



## Serving members and reaching others: The performance and social networks of a landowner cooperative

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### ABSTRACT

Local forest landowner associations and broader peer-to-peer learning efforts have received attention—particularly in the United States of America—as ways to increase landowner engagement in forest planning and management. Unlike traditional technical assistance and outreach, knowledge is primarily shared among landowners as opposed to being derived from natural resource professionals. While potentially promising, few studies have investigated these approaches. Through a study of a landowner cooperative in Wisconsin, I report on a finding that considers both the effectiveness of a landowner cooperative in the Upper Midwest (USA) and the social network members rely on in decision-making. The former relies on an importance–performance analysis (IPA) of the services provided by the cooperative and the latter on an egocentric network analysis of members with an emphasis on strong and weak ties. Data were collected via a mail survey to which 146 members (81%) responded. The IPA indicates that the cooperative is providing services with which members are largely satisfied. The network analysis suggests that members, through strong ties, discuss their land with on average three others—primarily natural resource professionals (including cooperative staff), as opposed to other members, neighbors, and kin. However, by virtue of membership, they share weak ties with other members whom they see as trustworthy. The extent to which a network perspective might be applied to similar situations is discussed, as are conceptual implications and future directions. The main conclusion is that the emergence of local landowner associations and peer-to-peer learning requires research methods that better capture the social nature of these new directions.

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### 1. Introduction

Local forest landowner associations have received increased attention in recent years—particularly in the United States of America (USA) (e.g., NRC, 1998; Blinn et al., 2007). Driving this interest is a seemingly intransigent and large portion of private landowners that lack active engagement in managing their woodlands, little or no connection to the forestry community, or both. For example, national statistics indicate that only a small portion of landowners in the USA has written management plans or some contact with a resource professional (Butler, 2008). The concern with lack of engagement and/or connection is twofold. First, landowners may miss opportunities to advance their personal objectives (e.g., recreation, aesthetics, hunting) or those of the broader public (e.g., timber supply, habitat conservation, parcelization, etc.). Second, they may make hasty or ill-advised decisions (e.g., high-grading) that might adversely affect them, their use of the land, or the ecological health of the land.

Landowner associations that take an active role in assisting members with forest planning and practice implementation are

seen as a possible pathway to engage more landowners (NRC, 1998). In part, this perspective may be fueled by the prominence of cooperatives in Europe—particularly Scandinavia (Kittredge, 2003)—and by the emergence of several local landowner associations<sup>1</sup> in the USA (Blinn et al., 2007; Hull and Ashton, 2008). As context, landowner associations in the USA have traditionally focused on member education and informal information exchange, and tend to be organized at a statewide level (Washburn, 1998). Alternatively, the emergent local landowner associations provide services to member landowners (e.g., plan preparation, timber sale administration) that are more similar to those offered by associations in Europe than to those in the USA. It is unlikely that associations in the USA will evolve into anything like their European counterparts any time soon (Rickenbach et al., 2005), but they are an innovation in private forestry—particularly as a way to engage landowners. These associations connect with landowners in different ways, which, in turn allows them to reach more

<sup>1</sup> While many of these emergent associations are organized as business cooperatives, not all of them have chosen this organizational form (Hull and Ashton, 2008; Jakes, 2006). For this reason, I have chosen the broader term “association,” except when specifically referring to a cooperative. For this article, the important delineation is that these organizations focus more at the local level and tend to assist members (and perhaps others) with on-the-ground management.

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and/or different landowners than currently served by existing opportunities and programs offered through state forestry agencies, extension services, and timber supply interest (i.e., saw- and pulp mills) (Blinn et al. 2007; Hull and Ashton, 2008). Given this potential, federal and state resources (i.e., dollars, effort, etc.) as well as those from the not-for-profit sector (e.g., The Nature Conservancy, Community Forestry Resource Center, etc.) are being redirected toward local landowner associations and peer-to-peer educational models more broadly (Wolf and Hufnagl-Eichiner, 2007; Hujala and Tikkanen, 2008; Hull and Ashton, 2008). Related peer-to-peer models include master volunteer programs (e.g., Master Woodland Stewards; Woodland Owner Network, etc.) and community-based forestry initiatives (e.g., woodland/watershed councils) (Catanzaro, 2008).

This redirection—particularly toward local landowner associations—would appear to be premised on four assumptions.

