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Succession Planning Among Logging Business Owners Approaching Retirement Age in Georgia and Florida, USA

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Abstract

The advanced age of logging business owners in the US South and their pending retirements has created uncertainty about the future stability of timber harvesting. Succession plans increase the likelihood of business longevity, but it is unknown how many logging business owners in the US South have one. In-person interviews of sixteen logging business owners aged 52 through 75 years were conducted in Georgia and Florida in 2022, focusing on business characteristics, employment, perceived challenges, profitability, and succession planning. Most owners had no written succession plan but did have contingency plans for short-term, unanticipated absences. Owners greatest challenges were trucking, insurance premiums, fuel costs, equipment pricing and availability, and labor. Loggers' associations, forestry associations, and mill procurement staffs should be proactive in encouraging logging business owners to prepare succession plans.

Keywords: timber harvesting, wood supply chain, forest business, profitability, family business, workforce, rural economies

1. Introduction

Timber harvesting in the US South is a critical component of the forest products industry and is important for the health of rural economies. The US South is responsible for approximately 60% of the annual harvest volume in the US (Oswalt et al. 2019). Timber harvesting in the region is distinct from other regions as logging businesses typically have larger capital investments, harvest larger tracts, and have longer operating seasons than logging businesses in other US regions (Conrad et al. 2018a, Gc et al. 2020, Blinn and Nolle 2023, Bowman et al. 2023, Conrad et al. 2024).

In 2022, 30% of Georgia logging business owners expected to leave the industry within five years (Conrad et al. 2024), compared to 23% five years earlier (Conrad et al. 2018b). Similarly, in both 2017 and 2022, approximately 25% of logging business owners in the Lake States region planned to exit the industry within five years (Gc et al. 2020, Blinn and Nolle 2023). The high percentage of owners expecting to leave the industry is logical given the demographics and trends facing the sector. The average age of logging business owners increased from the mid-40s during the 1990s to almost 60 years during the 2020s, with nearly 40% of logging business owners 60 years old or older (Conrad et al. 2018a, Blinn and Nolle 2023, Conrad et al. 2024). The logging industry has undergone a long period of consolidation, with the number of logging businesses in the US falling from more than 13,000 to just over 8000 between 1990 and 2023 (BLS 2023). Recent years have also been very difficult for logging businesses because of rising costs and limited profitability, among other challenges (McConnell 2020, Gutierrez-Castillo et al. 2022, Blinn and Nolle 2023, Conrad et al. 2024, Conrad and Blinn 2024).

Logging businesses in the US are typically family businesses. More than 70% of logging businesses in Georgia and Florida employed at least one relative of the owner, and relatives accounted for approximately 20% of all employees in 2022 (Conrad et al. 2024). Family-owned businesses account for approximately one-third of all firms with employees, and tend to employ more people than non-family-owned firms (SBA 2021). Research indicates that family-operated firms are more profitable than non-family businesses

(Anderson and Reeb 2003), with family-operated firms achieving a seven percent higher return on assets than non-family-owned firms in the US (Poza 2012 as cited in GVSU 2023). Family-owned businesses also have greater longevity (Baron and Lachenauer 2021) and resilience than non-family businesses (Chrisman et al. 2011).

Intergenerational transfers of logging businesses have become less common since 2010 compared to previous decades (Blinn et al. 2015, Conrad et al. 2018a). A Minnesota study found that only nine percent of respondents thought it was very likely that their business would be taken over by someone in their family (Blinn et al. 2015). Fewer than 25% of logging business owners would encourage friends or family members to join the logging industry (Egan and Taggart 2009, Gc et al. 2020). These findings, coupled with the pending exodus of members of the baby boom generation from the logging sector, creates ambiguity regarding the future of the logging industry in the US as a whole and in the US South specifically.

