Changing Perceptions and Efficacy of Pressure Treated Lumber in a Post CCA Caribbean Market

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Good Afternoon Everyone.

I want to start by thanking the American Wood Protection Association for being there to protect the interest of end users of treated lumber. To consumers, this is not just the American Wood Protection Association, but really the American Wood Consumers Protection Association. This organization is not only about protecting wood, but about protecting the end users of treated wood, and there is nobody else out there doing this for us. Thank you for giving me the opportunity to speak to you about what I, as a user of treated wood have seen in the Virgin Islands and more specifically, on the Island of St. John, since the standardized alternatives to CCA lumber were introduced to our market.

When I was asked to deliver the Colley-Hartford Memorial Lecture, I was shocked. Why would this group of such learned people ask me to address them? I was dumbfounded, and I was sure it was a mistake, but the apologetic retraction that I was anticipating never came, so three months later here I stand. And as to why I was chosen for this, I keep going back to my original guess. Paul Morris, who nominated me for this honor, knew he wouldn't be here and he didn't want to miss anything too interesting. Paul Morris was the first AWPA member I met at the first AWPA meeting I attended, which was in Hawaii.

I happened to sit down next to Paul, who gave me a friendly hello, and in the brief conversation that followed, I told him that I had come from the Virgin Islands because the new non-CCA treated lumber was not faring well in our environment. We have a significant failure rate in three to five years. When Paul asked me why I thought the lumber was failing, I told him that I thought it was a combination of our extreme conditions, as indicated by a Scheffer index of 240, and an abundance of copper tolerant fungi. The fact that I had figured out our Scheffer index seemed to make Paul think that I was perhaps not as strange as I looked, and he did not deny that what I was saying was a possibility.

I'll tell you about what I have seen and hopefully you will have a better understanding than I do of why this has happened.

I started to prepare for this talk commemorating Reginald Colley and Winslow Hartford by looking at some of their papers. The prospect of doing this became no less intimidating, but it made slightly more sense when I learned that Reginald Colley and Winslow Hartford were both avid environmentalists who took great pride in the fact that wood preservation left so many more trees standing for future generations. Reginald Colley or Winslow Hartford would not have been happy to see treated lumber start failing in three to five years, in the same environment where it had historically lasted lifetimes. Maybe that is why I was chosen. I just happened to be the most vocal witness to that change.

You are the ones who have done all the work on the subject. It is your work that has enabled me to understand, to some degree, what is going on. I will be quoting the scientists who have written papers that are archived on the AWPA web site. It has been a great resource for me. I hope that going forward more consumers will join and educate themselves on this important subject.

I am a lay person who is speaking words that until now, I have only read, so please forgive the many mispronunciations you will hear.

The tree hugger in me thanks you, since every tree that is treated after harvest will have a significantly longer service life. This leaves more trees standing for all of us to enjoy. I echo Winslow Hartford by saying that, and I am proud to speak in his memory. In 1976 he said "That treated wood is capable of passing on very real savings to the consumer has been abundantly documented in the market place, else we should not exist as an industry. Today, though, we are beginning to see a new impact which cannot be measured entirely in dollars and cents. The U.S. and Canada are unique among the great nations of the free world in retaining large acreages of woodland." He also said, "Part of the real quality of life in this country stems from our ability to leave our urban pressures and use our forests for restoration and uplift of our spirit. So let us look at how treated wood contributes both to our wealth and to the quality of our life."

I live on the island of St. John, which is about 87 miles to the east of San Juan. Unlike Puerto Rico, which is one of the Greater Antilles, the Puerto Rican islands of Culebra, Vieques, and the Virgin Islands are part of the Lesser Antilles, and receive very similar weather. The lack of a large land mass and exposure to the trade winds result in similar frequent wet dry cycling weather events. The United States Virgin Islands consists of three main islands. St. John is the smallest of the islands, and most of it is part of the Virgin Islands National Park. No trees are harvested on St. John for lumber, although we do have some species which are naturally extremely durable.