1. Associations are well-functioning organizations that create value and/or benefits for members, and can stand the test of time.
2. Associations will influence members and their forest management activities toward outcomes that are consistent with public policy goals such as sustainable forest management.
3. Impacts will extend beyond the membership to neighbors, friends, and others—either directly through new members or indirectly through social networks.
4. Associations and similar peer-to-peer efforts can be at least as effective as existing policies (e.g., technical assistance, cost-share, etc.).

This article's intent is twofold. First, I report the findings of an evaluation of a local landowner cooperative that addresses assumptions #1 and #3. Second, I explore the implication of the findings toward understanding local landowner associations and the broader peer-to-peer learning arena.

### 1.1. Conceptual framework

The study described here is novel in that it seeks to both assess the effectiveness of an association in meeting member needs (i.e., assumption #1) and in determining the social ties that inform members' decision-making (i.e., assumption #3). Effectiveness is a fairly typical evaluation question (Patton, 2002), but, as measured here, suggests the use of social network analysis (SNA), which is specifically suited to the task of analyzing social ties. In the strictest sense, such studies are largely absent from previous landowner studies, but have a rich conceptual development in the social sciences (see e.g., Scott, 2000) and an emergent one in natural resources (Prell et al., 2009; Crona and Bodin, 2006). SNA is a suite of data collection and analysis techniques (Wasserman and Faust, 1994) that has been instrumental in advancing various social theories through an understanding of how relationships matter. The network perspective's contribution lies in its emphasis on the relationships among people as opposed to their individual characteristics (e.g., age attitudes, etc.). In general, the network perspective holds that one's network position is a robust indicator of behavior.

As an exploratory study, I do not focus on a particular theoretical or conceptual perspective to define the role of social networks in understanding local landowner associations. Instead, I apply one conceptual element of network studies, *strength of ties*, which has been highly influential on network concepts and associated theories (e.g., social capital and social learning) that might apply to associations and the broader peer-to-peer learning arena. Tie strength is a measure of the intensity of a particular relationship between two individuals (Wasserman and Faust, 1994). The power of this measure, though, lies in the simple dichotomy between relatively strong and relatively weak ties. The importance of strong ties is fairly obvious as we trust and rely on those closest to us for financial, informational, and moral support. Yet, weak ties can be equally important. Granovetter (1973), in his seminal paper "The Strength of Weak Ties," found that weak

ties were important in acquiring new information that might be beneficial. For example, one is more likely to learn about a new job opportunity through acquaintances or friends of friends rather than close friends or colleagues. A basic premise of this argument is that strong ties tend to be between people who are similar (i.e., homophily; McPherson et al., 2001) and, thus, generally have similar informational resources. Hence, there is nothing "new" to share among strongly tied individuals, whereas weak ties allow individuals to access different social networks with "new" pools of information.

While focused on the ties between individuals, the concept of weak and strong ties has application to whole networks and social systems more broadly. For the former, one can imagine networks comprised of differing mixes of strong and weak ties, which in their measure yield both trust (i.e., bonding) and the ability to access/spread new ideas and resources (i.e., bridging) (Newman and Dale, 2005). As part of broader social inquiry and to varying degrees with other network metric (e.g., centrality, reachability, etc.), strong and weak ties have served important explanatory roles, most notably in social capital (see Portes, 1998), and within natural resource management specifically through adaptive management (e.g., Hahn et al., 2006). Through a focus on a single, but conceptually important metric, this article offers insights and potential future directions for a network perspective on private landowners and efforts to effect changes in their behaviors.

### 1.2. Study questions

Based on the intent and conceptual framework, this study centers on two research questions that reflect two of the assumptions outlined above.

1. *Is the cooperative a well-functioning organization in terms of effectively meeting members' needs?* This question relates directly to assumption #1: Forestry cooperatives have a poor track record in the USA. Therefore, it is important to identify useful metrics by which to assist associations and those who seek to support them assess and improve their potential viability. I focus on members' needs, as those are most central (but by no means sufficient) to a cooperative's success (Zeuli and Cropp, 2004; Rickenbach et al., 2005).
2. *From whom do members seek information when making land management decisions?* Starting an association redraws social boundaries and creates the opportunity for new interactions; a key premise of assumption #3. By understanding the networks among members and their conceptual implications, this study can assist landowners, resource professionals, and decision-makers better define the impact and potential of associations and peer-to-peer learning in ways that more traditional, non-relational metrics (e.g., number of members, etc.) cannot.

Assumptions #2 and #4 remain important and should be considered in future work, but were beyond the scope of this study.

