

Forest Cooperatives Revisited

R. Bruce Hull and Sarah Ashton

ABSTRACT

Forestry cooperatives provide strategies for reaching increasingly diverse and numerous forest landowners with forest management advice and profitable management services. Forestry cooperatives currently thrive in at least 17 countries. We use a case study method to compare four US-based entities, each using a different strategy that involves cooperation beyond the traditional landowner-harvester-processor-marketer chain of custody. Keys to successful co-ops include maximizing forest owner control and flexibility, emphasizing amenity and environmental qualities over short-term profits, cautiously integrating harvesting processing and marketing functions, accessing capital from public grants and private investors, and having good management skills and a sophisticated resource inventory system. Public forestry agencies, private forestry consultants, and forest scientists can support cooperative forestry ventures by implementing a few strategic initiatives discussed in the conclusion.

Keywords: sustainability, fragmentation, value-added, vertical integration, community economic development

The traditional forestry cooperative is a state-regulated business arrangement that enables advantageous coordination among otherwise competing timber-producing landowners (Torgerson et al. 1998). Benefits of participating in cooperatives include improved services, trusted information, economies of scale, reduced costs, and better access to markets. Participants typically invest in the capital needed to get the business running and receive financial returns proportional to how much product they move through the business. Management philosophy and policy are set democratically, usually one-member-one-vote, rather than by patronage or investment; and thus a defining characteristic of cooperatives is that they strive to balance member needs with investor returns. Most co-ops hire a manager to take care of daily business and administration. However, despite their potential,

forestry co-ops in the United States fell out of favor, largely because they failed as business ventures (Dempsey and Markeson 1969, Jakes 2006, Kittredge 2005).

Times are changing, however. Forestry cooperatives currently thrive in Europe, Japan, Australia, and at least 15 other countries and involve over 3.6 million people owning nearly 60 million ac (Kittredge 2005). In the United States, new variants of traditional cooperatives are being developed as possible strategies to respond to a rapidly changing forest ownership and industry (Nadeau 2002, Baker and Kusel 2003, Jakes 2006). Forest ownership is changing with urbanization, industry divestiture, and intergenerational transfer (Best 2002, Alig and Plantinga 2004). Forests have more owners than can be reached by traditional means, and many of these owners have nontraditional forest management needs. Forest in-

dustry reorganization is also changing how and why forests are managed (Oliver 1999, 2005). The profit margins for producers of forest commodities are declining, in part because technical innovation and globalization have increased supply of substitutable raw materials. Profits emerge less from the management of forests for fiber and more from the processing, distributing, and marketing of finished forest products.

The context created by changes in ownership and markets creates challenges for the more traditional efforts used to reach landowners with quality forest management services, to retain local forest economies and to sustain healthy forests. Conversely, it also creates opportunities. New organizational structures and strategies of cooperative enterprises are emerging in response to these opportunities and challenges. This article forwards a more inclusive definition of forestry cooperatives: an enterprise that moves value and control down the supply chain, closer to the landowner and within the local community, so that desired environmental and social qualities may be restored and sustained. This article describes and compares four such cooperative enterprises and evaluates the barriers and challenges to their success using lessons learned from studies of traditional forest and agriculture business cooperatives.

Past cooperative enterprises have failed for various reasons. They fail when membership costs exceed membership benefits, especially if membership commitments are inflexible and excessive, but also if internal

Received October 25, 2006; accepted February 25, 2008.

R. Bruce Hull (bullrb@vt.edu) is professor, College of Natural Resources, Virginia Tech, Blacksburg, VA 24061. Sarah Ashton (sashton@warnell.uga.edu) is program coordinator for Southern Regional Extension Forestry, University of Georgia. The authors acknowledge the US Forest Service, Northern Research Station.

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conflict requires excessive negotiations, and if new members are not recruited and educated (Dempsey and Markeson 1969, Parnell 1999, Nadeau 2002). They fail when they are unable to generate profits because they are inadequately capitalized, are unable to control product quality, or are unable to market their products (Dempsey and Markeson 1969, Parnell 1999, Merrett and Walzer 2001). They also fail if inadequate management infrastructure limits ability to track and organize inventory or manage the diverse and conflicting needs of members (Cook 1995, Katz and Boland 2002, Kirtledge 2005). Cooperatives succeed for various reasons, but a common theme is good organizational capacity, leadership, business management, and conflict resolution skills—reasons that for the most part make any collaborative natural resource management effort succeed (Merrett and Walzer 2001, Baker and Kusel 2003, Conley and Moote 2003). These reasons behind success and failure are used as the basis of comparing four emerging co-op models.

