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social sciences

Regional Conservation Partnerships in New England

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Across New England, a new model of regional collaboration is increasingly being used by land conservation trusts, watershed associations, state agencies, and others. Regional conservation partnerships (RCPs) serve multiple purposes, such as coordinating among the various active groups in the region and allowing them to leverage funding and staff capacity. However, their essential mission is the same: protect more land from development. We use interviews, geographic information systems (GIS), and statistical analysis on 20 case studies to document RCP growth and characteristics and to analyze which attributes most contribute to their ability to conserve land. Along with well-known factors of organizational development, we find that when the territory of the lead (or “host”) partner organization is well matched to the size of the partnership region, the RCP is better able to achieve measurable conservation gains.

Keywords: forest conservation, collaborative conservation, partnerships, case studies, geography, large landscape conservation

In the past century, New England rapidly reforested widespread clearance for agriculture, which peaked in the late 19th century (Foster and Aber 2004). This reforestation was so thorough that New England is now the country's most forested region, with 33 million of its 42 million total acres blanketed by forest, even while southern New England is one of the most densely settled regions in the country (Foster and Aber 2004). In southern and central New England, parcels tend to be small and privately owned, creating a complex mosaic of forested parcels amid hundreds of municipalities. These mostly forested properties are subject to increased parcelization and fragmentation by first- and second-home development and by roads. Forecasts suggest that in some areas of New England, up to 63% of

private forestland could be developed by 2030 (Stein et al. 2005). With more fragmentation and development, forest connectedness and ecological function will decline.

In response to these threats and the complexity of ownership, a relatively new and potentially promising model of private-public collaboration has emerged: regional conservation partnerships (RCPs). These are often informal groups of people who represent conservation land trusts, municipalities, state agencies, and others who coordinate their activities to advance the protection of land within a region or to conserve specific natural resources that cross town, county, or state boundaries. As of July 2013, there were 38 RCPs active in New England (RCP Network 2013).

Our first research goal is to document and describe examples of this model of collaborative conservation and their common characteristics as well as what differentiates them. Our second research goal is to suggest what sorts of actions and characteristics may contribute to their ability to protect land from development.

Literature

Conservation at the regional scale, although often pursued, is considered among the most difficult of conservationists' goals to achieve (Innes 2005, McKinney et al. 2010). It is particularly difficult where a large proportion of the region's land is privately owned (Williams and Ellefson 1997, Klosowski et al. 2001, Wolf and Hufnagl-Eichiner 2007). Regional collaboration is an emerging approach to these challenges. The concept of collaborations is, of course, well known and researched across a variety of fields (Leach et al. 2002, Margerum 2002, Thompson et al. 2005). Working from the broad literature on collaboration, Margerum (2008) describes the essential characteristics of collaborative conservation planning and management. First, these efforts engage a wide variety of stakeholders; second, they use a consensus-building process; third, activities include the definition of problems and goals, as well as actions; and

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finally, they require a sustained commitment to solving the problem. Consensus, however, “means many things to many people” (Leach 2006, p. 574). Care is required in implementation of consensus-based decisionmaking, because the strength of a single veto can lead to concretization of the status quo in favor of those with power, who often hold the property interests that benefit from development (Peterson et al. 2005). Processes that encourage joint fact-finding and healthy debate in public view may minimize this risk (Leach 2006).

In natural resource management, the focus tends to be on collaborations initiated by government entities as a way to engage representatives of other agencies as well as the public in important management decisions for public lands (Schuett and Selin 2002, Thompson et al. 2005). In fact, most natural resource researchers find that active government support for collaborative efforts is one of the factors critical for success (Wondolleck and Yaffee 2000, Koontz et al. 2004). The government can lead, follow, or encourage (Koontz et al. 2004), but often provides continuity and funding (Hamin 2001).

What makes the research complex is that collaborations are not easy to pigeonhole; each particular partnership is likely to operate differently. The level of organization and goals among collaborations differs widely, from more simple networks to partnerships to regional institutions (McKinney et al. 2010). Most cooperative efforts form around a specific project or pressing issue in something more akin to joint ventures, and then when the particular issue is resolved, the venture dissolves (Schaeffer and Loveridge 2002). These short-term, cooperative efforts are in contrast to the more open-ended, long-term RCPs that are the topic of this article.

There are a number of related explanations for why a natural resource-based collaboration will develop. The fundamental motivation tends to be a threat to common resources, such as environmental quality (Lubell et al. 2002). The overriding goal generally is better management of these resources, creating public value that could not be achieved through individual action. In particular, natural resource management issues, which may be beyond the capacity or authority of any one institution to address on their own, can prompt new ways of working across boundaries (McKinney and Johnson 2009). Other key characteristics include

a relatively homogeneous landscape with significant stocks of human, social, and financial capital to overcome the transaction costs of organizing (Lubell et al. 2002), a strong landscape character and residents' attachment to it, and an activist to give it the catalyzing push (Hamin and Marcucci 2008).

Collaborations tend to seek goals that include external on-the-ground results, as well as internal capacity building for their organization. Genskow (2009), working from a wide variety of sources, distilled the outcomes expected from collaborations focused on natural resource management as specific accomplishments, increased social and organizational capacity in the region and among the partners, and increased legitimacy for the resulting actions/policies. Investigating forest landowner collaboratives, Wolf and Hufnagl-Eichiner (2007) summed up the benefits for participating individuals: money, information, and legitimacy.