A written succession plan is a document that states when, how, and under what circumstances ownership of a business will transfer from one owner to another (Mishra et al. 2010). A critical component of a succession plan is the identification of a suitable successor. The ideal candidate has career goals that align with the business, which is especially important for family businesses (Handler 1994). Ideally, the transition should occur when the business is in good financial standing, and the incumbent owner should gradually decrease his duties over time instead of leaving abruptly. The successor should receive thorough training and mentoring, and their authority during the transition period should be clearly defined and agreed upon.

A popular succession planning method called »The Seven-Pointed Star Model« outlines seven steps for successful succession planning:

⇒ make the commitment
⇒ assess present work/people requirements
⇒ appraise individual performance
⇒ assess the future work/people requirements
⇒ assess individual potential
⇒ close the development gap
⇒ evaluate the succession planning and management program (Mehrabani and Mohamad 2011).

These steps are intended to prepare managers for succession by identifying the strengths of the current workforce, predicting the future needs of the company, and determining how the current employees can be used to meet them. Determining which individuals are best suited for certain responsibilities and roles before an unexpected vacancy will result in a much smoother transition period. Making the commitment to design a succession plan is a seemingly simple but crucial step. Yet, many business owners do not think about their succession plan and do not have a defined plan describing how it will be carried out, which leaves the business unprepared for any sudden, unpredictable event, such as injury, death, or serious illness.

There is minimal published literature regarding succession plans among logging business owners. Agricultural researchers have conducted much more research, and some of their findings may apply to logging businesses. Both logging businesses and farm businesses have historically relied on intergenerational transfers within families (Mishra and El-Osta 2008, Blinn et al. 2015, Conrad et al. 2018b). Intra-family farm transfers offer many advantages, such as reduced taxes, reduced business transfer costs, and a smoother ownership transition (Mishra and El-Osta 2008).

Failure to plan for business succession can have dire consequences for a business. For example, inadequate planning has forced some farm owners to liquidate farm assets to cover the costs of retirement, limiting the long-term viability of the enterprise. Inadequate planning can also result in managers who are unequipped to lead due to insufficient training prior to the transition (Mishra and El-Osta 2008). Additionally, disputes over how to manage assets can cause tension and fracture relationships within families, threatening the harmony of the family business. Broadly, the risks associated with poor planning include financial insecurity, stressed relationships, and capital losses.

When a family business owner dies unexpectedly, it often leads to business closure; nearly half of family business failures in 2009 happened after the owner's death (Cornell SC Johnson College of Business 2024). Additionally, only 16% of businesses reported an orderly transition. This finding suggests that having a succession plan documented before unexpected events occur is important for business longevity and maximizes the likelihood of a smooth ownership transfer.

The purpose of this study was to explore succession plans and intentions of logging business owners approaching retirement in the US states of Georgia and Florida. Georgia harvests more timber than any other state in the US, and Georgia and Florida timber markets overlap, making this an ideal study area. In addition, previous studies in Georgia and Florida

(Greene et al. 1988, Baker and Greene 2008, Conrad et al. 2024) allow for comparisons between logging businesses with an owner approaching retirement to the logging business population as a whole. The specific objectives of the study were to:

⇒ evaluate succession plans for logging businesses with owners approaching retirement

⇒ measure changes in capital investment and profitability over the life of these businesses.

2. Materials and Methods

In-person interviews were conducted with logging business owners approaching retirement in the US states of Georgia and Florida. Business owners approaching retirement were defined as those 55 years old and older because it was believed that these owners were far enough into their careers to have at least considered their plans for retirement and would soon be approaching the age at which they could collect social security benefits. The federal retirement age in the United States begins at 62 years because that is when partial social security benefits can be collected; full benefits can be collected at 67 years, which is considered the full retirement age for those born in 1960 or later (SSA 2024).

