

he was promised but substantially more than the \$15,817 he received.

Although the landowner called for help from law enforcement, a local forestry consultant, and the state forestry commission, with a signed and legal contract, there was little to be done. The contract could only be considered on what was included, not what was verbally promised since that could not be proven.

Although this contract was unethical, it was legal and technically described the way the transaction was to be implemented, and the contractor fulfilled the letter of the agreement.

There are many considerations here that could have made this story come out much better for the landowner. This contract was very general in its terms and made no reference to any guaranteed amounts to be received. The products agreed to in the contract were very general, when most harvests would include at least four product separations. Furthermore, there was no specified method for verifying the amount of timber harvested except the word of the contractor, nor were there agreements about how and when the landowner was being paid and the conditions for getting paid. Finally, the contract should have included the method to be used for resolving disputes.

Other Types of Contract Fraud

Unfortunately, contracts that are too general and leave out the verbal agreements are not the only ways landowners can be cheated. In some cases, the contract is clear but the buyer simply does not follow through on the agreement, hoping the landowner won't take action to demand compliance. Other examples of contract fraud include:

- A contract that clearly spells out all the activity and products to be harvested, but the buyer only harvests some of the trees.
• A contract designates pine pulpwood in the thinning agreement, but the buyer hauls pine chip-n-saw and only pays the landowner for pine pulpwood.
• A contract specifies how the tract is to be cared for (implementation of best management practices and/or streamside management zones, road creation/close out) but the buyer ignores these terms.
• A contract includes acreage variances for tree planting and chemical applications and the contractor goes beyond what was agreed upon and charges for the extra work.
• A contract specifies harvesting all the timber, but pulpwood markets become tight, so the harvester picks out only sawlogs and leaves the rest standing.

Control Measures for Landowners - Some Questions to Ask

Determine ways to be as clear and specific as possible using numbers instead of general terms. Here are some questions you should ask yourself and include in the agreement for a variety of contracting issues:

- What is the type of work to be done and the nature of the agreement?
• What happens if the contract is not followed as agreed upon?
• What methods will be used to verify the type and amount of wood harvested? What documentation must be provided? How will the landowner monitor the process?
• How many trees will be planted per acre? Will genetically improved trees be used? Who gets any extra trees?
• How will boundary lines be marked? What happens if the boundary lines are not followed?
• What equipment or material is to be used?
• What is the time frame for the project?
• What are the payment terms? Make sure any contracted work is completed to your standards before paying the contractor.
• What types and amounts of insurance should the contractor have to work on your property?
• Include an indemnity clause that is clear who is responsible for "issues that may occur."

It is difficult to ensure you are considering all the possible areas to control the contractual relationship. The best practice is to make sure you have a qualified contractor in the first place. Take the time and effort to find one who works with integrity, experience, and the right qualifications for the job. Obtain and check references to verify your observations and assessments during the discussion process. Evaluate the work the contractor has done in the past. Work with a consulting forester.

Remember that having a written contract is essential. Within the contract be careful to address the quality of the work to be performed. Do that in the most specific ways possible. Clearly state the specific work to be done. Keep away from generalizations that give the contractor a lot of leeway to do whatever they please so your contract is of no real value. All of this planning and contract detailing up front are designed to help you safeguard your resources so they can be valuable sources of cash today and tomorrow.

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Avoiding Contract Fraud
By Aaron Gilland, dendro Resource Management

Most landowners are aware of the benefits of utilizing contractors but can be unaware of some of the pitfalls. If you want more of the benefits and less of the pitfalls, the relationship starts with a solid, well-written contract. A contract written before any activity starts can avoid misunderstandings, disputes, or legal proceedings. A well-structured contract ensures effective communication and understanding of expectations up front. No surprises.



Yet there are still some landowners who see contracts as unnecessary. To them, an agreement should be based on a handshake, a word, and integrity. I am a fan of the sentiment; however, I can tell you after 24 years of working in theft and fraud prevention, I would not contract with anyone on a handshake!

All contracts are not equal. There are three major purposes for a contract:
• Provide a binding agreement between two or more persons and/or organizations where a failure to comply with the terms results in some financial, material, or even legal recourse for the contracting party.
• Establish a business arrangement for the supply of goods or services at a fixed price or hourly rate that details the quality, quantity, and performance standards of the work performed or the product supplied.
• Detail what happens when standards are not met.

By definition, it is assumed that all parties understand the specifics of the arrangement, so the words used and the details that are outlined in the contract are critical. Otherwise, once signed, it is very difficult to dispute a written contract and claim a misunderstanding. If the dispute becomes a legal issue, outsiders who were not party to the discussions will only weigh the words on the page.