Methods

Four detailed case studies were developed: Appalachian Sustainable Development (ASD), Blue Ridge Forest Cooperative (BRFC), Conservation Forestry Program (CFP), and the Massachusetts Woodlands Cooperative (MWC). All but the last are located in southwestern Virginia. The method used in this study was a multiple case study, qualitative approach described by Yin (1988).

For the four main case studies, data were collected using semistructured interviews, with follow-up interviews and e-mail exchanges with key informants. Internal and external documents produced by the organizations were used extensively. In addition to interviewing the four cooperative organizers, we interviewed natural resource professionals (both government and private), participating nonindustrial private landowners, local government administrators, and consumers of both traditional and niche forest products. Interviewees were identified by a technique commonly referred to as snowballing where initial informants identified other informants and sampling stopped when no new informants were recommended or new information was generated. Most interviews were taped and transcribed. NVivo, a qualitative analysis tool, was used to organize and analyze textual data first using an “open coding” process and second

using an “axial coding” process (Strauss and Corbin 1990). Emerging results and questions were shared with key informants for verification and clarification. Their responses were integrated back into the analysis and reporting. More detail about the cases and methods can be found in Ashton (2006)

Case Study Descriptions

ASD. ASD is a nonprofit organization initiated in 1995 to develop market-based mechanisms that “help diversify and strengthen the local economy while at the same time encouraging conservation of local natural resources and investment in local natural capital” in southwestern Virginia and northeastern Tennessee. It administers a successful organic food cooperative in addition to a forestry cooperative. The forestry program pays a consulting forester to develop forest management plans for qualified landowners that express interest. The plan reflects the landowner’s objectives but adheres to ASD’s standards, which are similar in intent to Forest Stewardship Council (FSC) standards. ASD pays approximately 20% above market value for stumpage harvested according to this plan. The premium compensates landowners and loggers for the lower volume and greater operator care/time required to meet ASD standards. ASD arranges to have timber marked and harvested using detailed contracts with local service providers. If the owner sells forest products without involving ASD, they are obliged to pay a nominal fee for the forest plan, \$10/ac.

ASD pays for the forest plan and stumpage premium through profits generated by buying logs directly, processing them locally, manufacturing products made from traditionally lower-value species, and charging a premium for its unique product label, sustainable woods. A privately contracted marketing specialist sells ASD products to wood manufacturing businesses, builders, architects interested in green design and construction, and community groups and other end users willing to pay a premium for sustainably grown, local materials.

To fund its start-up phase, ASD used grants and loans from the Kellogg Foundation, Ford Foundation, Blue Moon Fund, and Wallace Foundation. Some funders have set economic feasibility as criteria for future funding. ASD’s business plan promises two economically, self-sustaining businesses within 5 years. Thus far, approxi-

mately \$600,000 has been invested in the forest products program; replication costs should be lower because valuable lessons have been learned about how to vertically integrate the supply chain, as discussed later. ASD markets its services to landowners via word-of-mouth, free educational programs, field days, one-on-one advice, literature, and media exposure.

The BRFC. BRFC is a for-profit, producer cooperative providing its members forest management advice, low-impact harvesting, and processing and marketing of value-added forest products. It was incorporated October 2004 in Virginia. It has over 7,000 ac committed and is still soliciting investments to meet the self-imposed \$150,000 minimum capitalization that the cooperative’s board of directors decided is necessary for the co-op to be viable. People can participate in the co-op as an investor or member. Investors purchase preferred stock that pays dividends of up to 8% per year and are refunded first should the co-op fail. Investors include members, environmental groups, and socially responsible investment operations. Members and investors are solicited through word-of-mouth, educational programs, presentations at community meetings, and articles in local press.