A questionnaire consisting of 18 open-ended questions, 43 closed-response questions, and four 5-point Likert scale questions was developed. The questionnaire included questions on the following topics: general business characteristics, retirement planning, owner background, and financial information. The general business characteristics section was consistent with statewide mail surveys conducted in Georgia and Florida (Conrad et al. 2018b, 2024) to allow for comparisons between logging businesses with an owner approaching retirement to the logging business population in these states. The general business characteristics section focused on basic company information, such as the number of employees, logging equipment operated, and harvesting practices. Owner background questions explored motivations for entering the logging industry, family ties, and owner education. Retirement planning questions asked whether the owners had a succession plan, how long they planned to remain in the industry, and whether a family member(s) was expected to take over the business. Financial questions pertained to the company's financial health and capital investment.

Pre-testing was conducted to ensure questions were easily understood and to get an estimate of interview length. Pre-testing was conducted with two Georgia logging business owners, a forest business professional, and a state Sustainable Forestry Initiative coordinator, totaling four subjects. Responses from pre-testing were not included in the results.

A list of logging business owners approaching retirement was compiled by asking procurement foresters, logging association leaders, and logging safety consultants to share contact information of logging business owners who met the study criteria. Each identified logging business owner was contacted by phone and invited to participate in an in-person interview, with follow-up text messages sent if the first attempted contact was unsuccessful. Additional logging business owners were identified using a snowball approach in which interview participants were asked to provide contact information for logging business owners that fit the study criteria. A list of 30 logging business owners was created, and 16 logging business owners agreed to participate. Interviews were conducted during the summer and fall of 2022.

Interviews were held across Georgia and Florida on logging sites, logging business offices, or other locations convenient to participants. Each interview lasted approximately 45 minutes, and audio was recorded for future transcription with permission from participants.

Data were analyzed using Microsoft Excel and NVivo (QSR 2020). The University of Georgia Institutional Review Board determined that the study did not meet the federal definition of human subjects research.

3. Results

3.1 Business and Owner Characteristics

Sixteen logging business owners participated in the study. All participants were white males. The average age was 62 years, with ages ranging from 52–75 years (Table 1). The majority of respondents harvested timber in the state of Georgia exclusively, while four businesses harvested in multiple states. Respondents had been involved in the logging industry for an average of 38 years and operated their own logging business for 25 years. This indicates that most respondents held other positions in the logging industry before starting their own logging business or inheriting it from a family member.

The majority of the companies were family businesses, with 69% employing family members, including 44% that employed one or more children of the owner. Half of the owners had a family history (father or grandfather) in the logging industry and the rest

Table 1 Owner age and experience, states of operation, and scale of operations for 16 logging businesses with an owner approaching retirement in Georgia and Florida, USA

Respondent	Age, yr	Logging industry experience, yr	Years as owner	States of operation[1]	Number of crews	Average weekly production, t
1	58	33	33	GA	14	4082
2	65	34	34	GA	4	12,519
3	53	35	22	GA	1	1724
4	59	38	28	FL, GA	1	1270
5	75	31	17	GA, SC	19	20,321
6	61	42	21	FL, GA	2	3628
7	52	35	6	GA	1	1270
8	63	36	22	GA	1	907
9	58	40	30	GA	2	2540
10	63	46	36	GA	4	3629
11	56	37	26	GA, FL, AL	3	2268
12	60	30	20	GA	2	2722
13	70	51	39	GA	6	5443
14	68	51	25	GA	7	9144
15	74	30	12	GA	1	1270
16	54	35	4	GA	2	1724

[1] States of operations are listed in order from most frequent to least frequent harvesting

had no familial ties to the industry. Seventy-five percent of the owners were the sole owners of the business, while the others held joint ownership with a spouse, son, sibling(s), or a business partner.

The majority of respondents were high school graduates who did not pursue higher education. Twelve percent graduated from college, 6% attended college but did not graduate, while 12% did not graduate from high school. Bachelor's degree holders studied forestry and agronomy, respectively.

All of the logging businesses operated whole-tree harvesting systems consisting of an average of one feller-buncher, one grapple skidder, one knuckleboom loader equipped with a pull-through delimber and slasher saw, and three company-owned log trucks per crew. Five businesses operated a processor on one of their crews. Eleven of the sixteen logging businesses also owned at least one bulldozer or motor grader for forest road maintenance.