Prescriptive advice to partnerships is widely available in the form of lessons learned, usually developed through case studies, polling, or interviewing collaboration leaders. One of the most helpful and rigorous applications of this is by Williams and Ellefson (1997), who reviewed 30 natural resource collaborations, and had activists identify keys to success. Based on these, they developed the following list of attributes of self-defined successful collaborations:

- Development—have specific purpose, goals, and representation from all affected parties;
- Information—exchange research, inform stakeholders, etc.;
- Organizational support—regular meetings, staff, internal and external support;

- Interpersonal communication—clear decisionmaking mechanism and culture of open listening;

- Trust, honesty, respect; and,

- Accomplishments—some specific outcome, even if it is just a final report.

An important point is that these assessments of effectiveness tend to be made by giving surveys to organizations and asking them what is most effective. Helpful as this is, there is also a benefit to an external evaluation of achievement, followed by a search for shared traits among those with and without a particular indicator of success, in this case the protection of land as a partnership. This is our approach.

Methods

We address each of our two research goals using different methods. First, to document and describe this model of collaborative conservation, its spread and characteristics, we drew from interviews with RCP leaders, the literature, public documents, and use of geographic information systems (GIS). For our second research goal, to determine the sorts of actions and characteristics that may contribute to the ability of RCPs to protect land from development, we used grounded theory and then statistical analysis to identify 12 important variables. In grounded theory, data are collected, coded, and analyzed, and then a hypothesis (or explanation) is developed, rather than the more common hypothesis-first approach to research. Grounded theory is particularly useful when one is asking more interpretive questions, such as “what are participants doing, and why?” (Corbin and Strauss 2008). Finally, we modeled the data within a regression analysis to determine which of these variables best explained why 10 RCPs had protected land at the time of the start of the

Management and Policy Implications

Urbanization and climate change are motivating nonprofit conservation land trusts to coordinate their actions at the landscape scale. In large landscapes dominated by family forest ownerships, land conservation trusts are cultivating RCPs. RCPs are typically informal networks of people representing nonprofit conservation organizations and state and local government agencies. They coordinate their activities to conserve contiguous forests that cross town and sometimes state boundaries in regions spanning 10,000 to 2 million acres. Our study shows that the success of RCPs is largely dependent on the organizational capacity and expertise of their partners. The authors of this article encourage foresters in the private and public sectors to consider the role of RCPs in achieving their own forest conservation and management objectives (45% of RCPs in our study included productive working forests among their conservation priorities).

interviews (December 2009) and 10 had not. Each goal is described in more detail below.

Growth and Characteristics of RCPs

In 2009, using the snowball sampling technique, we asked land conservation trust professionals whether they knew of one or more ongoing and informal, multi-stakeholder collaboration(s) organized to advance land conservation efforts in a particular region. We developed a preliminary list of 35 such groups in New England and eastern New York. People representing these 35 groups were contacted by phone and e-mail and invited to participate in an online survey by July 1, 2009. People representing 23 groups took the survey between May 14 and June 19, 2009. We were most interested in their membership, missions, and activities. Five groups were removed from consideration: three because they were no longer active, one because it was a statewide biodiversity initiative, and one because it was being led by one of the authors. After the in-person interview process had begun, researchers learned of and added two more partnerships, for a total of 20. We interviewed the coordinator or other leader for each of these partnerships. Structured interviews took place between Dec. 7, 2009, and Mar. 8, 2010, and lasted between 60 and 120 minutes each. Seventy-four interview questions focused on partnership history, activities, partners/partnership, conservation vision/planning, funding, communication, and needs. We categorized all of the interview responses using the constant comparative technique (Glaser 1965) and generated data for 45 variables (see Harvard Forest 2012). These data were used to describe the key characteristics of RCPs in the areas of partnership initiation, establishment and growth, organization and design, membership, host partner capacity, partnerships' regions, and conservation activities. The organization providing critical financial support to the RCP, which might include employing the current coordinator, is considered the host partner in our study. Note that the scope of our study did not include delving into decisionmaking processes *per se*. This would be a good next step in terms of follow-up research. Interviewees were told that their data would not be attributed to them or their partnership in the study. Interview responses were cross-referenced when possible. For instance, we checked publicly accessible sources, such as annual reports and websites, to assure that

the values reported in interviews for number of acres protected were accounted for.

To more fully document the growth and characteristics of RCPs and their regions, we collected additional data on 11 variables including number of the host partner's full-time equivalent (FTE) positions (staffing as identified by the host partner organization's office personnel), size of the partnership region (the area within which the RCP partners coordinate activities, typically defined on a map submitted to the researchers by the partnership coordinators or leaders and then measured using GIS), percentage of the partnership region protected from development measured using GIS and a composite protected lands data set developed by Harvard Forest, and size of the host partner organization's territory as identified by information provided on their website, in publications, or by their staff. For example, the territory of a host partner organization that is a statewide land trust would be the total land area for that particular state (for a complete list of the attributes/variables, see Harvard Forest 2012).

