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**NATURAL GAS LANDOWNER COALITIONS IN NEW YORK STATE:
EMERGING BENEFITS OF COLLECTIVE NATURAL RESOURCE
MANAGEMENT**

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ABSTRACT

Thousands of rural landowners in New York State have joined together to form grassroots organizations aimed at collectively bargaining with natural gas companies. The leverage afforded by acting collectively allows these landowner coalitions to potentially influence the economic, environmental, and community impacts of gas development across hundreds of thousands of acres. In-depth interviews with coalition leaders conducted for this article reveal the scope, motivations, and benefits of membership in these groups. Our work examines these elements using multiple frameworks for understanding collective natural resource management. The coalitions are primarily concerned with the advancement of private member benefits, while public benefits of the collective action are poised to accrue indirectly. Group leaders are also contemplating how to use their leverage to secure direct benefits for the wider community – actions that may give communities a modicum of local control over gas development.

New types of energy development emerging across the rural United States – such as wind, unconventional natural gas, and biofuels – primarily depend on large swaths of contiguous land that is often owned by many individual landowners (Franklin et al. 2010). The potential for collective action among these landowners during the development process offers an array of implications for rural communities, environmental landscapes, and domestic energy production. Along the southern border of central New York State, in an area known as the Southern Tier Region, rural landowners have formed grassroots organizations aimed at collectively bargaining with natural gas companies over the terms of development leases in the Marcellus Shale natural gas formation. As of early 2011, these organizations – calling themselves landowner coalitions – have grown to claim more than 800,000 acres of rural landscape owned by more than 20,000 landowner-members, a sum that equals more than 20 percent of the land within this region (JLCNY 2010).

With the initial goal of securing financial benefits for their members, these coalitions – largely consisting of, and voluntarily led by, rural landowners – have

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inadvertently become the de facto managers of natural resource development across vast and largely contiguous landscape scales. Besides setting rates of compensation, the leases these groups negotiate with energy companies serve as legally-binding operating agreements that can influence environmental and community outcomes. The traditional practice is for representatives (called landmen) from one or more energy companies to approach individual landowners in a “seller beware” transaction where the landowner is typically the less knowledgeable party (NYSAG 2008). The coalition phenomenon, in contrast, offers the prospect of increased landowner agency by turning this process into a much more uniform action that is centrally negotiated and managed by groups of local landowners.

This article describes the organization and emergence of these landowner coalitions in New York State and interprets them using existing frameworks of collective natural resource management. Although coalitions or associations are known to exist in other natural gas development areas such as Texas or Pennsylvania (Smith 2010), the landowner coalition movement in New York – while still very new – appears to be much larger and better organized. In 2008, pending a supplement to the existing New York State Generic Environmental Impact Statement (GEIS) for natural gas drilling, state regulators suspended critical natural gas development activities in the Marcellus Shale formation during the very height of land speculation and drilling interest (Office of the Governor, State of New York 2008). While drilling has increased dramatically in neighboring Pennsylvania, the stop in development in New York caused by the review has provided an opportunity for the coming-together and evolution of these groups. The vast acreages and higher economic stakes associated with the Marcellus Shale have helped to make collective negotiation an attractive option for landowners and the regulatory “time-out” has allowed some of these groups to transform into organized institutions aimed at providing landowner education and agency, political advocacy, and environmental management. Although uncertainty remains, state regulators expect the review to be completed and drilling permits to be issued again sometime in 2011 (Goldberg 2010).

Importantly, landowner coalition groups are operating in a local-level power vacuum. New York State has a long tradition of home rule that empowers municipal decision making; however, it is similar to other states in that it exempts such local authority in the case of oil and natural gas development (New York State 2010). As in many states, local municipalities in New York lack the capacity to exclude gas development through local land use regulations, and therefore lack the capacity to gain economic, social, and ecological concessions from energy firms (Kenneally and

Mathes 2010). Previous research into energy-impacted communities has shown that local municipalities are often required to provide a rapidly increased level of infrastructure and services during development phases while new sources of revenue are not equal to these costs (Gilmore 1976; Markussen 1978; Jacquet 2009).

Through local ordinance, or the leverage afforded by large landowners, communities in other energy contexts have sometimes been successful in negotiating with energy developers for public socioeconomic and environmental benefits, such as school and police facilities construction (OIA 1988), per-well payments to environmental mitigation funds (USDOJ 2008), pace of development controls (Butler and Nelson 1994), and economic compensation (Peelle 1978). Some leaders have looked to the contractual leverage provided by the sheer scale of landowner coalitions as a proxy to municipal or community-based regulation of natural resource development, as the groups may hold the potential to exert greater influence over development than state regulators or local municipalities.

COLLECTIVE RESOURCE MANAGEMENT FRAMEWORKS

The use of collective action to economically leverage private natural resource development is certainly not new, and well-known examples include agricultural cooperatives (Knapp 1963), forest cooperatives (Kittredge 2005; Wolf and Hufnagel-Eichiner 2007), and common pool natural resource management organizations (Ostrom 1990). Several similarities between the landowner coalitions and forestry or agricultural cooperatives can be identified; the most critical of which – building from Olson (1965) – emphasizes the maximization of the individual outcomes of members, rather than a focus on the improvement of public goods. However, as with cooperatives, public goods may still emerge from the process, despite intent.

Emerging landowner coalition traits can also be compared with a framework of community-based natural resource management (CBRM). Much has been written and debated regarding the emergence and effectiveness of CBRM in the United States and abroad, with examples ranging from community forests to collective watershed management (Baker and Kusel 2003; Griffin 1999; Kellert et al. 2000; Stedman et al. 2009). CBRM is useful in this analysis as it offers a cooperative resource management framework that clearly moves beyond strictly “members-only” benefits to provide benefits for the public-at-large; but how the current and future activities and goals of the New York State landowner coalitions fit within a CBRM framework is as unclear as it is intriguing.

While case studies of collective action to manage natural resource development continue to accumulate, a paucity of analysis has been noted regarding collective

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action that involves disparate actors across landscape-scales (Goldman, Thompson, and Daily 2007; Meinzen-Dick, DiGregorio, and McCarthy 2004; Poteete and Ostrom 2004). We utilize the provision of public goods in addition to member benefits as a potential bridge between a strict cooperative model and a CBRM framework. Specifically, our research examines: (1) the purposeful action toward public benefits by the coalitions; (2) the accrual of public benefits as an unintentional byproduct of their actions; and (3) the potential for progressive unfolding/expansion of these larger benefits over time. This article does not argue the merits of natural gas drilling, but it does indirectly compare the prospect of wide-scale natural gas development organized collectively by landowner coalitions to the scenario of wide-scale natural gas development that is privately negotiated with individual landowners.