Weekly production averaged 4654 t wk^{-1} and ranged from 907 to 20,321 t wk^{-1} (Table 1). The majority of participating businesses had grown since their first five years of existence. Seventy-three percent of these businesses employed more people at the time of the interview compared to their first five years of existence, while 20% employed fewer (Table 2). Seventy-nine percent of responding businesses had higher capital investments at the time of the interview compared to their first five years of existence. A plurality of responding businesses (43%) reported improved profitability compared to their early years, while 29% reported being equally profitable and 29% reported being less profitable.

3.2 Succession Planning

All but one respondent expected to remain in business in 2027. Respondent three stated that he preferred to retire within five years, although this depended on his finances. None of the respondents' retirement was imminent at the time of the interview.

Only 12% of respondents had a written succession plan. All owners with a succession plan had family members that intended to take over ownership and management of the business. The son of respondent six, who is currently studying forestry in college, planned to take over ownership and management of that business. The ownership and management of business 11 will be shared by the son and daughter of the current owner, both of whom currently work in the business as supervisor and office manager, respectively.

While 88% of respondents lacked a formal, written succession plan, most business owners had an idea of

Table 2 Changes in employment, capital investment, and self-reported profitability at the time of interview compared to the company's first five years in existence for 16 logging businesses with an owner approaching retirement in Georgia and Florida, USA

Respondent	Full-time employees	Net change in employment	Capital investment at end of first 5 yr, 1000 USD	Capital investment in 2022 1000 USD	Profitability during first 5 yr	Profitability most recent 5 yr
1	15	+8	100–499	≥3000	Poor	Good
2	32	+26	100–499	≥3000	Average	Good
3	9	–9	1500–1999	1000–1499	Good	Average
4	3	0	100–499	<100	Excellent	Poor
5	67	+42	<100	≥3000	Poor	Good
6	29	+24	100–499	≥3000	Average	Good
7	5	+1	–	2000–2499	NA	Good
8	9	+3	500–999	1000–1499	Average	Poor
9	23	+18	100–499	≥3000	Poor	Average
10	9	–9	500–999	≥3000	Excellent	Average
11	20	+12	100–499	≥3000	Good	Good
12	13	+6	500–999	2000–2499	Good	Good
13	48	+42	2500–2999	≥3000	Average	Average
14	9	+2	1000–1499	2500–2999	Average	Good
15	3	–1	1000–1499	1000–1499	Good	Good
16	12	–	–	1000–1499	Good	--

how they would like to end their career in the logging industry. Forty-four percent stated that they planned to gradually reduce workload until retirement, 25% planned to work until death, and 19% planned to exit at once rather than gradually reducing their workload (Fig. 1). Respondent two stated that most of his employees have worked for him for decades and are like family, so he does not want to take away their primary source of income. Thirty-one percent of respondents reported that their age was likely to necessitate their exit from the logging industry (Table 3). The departure of owners five and twelve was dependent on their children's readiness to assume leadership in the business. Nineteen percent of respondents reported that financial or regulatory challenges would lead to their exit from the industry rather than a choice on their part.

No respondents had a written contingency plan for what would occur if they were unable to operate the business due to unforeseen circumstances, but 56% stated that one or more family members would take charge, and 38% stated that their harvesting crews were capable of operating independently if the owner were unavailable for some period of time. One owner said he would attempt to manage the business remotely, and another said that he would sell his business if he was unable to operate it himself.

