

Wildland–Urban Interface Forest Entrepreneurs: A Look at a New Trend

R. Bruce Hull and Katie Nelson

ABSTRACT

Wildland–Urban interface forest (WUIF) entrepreneurs are finding a niche in fragmenting forests. Most successful entrepreneurs are either scaling down from their forestry and logging backgrounds or scaling up from green industry. They are skilled in some aspects of working with WUIF owners but often need additional tools, including people and marketing skills, business plans based on hourly fee structure, and technical skills such as amenity silviculture and ecology. Successful entrepreneurs emphasize amenity and environmental qualities, offer diverse services and/or are well networked with complementary businesses, have an appropriate suite of equipment, charge by hour and job rather than commission, and have excellent people skills. A thriving WUIF service provider industry is needed for society to have the capacity to manage its urbanizing forest estate.

Keywords: parcelization, urbanization, green infrastructure, small scale

The trends are familiar. Urbanization is transforming and fragmenting forestland (Alig and Plantinga 2004, Brown et al. 2005) and potentially decreasing the quality of timber and ecosystem services (Germain et al. 2007, Munsell and Germain 2007, McDonald 2008). The motivations of forest owners are changing (Butler and Leatherberry 2004, Kendra and Hull 2005). Owners are less interested solely in generating revenue from timber and increasingly interested in legacy and amenity values such as recreation, wildlife, privacy, and forest health. Many owners seem less tolerant of harvesting-related disturbance and expect forests to be neat and free of mud and debris. City and community ordinances increasingly constrain use of heavy equipment, prevent the establishment of temporary logging roads, or limit the hours during which noisy equipment can operate (Egan

and Luloff 2000). Producers of forest commodities find themselves in a cost-price squeeze because globalizing markets reduce prices while increasing regulation and relocating processing facilities increase costs of production and transportation (Wear et al. 2007).

The consequences of these trends are profound. Once regional conditions change beyond some threshold, traditional forestry service providers find it difficult to operate profitably, even though in aggregation a great deal of forest cover and timber value remains (Barlow et al. 1998). Urbanizing regions therefore lose capacity for management advice and practice as experienced service providers retire or relocate. Professional forestry likewise risks losing relevancy as wealthy, educated, and politically connected owners of the fragmented forest turn elsewhere for professional advice. Economic op-

portunity and perhaps national security are jeopardized as local building materials and energy are neglected. Forest health and ecosystem services may be at greater risk because skilled professionals will be less available to respond to stressors introduced by roads, invasive species, pets, and a changing climate.

Necessity is the mother of invention. Wildland–Urban interface forest (WUIF) entrepreneurs are filling the niche these conditions create. WUIF entrepreneurs see opportunity in fragmenting forests. They recognize the changing motivations and needs of WUIF owners and are developing businesses to offer a suite of services to meet those needs. This study used qualitative methods to locate these entrepreneurs and determine what they do, what obstacles they face, and what makes them successful.

Methods

WUIF entrepreneurs are difficult to find, because there is no professional organization, business license category, or phone-book listing. We used purposive and snowballing sampling techniques to identify and obtain information from a wide variety of entrepreneurs managing forests in the WUI (Babbie 2007). The first informants were identified because they participated in workshops on small and suburban woodlot management hosted by the Virginia Department of Forestry and Virginia Cooperative Extension and/or they were known to state agency

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Table 1. Typology explaining differences between WUIF entrepreneurs according to background.

	Green industry background	Forestry background
Management practices	Accustomed to single tree removal and landscaping jobs	Accustomed to harvesting, planting, or creating plans
Technical skills	Skilled at managing individual trees or plants for amenity outcome, but may lack holistic ecosystem management, silviculture, and timber marketing	Skilled at ecosystem management and timber marketing but may lack silvicultural skills to produce scenery, privacy, and related amenities
People skills	Skilled at working with interface clients, leaving work site neat, showing professional cues-to-care, and working around neighborhood noise ordinances, traffic, and schedules	Less accustomed to working on small sites, leaving work sites neat, or dealing with constraints of neighborhood or city life
Payment structure	Generally charge by some measure of time and materials	Generally charge a percentage of timber harvested and sold
Business plan	Market word of mouth, Internet, newspaper, and mail advertisement; abundant manual unskilled labor	Market word of mouth; lack of skilled labor to operate technical equipment
Equipment suite	Manual, small-sale equipment, such as mowers, plows, chainsaws, and trucks	Large, expensive, technical equipment, potentially "overkill" on small woodlots
Language	Do not refer to themselves as foresters or managing forests; careful to avoid controversial terms such as "harvest" and instead use "improving" or "opening up"	Refer to themselves as foresters doing forestry; some emphasize other terminology; most also use "harvesting" and "clearcutting"