THE MARCELLUS SHALE AND NATURAL GAS DEVELOPMENT IN NEW YORK STATE

The Marcellus Shale is a massive Devonian period sedimentary rock formation that stretches across the mid-Atlantic region from northern West Virginia through much of Pennsylvania and into the Southern Tier of New York State (see Figure 1) (Soeder and Kappel 2009). It is called an unconventional shale play – similar to the Barnett Shale in Texas or the Haynesville Shale in Louisiana—as the gas is trapped in microscopic pores within the formation instead of in a large gas pool as is found in “conventional” gas development. To exploit the small pores of gas, the well bore is drilled horizontally underground for a distance of several thousand feet and a mixture containing millions of gallons of water, sand, and chemicals is pumped at an extremely high pressure into the formation (a process called hydrofracturing) to create artificial fractures that connect these microscopic gas-bearing pores and allow the gas to flow through the well and up to the surface (Soeder and Kappel 2009). To fracture the maximum amount of shale formation, several horizontally-drilled wells can be drilled from a single surface location, and the well bores are methodically placed so that an underground carpet of well bores and fractures perforate a large portion of the formation. This technique, when compared with traditional extraction techniques, has been viewed as more akin to a manufacturing process (Farey 2010). While these advancements in well drilling and stimulation techniques have led to a reclassification of unconventional shale formations such as the Marcellus as economically recoverable, the array of

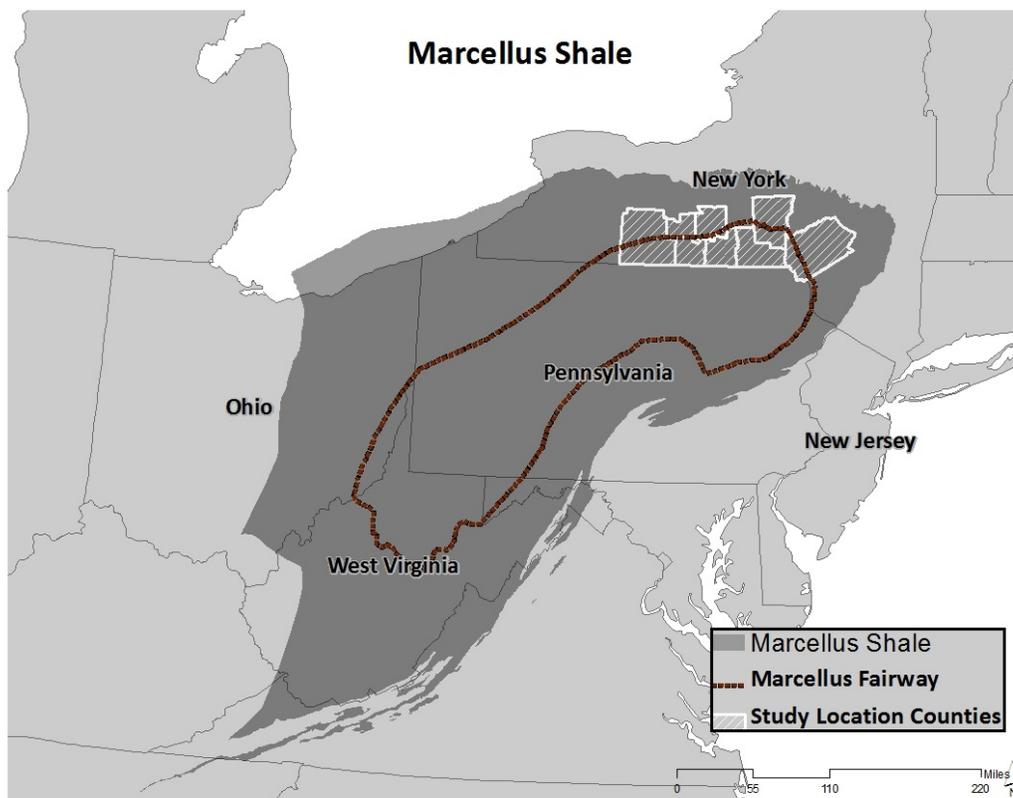


FIGURE 1. THE MARCELLUS SHALE REGION. FIGURE BY JEFFREY JACQUET.

horizontal wells presents a logistical challenge that requires obtaining subsurface drilling rights from many different property owners.

The high natural gas commodity prices of the mid 2000s and revised geological estimates of the total amount of recoverable gas in the Marcellus Shale have further incentivized development. Some estimates have predicted as much as 500 trillion cubic feet of recoverable natural gas in the Marcellus Shale, which would place the field among the largest on the planet (Englander 2009; Greico 2008). Much of the gas company interest has recently centered on a geologically attractive central swath of Pennsylvania called “the fairway” which reaches into the Southern Tier of New York State. While development of the Marcellus Shale began in West Virginia and southwest Pennsylvania as early as 2003, interest in developing the resource

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in the fairway areas of northern Pennsylvania and New York State did not materialize until late 2007 (Harper 2008).

New York State has a long history of natural gas development, as the first commercial natural gas well was developed in 1825 in Fredonia, NY and gas storage operations exist along the southern border of the state (NYSERDA 2010). Several conventional natural gas fields have been developed in New York over the last 185 years and in 2008 there were more than 13,000 active wells that produced more than 50 billion cubic feet of natural gas (NYDEC 2010a; 2010b). However, the vast majority of this development was small in scale and intensity, and the wells were conventionally drilled and operated by locally-owned energy firms that paid modest royalties and leasing bonuses. This historical drilling activity has largely occurred in areas not currently facing Marcellus Shale development, although leasing activity has been commonplace throughout the Southern Tier for decades. Much of this leasing activity was highly speculative in nature, performed before development of the Marcellus Shale was thought to be feasible, and thus was negotiated for very low rates of compensation. An analysis of publically available information found that between 40 and 60 percent of land in the Southern Tier has been leased; however, given that the term of a lease is typically five years in duration and little new leasing has occurred since 2008, most leases will have reached expiration within the next few years (MAPTC 2011).

In contrast to historical activity, the Marcellus Shale offers the prospect of large national and international energy firms conducting intensive and industrial modern natural gas development across large swaths of southern New York. Such development can give landowners much larger leasing and royalty payments than previously received from conventional gas drilling, as well as the potential for much larger-scale environmental and community disruptions.

COLLECTIVE NATURAL RESOURCE MANAGEMENT

The Cooperative Model

The economic and ecological benefits of coordinated forest management among smaller private landowners have long been espoused by foresters and other landscape managers in the United States (Stoddard 1961; 1964). However, despite wide-scale implementation among forest owners in other countries, the practice is not widespread within the United States (Kittridge 2005). However, there has been an increased interest in coordinated forestry in recent years, and case studies highlight functional forestry cooperatives (Schulte, Rickenbach, and Merrick 2008). The now-defunct Sustainable Woods Cooperative – a venture in southwestern

Wisconsin that leveraged the local cooperation of more than 150 landowners for favorable harvesting practices and the cooperative ownership of lumber production facilities – is among the high profile examples (Gaskill 2003).

We view forest cooperatives as perhaps more analogous to the landowner coalitions than agricultural cooperatives given the forest cooperatives' often informal organizational structures and focus on natural resource extraction. The inhomogeneous organizational structures of the forest cooperatives can range from loose alliances of volunteer landowners that do little more than coordinate timber sales to formally staffed organizations that centrally produce and market upscale timber products (Gass et al. 2008; Klosowski et al. 2001). Moreover, the motivations of these groups can range from pure economic leverage, to strict ecological conservation, to the social benefits produced through community interaction (Rickenbach 2006a).

However, it has been noted that the vast majority of forest cooperatives are fundamentally businesses (Rickenbach 2006b:27), formed to advance the outcome of individual members and not the benefit of common goods or society as a whole (Tiles et al. 2004). Rickenbach (2006a) succinctly noted “(c)operatives are effective when they meet the needs of the members,” and as such, membership in these forest cooperatives is reserved to the property owners, and community benefits are left to accrue only indirectly. The community benefits of the larger cooperative model have been noted, including the benefit of increased social capital (Merrett and Walzer 2004), and the retention of value-added business in the local community (Fulton and Anderson 2001). Nadeau and Wilson (2001) show that cooperative ventures can be effective in producing social and economic benefits to the larger community, although these benefits typically accrue as a byproduct of increasing benefits to cooperative members.

Community-based Resource Management

CBRM has emerged in recent years in a spate of great enthusiasm around the potential for locally-based management of forests (Baker and Kusel 2003), wildlife (Agrawal and Gibson 1999), and fisheries (Hviding and Baines 2008). Although Bradshaw (2003) has sounded some crucial cautionary notes, based on the credibility and capacity of communities to effectively manage their own resources, the general tide of management strategy has been toward the greater devolution of state power to the local level. Kellert et al. (2000) offered several core principles of CBRM. Briefly, these emphasize greater involvement of local community members in decision making and the devolution of power from more centralized authorities.