The use of certain terms can make all the difference. Terms such as cords, tons, and board feet can create a large discrepancy between what was understood at the time the contract was signed and the actual cash a landowner receives. For example, \$5 a cord is a much lower value than \$5 a ton.

Today, over 100 log rules for determining the volume of wood in a standing tree have been developed, using a variety of methods. Some are based upon the lumber tallies of individual mills, others are developed by diagramming the cross-section of boards in the ends of logs, and still others are developed using mathematical formulas. It pays to agree on which of those rules will be used to measure the volume of wood included in the contract.

For instance, the Doyle, Scribner, and International log rules are the most widely used and a contract should specify which rule is to be used. Under the Doyle Log Rule, if the logs are smaller in diameter, the actual volume of wood will be underestimated. Under the Scribner Log Rule, logs will be underestimated if they are particularly long. The International 1/4-inch log rule allows for a fixed allowance of 1/2 inch per 4 feet of log length and allows for board shrinkage and slab thickness that provides the most consistent result across all logs.

You can specify which rule is being used in the contract and you should understand the local markets. Not doing so can lead to results that may be different than expected. Just keep in mind, the local mills have traditionally set the log rule they will use, and if you designate a different rule, then you introduce conversions between log rules. And that is a challenging issue even for mill owners and foresters!

And if forestry terms are not your bread and butter, consider hiring a credentialed consulting forester who has been trained in forest management. A well-trained, experienced, and vetted forester adds value to any forestry operation. Start your search by looking for foresters who are members of the ACF (www.acf-foresters.org), SAF (https://www.eforester.org/), or VFA (https://www.vaforestry.org/), check their

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Table with 5 columns: Virginia Department of Forestry, Virginia Tech Department of Forest Resources & Environmental Conservation & Virginia Cooperative Extension, USDA Forest Service Forest Stewardship Program, Virginia Forestry Association, Virginia Sustainable Forestry Initiative SIC/Virginia Tree Farm Foundation. Includes contact information like addresses, phone numbers, and websites.

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EVENTS CALENDAR			For the most complete listing of natural resource education events, visit the on-line events calendar at https://forestupdate.frec.vt.edu		
Contact	Date	Location	Event	Time	Fee
MP	Year-round	State-wide	Virginia Master Naturalist Volunteer basic training www.virginiamasternaturalist.org/chapters.html	Varies	Varies
EP	June 27-28 July 18-19 Aug. 7-8	Galax Charlottesville Newport News	Teaching Trees These 2-day professional development events introduce middle & high school science teachers to local forestry, sustainable forest management, and forest products, through hands-on field trips. Instruction totals 14 hours; recertification credits offered.	All-day both days	\$25*
JMM	June 29 Aug. 31	Montpelier Station	Forest & Field: Nature Exploration Walks at Montpelier Mushrooms & Other Forest Floor Dwellers Insect Friends and Foes	10 - 12	\$10
SMSP	July 27	Delaplane	Botany and Bloom Workshop: Summer Blooms Explore the rich natural diversity of Sky Meadows. This workshop includes a lecture and a 3-mile hike.	10 - 2	\$15
JF AD BW	Aug. 9-10 Sept. 27-28 Dec. 5-6	Farmville Harrisonburg Roanoke	Preparing for Generation NEXT 2-day Workshops Are you prepared to pass the environmental and heirloom values rooted in your woods to the next generation? Join CPA's, estate planning attorneys, landowners, and conservation experts to learn how to secure your woodland legacy.	Varies by location	Varies by location
JMM	Aug. 10	Montpelier Station	Seasonal Forest Stroll at Montpelier Learn about the dynamic history of the forests, including use, preservation, and management over the last two centuries.	10 - 12	\$10
BEF	Aug. 10 Aug. 21	Boyce	Blandy Experimental Farm Programs Bad Bugs: A Backyard Bestiary The Butterflies in Your Backyard	9-12 10-11:30	\$25 \$15
JG	Sept. 13-14	Monterey	Highland County Tree Farm Tour & Dinner Take a trip to beautiful Highland County to learn about golden-winged warbler habitat and sugar maple management. A maple syrup production workshop will be held on Saturday.	TBD	\$10* Fri. only \$20* Sat. only \$30* both days
JG	Sept. 19-21	Providence Forge	SE Virginia Beginning Woodland Owner Retreat Is woodland management a new concept for you? If so, come spend the weekend with fellow forest owners and natural resource professionals and learn how to get started.	All day Friday & half-day Saturday	TBD
BW NC	Sept. 27 Nov. 9	Lebanon Prov. Forge	Preparing for Generation NEXT Half-day Workshops Abbreviated version of the 2-day workshops described above.	Varies by location	\$25*
JF BW AD	Oct. 11 Oct. 17 Oct. 25	Charlotte Floyd Fredericksburg/ Stafford Co.	Fall Forestry & Wildlife Field Tours Join other woodland owners and natural resource professionals for a full day in the woods learning about sustainable management for forests & wildlife.	8:30 - 5	TBD