Figure 1. Wood ruins were, until recently, standing on East End of St. John

These old wooden ruins were, until recently, standing on East End of St. John (Figure 1). The structure pictured here was occupied from the mid 1800's until 1917. These structures were framed with lignum vitae and other species from the area. The framing members were hand hewn over 150 years ago, and you can see the natural point which was driven into the ground and hand hewn square section that was upright. This would be a good target for naturally durable species comparisons.

Like everyone else on St. John in the 1980's, I purchased the lumber to build my house at the lumber yard in Cruz Bay. They sold CCA pressure treated lumber, cypress tongue and groove, and bright southern yellow pine lumber (and plywood) known here as form boards. Untreated lumber is referred to as form lumber, since it is so short lived in our environment that its only practical use is for concrete forms. I have seen it fail, even in that capacity, as the result of construction delays.

From my arrival on St. John in 1972 until shortly after 2004, nobody talked much about pressure treated lumber. It was a given. It lasted a life time. There was not much about which to talk. Development makes it hard to recall wooden structures that were here prior to my arrival, but there are many structures that were built in the 1970's and 1980's with CCA lumber that are weathered, but structurally in excellent condition.

Although I have been on St. John most of my life, pest control is an encore career for me. Starting in 2001, I spent the first six years of my termite career repeatedly talking customers out of doing termite treatments. This didn't make me much money, but it was the right thing to do, and good for my green marketing approach. For those of you unfamiliar with the process, subterranean termite treatments are performed by digging a small trench adjacent to the foundation. The trench is then flooded with four gallons of termiticide per ten linear feet. This generally means a hundred to hundreds of gallons of liquid are put into the ground around each structure, depending on its size.

When all we had was CCA lumber, I would routinely tell customers that since your house is built completely out of materials that termites will not eat, there is no need to put all the chemicals in the ground. I pointed out that the chemicals that were needed to protect their house were already inside the lumber where they belonged. On St. John, we have so many termites that they will forage on just about every building. This is no cause for concern since the termites are only on your wood, not in your wood. My observations made from 1972 until 2004 gave me the confidence to make that statement routinely, and it was never proven wrong. The fact that hundreds of gallons of termiticide were *not* put into the ground, for an irrational reason, was always gratifying.

When people asked me to look at their termite activity a few years after 2004, my inspections resulted in very different observations. In this new post CCA world, I was ill-prepared to analyze what I was seeing. It was obvious that when I looked at termite problems now, the termites were indeed in the wood. I did several termite treatments, each involved putting in excess of 100 gallons of termiticide into the ground, before realizing that the termites were only eating rotted wood. They weren't the problem. They were a secondary issue of little consequence.

The fact that there was a major spike in liquid termite treatments when alternatives to CCA were introduced is testimony to the environmental friendliness of CCA treated lumber. The increase in liquid termite treatments was an unforeseen, but serious consequence of the product changes in our market. Since exterminators are unfamiliar with rot, and the financial incentive is to sell termite treatments, the unnecessary treatment practice continues.

There are a little more than four thousand citizens of St. John. There are, I would guess, over a hundred people who have taken settlements, or are participants in lawsuits, relative to the performance of non CCA pressure treated lumber on St. John. The largest ongoing lawsuit I know has 55 plaintiffs. The lawsuit charges that the problems are caused by a bad batch or bad batches of lumber. The lawsuit alleges that bad batches were dumped here by treaters who knowingly delivered insufficiently treated lumber to our market. My conclusion is that the problem is far more widespread than just lawsuit participants. Lawsuits

address participants' problems in relation to the limited scope and financial impact of the specific case. Lawsuits do not seek scientific analysis of what is happening overall. Winslow Hartford actually wrote a paper on "the ethical futility of trying to settle scientific problems in a court of law." Lawsuit participants have been told not to talk about the situation with anyone.