Ability of RCPs to Protect Land

We used two separate methods to identify which of the 56 variables were most common to RCPs that had protected land. Overall, 45 variables were derived from interviews and 11 from spatial data sets (including a composite protected land coverage using The Nature Conservancy's SA2009, PAD-US 1.1 [US Geological Survey GAP program], and one developed by Harvard Forest) and other sources (websites, personal communication with host partner organization staff, and others). We found that by December 2009, of the 20 RCPs participating in our study, 10 had protected land as a partnership and 10 had not. We applied grounded theory to the categorical data generated by the interviews and found seven attributes most common to RCPs that protected land (1–7 in Table 1). For each of the 11 continuous variables identified using GIS data sets and other sources, we compared the median values for RCPs that had protected land with values for those that had not and selected five variables that appeared to be most important (variables 8–12 in Table 1) in explaining the ability of an RCP in our study to have protected land by late 2009.

To test whether these 12 attributes, or variables, explained a significant amount of the variation in the success of partnerships as

Table 1. Potentially important attributes relating to protecting land as an RCP.

1. Partnerships with two or more governance structures*
2. Partnerships that have partners that represent municipalities*
3. Partnerships that have partners with access to staffing and funding
4. Partnerships that involve municipalities in conservation planning*
5. Partnerships that have a mapped conservation vision*
6. Partnerships that meet regularly and in-person versus by phone or on an ad hoc basis*
7. Partnerships that coordinate individual actions to raise money instead of through a joint capital campaign*
8. Age in 2009
9. Size of the partnership region in acres
10. Ratio of host partner territory: partnership region*
11. Number of full-time equivalent positions of the host partner
12. Number of municipalities in the partnership region

* Variables included in our regression model.

measured by their protection of land, we ran a logistic regression analysis. With the regression modeling, we chose to model a binary response (i.e., protection or no protection of land) as opposed to a continuous response (i.e., number of acres protected), because half of the partnerships had not protected any land.

A logistic regression model assumes that the predictor variables are not correlated. To check for collinearity between predictor variables, we ran a log-linear model for comparisons between two categorical predictors, calculated point biserial correlation coefficients for comparisons between continuous and categorical predictors and calculated Pearson correlation coefficients for comparisons between continuous predictors. We excluded correlated predictors that had correlation coefficients $r_{x,y} > 0.4$ or $r_{x,y} < -0.4$ based on the general rule of thumb that a relationship between two variables, x and y , exists if $|r_{x,y}| \geq 2/\sqrt{n}$, where n is the sample size (i.e., the number of RCPs) (Newbold et al. 2003, Krehbiel 2004).

The ratio of the host partner's territory to partnership region, size of the partnership's region in acres, age of the partnership, the presence of partners with access to staffing and funding, the presence of a shared conservation vision and map, and the number of FTE positions were correlated according to these criteria. We chose to include host partner's territory to partnership region for two reasons: because we were interested in whether the size of the host partner's ter-

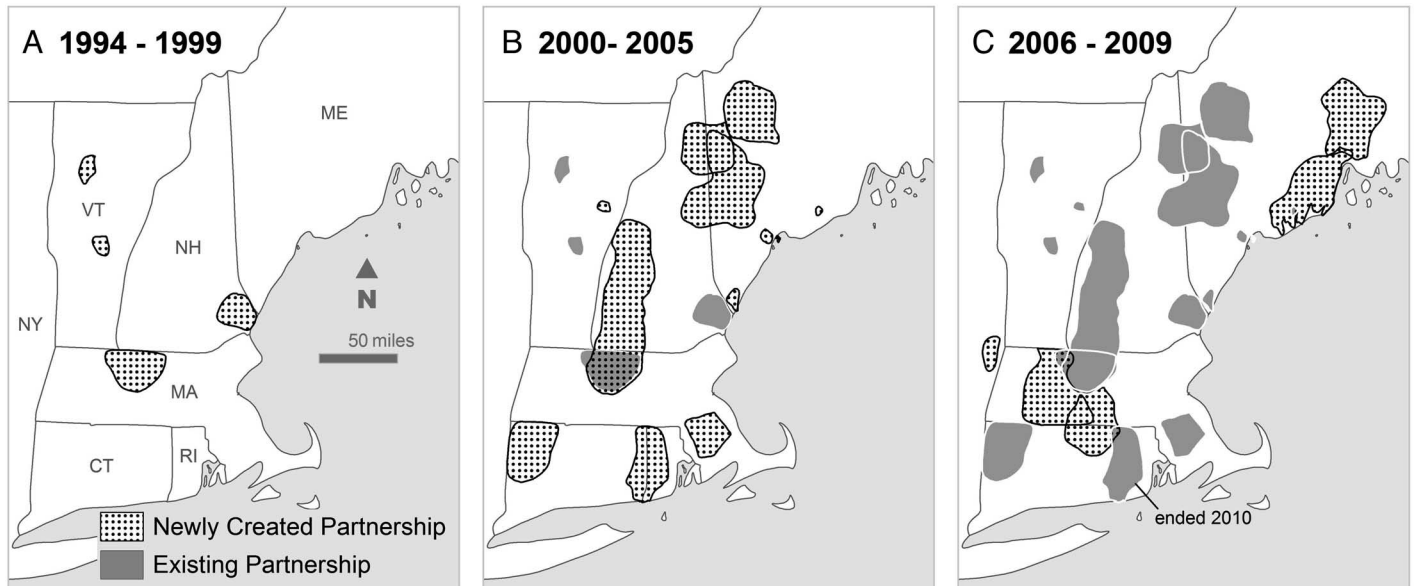


Figure 1. Emergence of regional conservation partnerships in New England (1994–2009).

ritory could be a measure of its organizational capacity and because Williams and Ellefson (1997) suggest that organizational support is an important attribute of successful RCPs. Because these variables are all highly correlated, the ratio of host partner's territory to partnership region may be viewed as a substitute for the size of the host partner's territory, size of the partnership region, the number of FTE positions of the host partner, and the number of municipalities in the partnership region. We also wanted to represent some aspect of the conservation vision in the regression model, so we chose to include "just a shared conservation vision," because it was not correlated with host partner territory to partnership region as was "conservation vision and map." We chose to exclude numbers of municipalities in the partnership region and the size of the partnership region because they were too closely correlated with the seven aforementioned variables that were derived from grounded theory. We chose to exclude age as a predictor because the data suggested that the existence of a partnership over time was itself not a predictor of whether the RCP would protect land. The median age at which RCPs first protected land is 3.1 years, whereas the median age of RCPs that had not protected land is 4.5 years.