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CBRM also involves the joint consideration of environmental and socioeconomic objectives and outcomes. Finally, CBRM emphasizes local knowledge and tradition, as expressed (for example) in local property rights and traditional values.

The success or failure of CBRM is based on, according to Kellert et al. (2000), the equitable distribution of benefits across a wide range of community members and the empowerment of community members (including the ability to effectively engage in conflict resolution and increased production and widespread distribution of knowledge and more sustainable use of resources). In our case, the existence of a community-level power vacuum, as described earlier, matters a great deal; as communities are unable to invoke the powers of home rule to either exclude all together or dictate the terms of leasing arrangements, the possibility increases that these groups of individual landowners may serve as one of the very few available avenues of community control over this resource development.

PROJECT LOCATION

The Southern Tier region of New York is located just north of Pennsylvania, part of the High Allegheny Plateau consisting of rolling hills and valleys primarily forested (more than 65 percent) with mixed hardwoods (NYSDEC 2006). Like much of the northeastern United States, the area is experiencing a trend of afforestation as agricultural use declines (NYSDEC 2010c). New York State has recognized the Southern Tier region as important for its biological diversity, especially regarding small-acreage wetlands, forests, and habitat for a broad range of taxa, and has identified large-scale forest management planning to be one of the biggest challenges facing the ecology of the region (NYSDEC 2006).

The Southern Tier is often considered part of the post-industrial Rust Belt, and has largely suffered from poor economic conditions during the latter half of the twentieth century (Thomas and Smith 2009). The region is known for its high levels of population loss among the already struggling northeast United States (McGranahan and Beale 2002). It typically rates below average regarding economic indicators such as rates of employment and Gross Domestic Product (NYSCAA 2010; Abel and Dietz 2008). The U.S. Census Bureau (2010) estimates the population of the eight Southern Tier counties studied in this paper (see Figure 2) to have decreased by nearly 31,000 residents, or about 6 percent, between 1990 and 2009. The region also contains one of the highest percentages of elderly persons in the United States, with persons aged 65 or older comprising 30 percent of the population in Broome County (He et al. 2005).

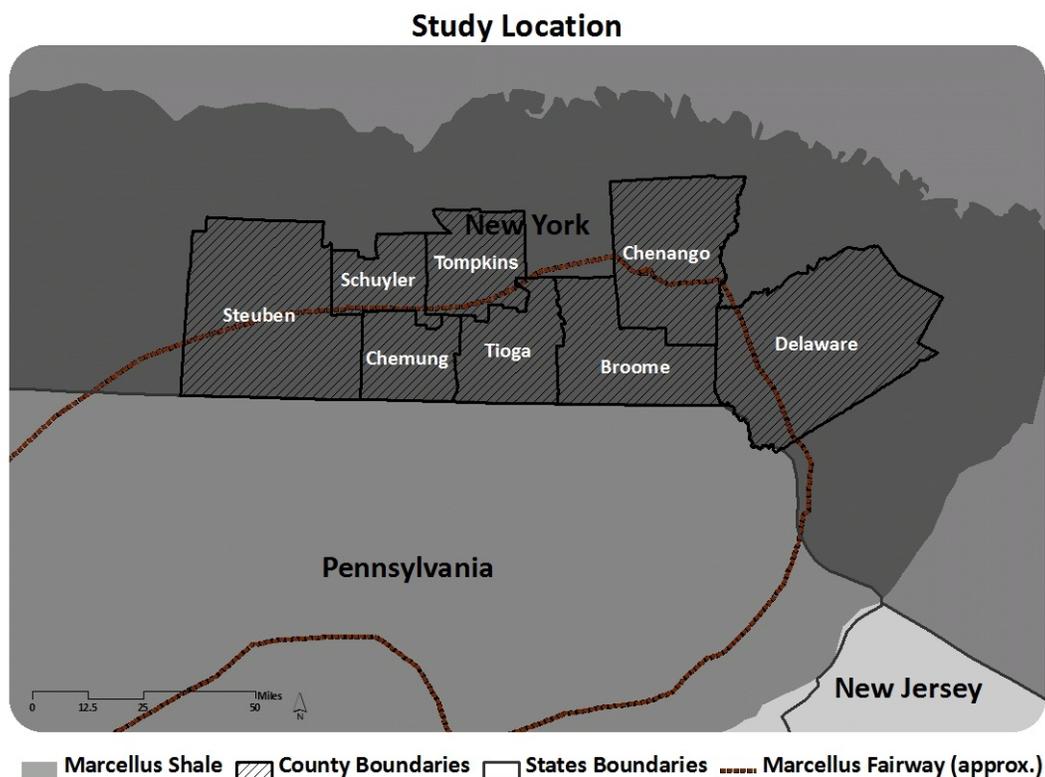


FIGURE 2. THE SOUTHERN TIER REGION OF NEW YORK, WITH THE COUNTIES THAT CONTAIN LANDOWNER COALITIONS EXPLORED IN THIS STUDY. CREATED BY JEFFREY JACQUET.

RESEARCH QUESTIONS

In this research, a primary goal was to obtain a better characterization of the coalition phenomenon, including the time lines of emergence, the numbers of organizations, membership and organizational attributes, and the sizes of acreages held. Our overarching inquiry considers the possibility of landowner coalitions as moving from a model that emphasizes member benefits to one that attempts to gain benefits for the public at large. Specifically, we asked three sets of questions:

- What types of benefits are emphasized or de-emphasized (e.g., environmental health, economic prosperity, social well being, etc.)? A related key question is

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“for whom” are these benefits intended? Does the “community” only include members of the coalition? How are these boundaries related to the particular outcomes being considered?

A second set of questions involves the potential for indirect benefits.

- Do we have the sense that—regardless of intent—there are indirect community benefits of these lease negotiations? As with above, we ask which sorts of outcomes are most likely and for whom?

Thirdly, we engage the prospect of change over time:

- What do we envision as the future of these groups? If certain outcomes are not currently being realized, may these groups move to realize them in the future? What are the barriers and opportunities for such movement to occur?

METHODOLOGY

In the spring of 2010, we performed interviews with the principal organizers or leaders of each of the twelve larger or more active landowner coalitions in the state. In addition, a small focus group was performed with four leaders of two late-emerging coalitions that were starting to organize by mid-2010. The interview subjects were selected to represent the entire geographical area broadly (each of the eight counties considered in this study were represented by at least one interview subject). Most of the interview subjects were retired or semi-retired landowners with a long history of residence in the area, although two of the interview subjects were agricultural or county educators, and one subject was a legal consultant working with several coalitions. Given the emergent nature of the coalitions – and our focus on organizational history and goals – we determined that coalition leaders and/or organizers were best suited to provide these data, as they had been present since the beginning of the group organization and participate in nearly all group activities. Sixteen participants represented the leadership of nearly all of the largest coalitions in New York State.

All of the interviews were audio-recorded and transcribed, and each was between approximately 45 minutes and 2 hours in length. They were semi-structured, based on an interview protocol created to reflect the research questions above, focusing on the time lines, motivations, outcomes, and organizational structures of the coalitions and their members. Additional questions were asked

about how the role and goals of the coalitions may change though time, the role the coalitions play in the larger community, and lessons learned from the organizational process. A cross-case analysis of the transcript data was performed, and from these major categories of discussion, themes and sub-themes were identified and organized into a spreadsheet, and quotes that best represented the breadth and character of these data were culled from the transcripts (Fontana and Frey 2000).¹

RESULTS

Scope of the Coalition Phenomenon

According to coalition websites and other promotional material, at least 35 coalitions exist in the Southern Tier of New York State. In aggregate, these coalitions claim more than 800,000 acres of land owned by more than 20,000 property owners, or an area equal equivalent to approximately 1,125 square miles (JLCNY 2010). By comparison, the entire area of the eight-county region in which they operate is 5,762 square miles, while the approximate area inside that region considered viable for gas drilling may be closer to 3,700 square miles. As such, these coalitions exert considerable influence over a substantial portion of the terrain considered attractive to gas drilling. Through the interviews, the leaders indicated that these figures generally represent landowners who have provided detailed parcel, lease, and contact information to the coalition, but are under no obligation to sign a lease negotiated by the coalition. One coalition leader described this affiliation as “in orbit around the coalition,” while many more untallied landowners are taking a “wait and see” approach to membership (Martin).