I understand that CCA alternative treatments are more difficult to perform. I also understand that CCA was so much more effective than alternatives that even if the quality control (as far as penetration and retention) been no better, the chance of failure for CCA treated wood was far less likely. I don't know why it happened, but there is no doubt that we have seen a radical change in the performance of pressure treated lumber on St. John, and in the Virgin Islands in general with the introduction of CCA alternatives. Additionally, the impact of failure is far greater here since we build our whole house from treated lumber.

In May of 1993, Winslow Hartford delivered what was then, simply, the Colley Memorial Lecture. His lecture was titled "Science, Politics, and the Environment." I mention this now because the example really illustrates his point. In this paper, Winslow Hartford said that when he started teaching, "It soon became apparent that the 'bottom line' in industry, and the government's funding of research in academia, were slowly throttling the ability of most employed scientists to speak their minds." Dr. Hartford talked about how this contributed to what he called "politically correct" environmentalism which was based on popularity rather than honest science. Going on he said, "What we find is that, as employees, we are free to speak only to our management and their lawyers, and we often find it imprudent to say what we think." This is the Colley-Hartford Memorial Lecture and I think it is appropriate to point out that Winslow Hartford also said, "During the 85-year continuum which Reg and I shared, the freedom to speak the truth about wood preservation has nearly been lost" and "the answer lies in a renewal of honest science."

The following example of pressure treated lumber use on St. John clearly illustrates the impact of "politically correct" environmentalism. Maho Bay Campground is billed as the world's first eco-resort. It was built by Stanley Selengut on land that was leased from the original Rockefeller holdings within the Virgin Island National Park. Stanley had a 36-year lease on the property with the stipulation that there would be no impact on the land and that at the end of the lease all the structures would be removed. The whole resort was built out of southern yellow pine treated with CCA-C. The Maho Bay camps had 115 units and closed when the lease ran out. At closure, the whole development was still perfectly sound. It was dismantled and in the spirit of "politically correct" environmentalism, the material was shipped to a stateside landfill for disposal.

Concordia Eco-Resort was Stanley Selengut's next venture. He knew he would be losing his lease on Maho Bay and bought a large piece of property for his next project. He started in 1993 by building four units. He ran into financial challenges and things were put on hold. From 2004-2006, in anticipation of Maho Bay closing, he built 20 units and connecting walkways. As the structures that were built in 1993 stand unscathed, new walkways are being replaced. Four of the new units have been completely replaced and the remaining 16 are showing damage. As small as St. John is, Concordia is located in a much drier area than Maho Bay. Although Maho Bay Campground was dismantled in excellent condition after 36 years, Concordia already sustained damage estimated to be between two and four million dollars.

Figure 2. Railing added in 2011 to stairway built in the 1980's

Here's an illustration of a common sight (Figure 2). This railing was added in 2011 to a stairway built in the 1980's. The stairway is still in excellent shape but the railing failed to the new normal, brown rot. This brings to mind the AWPA Mission Statement: "The AWPA seeks to improve the performance and longevity of sustainable wood products by developing competent, reliable, international standards through an open, consensus-based process, and to serve society as a resource for knowledge on all aspects of wood protection."

In the Caribbean we went from a one size fits all product that never failed, to a wide variety of products that were randomly distributed, leaving us clueless as to whether one, or all, of the new products are failing rapidly. We missed the opportunity to gather some really good information. Reginald Colley would not have been happy with this situation. In 1944, when Reginald Colley was president of this organization, he said in his annual address that, "When it comes to interpreting service records, I would like to see more information on the probable reasons for failure. I would like to see the autopsy report as well as the record of removal. More and more such information is becoming available. It helps greatly in diagnosis." It's too bad his words didn't motivate us enough or we might be in better shape now. Seventy-two years ago, Reginald Colley was talking about the importance of service records and he said, "more and more information was becoming available." We live in the information age. If Reginald Colley were here to speak to you today, he would probably be urging adoption of the AWPA app. This app would give users the ability to photograph end tags which would automatically be entered along with GPS coordinates, installation date, and end use category information in the AWPA database. But he is not here. The absence of end tags hinders information gathering, and it makes me think that stamping treated lumber as we do with Permanent Wood Foundation grade, rather than tagging, would help us learn from experience. As Virgin Islanders go forward and build homes out of CCA alternatives, we are still doing the testing but not analyzing the results.