In sum, our regression model included 7 of the 12 variables (see the 7 variables designated with an asterisk in Table 1). Our study does not describe the activities that would have occurred without the partnerships, nor does it compare the pace of con-

servation before and after the partnerships became established.

Findings—Growth and Characteristics of RCPs in New England

Partnership Initiation and Growth

Overall, 70% of the 20 RCPs in our study were established by individuals who normally worked within the region. Initiators of the 20 partnerships (may be more than one per partnership) comprised paid staff of nongovernmental organizations (16 partnerships), a federal agency (1 partnership), and volunteers (4 partnerships). Initiators invariably became the designated coordinator for the partnership. In two cases in which partnerships were initiated by individuals, the groups later became tax-exempt, nonprofit corporations under Section 501(c)(3) of the US Internal Revenue Code.

The first RCP was formed by 14 organizations in 1994 (Figure 1) including the New Hampshire chapter of The Nature Conservancy, Society for the Protection of New Hampshire Forests, Trout Unlimited, and New Hampshire Fish and Game Department. The second partnership started in 1997. Twelve years later, there were 20 active partnerships (in our study) involving 214 individual organizations. Some organizations belonged to more than one RCP. More specifically, 12 organizations and agencies participated in at least three part-

nerships between 1994 and 2009. The Nature Conservancy participated in 11 of the 20 partnerships in our study. The Trust for Public Land (TPL) was a member of eight partnerships and one statewide conservation organization, The Trustees of Reservations participated in five of the partnerships. The number of acres followed a similar trajectory. In 2009, the combined territories of partnerships in our study totaled 10,685,783 acres, representing 32% of the land area in forest cover in New England.

Partnership Organization and Design

Fourteen of the partnerships had host partners that were conservation land trusts, including regional land trusts (six partnerships), statewide conservation organizations (three partnerships), state chapters of international conservation organizations (two partnerships), watershed associations that also protect land (two partnerships), and a partnership of three local land trusts (one partnership). Other partnerships had coordinators funded by foundations (two partnerships), a wildlife sanctuary (one partnership), and individuals [two partnerships, both of which later formed a 501(c)(3)]. One of the partnerships, now a 501(c)(3), is also hosted by a business. Another partnership, coordinated by a volunteer, claims not to have a host partner. We were interested in the host partners' total number of FTE positions as a potential measure of their capacity to sustain the partnership over time. FTE

Table 2. Organizational attributes of RCPs.

RCP	Age in yr at time of their interview	No. of partners/organization	Host partner type	Host partner organization's total no. of FTE positions	Most common contribution of strong partners	How RCP partners meet	Governance structures that make decisions in the RCP	Elements of shared vision	Readiness for land protection: conservation vision, map, land protection targets
A1	10	13	SLT	38.25	Money/staffing	Phone/e-mail, Ad hoc	Small cadre	WF, LFA, LC, PS	Vision, map, targets
A2	11	7	SLT	38.25	Money/staffing	In-person, regularly scheduled	Whole RCP	WF, LFA, LC, PS	Vision, map
A3	15	14	SCI	26.43	Money/staffing	In-person, regularly scheduled	Whole RCP, small cadre	Not specified	Vision, map
A4	6	12	F	2.5	Expertise	In-person, regularly scheduled	Whole RCP	WF, RSC	Vision, map
A5	8	9	RLT	2	Expertise	In-person, regularly scheduled	Whole RCP, small cadre, working groups	L, LC	Vision, map, targets
A6	7	19	SLT	41.83	Money/staffing	In-person, regularly scheduled.	Whole RCP	L, LFA, LC	Vision, map, targets
A7	6	4	WA	3	Expertise	In-person, regularly scheduled	Whole RCP, small cadre	LC	Vision, targets
A8	4	10	F	0.5	Expertise	In-person, regularly scheduled	Small cadre, steering committee or board, working groups	LFA	Vision, map, targets
A9	12	22	RLT	14.8	Money/staffing	In-person, regularly scheduled	Whole RCP, steering committee or board	L, LFA, PS	Vision, map
A10	6	5	501(c)(3)	1	Money/staffing	In-person, regularly scheduled	Whole RCP, small cadre	LFA, RSC, PS	Vision, map, targets
B1	1	10	WA	2.5	Expertise	In-person, ad hoc	Whole RCP	L	Vision, map
B2	5	6	SCI	18	Expertise	Phone/e-mail, ad hoc	Small cadre	NV	None
B3	5	3	RLT	1	Expertise	Phone/e-mail, ad hoc	Small cadre	RSC	Vision, map, targets
B4	5	26	WA	10.75	Expertise	In-person, regularly scheduled	Steering committee or board	NR	Vision, map, targets
B5	3	41	NHP	0	Local buy-in	In-person, regularly scheduled	Whole RCP, steering committee or board	NV	None
B6	3	28	WS	10	Expertise	In-person, regularly scheduled	Whole RCP, steering committee or board	LFA, LC	Vision
B7	2	13	RLT	0.5	Expertise	In-person, ad hoc	Whole RCP	NV	None
B8	5	3	3LLTs	1.0	Expertise	In-person, ad hoc	Whole RCP, steering committee or board	WF, L	Vision
B9	4	10	501(c)(3)	0	Money/staffing	In-person, regularly scheduled	Whole RCP	WF, L, LFA, RSC	Vision, targets
B10	6	4	RLT	1.0	Expertise	In-person, regularly scheduled	Small cadre, steering committee or board	NV	None