The size, scope, and structure of these groups can range widely (see Table 1). The two largest coalitions are informal and volunteer-led organizations found in Steuben and Tioga Counties, claiming approximately 162,000 acres owned by 5,000 owners and 113,000 acres owned by 1,700 owners, respectively (SCLC 2010; TCLG 2010). Both groups have a leader or spokesperson and a central committee of volunteers that coordinates membership and activities. On the other end of the spectrum, some coalitions are formed by a handful of neighboring property owners owning a few hundred acres or by an entrepreneurial local attorney or leasing consultant who is typically paid a per-acre fee upon successful negotiation. Most of the organizations are somewhere between these extremes, with many comprising informal organizations representing tens of thousands of largely contiguous acres.

¹We have attached a pseudonym to the end of each quotation to aid the reader in differentiating the source of the quotation while preserving the anonymity of interviewees.

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Except for one group organized by a leasing consultant, all of the groups represented by our interview subjects were organized and are run by a committee of volunteers. Yet all are affiliated with an attorney or leasing consultant who performs the legal paperwork and negotiates the leasing terms with the energy company for the members. These coalitions require no fee to join, but will require a relatively small per-acre fee to offset the legal costs upon signing a lease with an energy company.

TABLE 1. LANDOWNER COALITIONS REPRESENTED BY INTERVIEW SUBJECTS

NAME	COUNTY	MEM. HHs	MEM. ACRES	YEAR FORMED	LEASE SGD*
Steuben County					
Coalition.	Steuben	5,000 ^a	164,000 ^a	2008 ^c	No
Tioga Landowners					
Group.	Tioga	1,600 ^{+b}	120,300 ^b	2008 ^c	No
Chemung County					
Coalition.	Chemung	1,000 ^{+c}	80,000 ^c	2008 ^c	No
Windsor Coalition.	Broome Broome;	ND ^f	80,000 ^c	2008 ^c	Partial
Deposit Coalition.	Delaware	300 ^d	37,000 ^d	2008 ^c	Yes
Conklin/Binghamton					
Coalition.	Broome	700 ^e	19,000 ^e	2008 ^c	No
Schuyler County					
Coalition.	Schuyler	150 ^c	10,000 ^c	2009 ^c	No
Tompkins County					
Coalition.	Tompkins	80 ^{+c}	ND ^f	2010 ^c	No
Southern Tier					
Landowners					
Coalition.	Tioga; Broome	ND ^f	ND ^f	2008 ^c	No

NOTE: *Lease signed as of February 01, 2011.

SOURCES: ^aSCLC 2010; ^bTCLG 2010; ^cInterview data; ^dWilber 2008; ^eBCLC 2010; ^fThis information has not been publically disclosed

Many landowner coalitions were on the verge of signing leases with energy companies before the state environmental review and the recent economic decline. As of early 2011, most have not yet signed group leases. This is attributed primarily to the decrease in leasing interest, which is expected to be temporary. Much of the groups' strategy and true negotiating leverage has yet to be tested, although a few

of the coalitions in New York have lucrative leases. It is widely expected that once drilling is again allowed, leasing activity in New York will strongly rebound.

Membership in the coalitions is clearly reserved to property owners. However, many coalitions currently have outreach efforts to the broader community. Coalitions organize or sponsor educational seminars that are open to the public on topics ranging from geology to forestry practices to financial literacy presented by a range of municipal, state, academic, and energy company representatives. Dozens of such sessions have been organized by landowner coalitions and serve as among the most influential and comprehensive sources of education on Marcellus Shale-related topics in communities throughout the Southern Tier. Coalition leaders have often become community leaders that interact regularly with local politicians and officials.

Political Advocacy

Another significant development is the recent creation of a statewide umbrella group called the Joint Landowners Coalition of New York that includes the leaders of many individual coalitions, created to share leasing information and negotiation strategies, and for lobbying and advocacy at the state and federal government levels. The group's mission statement reads: "To foster, promote, advance and protect the common interest of the people as it pertains to natural gas development through education and best environmental practices" (JLCNY 2010). While this group will not be signing leases for the totality of coalition acreages, it does serve to aggregate existing human, political, and social capital resources and improve the relative position of these groups. Lobbying and political outreach activities among the coalitions have increased with the environmental review process: blue and green yard signs that read "Friends of Natural Gas NY" have been distributed across the Southern Tier by landowner coalitions, and some groups have helped to organize public demonstrations with a coordinated message of "Pass Responsible Gas Drilling" (which is often memorably summarized with the slogan "Pass Gas"). There are members of the coalitions who have publicly avowed critical views of federal or state government regulation. However, most coalitions appear – at least publically – to favor non-confrontational rhetoric when advocating for the issuance

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of drilling permits.² Further, the central focus and organizing force behind the coalitions appears to remain related to collective lease negotiation.

The Timing of Group Formation

When questioned about the time line of the emergence of landowner coalitions in southern New York State, eight of the interview subjects pointed toward a series of educational presentations held by a handful of agricultural and extension educators during a period between late 2007 and mid-2008, a time when energy company representatives (or landmen) began to aggressively approach landowners to sign energy leases. The purpose of those meetings was to offer information on the leasing process, the process of drilling a natural gas well, and strategies for individually negotiating a natural gas lease. Two organizers said they had been aware of a few small-scale coalitions forming among landowners in Pennsylvania, while others said the rationale to act collectively occurred spontaneously.

One educator interviewed for this study recalled,

We did a meeting down in Delaware County, and a meeting up in Broome County, after getting some calls about landmen showing up...It took a while to realize that you could negotiate and that all your leverage for the most part is your base of property...It was more of a spontaneous thing. I'm trying to think if the word coalition was even used. It was just the idea of working in groups, with your direct neighbors, just for leverage in negotiations. (Emerson)

It was out of these educational meetings that at least three landowner coalitions were formed in the eastern end of the Southern Tier. In May of 2008, the Deposit, NY coalition, comprised of about 300 landowners owning some 30,700 acres of land in Broome and Delaware Counties, used their leverage to sign a 5-year lease with XTO Energy for \$2,411 per acre and a 15-percent royalty. By comparison, the highest rate offered to individual landowners in that area at the time was approximately \$750 per acre and a 12.5-percent royalty, with most landowners receiving much less (Wilber 2008). Many farmers in the Deposit area were literally made millionaires overnight, and news of the deal spread.

²As an example, a recent fund-raising letter from the president of the Joint Landowners Coalition summarized the group's advocacy efforts: "We're the *only* statewide organization that is reaching out to educate people and politicians about the benefits of gas and how it can be safely and responsibly developed" (JLCNY 2011:1, emphasis in original).