Another thing I would like to bring up is the lack of consumer education prior to the release of the new products. A common theme in AWPA archived documents is the importance of having retailers and end users involved in the association. I have seen variations of this theme recurring throughout AWPA historical documents. Most of these comments express regrets about the real lack of consumer involvement. Alan Preston's "Changing Our Standardization Criteria to Meet the Evolving Needs and Perceptions of Consumers of Treated Wood" was a groundbreaking and insightful paper with great impact on the industry. It was written in 1996. Winslow Hartford was in the audience when this paper was presented. I'll talk more about this paper later, but for right now here is one quote, "Wood preservation standards should reflect the needs of the final consumer and the AWPA standards should make a realistic reappraisal of these needs. The AWPA is hindered in this respect by the absence of consumers of residential treated lumber, or for that matter retailers of residential treated lumber, from the organization." I am sure this lack of consumer involvement makes the task of educating consumers and retailers challenging. I once again want to thank this organization for promoting consumer involvement by asking me to deliver this message.

It became clearer to me last month just how desperately the AWPA needs to get retailers involved. I did a quick phone survey, calling all the lumber yards in the territory's yellow pages. Of the seven yards that sell pressure treated lumber, only two were able to tell me what type of treated product they sold. Five of the seven retailers couldn't even tell me what they were selling. The largest retailer in the territory was selling a Micronized Copper Azole product at two different retention levels. The lumber yard on St. John was able to tell me that they were selling Copper Azole Type C but didn't know the retention level. Interestingly, I removed an end tag from a friend's 3x10 coming from that yard and listed the retention at 0.15 pcf, which is UC4A, but it was marked UC4B.

As consumers go, I am a pretty observant one. But it wasn't until 2007 that it became clear to me that the onset of problems coincided with the release of CCA alternatives into our market. By 2009, I was seeking help by contacting the EPA and local officials regarding our problems. I was the person that people depended on to protect their wooden structures, and I felt I had an obligation to try to take action on my customers' behalf. I started reading about wood preservation. When I realized that anyone could join the American Wood Protection Association and gain access to their document archives, I joined.

One of my first pleas for help in trying to resolve our situation, was to Donna Christensen, who was our delegate to Congress at the time. She is the go-to person for Virgin Islanders when they want to interface with the federal government. Assuming this was an EPA issue, I contacted her.

I brought some samples of failed lumber to our meeting. She seemed very concerned and asked me to stay in touch on the subject. In order to reinforce my position, I printed up a brochure asking people to contact Delegate Christensen as well. The responses made her take the situation seriously enough to set up a conference call for me with members of the USDA Forest Products Laboratory.

A couple of months after the call, the Forest Products Laboratory released a TechLine document, called "Best Management Practices for Using Treated Wood in Caribbean Residential Applications." While I was hoping for something a little stronger, this document did call for using UC4B or UC4C lumber for certain applications, and pointed out that this would not be in stock at lumber yards. I had already printed and distributed a brochure of my own, which stated the same thing, but additionally pointed out that alternative treatments had never been tested in our environment. Next, I placed a series of advertisements and inserts in the St. John newspaper promoting the Use Category System, and discouraging people from accepting UC4A lumber to replace their failed lumber. When people accepted replacement lumber and it failed as well, I put yet another ad in the *St. John Tradewinds.* This advertisement was trying to illustrate the negative impact on the forest resource when we switch from a product that lasts 75 years to one that lasts five. The lumberyard was offering free replacement lumber in exchange for the customers giving up the ability to litigate. With no mention of the fact that the treatment process had changed, consumers were told they had just received a bad batch of wood. Pam Gaffin describes herself as one of the original three bad wood victims. She took replacement lumber in 2008, to replace a deck built in 2006.