All information was derived from the case study interviews of 20 partnerships. Partnerships A1–10 had protected land by their interview (2009–2010); B1–B10 had not. Main elements of shared vision: NV, no vision; L, protect lots of land from development; PS, prevent sprawl; LFA, large forested areas; WF, working forestland; LC, landscape connectivity; RSC, rural, scenic character of the region; NR, natural resources conservation. Host partner types: RLT, regional land trust; SLT, statewide land trust; SCI, state chapter of international conservation organization; WA, watershed associations; F, foundations; 3LLTs, three local land trusts; 501(c)(3), individuals, then 501(c)(3); WS, wildlife sanctuary; NHP, no host partner.

values range from 0.0 to 41.8, with a median of 2.5 (Table 2).

Host partners identified the importance of two or more “strong partners” in the partnership. Strong partners are characterized as bringing value to the partnership. The most commonly identified value is expertise in the subjects of conservation, natural resources, land planning, and business. A close second is “money/staffing capacity” (Table 2).

Although only two partnerships are incorporated, half of the informal partnerships use a variety of nested governance structures, including a steering committee and working groups to make decisions (Table 2). Most of the partnerships' members meet in person and at regularly scheduled meetings, although others meet by phone and use e-mail to communicate on an ad hoc basis (Table

2). Although we understand decisionmaking processes to be important, a deeper analysis in this area was beyond the scope of this study.

Partnership Membership

The number of partner groups and agencies range from 3 to 41, with an average of 13 and a median of 10 partners. Ten RCPs had individuals representing municipalities, including local land trusts. Regional conservation partnerships have a wide range of member affiliations, although there are a few common partner types. For example, 80% of the 20 partnerships in our study include regional land conservation trusts, and 75% include statewide conservation organizations (Figure 2).

At least half of the partnerships include national organizations, state chapters of an international organization, and watershed/river associations. Local land conservation trusts are members of only 40% of the RCPs, and fewer still include people representing state agencies. However, in terms of people participating, the top four partner categories are, in order: regional land conservation trusts, local land conservation trusts, statewide conservation organizations (e.g., Vermont Land Trust and Massachusetts Audubon), and watershed/river associations.

Partnerships' Regions

We were interested in understanding the diversity of regions within the 20 partnerships included in our study, including

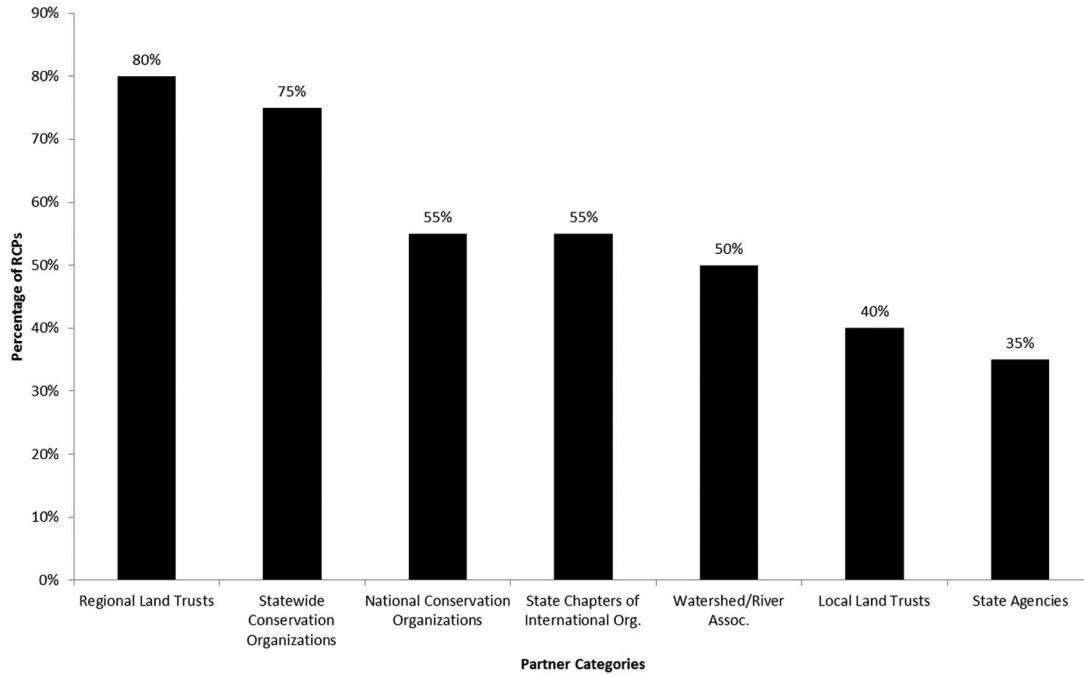


Figure 2. Most common partner categories and the percentage of regional conservation partnerships with members in each.