Motivations for Membership

It emerged from the interviews that financial incentive for members represented the primary motivation among both members and organizers. This motive was especially strong at the early stages of organization. A coalition organizer from an area several counties away from the Deposit coalition recalled,

Here was a whole bunch of people, landowners, that were being offered \$50-75 an acre, but you started seeing \$2500 an acre with the coalitions. And so I thought, 'Whoa, that's pretty significant.' That's how I got involved....I saw that, gee, this didn't make any sense that the gas companies were not offering fair and equitable prices. So [in] June 2008, I went out to [the local] firehouse and gave a little presentation to some people out there [about starting a coalition]. (Hume)

Another organizer from a different coalition recalled,

I had saw a flier down at a tractor supply store that was announcing an informational workshop down at the [town] auditorium. And by this time, I believe the Deposit coalition, I think it was, had signed. So this was when things really started getting heated up so it was really becoming the idea that if land owners joined together, they could get a better deal....And there were quite a few people in that auditorium that night; there was probably a couple hundred. And it was kind of, "Hey, I think we ought to get together." (Dell)

Soon thereafter, however, the combination of the update to the GEIS and economic decline halted much of the leasing activity. Five of the interviewees indicated that during this time, members expanded their motivations for collective action to include the protection of private property and environmental protection. One organizer noted,

So in the beginning it may have started as, "Let's band together for increased bargaining power." But as it evolved, it became more of "Let's become knowledgeable. Let's work together as a group. Let's keep our resources intact. Let's keep our environment intact. Let's make sure the water is safe." So it switched to a much more comprehensive purpose. (Murphy)

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Another organizer added, “You can almost put money as number two, now. The biggest thing is the protection of private assets and private property, and just the knowledge. Not being taken advantage of and protecting yourself.” (Emerson)

An Emerging Emphasis on Property and Environmental Protection

The environmental protections negotiated by landowner coalitions have the potential to influence natural resource management across vast acreages of New York and thus the environmental public goods over what might occur if the leases were negotiated separately. The leases signed with some coalitions require environmental protections above those required by the New York State DEC (Department of Environmental Conservation) regulations – such as additional water testing; additional buffers from streams, wetlands, or structures; and more stringent reclamation practices – and other coalitions have since investigated additional management strategies that not only go beyond what is required by DEC but include development practices more specifically tailored to the local environment.

The DEC is going to have environmental regulations that will be a minimum requirement. The lease that our groups have created is going to be more restrictive and much more protective of the environment than anything the DEC is doing....because the lease is a legal contract, the gas companies are not going to have the option to choose less stringent environmental regulations. If you acknowledge that drilling is going to happen at some point, the reality is that there will be more environmental protection by landowners getting involved in a coalition, because you have more power to write a more stringent lease. (Dell)

A representative of the Deposit Coalition noted that property and environmental protections included in their lease were critical to the members.

We have in there that, for example, there's distances that they have to stay away from all buildings, I think it's a 500-ft additional buffer. They have to come in and they have to check all the water systems within that area, it's got to be tested before they drill. So if there's any way that these water supplies are harmed in any way, they're going to have to be prepared to fix it. (Newcombe)

Future Roles: "Rolling" Coalitions? Environmental Monitoring?

When asked to predict how the coalitions would operate or expand in the future, especially after a lease is signed, three organizers cited the current mosaic of leased and un-leased properties as a constant source of new members as leases expire in the future.

We organized in the form of what we call a rolling coalition. We actually have right now about 75,000 acres that is ready to be released. "Open acreage," we call it. Within the next year there will be an additional 8 or 10 thousand acres that the leases will run out on, and so on. So this will be a rolling, or constant coalition and we don't foresee any predetermined time when we would end. (Noble)

When asked if they envisioned that the coalitions would help landowners monitor drilling activities for environmental or other lease violations, all of the organizers expected that the coalitions could do so, with scenarios ranging from the issuance of monitoring guidelines to *pro bono* legal assistance. However, one organizer floated within his or her coalition the idea of setting aside funds for long-term legal assistance, but it was deemed too complicated.

[We had the idea that] landowners put 3 percent back into a trust for the group so that should future legal expenses arise, that that trust would be there. But who manages it? How long does it last? Where does the money go when it's done? And most importantly, your landowners don't want to spend 3 percent of their money because right now it's not a problem....So not to say that it couldn't be done, but the landowners would have to fund those trusts and manage them and your landowners are not going to be willing to give up that money. (Jones)

However, even lacking a legal trust, the collective power of the landowner coalitions to fight lease violations has already been demonstrated. For example, letter-writing campaigns and lobbying efforts organized by the coalitions have resulted in punitive actions by the New York State Attorney General against energy companies for violating existing lease agreements with coalition members (Wilber 2009). Besides lobbying state regulators, the coalitions distributed information to their members on which common leasing violations to watch for, cataloged reported violations, and provided legal advice on how to best respond to

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the violations. Upon the announcement of a widely-publicized legal settlement with an energy company, a coalition representative was quoted in the newspaper as stating “[T]his lets landowners know it is not a David-and-Goliath fight. It lets gas companies know they will be watched, and they have to follow the same code of ethics everybody else does” (Wilber 2009:1).

Membership and Benefits to Community

Coalition members were asked to explain whether and how the broader community might benefit from the coalitions, and how communities might potentially work with the coalitions to achieve benefits. Most respondents indicated that they believe these communities will most certainly receive indirect benefits of more local income and the cumulative environmental effect of better property protections. However, the avenue by which communities or municipalities could receive direct benefit was not well established. It appears that little is currently being done to concretely address this aspect, suggesting that this element is being recognized but remains yet-underdeveloped.

When the leasing boom first appeared in spring of 2008, everybody’s immediate focus was on compensation. And nearly a year later other concerns such as all the social and economic and the environmental and legal issues kind of started to enter in to most landowners’ consciousness. So we weren’t just gonna be about giving better deals for our landowners, and monitoring terms but we are looking to protect landowners and even the non-leasor community members . . . trying to maximize capital on a lot of the good things that could come from natural gas development, and minimize the bad things. (Murphy)

Another coalition leader stated,

I don’t think [negotiating benefits for the larger community are] being contemplated yet by the landowner coalitions because the landowner coalitions are made up entirely of private land owners.... The next logical step in my opinion is for these [local government advisory] energy taskforces that are also emerging across the Southern Tier should begin to work together with landowner coalitions. The landowner coalitions would certainly have the leverage and I think that’s where an energy taskforce could provide valuable recommendations to a landowner coalition and to

say, “Let’s try and get some of these additional things that are very common in large scale energy projects.” If one little town is asking for a new playground, it just depends how important that little town is. But if you've got the whole county saying, “You ain't doing business in our community...unless...”, it sounds a little bit like blackmailing, but there’s going to be significant externalities that affect the whole community, so beyond the tax assessment benefits and things that supposedly trickle down and help the whole community, to me it seems very reasonable that if there is going to be any kind of gas drilling in our community that there’s some benefits done that compensate the whole community. (Carruthers)

Another coalition leader also mentioned impact mitigation techniques used in other areas.

Government doesn’t typically lead the way that people think it does. Most good ideas are going to come from another source, and it’s going to be landowner coalitions who are going to be the ones that are going to show the state, the feds in some instances, what should or shouldn’t be done. People always go to town meetings and say they want the truck traffic to diminish and the town can do very little about it – and this is even without any gas drilling. I know there are pipeline systems that have been put into place in heavily developed gas plays that pipe water in right next to the pipelines that pipe the gas and this cuts down all the truck traffic. This is absolutely something we could try [to negotiate]. We have these ideas- we have been looking at development in Norway, and we know how it can be done and we are looking at this in a global way. If the town, if the county...once these problems and opportunities come we can begin to brainstorm. (Francis)

One coalition organizer was less optimistic.

As far as working with the municipalities: as the landowner, do you want to sit there and wait for the municipality to get what it wants? Landowners are not going to sit there and wait. Most landowners you would like to think are community-oriented, but how often do you think about the shape and condition that your town's fire truck is in until you need it? (Jones)

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Another coalition leader, while sympathetic, thought that negotiating for the public at large was not pragmatic.