Figures 3 and 4. Wood failure due to termites (left) and rot

The 2008 replacement lumber failed in 2011. These pictures are unusual, in that it does indeed look like her original lumber incurred termite damage, rather than rot. The free replacement lumber failed rapidly as well, but this time it was done in by the new normal culprit, rot (Figures 3 and 4).

Jim Donavan is a contractor friend of mine. I asked him what he was working on a few weeks ago. He was replacing lumber that he had already replaced in 2009 after the original installation in 2005. In his case, like most, all the lumber had failed due to rot.

When asked to do this presentation, I decided early on that I should do a consumer survey. I thought it would be easy and would add credibility to what I was saying. I failed terribly. Some of the questions weren't explicit enough and open to interpretation, rendering them useless. Although I had advertised the survey on all three islands, and asked for responses, 83 out of 85 responses came from St. John. It doesn't sound like many responses, but as a percentage of population, that would equate to 54,733 responses in my native Brooklyn. As poorly done as the survey was, it did illustrate a few points.

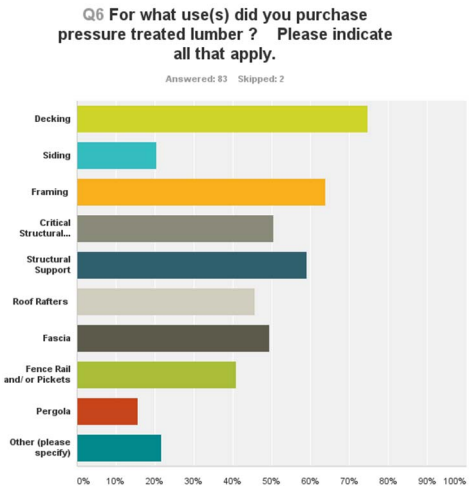

Figure 5. Survey results of uses of pressure treated lumber

First, you can see that pressure treated lumber is used here for a variety of uses other than decking (Figure 5). The second most popular use is framing, followed by structural support. Over 80% of respondents said they had experienced what they considered premature failure. When asked how fast the lumber failed, over 45% said one to three years, which even I found surprising. Thirty-eight percent said their lumber failed in 3-5 years and 12% said 5-7 years. So, 95% of respondents had failure within 7 years.

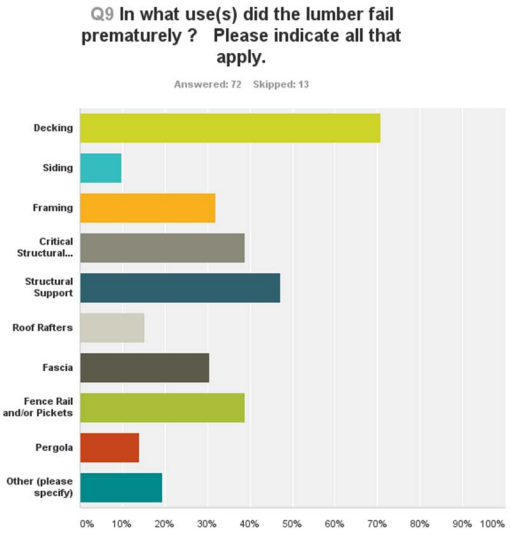

Figure 6. Survey results of uses of lumber that failed prematurely

We can see that the failures were across the wide range of uses we have here (Figure 6). Over 70% of respondents said they didn't know what kind of treated lumber they bought. Of the 17% that chose "other," all but one listed where they bought it, but didn't know what it was. So, well in excess of 80% of consumers didn't know what they bought. Most of the remaining questions were about the change in people's perceptions and expectations before and after the release of alternatives and the questions were interpreted differently by different people.