## 2. Methods

### 2.1. Study context

Toward answering these two questions, I studied the Kickapoo Woods Cooperative (KWC), located on the Upper Midwest of the USA. It was incorporated in 1999 and had 180 members at the time of this study. It offered eight member services (Table 1); some which were free and others for which members paid<sup>2</sup>. The selection of the KWC was based on convenience and a mutual interest in learning about the membership, but the KWC might well be viewed as a success. It has been in constant (if not profitable) operation for over

<sup>2</sup> The cooperative still offers these services.

**Table 1**  
Description of services provided by the KWC to members at the time of the study.

Service	Description
A. Field days	Typically 1/2- or 1-day outreach events on a specific topic; 5–10 per year; open to members and non-members; nominal fee is charged
B. Forestry practices	Personalized assistance in the completion of management practices (e.g., timber sale oversight, thinning); hourly fee, set by Board, is charged
C. Forestry supply store	Centralized purchasing of forestry supplies (e.g., flagging, tools, etc.) and loaning of some equipment; prices are cost plus small markup.
D. Internet site	Centralized information source for members and non-members about co-op activities and business
E. Newsletter	Quarterly newsletter (8–12 pages) providing updates, announcements, educational and informational items
F. Planning services	Personalized assistance in management planning; all new members entitled to free 1-day woods walk with staff member; further consultation at hourly fee set by Board
G. Social connections	General opportunity to network with other co-op members and others who attend events
H. Work parties	Typically 1-day work day to complete a management task (e.g., invasive species removal); labor provided by other members, often in exchange for a meal provided by hosting member; 1–2 per year

7 years.<sup>3</sup> Moreover, between 2004 and 2007, membership grew from 95 to 180 with the area collectively owned by those members similarly growing from 4000 ha to 5000 ha.<sup>4</sup> While perhaps modest metrics of success, they are likely appropriate given the emergent nature of local landowner associations in the USA and are consistent with related work (Rickenbach et al., 2005; Hull and Ashton, 2008).

## 2.2. Data collection

I contracted with the University of Wisconsin Survey Center to conduct a multi-wave mail survey of all 180 KWC members in Spring 2007. Survey administration, following Dillman et al. (2008), entailed an initial mailing (i.e., cover letter, questionnaire, return envelope) and reminder/thank you postcard to all members, followed by two additional full mailings to non-respondents. The eight-page questionnaire covered (1) basic landownership (e.g., size of holding, landownership objectives, etc.) and owner (e.g., tenure, age, etc.) attributes; (2) importance and performance measures of the cooperative and its services; (3) one egocentric name-generator question (i.e., “Please tell us with whom you have discussed the management and/or health of you land in the last two years?”); and (4) measures of trustworthiness for different information sources. More than a single name-generator question would have been preferable (Marsden, 2005), but space on the questionnaire limited the inclusion of additional questions.

Of those surveyed, 146 completed the questionnaire for an overall response rate of 81%. Given this high response rate, I am fairly confident that our findings generally represent members' views for those questions with relatively high response rates. However, the number of responses to the egocentric network name generator was 94 (64%). While respectable for standard questionnaire data and for conducting egocentric analysis, it is sufficient to allow me to speak in only general terms about the whole social network present within the KWC.

<sup>3</sup> In terms of profitability, it is important to note that the cooperative has received an annual grant through the University of Wisconsin-Madison (which the author currently oversees), which supports the KWC's outreach functions (i.e., field days and newsletter).

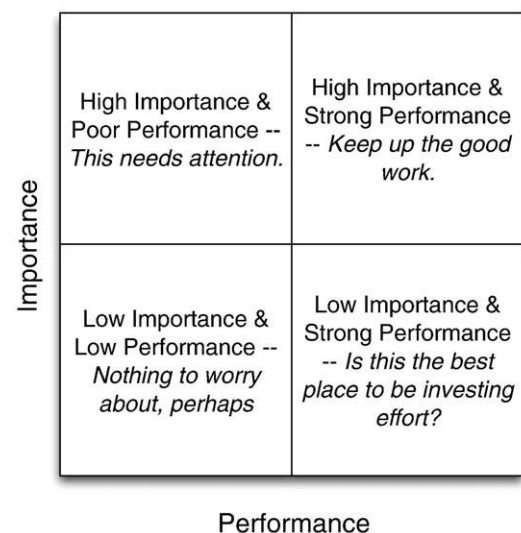
<sup>4</sup> As of mid 2009, the KWC had 247 members who own approximately 7800 ha.