There is a pretty large universe of stakeholders that have greater and smaller legitimate interests about how the development of the gas resource is done. The process by which their interest is recognized and dealt with is a pretty huge process, and I don't think it would be fair to say that it is up to a coalition to try to identify the whole world of stakeholders out there and legitimate interests. I think this is a process that to some degree people are going to have to speak up for themselves and there is some of this going on right now. (Martin)

A leader very optimistic toward working with local government still admitted that members will invariably have the most control over the organization:

Landowners are definitely going to be benevolent dictators in this process. There is no doubt in my mind. Especially the large landowners, which in this area is the farm community. Now whether they are mean or benevolent in how they go about it is a different story. But to vilify landowners for being interested in this is a grave error, because landowners are the folks that will make this a successful process or not. (Francis)

Another leader was more optimistic.

You got to be aware that there is impact to the community. There's positive impact with jobs, income, the turnover of income, the additional people, all of that. But then someone is going to have to take responsibility for the infrastructure, the roads, that kind of thing...I think whichever municipality that has the acreage, the coalition would be a partner with the municipalities. What would be a good thing is that if we have communication, an open link, and that we understand the impact to the local community. (Hume)

A coalition leader explained that the groups can still do good things for the community outside the lease negotiation process.

We have a situation [nearby] where several wind turbines are being proposed – they are trying to get venture capital together to finance the construction. I have suggested to the wind developer that he approach these landowner coalitions and make this pitch. If the plan is sound enough and good enough, people as a group will invest in it – not because it is wind, but because it is local, it's energy, and it is a sound business idea. (Francis)

While to some extent the coalitions currently seek the collective management of natural resources for the common good, the limit of that “commons” seems (for now) to be bounded by the property boundaries of coalition members. The groups are, however, building collective capacity by pooling information, skills, and other forms of human capital that, before the consolidation, have been widely dispersed across individual landowners, and they attempt to apply this to the management of natural resources. Furthermore, they attempt to wrest the power away from the centralized and non-local structures of the energy developer. In these elements, there are some nascent impulses toward community outcomes.

SUMMARY AND DISCUSSION

Our paper has introduced the emergence and activities of the landowner coalitions that have formed in the Southern Tier of New York State in response to exploration of the natural gas resources of the Marcellus Shale, and we have partially situated this phenomenon against other types of collective natural resource management by analyzing the provision of member versus public benefits. These coalitions have formed rapidly, have many members, and now influence a large portion of the drillable landscape in the region. They have heretofore been motivated by factors consistent with a cooperative framework, as they have emphasized the securing of private, excludable, financial, environmental, and property rights benefits for members. Barton (1989:1), in his introduction to the cooperative model, noted that cooperatives in the United States are fundamentally private organizations operating in a capitalistic private enterprise system, whereby “benefits of the cooperative are distributed to its [members] on the basis of their use.” The interviews with landowner coalition organizers show that the coalitions in New York State are organized and managed in much the same way, with a primary focus of maximizing the financial benefits from capitalistic enterprise to its members, with an economic return based on the property contributed. Coalitions that have signed collectively-negotiated leases have clearly demonstrated the

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economic value of doing so, and a clear and rational economic incentive for membership exists.

Our interviews, however, also reveal that these coalitions are engaged in discussions and strategies that may someday lead to the potential provision of public benefits, either indirectly through the cumulative impact of member property protections across landscape scales, or directly through large scale mitigation strategies in realms such as waste disposal, community development, and structured local economic investment.

The ecological, health, and land use protections – which thus far have included items such as water testing, setback restrictions from waterways and built structures, and reclamation protocols – negotiated for coalition members are private goods at the individual level, but at the aggregate level they can become public goods with implications for regional well-being. Interview data show that coalition leaders are thinking about these benefits similarly: individual benefits are foremost, but the larger cumulative effects on public benefits are also kept in mind.

Regarding the potential for reducing ecological damage, and in comparison to a scenario of individually-negotiated leases such as is occurring in neighboring states, the coalitions offer several opportunities for ecological benefits. First, ecological benefit may take the form of individual landowners' greater ability to dictate the terms of unwanted land uses (e.g., the placement of roads away from sensitive areas, reduction of permanent structures, materials handling and disposal stipulations) and wanted land actions (e.g., reclamation protocols, reforestation practices). Second, although these negotiations are conducted for individual coalition members, the sheer scale of land controlled ensures that some modicum of protection for relatively large blocks of rural landscape may result. Many members of the community will presumably benefit from the protection of large blocks of landscape, in both protection of cross-boundary ecosystems and other natural resources, and protection of landscape-based community attributes. An important component of this protection may take the form of ecological monitoring, either through a legal trust or, more likely, through collective sharing of information and lobbying (as has already occurred regarding other leasing violations). A third, and thus far entirely hypothetical, possibility for ecological benefit is the negotiation of common benefits by the landowner coalitions for the larger community.

While this latter type of negotiation is just beginning to be considered by coalition leaders, without municipal or regional governments' ability to conduct effective negotiations, the coalitions may represent the best and only option for this

third scenario to unfold. Such a negotiation would presumably be much more difficult, and it will be interesting to see whether coalition leaders and members are ultimately willing to shoulder the burden to promote general well-being on a larger scale. Research in other energy development areas has shown that, in general, people show more concern with negative impacts as experience with energy development increases (Anderson and Theodori 2009; Thompson and Blevins 1983). Likewise, experience with gas drilling in the Southern Tier may precipitate coalition activity toward larger concerns.

Thus far these groups have also not yet engaged the larger socioeconomic well-being of the community, although there are clearly benefits to the community in the form of increased compensation flowing through the local economy, especially when alternative drilling scenarios are considered. Yet a prime concern about Marcellus shale drilling involves the exacerbation of existing inequality: those with favorable leasing terms stand to reap great financial gain when socioeconomic and municipal infrastructure is stressed, a condition that has traditionally resulted in some members of resource dependent communities being made worse off (Jacquet 2009). A criticism sometimes leveled at the landowner coalitions is that they stand to benefit by degrading the quality of life of non-land owners, yet local communities now have a greater, if largely untested, potential to manage the development of these resources than was previously available, especially if the alternative scenario is widespread drilling that is individually negotiated. Interestingly, benefits from collective organization may also flow to energy companies, as the coalitions offer the companies lowered transaction costs through one-stop shopping; still, how these lowered costs compare with coalition leasing terms that include vastly increased rates of compensation and an array of additional demands seems unknown amongst all parties.

Even in the wider multi-state Marcellus Shale policy arena that includes academics and state regulators, socioeconomic impacts and community controls are only just beginning to be discussed (Jacquet and Stedman 2009; Kenneally and Mathes 2010). It may be unrealistic for coalitions to be “leading the pack” in this realm, and their acts of collective action toward leasing negotiations still represent some progressive changes to the organization and regulation of natural gas development in the Marcellus Shale.

CONCLUSION

This study is limited in that it is focused on the experiences and opinions of coalition leaders; a great deal of research opportunity exists to measure the

attitudes of rank-and-file members and analyze the groups' true capacity as they begin to negotiate with energy companies. Nonetheless, the landowner coalitions described here – especially given their impressive sizes and strength – have demonstrated the value of working together and have gained sometimes substantial increases in compensation, property-level environmental protections, and legal power acquired for their members.

Substantially increased leasing bonuses and royalty rates for thousands of landowners will undoubtedly create indirect benefits for local economies, and the impact of thousands of parcel-scale ecological protections can have a positive cumulative effect on public ecosystem services and amenities – especially when compared with a similar amount of gas development occurring on individually-negotiated properties.

It remains to be seen if the size and strength of the coalitions – combined with a vacuum of municipal authority – will allow the groups to transcend localized collective action and move toward the provision of public goods as more consistent with a public-benefits framework such as CBRM. Much of the coalitions' potential in this regard is yet unrealized; however, the coalitions have demonstrated an ability to expand the incentives of membership to engage non-monetary and ecological benefits.