Prior to 2004, pressure treated lumber performed excellently in our environment. On the little island of St. John, building site after building site reveals 35-year-old lumber standing in excellent condition, while recent additions and renovations deteriorate rapidly.

What could have happened? I jumped to the conclusion that we have specific types of fungi that are tolerant of copper and the new co-biocides. Admittedly, this is the gut feeling of a novice. For me to stand up here and talk about the possibility of copper tolerant fungi being the cause of the problems is strange because you have educated me on the subject. Frederick Green and Carol Clausen did so when, in talking about the upcoming release of non-arsenical copper based wood preservatives, they said, "Because the arsenic component of CCA controlled copper tolerant fungi, scientists have renewed interest in and concern about the decay capacity in the important copper tolerant group of brown rot fungi." In referring to copper tolerant fungi, Gareth Williams and Roger Fox stated, "As new copper based wood preservatives are developed, it is important to reconsider the role of these fungi both within approval procedures as well as from the point of view of protecting wood in service." Jeff Morrell pointed out that, "The presence of copper tolerance has been noted for years; however, our knowledge of these fungi and their effects within specific geographic regions remains sparse." Jean Lodge brings that theme home by saying, "The evolution of new species, particularly in the basidiomycetes, may be faster in disjunct populations occurring on islands rather than in mainland areas with contiguous populations." Dr. Lodge points out that knowledge of the fungi of the Virgin Islands was primarily from agricultural rather than natural forested areas. So, copper tolerant fungi do exist and we don't know much about their geographic distribution even in well studied areas like the states. We know barely anything about fungi populations in the Virgin Islands. We do know conditions are perfect for them, so we have a wide variety and high density of unknown populations.

So, are copper tolerant fungi our problem? Your guess is far better than mine! If it is not copper and co-biocide resistant fungi, what is our problem? Is our problem that the new treatments are so much more difficult to perform that treaters are generating an abundance of substandard material and dumping it here? Is our problem that we are being sold products at a UC4A retention level when we should clearly be using UC4C retentions? Is our problem the rapid biodeterioration of the co-biocides themselves? Schultz and Nicholas expressed concern about this in a paper in 2008.

Is our rapid wet dry cycling our problem? In 2009, Mitsuhashi and Morrell pointed out that in part, due to the absence of chromium, copper is more mobile, and as surface deposits are dislodged copper migrates to the surface as wood dries. We routinely have extended periods of weather with excess of 75 wet dry cycles a week. I am sure there are far more questions you could pose. I don't know the answer to any of these questions. I don't believe anyone in this room knows the answer to these questions.

There is one question to which everyone in this room does know the answer. Does CCA lumber last in excess of fifty years in this Caribbean environment? Without a doubt!

The number one question for Virgin Island end users is, is there a CCA alternative treated wood product that will last fifty years when exposed to Virgin Islands conditions? No one can say for sure.

Before the 2015 AWPA Annual Meeting, I sent out a letter expressing my concerns about premature lumber failure and the reason for that concern. On the question of service life, I quoted the EPA's Registration Eligibility Decision (RED) from 2008 quite a bit.

The RED on Chromated Arsenicals says that, "although many chemical and non-chemical alternatives exist for wood treated with arsenic or chromium many are not truly interchangeable due to safety, environmental, efficacy and/or economic considerations." It goes on to say, "In addition…companies require products proven to be capable of withstanding extreme conditions for long periods of time. In the short-term, a product treated with an alternative preservative may offer comparable efficacy compared to a product treated with a chromated arsenical; however, comparable efficacy might not be observed over the entire expected lifespan of the product...Because certain alternatives do not offer the same level of efficacy and because the end products themselves (e.g., utility poles) may not last as long as chromated arsenicals, they also cannot be considered as direct replacements." And in case we didn't get it yet the Registration Eligibility Decision reiterates, "Because certain alternatives, although lower in initial costs, do not offer the same resistance and/or do not last as long as chromated arsenicals they also cannot be considered as direct replacements. Economic considerations are particularly relevant."