*meals included; **meals and lodging included

EVENT CONTACTS

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JMM	James Madison's Montpelier	https://www.montpelier.org	
SMSP	Sky Meadows State Park	540-592-3556	skymeadows@dcr.virginia.gov
JF	Jason Fisher	434-476-2147	jasonf@vt.edu
AD	Adam Downing	540-948-6881	adowning@vt.edu
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BEF	Blandy Experimental Farm	540-837-1758 x 224	blandy.virginia.edu
JG	Jennifer Gagnon	540/231-6391	jgagnon@vt.edu
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You Ain't From Around Here! Exotic Invasive of the Quarter: Don't Get Bamboozled By Bamboo By: Dr. David Coyle, Clemson University

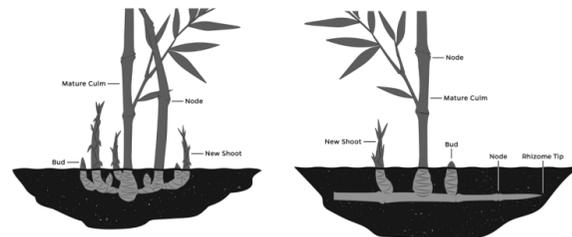
For many, the word "bamboo" conjures visions of plump panda bears perched on their posteriors amongst a sea of green, happily munching away on bamboo shoots. Unfortunately, to those of us who work in invasive species, that's not what the word "bamboo" brings to our minds. No, we see massive bamboo patches scattered on the landscape, remnants of home gardens gone wrong or abandoned dwellings. They are a desolate sea of emptiness, devoid of any life other than bamboo. They've choked out all the native vegetation, and few animals will venture into a mature bamboo patch. Heck, even the bugs tend to avoid them!



Stock Photo from Pixabay. Photo by: Kaedesis.

You can find many types of bamboo (which is an evergreen grass) in the U.S. Some, like river canes (*Arundinaria* species), are native to North America (the southeastern U.S. to be specific – see here for more information on native bamboos: <http://www.indefenseofplants.com/blog/2017/6/26/north-americas-native-bamboos>). However, many bamboos we see in the landscape are non-native. Most have escaped from managed landscapes (often yards) either by pure stealth or because their owners (or former owners, in some cases) simply stopped tending the plants. When bamboo is left to its own devices, it often spreads rapidly – human actions are pretty much the only things keeping most bamboo plantings in check. Recently there has been a growing push by several organizations to purposely plant bamboo for commercial production. This is happening in many parts of the Southeast, from Texas to Florida (especially Florida!) to Virginia. These companies will tell you that bamboo growth is faster than trees (even faster than pine!), there are so many uses for bamboo, and this cash crop is a NO LOSE proposition! As we all know, if it sounds too good to be true...well, it probably is. Let's look into some of these claims and issues.

Bamboo growth is somewhat unique in that once a shoot (called a culm) comes out of the ground, it doesn't increase in diameter – it comes out at the diameter it will always be. As the plant ages, culms emerge from the ground with larger diameters. So, when you look at a patch of bamboo, the smaller diameter shoots are the older ones, while the larger diameter shoots are the younger ones.



Rhizome structure of clumping (left) and running (right) bamboo. From Lieurance et al. 2018.

There are two types of bamboo: clumping and running. Clumping bamboo grows in (you guessed it) a clump, and expands outwards from the center. The patch of bamboo expands like a growing circle. Running bamboo sends out underground rhizomes, from which culms grow upward. Because of its growth pattern, running bamboo is much more likely to spread and become more invasive. In fact, many bamboos are considered to have a lot of invasive potential. The two main species being promoted for commercial use are running bamboos: moso bamboo and rubro bamboo (a clumping bamboo is also being promoted in Florida).

Are there a lot of uses for bamboo? Yes – with food, furniture, and flooring being three of the most well-known. Bamboo can also be used as pulp for paper, biofuel, and as a soil amendment (sort of like a fertilizer). There are a lot of potential uses for bamboo.

Can it grow faster than pine trees? Again, yes – provided you have the right conditions, care, and weather. So, if bamboo has that many uses and grows faster than trees, what's the problem? Well, there are many. Many problems and many questions. And many of the organizations encouraging bamboo cultivation have a number of things a grower must agree to when the two parties enter into a contract.