Table 3. Land protection attributes of the RCPs in our study.

RCP	Size of RCP region (acres)	No. of acres protected in RCP region	No. of acres protected by the RCP by 2009	Percentage of the region protected by RCP	Percentage of the region's protected acreage protected by RCP	Age of partnership when conservation effort began (yr)	Years of land protection activity	Average no. of acres protected/yr
A1	85,800	34,252	8,000	9.3	23	4	6	1,333
A2	68,900	11,344	9,807	14.2	86	3	8	1,226
A3	280,100	46,163	5,000	1.8	11	1	14	357
A4	598,800	123,814	26,500	4.4	21	4	2	13,250
A5	49,900	10,399	2,600	5.2	25	3	5	520
A6	1,896,700	431,391	15,960	0.8	4	6	1	15,960
A7	11,900	647	600	5.0	93	2	4	150
A8	332,600	40,051	1,500	0.5	4	4	<1	1,500
A9	504,500	163,008	14,755	2.9	9	1	11	1,341
A10	28,100	5,400	5,400	19.2	100	3	3	1,800
Average				6.3	38	3.1		3,744
Median				4.7	22	3.0		1,337

All acreage figures, except the number of acres protected by the RCP, were determined using geographic information systems and data sets that included data layers from three sources: The Nature Conservancy's SA2009 protected lands layer; PAD-US 1.1 developed by the US Geological Survey GAP program, May 2010; and Harvard Forest, Harvard University's database for New England. RCPs B1–B10 had not protected land as a partnership by 2009 and so are not listed here.

their size, coverage of portions of one or two states, numbers of municipalities, and percentage of the region already protected from development. The partnerships' regions varied greatly in size, ranging from 11,944 to 1,896,689 acres, with a median of 540,403 acres. These areas are most typically found in one state versus two and comprise portions of 2 to 85 municipalities, with a median of 25. They vary in the share of the land that is protected from development (2.5 to 40% with a median of 23%).

Partnership Conservation Activities

The three main functions that partnerships provided to their partners were (in order

of frequency of occurrence): fundraising; coordinating conservation planning and larger, multi-stakeholder and/or multiparcel land protection projects; and providing conservation services to municipalities (e.g., municipal open space planning and grant writing) and landowners (e.g., assisting with their estate planning and conservation needs). All of the partnerships in our study include one or more land conservation organizations. Seventy-five percent of the partnerships in our study with a stated mission (12 of 16) include land conservation as one of its main elements.

Seventeen partnerships have a shared vision for their region (Table 1). Fewer (12

partnerships) have a map of their vision and even fewer (9 partnerships) have conservation targets. The top three outcomes sought by these partnerships are, in order: large, contiguous forested areas; protection of a lot of land; and greater connectivity of protected lands.

All of the RCPs in our study are working to conserve land from development, but as of December 2009 only 10 of them had succeeded in doing so (Table 3). We define "protecting land as a partnership" to include land that was protected through actions of the coordinator of the partnership in collaboration with other partners and of partners working in coordination. These 10 partner-

Table 4. Size of the host partner territory, the RCP region, and the ratio of the host partner territory to the RCP region.

RCP	Host partner territory (thousands of acres)	RCP region (thousands of acres)	Ratio of the host partner territory to the RCP region*
A1	6,200	85.8	72.3
A2	6,200	68.9	90.0
A3	5,700	280.1	20.4
A4	22,646	598.8	37.8
A5	37	49.9	0.7
A6	5,700	1,896.7	3.0
A7	68	11.9	5.7
A8	1,743	332.6	5.2
A9	454	504.5	0.9
A10	1,513	28.1	53.8
B1	205	860.7	0.2
B2	777	576.3	1.4
B3	203	717	0.3
B4	1,247	641.2	1.9
B5	0	898	0.0
B6	6	692.7	0.0
B7	157	975.3	0.2
B8	36	36	1.0
B9	121	120.9	1.0
B10	119	1,310.2	0.1

Acreages were determined from GIS analysis and from publicly accessible sources.

* Example: Ratio of the host partner's (e.g., state land trust) territory (8,000,000 acres) to the RCP region (500,000 acres) would be calculated by dividing 8,000,000 by 500,000, which would equal 16.

ships protected from 600 acres to 26,500 acres, representing between 0.5 and 19.2% of the partnerships' regions. Although two partnerships began protecting land within their first year, on average it took them 3.1 years (Table 3). The median acreage per year protected is 1,337 acres.

Although 16 of the 20 partnerships in our study had raised at least \$10,000 for conservation purposes, 8 had raised more than \$1 million in total funding. Five had raised at least \$500,000 for every year they had been in existence.

We were curious whether the territories of these host organizations (in RCPs 1A–10A; Table 3) were significantly larger than their partnerships' regions, and whether this played a part in protecting land. Comparing the size of the host partner's territory (in acres) with the size of the partnership region, expressed as a decimal, produced a range from 0.0 to 90.0 with a median of 1.2 for all the RCPs (Table 4). The "0" values resulted from two cases: a volunteer is the host partner and a host partner organization with a very small territory (6,000 acres) hosts a partnership with a relatively large region (692,700 acres). The figure, 90.0, results

from an RCP with a territory of 86,000 acres having a statewide land trust as its host partner. Inspection suggests that the RCPs that succeeded in protecting land tended to have a much larger host partner territory than RCP region, whereas the RCPs that had not protected land tended to have a large RCP region compared with the territory of the host partner organization. This is an issue to which we return later in the article.