forestry staff as doing this type of work. We "snowballed" this sample by asking the people we interviewed to identify other entrepreneurs doing similar work and continued to conduct additional interviews until we stopped hearing new and different information (i.e., the snowball stopped growing). We purposefully focused our interviewing efforts on finding multiple exemplifiers of loggers, millers, arborists, consulting foresters, and other classifications of traditional forest workers. Limited by funding and location, we mostly focused on entrepreneurs working in Virginia, but also interviewed 10 celebrated entrepreneurs who were located in Oregon, Washington, Texas, New Hampshire, or Maryland. Efforts were made to gain input from people with diverse professional backgrounds, including loggers, foresters, woodworkers, small sawmill operators, arborists, landscapers, and others. A total of 52 service providers were interviewed by phone between June and December of 2008.

Semistructured telephone interviews were used to collect information about the current business practices, perceived obstacles, and keys to business success. Interview length ranged between 20 minutes and 2 hours, although most were approximately 30 minutes. Interviews were digitally recorded and transcribed for analysis. Transcriptions and notes were analyzed using the grounded theory research paradigm (Strauss and Corbin 1998). Data were analyzed using the qualitative data analysis software NVIVO. Potential categories were coded during an initial reading and recoded with subsequent readings of transcripts. These categories were collapsed into the larger concepts reported here. The second author did

the primary coding and the first author did random checks for consistency, which resulted in several revisions and recoding. In addition, we conducted three case studies by visiting specific jobs of different WUIF entrepreneurs to examine the site and interview workers and clients. Full details and additional data from surveys with landowners and interviews with agency-based and public forestry staff are available in a study by Nelson (2009).

Findings

Most WUIF entrepreneurs loosely fit into one of two groups. One group had their beginnings and training in timber-oriented forestry or logging; they were accustomed to working on larger sites and were learning to rescale their operations and work with a new clientele. The second group comes from a green industry background, including mostly arborists or landscapers, striving to be relevant to their traditional clients that also required forest services. Each group already possesses many of the required skills to successfully meet the needs of this clientele. Table 1 lists some of the differences between the two groups, the main differences being service providers coming from a green industry background possessed the necessary marketing and business plans/skills to work with WUIF clients, including a payment schedule, but lacked the silvicultural skills and timber products sales networks possessed by service providers coming from forestry and logging backgrounds. Although this categorization provides a useful heuristic to summarize WUIF entrepreneurs, some entrepreneurs defy this classification: some fit into both categories and some fit into neither. The most common exceptions

were sawmill operators who focused on aggregating and processing timber harvested in urbanizing areas.

Characteristics of WUIF Entrepreneurs

Regardless of their background, WUIF entrepreneurs shared many similar characteristics such as the ability to diversify, adapt, and form networks (Table 2). A comparison and contrast of these characteristics follows.

Environmental and Amenity Emphasis. WUIF entrepreneurs of all backgrounds espoused a strong environmental ethic, which they emphasized when talking with clients, on websites, and in their advertising. Many said they followed this ethic to such an extent that they refused jobs that went against these principles. One stated, "And so to us, how much in dollars and cents comes off this woodlot this time around isn't our primary goal, and if it's your primary goal, then maybe we're not the people to be working on your woodlot." Others refused jobs such as timber liquidation for site conversion; they explained that the long-term health of the forest is more important than short-term profit for themselves or for their clients. Some small sawmill operators and woodworkers showed their environmental ethic by using waste wood from urban areas: "Utilizing hazard trees just seemed like the right thing to do environmentally. . . . If homeowners can't be convinced to leave the trees, I take advantage of the wood as best I can." These entrepreneurs seem to receive support for their ethics from their clients. One said, "I've had a couple of landowners that just believe in the cause and they didn't want to be paid. I think

they essentially donated [their part of the money] to me to keep the cause going.”