It remains to be seen how the wider coalition strategy (and the patience of coalition members) will fare during protracted negotiations with energy companies. Yet the collective action of individual landowners in New York State has shown promise as an effective management tool for the extraction of natural gas and other types of energy development taking hold across vast areas of small-acre parcels in the United States.

AUTHOR BIOGRAPHIES

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REFERENCES

- Abel, Jaison R. and Richard Deitz. 2008. "New Measures of Economic Growth and Productivity in Upstate New York." *Current Issues in Economics and Finance: Second District Highlights* 14(2):1-7.
- Agrawal, Arun and Clark C. Gibson. 1999. "Enchantment and Disenchantment: The Role of Community in Natural Resource Conservation." *World Development* 27(4):629-49.
- Anderson, Brooklynn J. and Gene L. Theodori. 2009. "Local Leaders' Perceptions of Energy Development in the Barnett Shale." *Southern Rural Sociology* 24(1):113-29.
- Baker, Mark and Jonathan Kusel. 2003. *Community Forestry in the United States: Past Practice, Crafting the Future*. Washington, DC: Island Press.
- Barton, David. 1989. "What is a Cooperative?" Pp. 1-20 in *Cooperatives in Agriculture*, edited by J. R. Abel and R. Deitz. Englewood Cliffs, NJ: Prentice Hall.
- Binghamton Conklin Landowners Coalition (BCLC). 2010. "Homepage." Retrieved August 14, 2010 (<http://www.bcgaslease.com/ourmission.htm>).
- Bradshaw, Ben. 2003. "Questioning the Credibility and Capacity of Community-based Resource Management." *The Canadian Geographer/Le Gographe canadien* 47(2):137-50.
- Butler, R W. and J. G. Nelson. 1994. "Evaluating Environmental Planning and Management: The Case of the Shetland Islands." *Geoforum* 25(1):57-72.
- Engelder, Terry. 2009. "Marcellus 2008: Report Card on the Breakout Year for Gas Production in the Appalachian Basin." *Fort Worth Basin Oil and Gas*(August):18-22.
- Farey, Ben. 2010. "China May Emulate U.S. 'Quiet Revolution' in Shale Gas Output." *Bloomberg* (March 11). Retrieved August 14, 2010 (<http://www.bloomberg.com/apps/news?pid=21070001&sid=ahD4MXgJO CyA>).
- Fontana, Andrea and James H. Frey. 2000. "The Interview: From Structured Questions to Negotiated Text." Pp. 645-72 in *Handbook of Qualitative Research*, edited by N. K. Denzin and Y. S. Lincoln. Thousand Oaks, CA: Sage.
- Franklin, Nancy, Jordan Humphrey, Greg W. Roth, and Daney G. Jackson. 2010. "A Time of Opportunity: Energy, Extension, and Economic Development." *Journal of Higher Education* 14(3):13-46.
- Fulton, Joan R. and Keen Anderson. 2001. "Value-added Enterprises in the Rural Community." Pp. 129-46 in *A Cooperative Approach to Local Economic*

NATURAL GAS LANDOWNER COALITIONS

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- Development*, edited by C. D. Merrett and N. Walzer. Westport, CT: Quorum Books.
- Gaskill, Warren. 2003. *Sustainable Woods Cooperative: Lessons Learned in Its Five Years*. Sustainable Woods Co-op Summary Report. May.
- Gass, Rebecca J., Mark Rickenbach, Lisa A. Schulte, and Kimberly Zeuli. 2008. "Cross-boundary Coordination on Forested Landscapes: Investigating Alternatives for Implementation." *Environmental Management* 43:107–17.
- Gilmore, John S. 1976. "Boom Towns May Hinder Energy Resource Development: Isolated Rural Communities Cannot Handle Sudden Industrialization and Growth Without Help." *Science* 191:535–40.
- Goldberg, Delen. 2010. "Environmental Conservation Commissioner Pete Grannis Says Hydrofracking Likely to Begin in New York in Spring or Summer 2011." *The Syracuse Post-Standard*, April 20. Retrieved April 20, 2010 (http://www.syracuse.com/news/index.ssf/2010/04/environmental_conservation_com.html).
- Goldman, Rebecca, L., Barton H. Thompson, and Gretchen C. Daily. 2007. "Institutional Incentives for Managing the Landscape: Inducing Cooperation for the Production of Ecosystem Services." *Ecological Economics* 64:333–43.
- Griffin, Carol B. 1999. "Watershed Councils: An Emerging Form of Public Participation in Natural Resource Management." *Journal of the American Water Resource Association* 35(3):505–18.
- Greico, Greg. 2008. "Unconventional Natural Gas Reservoir Could Boost U.S. Supply." *Penn State Live*, January 17. Retrieved March 28, 2010 (<http://live.psu.edu/story/28116>).
- Harper, John A. 2008. "The Marcellus Shale – An Old 'New' Gas Reservoir in Pennsylvania." *Pennsylvania Geology* 38(1):2–12.
- He, Wan, Manisha Sengupta, Victoria Velkoff, and Kimberly Debarros. 2005. *65+ in the United States: 2005 U.S. Census Bureau Current population reports, special studies*. Retrieved March 12, 2008 (<http://www.census.gov/prod/2006pubs/p23-209.pdf>).
- Hviding, Edvard and Graham B.K. Baines. 2008. "Community-based Fisheries Management, Tradition and the Challenges of Development in Marovo, Solomon Islands." *Development and Change* 25(1):13–39.
- Jacquet, Jeffrey. 2009. *Energy Boomtowns and Natural Gas: Implications for Marcellus Shale Local Governments and Rural Communities*. (Rural Development Paper, No. 43) State College, PA: Northeast Regional Center for Rural Development. Retrieved March 29, 2010 (<http://nercrd.psu.edu/Publications/rdppapers/>

- rdp43.pdf).
- Jacquet, Jeffrey and Richard Stedman. 2009. *Emerging Trends in the Marcellus Shale*. (Community and Rural Development Institute Research and Policy Brief, No. 30.). Ithaca, NY: Cornell Community and Rural Development Institute. Retrieved March 29, 2010 (<http://www.cals.cornell.edu/cals/devsoc/outreach/cardi/publications/upload/07-2009-RPB.pdf>).
- Joint Landowners Coalition of New York (JLCNY). 2010. "Homepage." Retrieved September 13, 2010 (<http://www.jlcny.org/>).
- _____. 2011. "Homepage." Retrieved January 25, 2011 (<http://www.jlcny.org/>).
- Kellert, Stephen R., Jai N. Mehta, Syma A. Ebbin, and Laly L. Lichtenfeld. 2000. "Community Natural Resource Management: Promise, Rhetoric, and Reality." *Society and Natural Resources* 13:705–15.
- Kenneally, Michael E. and Todd M. Mathes. 2010. "Natural Gas Production and Municipal Home Rule in New York" *New York Zoning Law and Practice Report* 10(4):1–4.
- Kittredge, David B. 2005. "The Cooperation of Private Forest Owners on Scales Larger than Their Individual Property: International Examples and Potential Application in the United States." *Forest Policy and Economics* 7:671–88.
- Knapp, Joseph Grant. 1963. *Farmers in Business, Studies in Cooperative Enterprise*. Washington, DC: American Institute of Cooperation.
- 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." *Forest Policy and Economics* 2:20–38.
- Marcellus Accountability Project Tompkins County (MAPTC). 2011. "Homepage." Retrieved January 13, 2011 (<http://www.tcgasmap.org/>).
- Markussen, Ann R. 1978. *Socioeconomic Impact Models for Boomtown Planning and Policy Evaluation. (Working Paper 285)*. Berkley, CA: UC Berkley Institute for Urban and Regional Development. Retrieved March 29, 2010 (<http://www.sublettewyo.com/archives/42/Socioeconomic%20Impact%20Models%20for%20Boomtown%20Planning%20and%20Policy%20Evaluation.pdf>).
- Meinzen-Dick, Ruth, Monica Di Gregorio, and Nancy McCarthy. 2004. "Methods for Studying Collective Action in Rural Development." *Agricultural Systems* 82(3):197–214.
- Merrett, Christopher D. and Norman Walzer. 2004. *Cooperatives and Local Development: Theory and Applications for the 21st Century*. Armonk, NY: M.E. Sharpe.