## 2.3. Importance–performance analysis

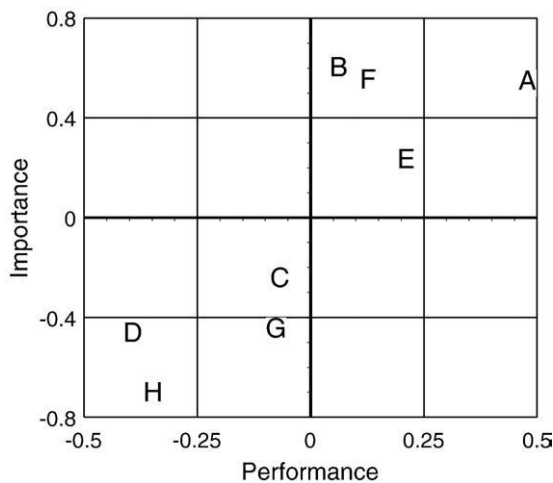
Importance–performance analysis (IPA), where differences between members' expectations of and satisfaction with the cooperative's services, is a tested method for assessing performance (Martilla and James, 1977; Bacon, 2003). IPA typically is used to evaluate product and/or service performance, but has been applied in natural resource setting (e.g., Overdeest and Rickenbach, 2006). In the questionnaire, members were asked to rate how important the eight services provided by the cooperative were to them (Table 1). In a separate section of the questionnaire, respondents were asked to rate performance on these same services. Performance is typically measured in terms of the user's satisfaction (Martilla and James, 1977). To illustrate importance–performance gaps, results are displayed on a two-axis graph (i.e., mean performance by mean importance), and may be standardized (Bacon, 2003). The location of plotted points provides guidance for evaluation (Fig. 1). In this study, importance and performance (i.e., satisfaction) were both measured on 5-point Likert scales. For graphing (Fig. 2), I standardized the importance and performance means for each service. This was done by calculating the simple (i.e., unweighted) mean of all 8 service means for importance and performance separately. Then, I subtracted the “grand mean” from each of the services for both importance and performance to determine their standardized differences (Bacon, 2003). These differences form the basis for the plotting in Fig. 2.

## 2.4. Egocentric network analysis

The single name-generator question asked members (i.e., egos) to identify individuals (i.e., alters) with whom they discuss management of their woodlands and to briefly describe the tie (e.g., relative, neighbor, my forester, co-op member, etc.). This question generates egocentric network data, which are the ties that an individual has with others. Egocentric networks are specific to an individual and, in this way, differ from whole networks (e.g., the connections between all the individuals in a social group; Scott, 2000). Given my interest in ties both within and outside the membership, the egocentric approach provided the ties of interest, and avoided boundary concerns that often make full network studies difficult (Wasserman and Faust, 2004, pp 30–33). Moreover, the ties studied are directional ties, i.e., the ego discusses their land with the alter. However, I posit, on theoretical grounds (Lawler et al., 2008), that some degree of



**Fig. 1.** Basic interpretations of quadrants present in importance–performance graphs (adapted from Martilla and James, 1977).



**Fig. 2.** Mean importance and performance (i.e., satisfaction) of Likert items for KWC services as deviations from overall importance and performance means, not on the center of the Likert scale (i.e., 3); letters correspond to services as presented in Table 1.

exchange is likely across the tie, particularly when the alter is not a natural resource professional (Gass et al., 2009). The focus in this analysis is on ego-network size and the types of alters. To the extent that the egocentric network analysis allows, I also explore ties within the cooperative.

The questionnaire did not directly elicit data on the natures of the ties (e.g., trust, frequency), but a separate series of items allows inference about the trustworthiness of generic sets of alters (e.g., KWC staff, DNR foresters, Consulting foresters, etc.) and aids interpretation of the network analysis. On a 5-point scale, respondents rated the trustworthiness of different generic alters in response to the following statement, "In general, to what extent do you see the following sources as trustworthy in providing information about your forest and its management or use?" A response category was also provided if the member had no contact with someone from that category.

### 3. Results

#### 3.1. Descriptives

KWC members tended to have larger ownerships than other landowners in the region (Rickenbach et al., 2005). The mean and median total ownership sizes were 61.5 and 40.4 ha respectively, while mean and median forest portion were 36.4 and 27.5 ha ( $n = 145$ ). Somewhat surprisingly, only 69% of members have written management plans ( $n = 141$ ), despite this being a requirement of membership in the cooperative. This does, however, greatly exceed that of most landowners in the USA at 4% (Butler, 2008, p. 25). Thirty-five percent had no previous timber harvesting experience ( $n = 139$ ). As to their reasons for ownership, members are typical in that non-consumptive objectives were most important (Table 2; Rickenbach et al., 2006; Boon et al., 2004; Kendra and Hull, 2005). However, they diverge from typical landowners in the importance they place on biological diversity—by far the most important reason—that may be an emerging characteristic of those who join local landowner associations (Rickenbach et al., 2005; Rickenbach et al., 2006).

