gratitude or acknowledgement of their altruistic behavior may inspire or evoke cooperation on the part of landowners.

Can landowners' overall experience with their woodlands be enhanced via some form of Management Cooperation (MC)? Probably yes, since many common objectives (e.g. wildlife habitat, recreation, protection from development given relatively lax American land use or zoning regulations) would be enhanced when thinking at spatial and temporal scales larger than the individual ownership (Campbell and Kittredge, 1996; Leak et al., 1997). Ironically, landowners may not understand that the benefits they seek could be enhanced by cooperation. If landowners are satisfied/fulfilled by the status quo, do they need MC? If they do not perceive the benefits, probably not. Thus, attempts to promote cooperation on that basis will probably not be successful. Even though landowners may not be convinced of the benefits of MC, it is a worthy long-term goal for landscapes from the standpoint of the sustainability of public benefits (e.g. water quality, biodiversity, outdoor recreation). These benefits are protected and sustained when ecosystem function and health are maintained (Allen and Hoekstra, 1992; Costanza et al., 1992). It may be more prudent to *start by 'selling' Information/Education levels of cooperation*, and in so doing establish trust, communication, and the 'processes' emphasized by Gemmell (1996). The Internet could play a key role, but it needs to provide locally relevant information.

Some motivated landowners may already be participating in a form of individual management that meets their needs (i.e. Model D, E). It may be best to *avoid the perception of competition* with their current situation (e.g. a good working relationship with a consulting forester). Even the perception of competition could be divisive and hence unproductive. Since each consulting forester has a 'stable' of other clients who could become involved in cooperatives, the promotion of a form of cooperation that was not perceived as 'competitive' could result in a future endorsement by consultants and public sector foresters alike. However, a few services or benefits that can augment the current situation or relationship could be offered. Motivated landowners are in an excellent local position to be effective spokespersons or advocates for cooperative efforts.

It is important to *maintain landowner interest over time*. If the only reason to cooperate is for commercial purposes, then landowners will only be engaged when they sell wood. In some places, commercial timber

sales may occur only once every 10–15 years. What will landowners do in the meantime, and what would justify their continued participation? At some point, market conditions and the value of wood may allow the profitable removal of small volumes on a more frequent basis, but currently, wood products in the United States have 'relatively' low value (due in part to its abundance!). Logically, the harvest of forest products is usually only conducted in large enough quantities to be profitable. This question of inactive periods further emphasizes the need for information/education, and communication. Cooperatives can offer other services to landowners, from which they can frequently benefit. While there may already be a plethora of free government information and education available (and there has been for decades!), it is not necessarily locally relevant or unique. The tactical advantage of locally-based cooperation and communication can make information and services relevant and the landowners more responsive.

Landowners interested in cooperation will find no better way to fully appreciate the services and function of a cooperative than to *visit an example and 'kick the tires'*. There are a number of existing and successful organizations in Quebec and the Maritime Provinces that are close enough for landowners to visit, ask questions, 'look under the hood', and determine how applicable some examples of cooperation might be to their local circumstances.

Based on the variety of landowner interests (e.g. Rickenbach et al., 1998; Alexander, 1986; Belin, 2002; Bourke and Luloff, 1994; Birch, 1996; Jones et al., 1995; Kingsley, 1976; Tyson et al., 1998; White, 2001) and numerous examples of cooperative activity from other countries, the following activities or services may be worth considering in some form of cooperation in the Eastern USA, with landscapes dominated by NIPF ownership:

Information:

- Estate planning.
- Taxation advice/assistance.
- References for loggers/foresters.
- Dissemination of local information about conservation/land protection.
- Market conditions.
- Informal experiences of other nearby peers.

Services:

- Access questions that landowners have in common (gates, roads, bridges).
- Boundaries that landowners have in common.
- Layout/implementation of connected recreational trails.
- Habitat planning/implementation – e.g. apple trees, openings, observation points, nest boxes, corridors, biological monitoring, rare species protection.
- Mapping/spatial information.
- Insurance.
- Green certification opportunities to small owners.
- Ability to react to damage/catastrophe like hurricanes, insect damage or market fluctuations.

Marketing/finance:

- Marketing of wood.
- Local production of wood leading to secondary production and value-added.

5. Conclusions

In the words of Nadeau and Thompson (1996), ‘Cooperation works’ when it comes to management and the production of wood products from non-industrial, private, *small* forests. It varies greatly, however, in its intensity, the type of cooperation, and the rights forgone or responsibilities required.