Table 5 shows key characteristics of RCPs organized by whether they had or had not protected land based on the interview results and other data as described in our Methods section. In comparison with RCPs that had not yet protected land, those that had were generally older, had a mapped conservation vision, had in-person, regularly scheduled meetings, had smaller partnership regions with fewer municipalities and a host partner with staffing capacity, and had a territory equal to, if not larger, than the partnership's region overall. This comparison forms the basis for our regression analysis that is presented in the next section.

Findings: Regression Analysis—Ability of an RCP to Protect Land

Our second research goal is to identify the statistically significant variables that would predict whether the RCP would have protected land or not by 2009. Based on the attributes presented in Table 5, we ran a logistic regression analysis to test whether these 12 attributes explained a significant amount of the variation in whether the RCP protected land. As is described in the Methods, of the 12 attributes listed in Table 5, 7 were included in the final analysis (Table 6). Of the 7 attributes included in the final logistic regression analysis, the ratio of the host partner territory to the partnership region and whether or not the partnership had regularly scheduled meetings were significant predictors of land protection by partnerships (Table 6).

Discussion and Conclusions

The literature suggests that regional conservation planning is very difficult, given the many different owners and jurisdictions involved (Wolf and Hufnagl-Eichiner 2007, McKinney and Johnson 2009, McKinney et al. 2010). Our study supports this suggestion, but finds that RCPs, at least in New England, are growing in numbers and can be

effective for conserving land. RCPs serve multiple purposes, such as coordinating among the various groups in the region and allowing them to leverage funding and staffing. However, their essential mission is the same—protect more land from development.

In this research, we sought to learn more about these RCPs and find out what best enables land protection. Most studies of regional cooperation have taken the perspective of those who do the cooperating. However, there is no guarantee that what organizers think contributes to their success is the same as what external observation will reveal. In our study, we investigated their perspectives but also tested organizational design for statistically significant influences on land protection. Our results showed only two statistically significant factors: organizational design and partnership geography.

Our study supports previous research findings (e.g., Williams and Ellefson 1997) that organizational support is essential to success. In particular, our findings point to the importance of choosing a host partner organization well-matched to a partnership's region, with staffing and a shared geography. Partnerships that meet regularly and in person and take advantage of governing bodies, such as steering committees, are more likely to protect land within 6 years than those that do not. These organizational design attributes require staffing capacity. Presumably these attributes also help RCPs to coordinate their conservation-related activities to connect large blocks of land across regional landscapes more effectively than those partnerships that are less well-organized.

However, when it comes to the 20 RCPs in our study, geography combines with capacity in unique ways. An RCP is more apt to protect land sooner if its host partner organization's territory is equal to, if not larger than, that of the partnership region. This relationship between the two areas (host partner territory and partnership region) is shown to be a statistically important metric for the capacity of an RCP to protect land. One explanation for this is that host partner organizations with territories smaller than that of the partnership region (or those short of staff) will require more time to develop the capacity for effective coordination of both fundraising and land protection activities across a region larger than their own territory.

When they share their geography, the

Table 5. Characteristics of RCPs that had protected land or not by 2009.

	RCPs that had protected land by 2009	RCPs that had not protected land by 2009
Percentage of partnerships with two or more governance structures*	60	40
Percentage of partnerships that have partners that represent municipalities	60	40
Percentage of partnerships that have partners with access to staffing and funding	60	10
Percentage of partnerships that meet regularly and in-person versus by phone or on an ad hoc basis	90	40
Percentage of partnerships that involve municipalities in conservation planning	40	10
Percentage of partnerships that have a mapped conservation vision	90	30
Percentage of partnerships that coordinate individual actions to raise money instead of through a joint capital campaign	50	10
Median age in 2009 (yr)	7.5	4.5
Median size of the partnership region in acres	182,950	704,850
Median ratio of host partner territory: partnership region (expressed as a decimal)	13.05:1	0.26:1
Median number of full-time equivalent positions of the host partner	14.8	1.00
Median number of municipalities in the partnership region	10.5	31.5

* See Table 1 for a list of the different governance structures used by RCPs. Percentages represent the number of RCPs out of 10 (A1–A10 and B1–B10) that possessed a particular characteristic.

Table 6. Results of logistic regression analysis.

Variable	df	SS	MS	F	P
Ratio of the host partner territory to partnership region	1	1.4635	1.4635	10.415	0.00726*
Partnership involved towns in conservation planning	1	0.2067	0.20676	1.471	0.24848
Two or more governance structures	1	0.1625	0.1625	1.156	0.30337
Shared conservation vision	1	0.01761	0.1761	1.253	0.28480
Partners represent municipalities	1	0.0198	0.0198	0.141	0.71409
Regularly scheduled meetings	1	1.0855	1.0855	7.725	0.01667*
Coordinate individual actions to raise money to protect land	1	0.1996	0.1996	1.420	0.25642
Residuals	12	1.6863	0.1405		

* Significant predictors of whether or not a partnership protected land.

host partner has much to gain from fostering activities throughout the entire partnership region, including the potential for engaging and attracting state and federal personnel and resources and in leveraging local, private, and municipal investments in activities that support their own mission and that of the RCP. Such an arrangement will mean greater conservation outcomes earlier in the life of the partnership and potentially result in a more sustained effort over time.