Members have owned their woodlands for, on average, 17.8 years (median = 16,  $n = 140$ ), and have been members of the KWC for 4.1 years (median = 4,  $n = 146$ ). Respondents to the questionnaire were predominantly male (83%) with a mean and median age of 57 years (Stdev = 10.7,  $n = 139$ ), although this does not reflect actual legal ownership, which is often spousal or familial (KWC General Manager, personal communications). At the time of the survey, 72% of respondents live on or beside their land, 19% live > 82 km, and the

**Table 2**

Importance of possible landownership objectives for KWC members based on importance ratings, and selection of most and second most important objectives ( $n = 140$ –146).

	Mean <sup>a</sup>	Stdev	n	# Most important ( $n = 140$ )	# Second most important ( $n = 140$ )
<i>Consumptive objectives</i>					
Firewood for personal use	3.2	1.0	144	4	12
Hunting	2.8	1.2	144	10	10
Long-term income potential	2.7	0.9	146	6	12
Non-timber products (not wildlife)	2.3	1.0	143	1	3
Short-term income potential	2.0	0.9	145	1	3
Timber production	2.8	0.9	146	8	12
<i>Non-consumptive objectives</i>					
Legacy for family	3.3	0.9	146	25	18
Wildlife and/or wildlife habitat (not hunting)	3.5	0.6	146	16	29
Protection/maintenance of biological diversity	3.6	0.6	146	50	22
Recreation (not hunting)	3.4	0.6	146	8	17

<sup>a</sup> Means based on 4-point importance scale (1 = not at all, 2 = not very, 3 = somewhat, 4 = very).

remaining 9% were somewhere in between ( $n = 141$ ). That members are more likely to live on or near their land is the only aspect that discriminates them from other landowners in the region (Rickenbach et al., 2005).

#### 3.2. Importance–performance analysis

Of the eight services provided by the KWC (Table 1), three were rated as equally most important: conducting educational field days, assisting members with forestry practices, and assisting members with management planning (Table 3). Of least importance were organizing work parties and the Internet site, which were relatively new and less frequently used services at the time of the survey. For performance, members reported high satisfaction with the services they used, but not all services were used equally. The two services that members were most satisfied with were educational field days and the newsletter; both of which also served the most members (103 and

**Table 3**

Descriptive statistics for importance and performance ratings of the services offered by, and overall performance of the KWC by members.

Service	Importance			Performance		
	Mean <sup>a</sup>	Stdev	n	Mean <sup>b</sup>	Stdev	n <sup>c</sup>
A. Field days	4.3	1.0	143	4.7	0.7	103
B. Forestry practices	4.3	1.0	138	4.3	1.0	57
C. Forestry supply store	3.5	1.0	139	4.1	1.0	52
D. Internet site	3.2	1.1	139	3.8	0.9	58
E. Newsletter	3.9	0.9	143	4.4	0.7	131
F. Planning services	4.3	1.0	142	4.3	0.9	79
G. Social connections	3.3	1.3	139	4.1	0.9	88
H. Work parties	3.0	1.2	140	3.9	1.1	34
<i>Overall performance of the KWC</i>						
In general, I am satisfied with the KWC				4.4	0.8	143
In general, the KWC is headed in the right direction				4.5	0.8	140

<sup>a</sup> Means based on 5-point importance scale (1 = very unimportant, 2 = somewhat unimportant, 3 = neutral, 4 = somewhat important, 5 = very important).

<sup>b</sup> Service satisfaction means based on 5-point satisfaction scale (1 = very unsatisfied, 2 = somewhat unsatisfied, 3 = neutral, 4 = somewhat satisfied, 5 = very satisfied), while overall assessment are based on 5-point agreement scale (1 = strongly disagree, 2 = somewhat disagree, 3 = neutral, 4 = somewhat agree, 5 = strongly agree).

<sup>c</sup> Wide range in number of responses based on those actually using the specified service.

131, respectively). Members also were satisfied with the planning services and assistance with forestry practices, but fewer members had taken advantage of these (79 and 57, respectively).

In plotting the importance–performance graph (Fig. 2), the KWC would appear to have an optimal situation: It is performing best on those services that are most important to members, while performance is lower (in comparison with all services) for those of lower importance. The importance–performance analysis is consistent with their overall opinions: Members were both very satisfied with the cooperative in general and believed it was headed in the right direction (Table 3).