WUIF entrepreneurs emphasize amenities over timber. One entrepreneur explained that, “Some people want their woods for wildlife, some for natural growth, some for screening, or shade, everyone has different values. I don’t see too many people who want to make money from [harvesting] the products.” Although revenue from timber harvesting often is not the primary goal, it can still be important. Another service provider explained the emphasis on amenities this way: “The people I work with can pull some timber out to help offset or pay for all the costs of doing what they want on their land.” Said differently, income from harvesting helps pay for putting in recreational trails, wildlife plantings, or other amenities desired by the landowner. For WUIF entrepreneurs who emphasize harvesting timber, there is demand from clients to minimize damage and clean up any debris afterward, leaving the site neat. One service provider stated that he emphasized neatness in his marketing: “They like [my work], because it doesn’t look like what your average timber harvesters are doing. It’s clean work, there’s not much damage.”

In addition to being “neat,” many WUIF entrepreneurs emphasize to their clients that they are practicing “sustainable,” “low impact,” or “green” management. Thus, at least in their rhetoric, they emphasize environmental quality and some even imply that their work produces higher environmental quality than does timber-oriented forestry and logging operations, although none offered specific evidence to support this assertion. Some explain that they practice “worst-first” or “restorative” thinning to begin to repair stands that have been high graded in the past. Others explained to landowners that their management strategy imitated natural stand dynamics because many clients are interested in keeping their land “natural.” It is important to note that we did not assess actual environmental impacts of these operations, but rather report here what WUIF entrepreneurs told us they emphasized in marketing and conducting their business practices.

Diversified, Adaptable, and Networked. WUIF entrepreneurs of all backgrounds seemed willing to diversify their businesses. They provide a wide range of services, allowing them to reach a wider range of clientele and to service the diverse needs of single clients. For small companies with

Table 2. Characteristics of WUIF entrepreneurs.

Payment structure	Charge by some measure of time and materials, not commission
Diversified	Offer a suite of related services to reach a wider range of clientele, provide multiple services for a single client, and protect against market fluctuations; larger companies have multiple capabilities in house, smaller companies are networked
Networked	Referral agreements with other companies that provide complementary services, so that together these companies offer a full suite of services, minimizing transaction costs for client
Adaptable	Study trends to make changes in business practices
Creative marketing	Market services and products towards high-end, specialty niches, promote “sustainability” and “green,” use Internet to reach customers
Value-added revenue capture	Process harvested material to create additional revenue streams; transport high-value timber to traditional mills; chip, mill, or create finished products
Amenity focus	Focus on providing amenity values, increasing forest health, and increasing property and legacy values
Terminology	Avoid prejudice about forestry or the forest industry by using terms such as “total resource management,” “environmental services,” and “woodscaping”
Stewardship ethic	Esouse strong environmental ethic: long-term forest health is more important than short-term profit; report refusing jobs that went against ethic

only one or two employees, diversification means that they have a broad skill set. One service provider said he performs a suite of services ranging from traditional forestry, to “phase I environmental assessments,” to managing a pine plantation on top of a toxic dump. Another service provider explained that it was easier for a landowner to work with his diversified company rather than multiple specialized companies because he can accomplish multiple tasks, often reducing the transaction costs of contracting with multiple parties. He also can charge less because of reduced travel and equipment relocation. However, these WUIF entrepreneurs admit limits because of lack of expertise and equipment. One service provider with a forestry background, stated, “We would get into arborist work, but the insurance rates are really high. If we do any arborist work, it’s consulting, or something that’s not hazardous.” In these cases, and as an alternative to diversification, some WUI entrepreneurs build networks.

WUIF entrepreneurs network with other entrepreneurs who perform complementary services. Members of a network promote mutually beneficial cooperative and referral arrangements. One example is a small sawmill operator and a tree company that work together to take down and saw trees: the sawmill operator receives free logs and the tree company receives free removal. One entrepreneur with a forestry background spoke about an arrangement he has with a local arborist and landscaper. Be-

tween the three of them, they can take care of almost any land-management needs a WUIF landowner has. He said they call on “... a certified arborist and tree climber ... [in situations where] they need to do a pruning they’re not comfortable doing, or a tree takedown due to houses or power lines ... also a landscaper that helps. They kind of do the same [referral] thing for us. We all work together.”

Many WUIF entrepreneurs with backgrounds in the green industry focus on using what would otherwise be waste lumber rather than paying to dump it or selling it as firewood. This capability requires that they take the time to learn about bucking and grading lumber, getting certified, and build a relationship with sawmills. However, WUIF entrepreneurs report sawmill operators are wary of the green industry. Thus, green industry professionals form networks with millers or with loggers and foresters the millers trust: “I’ve found in past 5 years that if you can demonstrate some kind of knowledge base to the processing plant for lumber, they will [work with] you.”