NATURAL GAS LANDOWNER COALITIONS

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- McGranahan, David A. and Calvin L. Beale. 2002. "Understanding Rural Population Loss." *Rural America* 17(4):2-11.
- Nadeau, E. G. and Corinne Wilson. 2001. "New Generation Cooperatives and Cooperative Community Development." Pp. 55-72 in *A Cooperative Approach to Local Economic Development*, edited by C. D. Merrett and N. Walzer. Westport, CT: Quorum Books.
- New York State. 2010. *Environmental Conservation Law §23-0303(2)*.
- New York State Community Action Association (NYSCAA). 2010. *Poverty Report 2010*. Retrieved April 30, 2010 (<http://www.nyscaaonline.org/PovReport/2010/2010PovReportWeb.pdf>).
- New York State Department of Environmental Conservation (NYSDEC). 2006. "Comprehensive Wildlife Conservation Strategy (CWCS) Plan." Retrieved April 8, 2010 (<http://www.dec.ny.gov/animals/30483.html>).
- _____. 2010a. "2008 Annual Oil and Gas Production Data." Retrieved March 28, 2010 (<http://www.dec.ny.gov/energy/36159.html>).
- _____. 2010b. "Wells Database Search." Retrieved March 28, 2010 (<http://www.dec.ny.gov/cfm/xtapps/GasOil/search/wells/index.cfm>).
- _____. 2010c. "New York State Lands and Waters." Retrieved April 8, 2010 (<http://www.dec.ny.gov/61.html>).
- New York State Energy Research and Development Authority (NYSERDA). 2010. *New York State's Natural Gas and Oil Endowment: Past, Present, and Future*. Albany, NY: NYSERDA.
- New York State Office of the Attorney General (NYSAG). 2008. *Oil and Gas Leases: Landowners Rights*. Albany, NY: New York State Office of the Attorney General.
- Office of the Governor, State of New York. 2008. "Governor Paterson Signs Bill Updating Oil and Gas Drilling Law; Pledges Environmental and Public Health Safeguards," press release 23 July. Retrieved March 18, 2010 (http://www.state.ny.us/governor/press/press_0723084.html).
- Olson, Mancur. 1965. *The Logic of Collective Action: Public Goods and the Theory of Groups*. Cambridge, MA: Harvard University Press.
- Ostrom, Elinor. 1990. *Governing the Commons: The Evolution of Institutions for Collective Action*. New York, NY: Cambridge University Press.
- Overthrust Industrial Association (OIA). 1988. *Overthrust Industrial Association: A Public/Private Partnership. History and Case Study*. Evanston, WY: Overthrust Industrial Association. Retrieved March 29, 2010 ([http://www.sublettewyo.com/archives/42/Overthrust_Case_Study_1988\[1\].pdf](http://www.sublettewyo.com/archives/42/Overthrust_Case_Study_1988[1].pdf)).

- Peelle, Elizabeth. 1978. *Mitigating Community Impacts of Energy Development: Some Examples for Coal and Nuclear Generating Plants in the United States*. Oak Ridge, TN: Oak Ridge National Laboratory.
- Poteete, Amy R. and Elinor Ostrom. 2004. "In Pursuit of Comparable Concepts and Data about Collective Action." *Agricultural Systems* 82(3):214–32.
- Rickenbach, Mark G. 2006a. "Cooperative Functions: Meeting Members' Needs." Pp. 21–3 in *Forestry Cooperatives: What Today's Resource Professionals Need to Know. Proceedings of a Satellite Conference 2003 November 18*, edited by P. Jakes. St. Paul, MN: U.S. Department of Agriculture, Forest Service, North Central Research Station.
- _____. 2006b. "Forestry Cooperatives: Past and Present." Pp. 25–9 in *Forestry Cooperatives: What Today's Resource Professionals Need to Know. Proceedings of a Satellite Conference 2003 November 18*, edited by P. Jakes. St. Paul, MN: U.S. Department of Agriculture, Forest Service, North Central Research Station.
- Schulte, Lisa A., Mark Rickenbach, and Laura C. Merrick. 2008. "Ecological and Economic Benefits of Cross-boundary Coordination among Private Forest Landowners." *Landscape Ecology* 23:481–96.
- Smith, Jack Z. 2010. "Barnett Shale Lawsuits: Some Still Hoping to Cash in on Gas." *Fort Worth Star-Telegram*, May 02. Retrieved August 14, 2010 (<http://www.star-telegram.com/2010/05/02/v-print/2157891/barnett-shale-lawsuits.html>).
- Soeder, Daniel J. and William M. Kappel. 2009. *Water Resources and Natural Gas Production from the Marcellus Shale*. United States Geological Survey Fact Sheet 2009-3032. Publisher information?
- Stedman, Richard C., B. Lee, Kathy Brasier, Jason Weigle, and Francis Higdon. 2009. "Cleaning up Water? Or Building Rural Community? Community Watershed Organizations in Pennsylvania." *Rural Sociology* 74(2):178–200.
- Steuben County Landowners Coalition (SCLC). 2010. "Homepage." Retrieved September 13, 2010 (<http://mysite.verizon.net/reszcmsk/>).
- Stoddard, Charles H. 1961. *The Small Private Forest in the United States*. Washington, DC: Resources for the Future.
- _____. 1964. "The Need for Associations of Forest Landowners in the United States." *Journal of Forestry*(March):163–6.
- Thomas, Alexander R. and Polly J. Smith. 2009. *Upstate Down: Thinking about New York and its Discontents*. Lanham, MD: University Press of America.
- Thompson, James. G. and Audie L. Blevins. 1983 "Attitudes toward Energy Development in the Northern Great Plains." *Rural Sociology* 48 (1): 148–58.

NATURAL GAS LANDOWNER COALITIONS

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- Tioga County Landowners Group (TCLG). 2010. "Homepage." Retrieved September 13, 2010 (www.tiogagaslease.org).
- Tiles, Kristen A., Mark G. Rickenbach, Emily D. Sturgess, and Kimberly Zeuli. 2004. "U.S. Forest Landowner Cooperatives: What do Members Expect? What Can Cooperatives Deliver?" Pp. 135–43 in *Human dimensions of family, farm, and community forestry*, edited by D. M. Baumgartner. Pullman, WA: Washington State University Extension.
- United States Bureau of the Census. 2010. "2009 County Population Estimates." Retrieved March 29, 2010 (<http://www.census.gov/popest/counties/counties.html>).
- United States Department of the Interior (USDOI), Bureau of Land Management. 2008. *Record of Decision for the Supplemental Environmental Impact Statement Pinedale Anticline Oil and Gas Exploration and Development Project*. Cheyenne, WY: Bureau of Land Management Wyoming Field Office.
- Wilber, Tom. 2008. "300 Agree to \$90 Million." *The Binghamton Press and Sun Bulletin*, May 12, A1.
- _____. 2009. "N.Y. Penalizes Gas Drilling Firm." *The Ithaca Journal*, November 24. Retrieved April 14, 2010 (<http://www.theithacajournal.com/article/20091124/NEWS01/911240350/N.Y.-penalizes-gas-drilling-firm>).
- Wolf, Steven A. and Stefanie Hufnagl-Eichiner. 2007. "External Resources and Development of Forest Landowner Collaboratives." *Society and Natural Resources* 20(8):675–88.