3.3. Egocentric network analysis

In discussing their woodlands with others, members (i.e., egos) identified, on average, three alters with whom they had such conversations (Table 4). The number of alters ranged from zero to eight. Individuals divided their ties among KWC staff, non-member professionals (e.g., public foresters, private consultants, loggers, etc.), non-members (e.g., neighbors, kin, landowners, etc.), and members. Surprisingly, other members made up the smallest portion of alters, even smaller than non-members (Table 4). These data suggest that members are most reliant on professional perspectives in managing their woodlands as KWC staff and non-member professionals together comprised 61% of all ties.

In further exploring these network data, I generated a graphic showing members' outgoing ties to their alters grouped by alter type (Fig. 3). Shown this way, the central role of the two staff members (one of which is also a KWC member) is clearly evident. One had 69 incoming ties (i.e., members seek this individual) and the other had 24. This difference reflects the fact that one was a member since the first days of the KWC, while the other had been with the cooperative for a shorter period (~2 years). For non-members (professionals and otherwise), there were few overlapping ties across unique alters. Hence, collectively, members seek out and have conversations with a wide range of individuals. Due to some respondents' unwillingness to always provide alters' full names (e.g., some alters were identified as simply "Joe, my neighbor" or "My DNR forester"), a precise count was not possible, but I conservatively estimated the number of non-member alters as 30–50 and 40–60 for professionals and non-members, respectively.

As noted above, other members were not commonly identified as alters and comprised only 16% of all egos' outgoing ties: the least of the four alter groups (Table 4). This lack of interconnectedness among members is evident in Fig. 4, where, without ties to the staff, members did not look to each other as information sources (i.e., do not have outgoing ties) in managing their woodlands. That said, one member had five incoming ties, another four, and three others with three each. Eleven members have no ties to other members or the staff. Importantly, the ties elicited through our questionnaire constitute relatively strong ties (e.g., "I go to this person for information.") as opposed to weak ties (e.g., "I know this person and talk to them occasionally.") that likely are present among members. The evidence

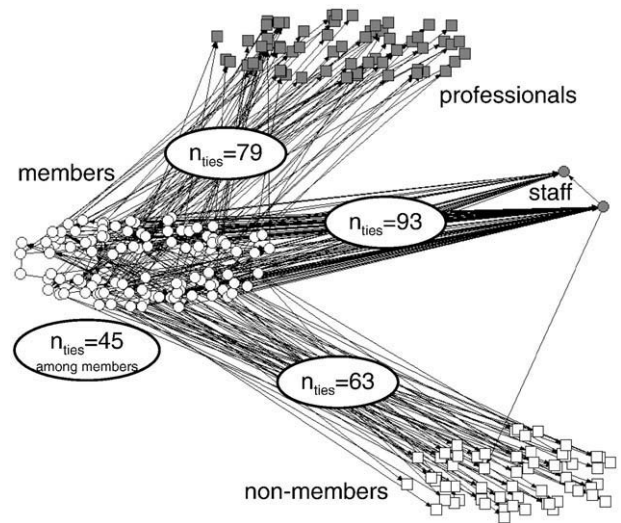


Fig. 3. Member outgoing ties to information sources by alter category: other member (white circles), staff (gray circles), professionals (gray squares), and non-members (white squares); line lengths between nodes have no analytical meaning; ties among members are shown in Fig. 4.

for these weak ties rests on members' high participation in field days (Table 3), the cooperative's annual meetings (typically attendance > 40), and other events the co-op sponsors or assists with that tend to attract many members (KWC General Manager, personal communications). This is an important point that I will take up in the discussion.

3.4. Whom do members trust?

Network ties, particularly related to information acquisition, often entail some aspect of trust (Barrera, 2007; Hujala et al., 2007). Members perceived the KWC staff and their fellow members as most trustworthy in terms of the information they might provide (Table 5). Least trustworthy were industrial foresters with whom they had limited contact and, loggers with whom contact was more extensive. Between these two extremes were an array of different sources mainly from the public (i.e., DNR foresters, County foresters) and non-profit sectors (i.e., conservation and environmental organization staff). Interestingly, a rather large number reported contact with consulting foresters (n = 98), which is exceptional in the region, whom they identify as trustworthy.