Members must be Virginia residents, commit at least 10 ac of Virginia forestland, purchase \$500 of common stock in the co-op, pay a \$100 annual membership fee, pay for an FSC certified forest management plan, and pay \$100 for oversight services during harvests. Management plans are developed at the landowner’s expense and thus reflect the landowner’s goals. Each member has one vote with regard to co-op policy and receives profits proportional to sales generated on their behalf (or terminate membership). Members must agree to patronize the cooperative for the harvesting and sale of timber. The BRFC is pursuing FSC group certification, which will lessen the cost to members of obtaining certification.

The director of operations has extensive business innovation experience and runs a separate, successful forest products harvesting, processing, and marketing business serving as the foundation for clients and infrastructure from which BRFC can grow. A dedicated advisory board has been meeting regularly since 2003 soliciting advice from agency, industry, and capacity building sources. The BRFC has received several thousand dollars of financial assistance from the Community Forestry Resource Center

and the Appalachian Forest Resource Center. Additionally, the Southern States Cooperative Foundation donated \$100,000 in services to develop the detailed business prospectus required by state law. The BRFC estimates that approximately \$600,000 are needed to become incorporated, purchase harvesting and processing equipment, provide space and salary for business staff, and become third-party certified. It has intentionally pursued private investors rather than grant money in an attempt to see if their system can become economically viable and deserving of replication with minimal public assistance. Like the ASD, the BRFC will use profits generated by value-added processing to subsidize the low-impact harvesting, timber stand improvement, and restorative forestry practices that interest co-op members and promise greater long-term financial returns.

The CFP. The CFP evolved from The Nature Conservancy's (TNC) 1990s efforts to create a Forest Bank, a for-profit institution in which landowners deposited their rights to harvest timber in exchange for an annual payment (see Dedrick et al. 2000). Profits from harvesting would fund the bank and careful management would ensure environmental qualities that met TNC goals. The program stalled when the Securities Exchange Commission (SEC) regulations required roughly eight pages of disclaimers be presented in the promotional materials given to potential members, which confused and thwarted landowner interest. The SEC also dramatically limited contract flexibility by requiring that each owner of stock be treated exactly the same, like a stock market transaction; but forests, forest owners, and forest plans are rarely the same. For these reasons, the Forest Bank was reorganized using conventional easements as the mechanism to achieve similar ends. It is now called the CFP.

The annual payment to landowners, guaranteed to never decrease, reflects the value of standing timber and is revalued every 10 years or after a harvest. CFP contracts a local FSC-certified consulting forestry firm to develop a forest plan reflecting landowner objectives. All management activities must be part of the FSC-certified management plan in order for the landowner to receive the annuity.

CFP assumes the risk of forest damage and price variation and the cost of management. Landowners still may hunt, recreate, and harvest firewood in accordance with the

forest management plan and benefit from property value increases if they decide to sell. CFP also provides the traditional tax advantages associated with conservation easements. The original Forest Bank provided an opportunity to "cash out" if landowner objectives changed. This option is no longer available.

The CFP has less than a dozen landowners with approximately 20,000 ac enrolled and is not currently recruiting new members. Local service providers are used for harvesting and processing. However, the CFP does not strategically integrate its sales or management with economic development goals. In 2005, timber harvests generated approximately one-half the revenue needed to meet annuity obligations; in 2006, they generated nearly two-thirds and estimate that approximately 60,000 ac are needed to be economically self-sustaining. The Pew Charitable Trust awarded a \$400,000 grant over 2 years to help initiate the bank; \$160,000 was used for planning and program start-up. TNC funds staff and program administration costs.

MWC. MWC was formed in 2001 as a limited liability company operating like a traditional cooperative in that each member has one vote and profits are proportional to patronage. Its mission is "to maintain the environment and character of western Massachusetts through the protection, enhancement, and careful economic development of one of the region's most plentiful resources, the forest." A sister organization, Massachusetts Woodlands Institute, formed as a 501 (C) tax-exempt organization. It targets a constituency beyond MWC members and receives foundation grants and other contributions that require a nonprofit partner. The MWC's history is well documented (Barten et al. 2001, Damery 2005).

A steering committee proceeded deliberately during a 5-year start-up phase. They organized market research into landowner interest and product placement, designed products that could be produced with high quality and volume, developed a marketing strategy (i.e., business cards, brochures, and website), developed a business plan, pursued FSC certification, and applied for grant money. They conducted pilot projects that tested the value-added system and built partnerships with local service providers. They also developed a sophisticated database for organizing management and tracking inventory. A \$40,000 grant from the US Forest Service and \$17,500 from local foundations

got efforts started. In 2004, the MWC received a \$499,253 working capital grant from the United States Department of Agriculture and, in 2005, another \$112,625.