Millions of private owners in at least 19 different countries with developed economies and temperate forest conditions have cooperated for decades. Such cooperation has resulted in impressive, tangible, and often profitable results, including hundreds of thousands of hectares planted, and millions of cubic meters of wood products sold. These benefits are by no means limited to subsistence-level products for farmers and rural peasants. Millions of ‘white-collar’ professionals, absentee urban residents, and new landowners participate in cooperative schemes. The benefits of cooperation are likewise not limited to intangible, altruistic benefits like improved ecosystem health or habitat. Forest owner cooperation in some places has one eye on the bottom line, and is as business savvy as any Fortune-500 corporation. Private landowner cooperation can produce a diverse array of tangible as well as intangible benefits.

Likewise, there are a myriad of greater public benefits that result from private owner cooperation. For this reason governments commonly invest in forms of cooperation, because they realize them to be efficient tools to implement greater social policy on private lands.

Cooperation does not universally appeal to all owners. Even in countries where it has been commercially successful for long periods (e.g. Sweden), only roughly half of the owners participate. Clearly, cooperatives cannot be considered a ‘silver bullet’ to encourage landscape level cooperation in every situation. Cooperation also is not without potential problems, and thus may not succeed in some circumstances. Places with difficult transportation, communication, or immature timber resources may not be conducive to cooperation. Based on local policies and personalities, cooperation could indeed be perceived as divisive, if thought to compete with existing organizations.

It is clear from this review of cooperatives in different countries that various types of cooperation exist. While many involve cooperation on the basis of Information/Education, and some are quite productive from a market-based or commercial standpoint, there are very few examples of private landowners who cooperate in a truly integrated management sense in spatial and temporal scales sensitive to ecosystem patterns and processes. It may be possible that truly integrated ecosystem management forms of cooperation really only happen on private *communally* owned land (e.g. Finland, Sweden, Germany, Switzerland, Japan, Italy), whereby private individuals own a ‘share’ or percentage of the whole, but not a specific piece. There is impressive evidence that this Common Pool Resource (CPR) approach to forest management has endured for centuries. These models were often started for a specific material purpose (e.g. to supply farms with a continuous supply of forest products), and continue to sustainably yield a suite of benefits to private owners and society alike (Ostrom, 1990).

Some believe that the success of cooperation in other countries is based on a social or cultural predisposition towards ‘working collectively’ which is absent in the United States, a country with a reputation for conservative independence. However, evidence suggests that this may not be the case. Cooperation is not just successful in a few culturally

similar countries (e.g. Scandinavia), nor successful only as a result of a consistently narrow set of circumstances (e.g. industry domination of the marketplace). This review of cooperation has shown that cooperatives flourish in a wide variety of dissimilar countries (including Australia, New Zealand, the Netherlands, Austria, Japan, South Korea and the United Kingdom), in response to a variety of different threats or stimuli (e.g. need for reforestation; degradation of local woodlands; acute parcelization). Also, in a number of cases, private forest owners cooperate in the policy arena through their organizations explicitly to protect their ownership rights (e.g. Sweden, Finland, Austria). Finally, Americans have been known to adopt cooperative models in agriculture (e.g. cranberries, wheat; Nadeau and Thompson, 1996). It is therefore reasonable to conclude that cooperation among private forest owners can succeed in the culturally diverse United States.

Is there a future for private forest owner cooperation in the United States? Given the important proportion of the US forest in this ownership class, the trend of parcelization that leads to smaller properties (Sampson and DeCoster, 2000), and the increasing need to rely on NIPF lands to meet society's needs (Haynes, 2002; Berlik et al., 2002), it would seem that some approach to cooperation would be advantageous. The landowner cooperative idea is forming in several states, organized by motivated individuals with an interest in meeting high management standards and contributing in a meaningful way to their local economy. Based on these characteristics, it appears that the concept of landowner cooperation can be successful if it:

- Emphasizes communication, and the exchange of timely information and experiences;
- Includes landowners already engaged in various forms of management, and avoids the perception of 'competition';
- Strives to be relevant in a local way;
- Focuses on how it can offer benefits that are different from what is available from the public sector or conventional management models;
- Avoids a sole focus of achieving a good price for forest products, or 'protecting the environment'. Numerous landowner attitudinal surveys (e.g. Finley, 2002; Belin, 2002; White, 2001; Rick-

enbach et al., 1998; Kingsley, 1976; Birch, 1996) have shown that they tend to be interested in more than the former, and the latter alone carries a stigma for some;

- Establishes a clear reason to cooperate, and some institutional support to get an organization through the first years of growing pains; and
- Maintains a base of highly motivated local people with leadership and decision-making skills, attention to strong communication abilities; creative ideas, and nerve.

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