WUIF entrepreneurs, not surprisingly, recognize their entrepreneurial tendencies. They say they try to remain nimble and flexible, keeping an eye on current industry trends and landowner needs and expectations, and try to adapt their business structure and focus to meet changing conditions. Many WUIF entrepreneurs say they eagerly learn new skills that are not traditionally considered part of their field. One stated,

“There are some things I might take on that I haven’t done before, but through a combination of education, experience, and everything else, I can figure it out and do a good job. I can’t think of anything that I’ve had to turn down.” Another stressed the need to look outside jobs traditionally labeled as forestry. He stated, “Foresters are trained in environmental awareness, and that can be put to good use.” This entrepreneur stressed the importance of being aware of current market trends and being willing to mobilize his business to meet those trends. “We do try to be ahead of the curve as far as being prepared to fill a market niche, and that’s really key. If you don’t, you’re going to go out of business.”

Payment Schedule. WUIF entrepreneurs usually charge by some measure of time and materials. Several stated that they prefer this method over charging a commission on stumps because it helps in marketing their services to the landowner. Payment by time and materials removes the incentive to mark more of the valuable timber as a way to increase commission. One entrepreneur stated that this fee structure sets a landowner’s mind “at ease.” Another entrepreneur said it put his mind at ease: “The overriding reason [I like it] is that it takes away any incentive to cut the best and leave the rest. We’re going to get paid even if we’re cutting the ugliest trees ... [and] we’re not going to lose our shirt doing it. It gives us a feeling that we are not being chased by the market.” Another entrepreneur explained why he didn’t like to charge by commission: “I feel it’s a conflict of interest, I always have. I don’t care how much of an angel you think you are, it’s always in the back of your mind when you’re marking trees, if you paint the bigger trees you’ll make more money. We provide a service just like a lawyer and should be paid for a professional service.”

Nonetheless, WUI entrepreneurs lament that an hourly payment structure can be cost prohibitive for many potential customers; therefore, they continue to charge on a percent commission, but on a sliding scale depending on the acreage and quality of the timber rather than a flat commission rate. One stated, “The less the material is worth, the less we can pay for it, right to the point that we often don’t pay for it at all. In particular pulpwood and firewood quality material has so little value that we can’t pay the landowner anything for it.” Occasionally, WUIF entrepreneurs, when working on small or low-value forests, will not charge

the landowner anything, but will not pay them anything either. They take all the value from the extracted timber as payment for their services and the landowner receives only the improvement to their forestland. Some entrepreneurs also lament that their small-scale forestry operations offer, at best, a limited opportunity for profit when compared with traditional timber harvesting: “I think most of the income will still come from timber sales. The small-scale work will be additional income.”

Maximizing and Adding Value, Not Volume. WUIF entrepreneurs talk about the need to be smart and innovative in marketing timber products, using their network and sometimes the Internet. One sawyer who was exceptionally good at this was able to exponentially increase his income by selling book-matched, figured woods as “art lumber” on eBay. He said that he had been able to make more than a living the past 4 years on other people’s junk, and that “marketing is literally everything.”

Other WUIF entrepreneurs emphasize sorting and grading. They are careful to direct the products they remove to the highest and best use for that product. WUIF entrepreneurs with forestry backgrounds were generally more adept in marketing their products. Green industry professionals are accustomed to dumping their removed material or selling it as firewood. Grading and marketing their logs as timber presents a steep learning curve.

Another marketing concept that several entrepreneurs mentioned is the current emphasis on “green” products. Many entrepreneurs emphasized that their practices were “green” in marketing of services to landowners, personal philosophy, and/or in marketing of harvested products.

Terminology. Some WUI entrepreneurs are struggling to find a label that describes their small-scale forest management work. They no longer fit under the traditional categories of foresters, loggers, arborists, landscapers, or millers. Some of the descriptions and terms they use include “total resource management,” “environmental services,” “forest resource manager,” “biological woodsman,” “conservation services,” “agriculture and forestry services,” “urban/interface forestry,” “woodscaping,” “land improvement,” a “fully vertically integrated wood processing company,” and “forestry services.” Hull et al. (2004) report that new forest owners are wary of forestry professionals; so we expected (and asked whether) ser-

vice providers with forestry backgrounds used other names or professional affiliations when approaching small-scale landowners. Instead we found the opposite: most entrepreneurs with forestry backgrounds did not perceive landowner concern and thus referred to themselves as foresters, both in conversations and in advertising. One WUI entrepreneur stated that he had never lost business because he referred to himself as a forester.