Literature Cited

CORBIN, J., AND A.C. STRAUSS. 2008. *Basics of qualitative research: Grounded theory procedures and techniques*, 3rd ed. Sage, Thousand Oaks, CA. 378 p.

FOSTER, D.R., AND J.D. ABER. 2004. *Forests in time: The environmental consequences of 1,000 years of change in New England*. Yale University Press, New Haven, CT. 477 p.

GENSKOW, K. 2009. Catalyzing collaboration: Wisconsin's agency-initiated basin partnerships. *Environ. Manage.* 43:411–424.

GLASER, B.G. 1965. The constant comparative method of qualitative analysis. *Soc. Probl.* 12(4):436–445.

HAMIN, E.M. 2001. The US national park service's partnership parks: Collaborative responses to middle landscapes. *Land Use Policy* 18(2):123–135.

HAMIN, E.M., AND D.J. MARCUCCI. 2008. Ad hoc rural regionalism. *J. Rural Stud.* 24(4): 467–477.

HARVARD FOREST. 2012 *Data archive*. Available online at harvardforest.fas.harvard.edu/data-archive; last accessed Dec. 15, 2012.

INNES, J.E. 2006. Collaborative Regional Initiatives: Civic Entrepreneurs Work to Fill the Governance Gap (with Jane Rongerude), Insight. James Irvine Foundation and Institute of Urban and Regional Development, Working Pap. 2006–04, University of California Berkeley. 35 p.

KLOSOWSKI, R., T. STEVENS, D. KITTREDGE, AND D. DENNIS. 2001. Economic incentives for coordinated management of forest land: A case study of southern New England. *For. Policy Econ.* 2(1):29–38.

KOONTZ, T.M., T.A. STEELMAN, J. CARMIN, K.S. KORIMACHER, C. MOSELEY, AND C.W. THOMAS. 2004. *Collaborative environmental management: What roles for government?* Resources for the Future, Washington, DC. 224 p.

KREHBIEL, T.C. 2004. Correlation coefficient rule of thumb. *Decision Sci. J. Innovative Educ.* (2):97–100.

LEACH, W.D. 2006. Theories about consensus-based conservation. *Conserv. Biol.* 20(2):573–575.

LEACH, W.D., N.W. PELKEY, AND P.A. SABATIER. 2002. Stakeholder partnerships as collaborative policymaking: Evaluation criteria applied

to watershed management in California and Washington. *J. Policy Anal. Manage.* 21(4): 645–670.

LUBELL, M., M. SCHNEIDE, J. SCHOLZ, AND M. METE. 2002. Watershed partnerships and the emergence of collective action institutions. *Am. J. Polit. Sci.* 46(1):148–163.

MARGERUM, R. 2008. A typology of collaboration efforts in environmental management. *Environ. Manage.* 41(4):487–500.

MARGERUM, R.D. 2002. Collaborative planning: Building a consensus and building a distinct model for practice. *J. Plan Educ. Res.* 21(3): 237–253.

McKINNEY, M., L. SCARLETT, AND D. KEMMIS. 2010. *Large landscape conservation: A strategic framework for policy and action*. Lincoln Institute of Land Policy Policy Focus Report, Cambridge, MA. 56 p.

McKINNEY, M.J., AND S. JOHNSON. 2009. *Working across boundaries: People, nature, and regions*. Lincoln Institute of Land Policy, Cambridge, MA. 176 p.

NEWBOLD, P., W. CARLSON, AND B. THORNE. 2003. P. 63 in *Statistics for business and economics*. Prentice Hall, Upper Saddle River, NJ.

PETERSON, M.N., M.J. PETERSON, AND T.R. PETERSON. 2005. Conservation and the myth of consensus. *Conserv. Biol.* 19(3): 762–767.

RCP NETWORK. 2013. *Wildlands & woodlands: A vision for the New England landscape*.

- Available online at <http://wildlandsandwoodlands.org/rcpnetwork>; last accessed July 17, 2013.
- SCHAEFFER, P.V., AND S. LOVERIDGE. 2002. Toward an understanding of types of public-private cooperation. *Public Performance Manage. Rev.* 26(2):169–189.
- SCHUETT, M.A., AND S. SELIN. 2002. Profiling collaborative natural resource initiatives and active participants. *North. J. Appl. For.* 19: 155–160.
- STEIN, S.M., R.E. MCROBERTS, R.J. ALI G., M.D. NELSON, D.M. THEOBALD, M. ELEY, M. DECHTER, AND M. CARR. 2005. *Forests on the edge: Housing development on America's private forests*. USDA For. Serv., Gen. Tech. Rep. PNW-GTR-636, Portland, OR.
- THOMPSON, J.R., W.F. ELMENDORF, M.H. McDONOUGH, AND L.L. BURBAN. 2005. Participation and conflict: Lessons learned from community forestry. *J. For.* 103:174–178.
- WILLIAMS, E.M., AND P.V. ELLEFSON. 1997. Going into partnership to manage a landscape. *J. For.* 95(5):29–33.
- WOLF, S.A., AND S. HUFNAGL-EICHNER. 2007. External resources and development of forest landowner collaboratives. *Soc. Natural Resources* 20(8):675–688.
- WONDOLLECK, J.M., AND S.L. YAFFEE. 2000. *Making collaboration work: Lessons from innovation in natural resource management*. Island Press, Washington, DC. 280 p.