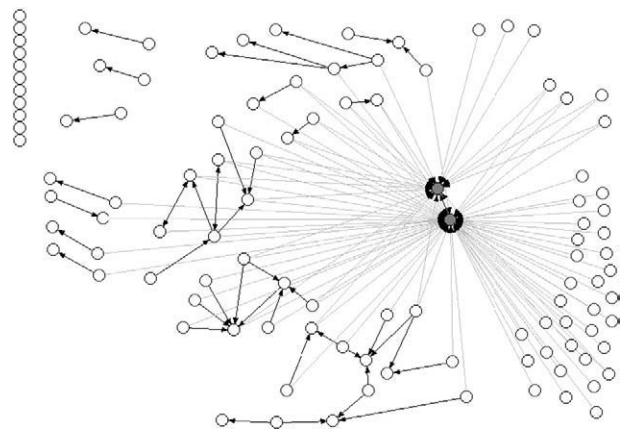


Fig. 4. Member outgoing ties to other members (black lines) and to the KWC staff (gray lines) as information sources; 11 members (upper left corner) reported no ties to other members or staff; one staff member is also a member of the KWC; line lengths between nodes have no analytical meaning.

Table 4  
Distribution of KWC members' outgoing ties (n = 94).

Network measures	Mean	Stdev	Sum	Portion (%)
Size (outgoing ties only)	3.0	1.8	280	100
Number of those ties going to...				
Members	0.5	0.2	45	17
KWC staff	1.0	0.7	93	33
Non-members (e.g., neighbors, kin, other landowners, etc.)	0.7	1.2	63	23
Non-member professionals	0.8	1.1	79	27

**Table 5**  
Perceived trustworthiness of information provided by generic individuals with different credentials.

Credential	Mean <sup>a</sup>	Stdev	n
<i>KWC affiliations</i>			
Members	4.5	0.8	121
Staff	4.7	0.7	128
<i>Non-KWC professional affiliations</i>			
Conservation organization staff	4.3	0.9	86
Consulting foresters	4.2	1.0	98
County foresters	4.1	0.9	62
DNR foresters	4.2	0.9	108
Environmental organization staff	4.0	1.0	58
Industrial foresters	2.8	1.0	68
Loggers	2.6	1.1	104

<sup>a</sup> Trustworthiness means based on 5-point scale (1 = very untrustworthy, 2 = somewhat untrustworthy, 3 = neutral, 4 = somewhat trustworthy, 5 = very trustworthy).

## 4. Discussion

The results indicate that the KWC is largely meeting the needs and expectations of its members and that members interact with a range of others in discussing their land and its management. Compared with the typical landowner, KWC members are more engaged in forestry (Butler, 2008), but the cooperative has attracted members who previously did not participate in other programs (e.g., cost-share or tax subsidies), nor did they have substantial management experience (KWC General Manager, personal communications). This is consistent with previous findings (Rickenbach et al., 2005). In further exploring these results and their implications, two aspects seem particularly important—alternative professional assistance and peer-to-peer learning implications—and I discuss them below. The discussion focuses on the network analysis as that is more innovative aspect of the study.

### 4.1. Professional assistance alternative

In accessing professional assistance, members make extensive, but not sole, use of the KWC staff: Other natural resource professionals are also important. The data indicate that many members have access to multiple professional perspectives in their decision-making. This is intentional: KWC staff works with public and private natural resource professionals to coordinate services for members who either have long standing relationships with other professionals or just prefer to split the tasks. For example, a member may rely on their consulting forester to prescribe a specific silvicultural treatment, but use the staff to oversee the timber sale. For other members, KWC staff are the sole source of professional assistance. In these cases, the cooperative may be reaching landowners who have no previous contact with resource professionals—an important public policy goal (NRC, 1998).

Whether a landowner consults multiple resource professionals or just one, trust is an important element of the relationship (Gass et al., 2009). In this regard, the cooperative appears to provide a benefit in that many members find their only link to a trusted professional via KWC staff. The cooperative provides members direct access to staff who have been vetted by the other members and who are accountable to the membership as a whole through the elected Board of Directors. Hence, staff are seen as highly trustworthy. Given the presence of staff and collective ties to numerous natural resource professionals, future research might explore whether local landowner associations provide a bridging function between landowners and a broad suite of professional services and advice available beyond the association. For example, does the membership as a whole gain from individual members' ties with non-staff professionals through either direct or indirect (i.e., via staff) sharing?