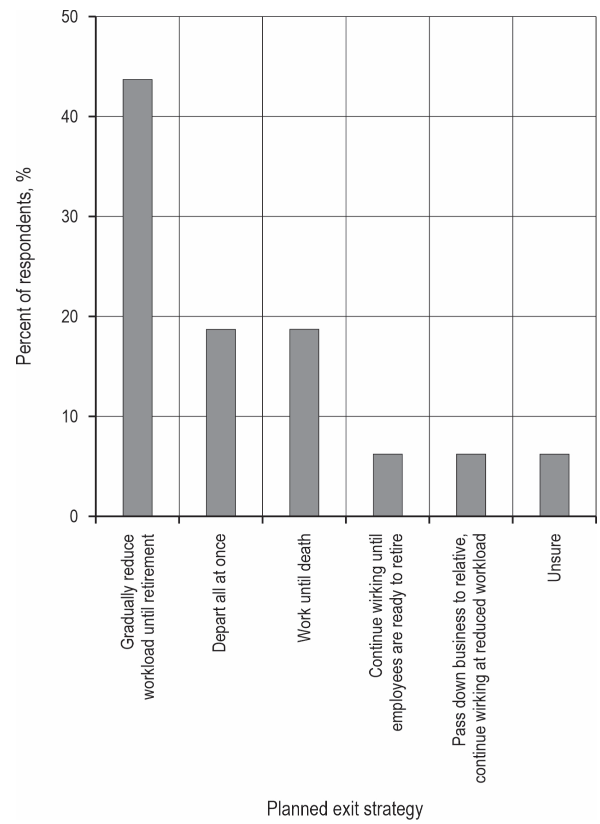

Fig. 1 Planned exit strategy for sixteen logging business owners approaching retirement in Georgia and Florida, USA

Table 3 Proximate cause of exit from the logging industry and likely outcome for the business after the owner's departure for 16 logging businesses with an owner approaching retirement in Georgia and Florida, USA

Respondent	Proximate cause of exit from the logging industry	Most likely business outcome after owner's departure
1	Log truck transportation regulations, fuel prices	Sell to an employee or transfer ownership to family member
2	Workforce availability	Transfer ownership to an employee
3	Fuel prices, insurance, workforce availability	Sell equipment and/or other assets and dissolve the business
4	Equipment and fuel prices, workforce availability	Sell the business, may transfer ownership to grandson
5	Son's readiness to manage the business	Transfer ownership to son
6	Owner/spouse health and age	Transfer ownership to sons-in-law and employee
7	Owner health and age	Sell business
8	Owner age and financial health of business	Sell or dissolve the business
9	Owner death	Sell to an employee
10	Owner death	Transfer ownership to son-in-law
11	Owner death	Transfer ownership to son and daughter
12	Children's readiness to manage the business, owner age, financial health of business	Transfer ownership to a family member
13	Owner health and age	Transfer ownership to a family member
14	Owner health and age	Transfer ownership to an employee
15	Owner health	Transfer ownership to sons and wife
16	Owner death	Transfer ownership to sons

3.3 Business Challenges

The most common problems identified by respondents included trucking, insurance premiums, fuel costs, equipment prices and availability, and finding quality workers (Table 4). Fifty-six percent of respondents listed fuel costs as one of the greatest challenges for their business, followed by 44% who reported trucking or finding truck drivers.

All but one respondent (94%) stated that the challenges facing logging businesses had changed since they began working in the industry (Table 4). Logging business owners reported that prices were higher, profit margins narrower, regulations had increased, and qualified labor was less plentiful than when they started their business. On the other hand, respondent #11 noted that harvesting timber was much safer than when he began his career.

4. Discussion

The logging businesses participating in this study represent the upper half of the distribution of logging businesses in Georgia and Florida in terms of weekly productivity, profitability, as well as owner age and experience, forming the backbone of the logging industry in these two states (Conrad et al. 2024). These businesses have owners approaching retirement age after growing their business over three or more decades, but now face an uncertain future.

The absence of a succession plan among 88% of participating businesses is a cause for concern for the future of the logging sector and the forest products industry in Georgia and Florida. When ownership of a business is transferred to a new individual, the successor should take at least one year to train under the previous owner to ensure a smooth transition (Blinn et al. 2015). Without a succession plan, this training may not happen and the new owner may be unprepared for the job. This may be less of a concern for the respondents who plan to transfer ownership to a family member or current employee, although working in a business may not prepare one for being the decision-maker for that business. Furthermore, intergenerational transfers of logging businesses are becoming less common (Allred 2009, Blinn et al. 2015, Conrad et al. 2018a, Gc et al. 2020).