However, WUIF entrepreneurs admitted that it was difficult for them to find business because they have trouble getting word of their services to potential clients. Clients wanting their kind of service did not know what to ask for, and so did not know who to call or what kind of company to search for. One entrepreneur lamented that small-scale forestry services did not have a category in the phone book. Others reported that most landowners hear about their services through word of mouth, which is a useful, but a somewhat inefficient and sporadic method of advertising. Several WUIF entrepreneurs mentioned that establishing a label for small-scale forestry services and promoting it would increase visibility for their work and assist in advertising, others saw no need for changing what they called their services.

Obstacles and Opportunities

We specifically asked WUIF entrepreneurs about the obstacles they encountered in working with small-scale forest landowners. The findings differed by the entrepreneurs’ background and closely mirror many of the points raised previously. For the most part, entrepreneurs with a background in the green industry already possessed many of the people skills, appropriately scaled equipment, and correct business model for working with WUIF owners, but sometimes lacked technical skills, such as knowledge of silviculture, best management practices, log grading and marketing, and ecosystem management. WUIF entrepreneurs with forestry backgrounds are well suited for small-scale land management as far as technical knowledge, but lacked some of the people and business skills for working at smaller scales and producing amenity outcomes. This information is detailed in Table 3.

Conclusion

Small, fragmented, and diverse forested tracts are increasingly the norm in our nation’s urbanizing areas. They require careful management and restoration if they are to

Table 3. Obstacles and opportunities for transitioning to work in the small-scale forestry industry by background.

	Green industry background	Forestry background
People skills	Already possess many of the needed people skills	Need to learn how to work with small acreage landowners, such as how to meet their expectations of how the site will look when work is completed, and how to work around city or neighborhood ordinances
Equipment suite	Need equipment capable of handling larger quantities and larger pieces, without bucking logs into firewood	Need smaller equipment suitable for small-scale woodlots and less damaging to residual trees and soil; may be able to use same equipment but with careful operations
Language	For the most part, already use appropriate language	Some suggest that foresters need to use fewer forestry terms around landowners, such as “harvesting,” “stumpage,” “logging,” and “clearcut”
Technical skills	Need additional technical knowledge about ecosystem management; need silviculture for amenity, privacy, and property value	Need silviculture for amenity, privacy, and property value rather than for the maximization of economic revenue from timber
Payment structure	Most already use payment structure by hour or job	Need new structure given low value timber and high time on site, either by charging for time or by sliding scale commission
Business practices	Need to diversify the suite of services they offer	Need to diversify the suite of services they offer

sustain ecosystem services, support local forest-based economies, and provide reliable supplies of energy and materials. Private forestry consultants offering traditional services are finding profits and clients harder to come by in this new forest. Public forestry programs are retreating in the face of budget reductions and retooling to be relevant to an urbanizing electorate.

Entrepreneurs are emerging to develop market niches created by these trends. Most WUIF entrepreneurs are either scaling down from their forestry and logging backgrounds or scaling up from green industry. They are skilled in some aspects of working with WUIF owners, but often need additional tools, including people and marketing skills, business plans based on an hourly fee structure, and technical skills such as amenity silviculture, ecosystem management, and ecology.

Professional and public forestry programs should reach out to assist WUIF entrepreneurs. Several notable efforts are underway. Texas, Maryland, Pennsylvania, and Virginia forestry agencies, e.g., have held workshops for green industry businesses considering a move into this new market [1] and the US Forest Service and Southern Group of State Foresters developed a “Changing Roles” program designed to assist agency foresters acquire a skill set effective in the WUIF. [2]

Endnotes

[1] The 2009 Texas’ Forest Expo attracted almost 1,000 by targeting family forests with the slogan, “targeting forests one backyard at a time”. Maryland and Pennsylvania hosted Landscapes and Backyard Woodlots: Busi-

ness Opportunities for the Green Industry at Gettysburg in March 2008 based on Kays et al. (2006). Virginia hosted a conference on Business Opportunities with Small Acreage and Suburban Woodlands, 2008, giving continuing education credits through the International Society of Arboriculture, SHARP Logger, and Society of American Foresters. The Forests for the Bay program (2010) is an example of partnerships among nongovernment organization and government organizations to encourage management by new WUIFs.

[2] The Changing Roles program is available at Centers for Urban and Interface Forestry website (Interface South 2010). In Nelson (2009) the second author describes interviews with agencies and other public foresters and summarizes the variety of strategies they suggest.

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