FSC principles played an important role helping identify the core values co-op members share. According to one of the organizers, FSC certification was used "to attract people of like minds and interests . . . using FSC to gain access to a particular market was secondary." Becoming FSC certified required innovations. The Group Manager and Resource Manager certification options offered by Smartwood were considered expensive and rigid. Responding to this problem, the FSC, with the help of a \$5,000 grant from the Doris Duke Foundation, helped the MWC develop its own group certification, a scheme the FSC is expanding and making more widely available. Under this scheme, the cooperative is the certified body. A resource team within the cooperative approves members' management plans and monitors compliance. Group certification reduces costs, frees the co-op from control by a few certified consulting foresters, and allows members to work with professionals of their choosing.

In an effort to do its own wood processing as well as contract with local mills, the cooperative initiated a group chain of custody certification scheme that involves tracking and sorting raw forest harvests through its production system to finished forest products. After seeking bids among competing certification service providers, they selected Scientific Certification Systems. Thus, the MWC has Smartwood as its systems and management auditor and Scientific Certification Systems as its chain of custody certifier.

Members must give the co-op first right of refusal for timber sales. A representative of the co-op meets with the landowner's forester and identifies low-to-mid-value timber to which the co-op can add value through local processing and offers an above market-value bid for that timber. Other high-value timber, if any, is sold through the forester using traditional bids or contracts. This arrangement allows the forester and logger to work within the traditional marketing system where the co-op is less competitive, maintains good relations with the local forestry industry, improves landowner profits, and adds economic value to the local community.

Much of the cooperative's market for its finished products is within 10–15 mi of the

sawmill. Five major universities within 100 mi provide another market. The cooperative currently needs 250,000 bd ft a year to cover its overhead (i.e., staff, space, accountant, and more). Landowners pay \$250 to join the co-op and are promised 80% of that back if they leave. They also pay an \$85 annual membership fee. The co-op has grown cautiously and, as of 2006, had approximately 50 members managing approximately 5,000 ac. It hopes to expand to 125 members, 20,000 ac of forest, and 25 associate members who buy, process, and sell value-added products.

Discussion

The four co-ops affect forest management on private lands and contribute to a forest economy by using various cooperative strategies that integrate landowners, foresters, loggers, processors, and markets. They are compared in the following sections using qualities identified in the literature that cause co-ops to succeed or fail.

Membership Costs and Benefits. The aforementioned literature reviewed suggests that past cooperative enterprises have failed when members perceived the costs of membership to exceed the benefits. One of the perceived costs of membership is lost or diminished property rights. Too much control over forest management by the co-op could be perceived as a threat to property rights, but too little control over forest management threatens the co-op's ability to maintain product quality and quantity.

BRFC and MWC encourage members to hire their own foresters to plan management actions and protect members' interests. Once a plan is submitted, however, the co-op expects access to the timber when promised. BRFC members must trust the co-op to offer a fair price for stumpage while MWC members retain the ability to sell their timber elsewhere if a better price is found. Both of these co-ops require legal contracts, membership fees, and professional-quality forest plans, which can add significant expense to membership. BRFC members must pay more because of the way the membership commitment is structured and because it is not as subsidized as the MWC. The CFP requires the greatest sacrifice of property rights, placing restrictions in perpetuity on land use and turning over forest management decisions to others. The ASD presents few barriers to participation. The only commitment required is for participants to pay a nominal fee for their forest

management plan if they decide to not sell their timber to ASD. Although the different cooperative models studied require different levels of landowner investment and control over management, all seem successful at recruiting members, or in the case of the CFP, have stopped recruiting despite continued interest.

Another cause of co-op failure occurs when members advocate conflicting goals or diverge from the goals that management pursues. The management of all four co-ops seem carefully attuned to landowner needs, and interviews suggest that membership interest seems to be coming from a new class of landowners willing to trade some autonomy and income generation for affordable and trustworthy management that minimizes risk and maximizes environmental quality (Kendra and Hull 2005). Analysis of the Sustainable Woods Cooperative in Wisconsin suggests that a contributing factor to its failure was a shift by co-op managers toward profit making when members mostly wanted affordable, trusted services (Sustainable Woods Cooperative 2003).