While 88% of respondents did not have a written succession plan, most had a general idea of what they would like to happen to their business when they retired or reduced their workload. Half of respondents said that their business would most likely be passed down to a family member, including sons, daughters, sons-in-law, wives, and grandchildren (Table 3). These owners may benefit from, and be receptive to, assistance in creating formal succession plans. University

Table 4 Problems facing logging businesses with an owner approaching retirement and perceived changes in the challenges faced by logging businesses

Respondent	What are the biggest problems facing your business today?	Quotations from responses to the question: Do you think that the challenges faced by new businesses are different today compared to when you first began?
1	Trucking, insurance premiums, fuel costs	Yes. Price of everything is much higher, and what loggers are getting paid hasn't really changed. They've increased production to keep up but that can only go so far
2	High costs, equipment shortage, finding truck drivers, fuel prices	Insurance would be a problem because if you don't have experience, you'll get a worse rate
3	Fuel costs, insurance premiums, workforce availability	Yes. The margin is so much tighter now because of high fuel prices. Finding experienced help is harder
4	Rising costs, fuel prices, workforce availability	Yes. Many more challenges today than there was back then. Mainly cost and prices with stagnant mill prices. This is what is going to kill the logging industry
5	Fuel costs and trucking capacity, workforce availability	Yes. Trucking, rising costs, and finding employees. Trucks used to be easy to manage and there were lots of employees. Also, regulations have changed a lot, DOT and county regulations related to timber harvesting notification systems. Every county they cut in they have to notify before cutting to get a permit, you didn't have to do that before. Can get shut down by the county over issues more easily now
6	Fuel costs, insurance, workforce availability and quality	Yes, lots of new challenges. New DOT regulations, in the state of Florida they have an overweight permit that allows them to carry 88k lbs. but they can't haul on the interstate
7	Fuel prices	Much more regulated now
8	Equipment prices, workforce availability	Yes. Loggers are financially impacted by equipment prices, fuel, tires, all parts. It was already headed south before COVID-19, and it only accelerated it. Employment will continue to be a challenge. Not a lot of young people are out in the woods anymore unless they're a relative
9	Workforce availability, insurance premiums, fuel costs	Yes. Fuel, equipment, trucking, insurance, and tire costs
10	Cost of doing business	Absolutely. Mostly because of government regulations and cost of doing business. Return on investment is not what it used to be. Harvesting permits have to be obtained in person from the county which wastes time and gas
11	Truck driver availability	Yes. Paperwork requirements with government and insurance. Harder to do things right. Things are now highly mechanized which requires higher investments, but it is safer
12	Equipment costs, insurance premiums, fuel costs, workforce availability	Yes. More difficult to get loans, borrowing money isn't as easy as it used to be. Price of equipment has doubled, insurance has doubled. Logging rates have not kept up
13	Trucking, insurance premiums, Availability of parts for equipment	Yes, costs are a lot higher
14	Workforce availability (drivers and equipment operators), trucking	Yes. There was more quality labor supply [sic] before, more available equipment, financing was easier
15	Equipment availability	I'm not sure, I can't tell much of a difference compared to when I first started
16	Trucking, driver availability, insurance premiums, fuel prices	Yes, they would have a harder time with getting help and trucking [in 2022]

Extension and others have developed succession planning resources tailored to the needs of farmers (e.g., O'Rourke 2017, Kirkpatrick 2022, University of Nebraska-Lincoln 2024). In contrast, similar resources are rarely tailored to the needs of logging business owners. There may be an opportunity for state loggers' associations and forest industry trade associations to address succession planning with their memberships. Failure to plan for a transition can lead to unwanted asset liquidation, ineffective management, decreases in financial security, and, in family businesses, tension and damaged relationships (Mishra and El-Osta 2008, Mishra et al. 2010). These outcomes are particularly likely for those businesses whose owner had no written succession plan and intended to operate the business until their death.