### 4.2. Peer-to-peer learning implications

Besides seeking out natural resource professionals, KWC members report that they discuss their woodland management with non-members who might be neighbors, kin, and/or friends, and to a lesser extent other members (Table 4). Surprisingly, non-members represent the largest non-professional source of information. What is not clear from this analysis is the extent to which these ties are bidirectional (i.e., information flows both ways), but some degree of exchange is expected (Lawler et al., 2008). If these are bidirectional, cooperative members have limited ties (in numbers anyway) to others with whom they discuss and share ideas about woodland management. In addition, information exchange may not be the primary nature of the exchange. People seek out others in decision-making for a variety of reasons (e.g., knowledge acquisition, confirmation, support, etc.). Without knowing the role(s) that alters play in this process, it is difficult to determine if sharing occurs, and whether it influences the alter's knowledge and/or behavior. Furthermore, it is not clear if these alters are landowners (who might implement practices on their own land) or others in the community (who might share the information with other landowners who are not associated with the cooperative). Without additional research on those who form members' egocentric networks, these remain open hypotheses.

Equally interesting is the apparently limited role that other members play in the members' egocentric networks. As Fig. 4 suggests, there were a few subgroups where there were discussions among members, but most were not part of such subgroups. In this way, the cooperative seems to reflect a situation where most members rely on professional staff and other natural resource professionals, which is in contrast to tenets of peer-to-peer learning (Catanzaro, 2008). Hence, one might, now, wonder, "What are the implications for peer-to-peer learning if members do not appear to talk among themselves or to other non-professionals all that much?" The question is particularly intriguing given that members see other members as highly trustworthy sources of information (Table 5). The answer is not directly evident in these results, but requires interpretation to posit a working hypothesis that future research might test.

For most members, other members are not within their egocentric networks (as measured in this study), and likely do not constitute strong ties. However, over two-thirds of respondents have attended at least one forestry field day (Table 3), and attendance at these events (including the annual meeting) ranges from 20 to 40 members and non-members (General Manager, personal communication). These events create opportunities for members to talk to one another and discuss their woodlands and their management. Hence, some degree of trust is conferred (Table 5) through the shared experiences of cooperative membership (Lawler et al., 2008). Such conversations or events may not be recalled when filling out a questionnaire, but likely do influence decision-making and behavior. Hence, future research should pay particular attention to identifying and understanding both strong and weak ties to determine the full potential offered by these emergent landowner associations and the broader peer-to-peer learning arena.

One interpretation of these findings is that the cooperative is meeting the expectations of its members. As a result, members view the cooperative and those associated with it as trustworthy. Nonetheless, the cooperative is not a "sole source provider" of forestry advice and services, as members also seek information from other natural resource professionals and non-members. Moreover, the results suggest that the cooperative has expanded members' strong ties—primarily to staff—and their weak ties through greater interaction with other landowners (i.e., members) they likely would not have met and trusted otherwise. Such an interpretation bodes well for those advocating landowner associations as a way to facilitate peer-to-peer learning, but more rigorous research is required.

## 5. Conclusion

The emergence of local landowner associations and the broader peer-to-peer learning arena is often touted as doing something more than “educating landowners,” “writing management plans,” or “increasing area under management.” Social and behavioral change, such as “connecting landowners to useable information,” are new, additional benchmarks. As such, the tools with which we study these efforts must also change and adapt. Future research could build on the approach presented here with different and more in-depth conceptual development, methods, and analyses. Two directions seem auspicious based on these findings. First, such work should adopt a network perspective (e.g., Scott, 2000; Wasserman and Faust, 1994) to determine if this interpretation or some variant operates among woodland owners involved in local landowner associations and peer-to-peer learning. Peer-to-peer learning is premised and dependent on the social networks among landowners and others to facilitate learning (Catanzaro, 2008). For example, as one reviewer suggested, an improvement on this study would have been to identify to what extent other landowners made up the “other member” category. There is only a hazy understanding of the social networks present, but network scholars have advanced the broader literature by characterizing the importance of social structure. Relying on this rich theoretical base is important as it provides a basis for determining both the potential and limits of social networks to facilitate outcomes on private woodlands.

Second, the growth and creation of landowner associations and perhaps some forms of peer-to-peer learning not only change social structure among landowners, but also shift the institutional landscape which includes those in the wider forestry sector and in local communities. For example, resources have been shifted from traditional approaches (e.g., outreach, cost-share, technical assistance) toward local initiatives (Wolf and Hufnagl-Eichiner, 2007). At the local level, cooperatives have played a role in altering market arrangements, management philosophies, and otherwise challenging the status quo (Rickenbach et al., 2005; Jakes, 2006). How emerging associations and peer-to-peer learning change the relationships within the network of institutional, community, and market actors is considerably important in determining the long-term viability and effectiveness of these initiatives. This work has begun, but there is much to do on this front at multiple scales (e.g., community, state) and in multiple contexts (e.g., market, policy).

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