Becoming and Staying Profitable.

The aforementioned literature reviewed suggests that past cooperative enterprises have failed when they were unable to generate profits that make management affordable and pay for services members desire. BRFC, MWC, and ASD add value through handling, processing, and marketing their forest products. This vertical integration of forest industry operations adds considerable complexity to management because it requires control over skilled labor and the appropriate facilities linking parts of the supply chain such as (1) silviculture and harvesting; (2) gathering, sorting, and marketing logs according to grade and species; (3) processing selected logs into flooring, trim, ceiling panels, and other value-added products; (4) product labeling; and (5) retailing to local markets.

Various means of integrating value-added services exist. At one conceptual extreme the co-op owns and manages all parts of the supply chain, from silviculture to sales. At the other extreme, the co-op contracts partnering businesses to deliver specific quantity, quality, and timing of product flows between links in the supply chain. It is unclear to us which strategy is most likely to succeed or fail in the long term, so we examine here in more detail the rationale behind ASD's hybrid strategy.

ASD contracts with a logger to harvest and transport logs to its mill. The mill manager sorts and grades the logs, which are then cut into boards by a contracted sawyer working on site and paid by volume sawn. The boards are dried by the ASD, transported by the ASD to a contracted mill works company for further processing, and then delivered back to ASD storage facilities or to ASD retail clients. These operations require land for a lumberyard and milling operation, a kiln for drying, a covered but open building for all-weather sawing, trucks for transportation, and a storage/sales warehouse with office space for staff.

ASD accepts the costs of transporting materials to and from processing to realize four advantages. First, ASD is not responsible for all capital and staff required for milling and related processing. Second, ASD is not responsible for the total volume required to support those facilities (i.e., the miller solicits and processes timber from other vendors). Third, ASD has flexibility to contract with other millers and thus its whole supply chain is not dependent on one milling operation. Fourth, better milling quality should result because all the established millwork's resources are aimed at generating a finished wood product whereas the ASD's capital, staff, and expertise are spread over numerous functions.

Inadequate capitalization is another reason co-ops fail to turn a profit. Because forestry co-ops have a history of failure, banks and other traditional sources of capital are cautious about investing in the facilities and staff co-ops need to begin operations. The CFP, ASD, and MWC relied extensively on grants from public and private institutions to get started. ASD also successfully solicited support from a regional economic development program that supports business ventures with incubators in industrial parks. BRFC, at first, intentionally minimized subsidy to lessen reliance on sometimes fickle political winds and thus actively courts private investors; but it is reconsidering this strategy for subsequent capitalization needs. The CFP, ASD, and MWC plan to use public or foundation support to build the necessary infrastructure and thereafter sustain their enterprises through profit generated by the enterprise.

The time between harvest and sales presents cash flow challenges for small integrated value-added businesses. ASD notes that it has taken up to 4 months to harvest, process, and sell a finished product, during

which time the landowner, logger, and processor must be paid. Cash flow problems have delayed purchase of new timber until money becomes available when finished products from previous jobs are sold. The co-ops practicing value-added operations suggested that the solution to this problem is simply to build more inventory and processing capacity. One strategy ASD pursued to increase cash flow was to secure a low-interest loan to allow them to purchase more standing timber and to add a second kiln for greater drying capacity.

The CFP is designed to minimize these management challenges by using forest management, harvesting, and processing capabilities preexisting in the region. The large size of their properties allows the CFP to contract forest planning to professional consultants who in turn contract with local loggers to conduct harvesting, who in turn sell the raw materials, an unknown amount of which is trucked out of the region. Although efficient and effective for larger properties, this strategy may not succeed on small acreages and likely contributes less to the local economy than the other value-added strategies; however, it is most likely to sustain forest on the land and associated regional economic benefits of active forest management because it requires a permanent easement. Profits from this operation still do not cover all program operations, but the backing and banking of TNC and other well-established conservation-minded foundations seem likely to keep the operation afloat.