Most owners had informal contingency plans that would allow the business to temporarily operate in their absence. Some owners may assume these contingency plans are suitable substitutes for a written succession plan. However, contingency plans generally address day-to-day operations. They are not a suitable substitute for a written succession plan that addresses the complex managerial, financial, and legal issues that arise with an ownership transition. In Georgia, if a successor is not named in a will, the estate will be transferred to the owner's spouse and children, and if the owner does not have living relatives, their estate will go to the state (Georgia Code §§ 14-11-506). This issue could be unfavorable if the owner wanted an employee or a family member who is not his or her spouse or child to assume ownership of the business or if an owner does not have any surviving family members. Succession and estate planning should address these potential legal issues (File and Prince 1996).

The challenges faced by the logging businesses in this study were very similar to the ones facing all logging businesses in Georgia and Florida: rising costs, workforce availability, and timber transportation, including insurance premiums (Conrad et al. 2024). The challenges facing logging businesses in these states have evolved over the past three decades. Workplace safety is much better, and consequently, workers compensation insurance costs are lower, than what loggers faced during the 1980s and 1990s (Baker and Greene 2008, Conrad et al. 2018b, Table 4). On the other hand, today's logging businesses face much higher capital and operating costs along with narrower profit margins (McConnell 2020, Conrad et al. 2024).

The transition to the next generation of logging business owners remains highly uncertain. Generational transition involves the transfer of ownership and management of existing businesses to a younger owner, as well as the creation of new logging businesses. The lack of succession planning will hinder the transfer of ownership of existing businesses. On the other hand, starting a new logging business today can be very difficult, especially for young entrepreneurs. New logging businesses face unique challenges associated with financing high start-up costs, establishing industry contacts, negotiating supply contracts, and recruiting employees to work for a new business, in addition to the challenges facing all logging businesses (Ellis et al. 2024). The difficulties in establishing new businesses make it all the more important for forest industry to encourage succession planning among existing businesses to avoid sudden losses of logging capacity as the current generation leaves the logging industry.

The next generation of logging business owners will need a different skill set than the current generation. The financial and managerial complexity of a logging business in the 2020s is much greater than during the 1980s and 1990s. The next generation is likely to need additional formal training in accounting and business administration, either as part of a college education or otherwise. Indeed, the percentage of Georgia logging business owners who attended college has been increasing over the past two decades, reaching a majority in 2017 and 2022 (Conrad et al. 2024). Approximately half of young and new logging business owners held college degrees according to a recent study, compared to 12% of the owners in this study (Ellis et al. 2024).

5. Conclusion

A successful transition of logging business ownership to the next generation is essential to forest management and the production of forest products in Georgia and Florida. Thousands of forest landowners and hundreds of forest product mills rely on independent logging businesses to perform forest management prescriptions and harvest more than 50 million tonnes of timber annually (Oswalt et al. 2019). This research demonstrated that many businesses with an owner approaching retirement age are unprepared for this transition.

State loggers' associations, forestry and forest products industry trade associations, and others should be proactive in creating succession planning resources and encouraging logging business owners to create written succession plans. Procurement staffs at individual mills should encourage their suppliers to develop succession plans. Procurement staffs should also assess the risk of supply disruptions if one or more of their suppliers close or experience disruptions associated with abrupt changes in ownership. To date, consolidation and growth of existing businesses has offset logging business closures (Conrad et al. 2018a). However, given the demographics of existing logging business owners (Blinn and Nolle 2023, Bowman et al. 2023, Conrad et al. 2024) and the challenges of establishing new businesses (Ellis et al. 2024), stakeholders should not assume that logging capacity losses will be readily offset by growth among existing businesses or the formation of new ones.

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