What happens if you plant your acreage with bamboo? It's not cheap to plant, and planting is done by hand. There can be relatively high mortality of newly planted bamboo. But let's say you do get it planted. Then what? You need to keep bamboo weed-free early on, and it may require fertilizer, depending on the soil qualities. If it doesn't rain, you'll need to water the bamboo, especially for the first year. Assuming your bamboo makes it through the first year, you're still several years away from a harvest. How many years depends greatly on the location and weather. Bamboo likes it warm, so a couple of cool years will set back any growth projections you may have been shown, likely delaying that first harvest (and first opportunity to make any money on your bamboo). And how does one harvest bamboo? By hand. You read that right – most bamboo is harvested by hand. Basically, it's cut down and loaded onto trucks. In most cases this will be under contract from the organization promoting it, and they'll buy back your product.

Bamboozled cont. from page 3



Removing an established bamboo population can be costly and time-consuming. Photo by: David Coyle, Clemson University.

Often, they will front you the resources to install the planting, then buy back the harvestable material as a way for you to "pay back" the initial loan. Needless to say, the economics of commercial bamboo production have not yet been truly worked out, regardless of what you might be told. There are still a lot of questions and uncertainty, like what happens to a grower if the bamboo market tanks?

Let's talk about ending bamboo production. A grower might end production if the market fails, or if they simply want to do something different. Bamboo is difficult to both control and eradicate. Sure, there are ways to do it (see: <http://southernforesthealth.net/plants/bamboo/growing-bamboo-for-commercial-purposes-in-the-southeastern-u.s.-faqs>) but in every case these tactics take time and resources. Controlling an invasive species, such as the bamboo species being touted for commercial use, often takes multiple treatments over multiple years. Treatments are often not cheap, nor are they fast. Multiple herbicide treatments are usually necessary, or the construction of physical barriers or trenches around the bamboo planting. Repeated mowing will keep bamboo contained, but will rarely kill it. And, when bamboo plantings are left or abandoned they no longer have anything keeping them in check and they grow unhindered into surrounding areas. When bamboo grows into new areas, it chokes out all other vegetation, making a desolate, plant-free, and often animal-free area. This is in no way considered a healthy ecosystem – it's a classic case of an invasive species in a native ecosystem.

There's a reason the southern U.S. is called the "woodbasket of the world." It's because we know how to grow trees. We have decades of silvicultural research to help us with proper planting and management. We know how to control pests and diseases. We have an infrastructure to handle loads of logs, whether they're going for pulp or sawtimber. We have a solid grasp of the economics of the situation. In short, we know how to do forestry, and there aren't many questions about how any of it works. This is in sharp contrast to bamboo, in which we know relatively little about the management and economics of commercial growth. And, the environmental costs of an abandoned bamboo planting far outweigh the environmental costs of an abandoned loblolly or longleaf pine planting.

Reference

Lieurance, D., A. Cooper, A.L. Young, D.R. Gordon, and S.L. Flory. 2018. Running bamboo species pose a greater invasion risk than clumping bamboo species in the continental United States. *Journal for Nature Conservation* 43: 39-45.

Contract cont. from page 1

references, and talk with more than one. A good forester will help you achieve your land ownership goals.

Case Study of a Dissatisfied Landowner

Clearly, having no contract leaves a landowner subject to all types of abuses and scandals with little, if any, recourse in disputes or court. However, having a poorly written contract can be a problem as well. This can especially be a problem if the contract doesn't cover all parts of what was agreed upon in the prior discussions.

In one case, a landowner signed a contract to have the timber harvested from his property. He agreed to a per unit price for two products - pine and hardwood timber. The signed contract clearly stated the tract was to be clearcut. Outside of the contract, the logger verbally estimated the entire tract would net the landowner \$50,000, but the amount was not specifically stated in the contract. The landowner was given \$10,000 up front as a deposit prior to harvesting. The agreement was that he would be paid the rest at the agreed-upon per unit prices, once the logger had harvested enough to cover the deposited amount.

The harvesting crew hauled 25-30 loads of timber per week for the next five weeks. After two weeks, the buyer supplied the landowner a settlement statement depleting the \$10,000 and returning a balance of \$1,250. At the end of the five weeks harvesting, the crew moved off the property and the landowner received a settlement check for \$4,567, marked as "Final Statement."

When the landowner called the buyer and said he was promised \$50,000, the buyer said that was a visual estimate of the tract and claimed he was mistaken when he made that estimate and insisted the landowner was paid for the tons harvested. This was clearly wrong. If the first two weeks netted him \$11,250 then three more weeks of harvesting should have totaled at least \$28,125 - not what