The aforementioned literature reviewed also suggests that developing a market is one of the keys to success of any value-added co-op venture, and lack of a market was one reason cited for the failure of the Sustainable Woods Cooperative in Wisconsin (Sustainable Woods Cooperative 2003). The BRFC, MWC, and ASD use niche marketing for certified sustainable, local, character wood products. The MWC spent a large portion of its start-up phase researching and building its market; and they were located in areas already primed by a "Be a Local Hero" marketing campaign, independently initiated in 1999 to promote local, organic, food products. The ASD hired a full-time marketing specialist to promote its product in nearby urban areas and with public institutions willing to pay a premium for sustainable, locally grown materials. Local mills, woodworkers, builders, and architects are pleased with the products and see a growing market for them. They also report that this

market is not all high-end. Many customers are middle-income homeowners.

Management Infrastructure. The aforementioned literature reviewed suggests that co-op success and failure often depends on motivated leaders capable of managing diverse interests and lingering conflicts. The co-ops studied here are no exception. They emerged and are sustained in large part because of inspired leadership. Key individuals have been motivated and invested to build, promote, and make these enterprises work.

But the literature also reveals that managers need a sophisticated resource inventory system to plan operations and attract investors. The in-house ability to track inventory, sales, and expenses was listed by participants in the failed Wisconsin Sustainable Woods Cooperative as a critical tool. (Vertical integration of certified product also requires an inventory system to track chain of custody.) Of the four co-ops studied, the MWC is the most sophisticated in this regard. It used grant money and volunteer time to design and pilot test its inventory system.

Another key to success is a good working relationship with forestry professionals and service providers, which can help a co-op find customers and conduct business. Good relations may be threatened if the co-op is viewed as competition or as providing poor forest management advice. Consulting foresters and mill operators working in the region of the co-ops were interviewed and reported little conflict at this time, although some were skeptical of long-term viability of such efforts. They were quick to point out, though, that the volume of timber processed and acreage influenced by these co-ops are so small that they still do not create a blip on the radar screen of larger operations, so only time will tell whether traditional forestry service providers become more or less supportive of the co-ops.

Conclusions

The results of this study confirm key challenges to the success of cooperative ventures identified in the literature and suggest innovative strategies to overcoming these challenges. Concerns about membership costs and property rights lost are important but not insurmountable barriers to recruiting forest owners. Nonbinding and low-commitment strategies of cooperation are being developed and refined, such as those used by the ASD and MWC. The co-ops studied seem to have not been hindered by

lack of willing members; a new class of forest owners seems willing to trade off some control over decisions that affect their forests to gain trusted advice and affordable service.

Additional challenges to co-op success exist because of the complexities of capitalizing and managing a vertically integrated, value-added forest products processing stream. Again, innovative strategies are being developed and tested that are hybrids of partnerships that address issues of quality control and management efficiencies; and, of course, leadership, organization, and management infrastructure also are critical to the success of forestry cooperatives, as they are to any other effort to organize people, infrastructure, and institutions. The biggest challenge these co-ops face seems to be amassing the capital needed to create the infrastructure for a local value-added forest industry serving niche markets.

The results of this study also suggest that cooperative forestry endeavors create an opportunity to respond to the new context of changing landownership, land use, and forest industry created by urbanization, technological innovation, and industrial globalization. Professional forestry might be wise to revisit cooperatives as a strategy for reaching landowners, sustaining local forest industry, and making management affordable and acceptable so that forest health can be sustained.

Government and nongovernmental forestry organizations can support co-ops by providing financial, technical, and organizational support. Technical support could include business and marketing plans and resource inventory strategies, as well as silviculture and low-impact harvesting techniques. Organizational assistance could include facilitators helping landowners and communities use cooperatives as economic development and environmental conservation tools. Financial assistance could include low interest loans, start-up grants, and space at industrial parks.

Private forestry consultants can support co-ops by providing the expertise necessary to achieve certification and by offering advice about the practice, cost, and profitability of sustainable forest management in a region. In addition, forestry professionals need to devise innovative strategies for contracting and paying service providers such as loggers and arborists to do the site work. Profits from the value-added processing can be used creatively to pay service providers to produce

the environmental and amenity qualities new landowners desire while extracting lower volume from smaller acreages.

Finally, there exists a critical role for forest science. Forestry cooperatives need different business models, different harvesting systems, different processing facilities, different distribution systems, and, perhaps, even different silvicultural practices. There is much to learn before we can answer the questions cooperatives ask.

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