By this point, I think that we have established that, in the eyes of the EPA, in many cases there is no replacement for CCA lumber. For those entities that sought prior approval to continue using CCA treated wood products, permission was granted. The 2008 RED said flattering things about chromated arsenicals. It granted continued use registration for end users that had the resources and foresight to pursue inclusion. We have an overtaxed government and a small population. Nobody knew what was coming, and nobody knew to fight to protect our interest.

The rationale for switching to alternatives to CCA lumber is that, for many applications, CCA lumber is too long lived. It wasn't about leaching problems. The EPA RED stated, "The bioavailability of arsenic and chromium is considered to be relatively constant regardless of chromated arsenicals-treated wood contribution, to steady background environmental levels." The switch was not based on the fact that CCA lumber was dangerous to residents, for the same document tells us, "a residential risk assessment was not performed."

Many AWPA archived documents tell us the real reason for the change. In one of these, Clausen and Kenealy (2004), pointed out that, "Chromated copper arsenate has been the most commonly used wood preservative in North America for the past 25 years, resulting in large volumes of this material entering our landfills after removal from service. It is estimated that 18 billion cubic feet of CCA treated wood will be removed from service by 2020."

The average deck is remodeled in less than 20 years and CCA lumber lasts about 75 so it will spend over three times as long in the landfill, as it did in service. As it decomposes it will be leaching into groundwater over time and with 18 billion cubic feet of material, it will have adverse effects. That is the only honest science argument against CCA lumber. With the goal of reducing the volume of pressure treated lumber with active biocides entering United States landfills, a new course was set. Why not create new types of lumber with biocides that will not last as long, and therefore will not pollute landfills as much. The concept of making and marketing a variety of treated wood products for specific uses and varied anticipated service life is a great one. Let's go back to Alan Preston's "Changing Our Standardization Criteria to Meet the Evolving Needs and Perceptions of Consumers of Treated Wood." This visionary paper urged us to change the world into a treated wood end users' utopia, where treated lumber consumers do indeed have the option of purchasing different wood products, for different applications and desired service life. Quoting the document, "This means that the structural wall components such as sill plates and framing should last for the life of the structure, say 50 to 100 years because they are both structurally important, as well as inherently difficult to replace. Foundation components would fall under the same expectation. Using these building component criteria, siding would be expected to last 20 to 25 years, as should exterior windows, while decks and fences should be expected to last 10 to 15 years."

Standardization would indicate that Dr. Preston's vision, laid out 22 years before, had indeed come to be and consumers had a variety of products to choose from. If consumers were choosing to use copper azole type C at a UC4A loading, they were not seeking a lifetime product. If these assumptions are not true, was standardization in keeping with the AWPA Mission Statement, "AWPA seeks to improve the performance and longevity of sustainable wood products by developing competent, reliable, international standards through an open, consensus-based process, and to serve society as a resource for knowledge on all aspects of wood protection"?

As Reginald Colley said in his 1944 address to this organization, "It is more necessary than ever, when the going is rough, to maintain the quality implied by Associations Standard Specifications." Reginald Colley was talking about WWII, and I am talking about the release of alternatives to CCA lumber, but in both cases, his words ring true. We must "maintain the quality implied by the American Wood Protection Associations Standard Specifications." Reginald Colley also pointed out that "the standards are the basic articles of agreement between the producer and user of treated wood."

I am here as a consumer advocate for the residents of an extremely small market that has been put in harm's way due to regulatory changes. Although subject to those regulations, we are in no way responsible for, or participatory in, the problems they were designed to resolve. I live in a community that always depended heavily on treated wood products, which we knew would last our lifetime. We have been the victims of "politically correct" environmentalism. We must go back to what honest science would dictate we do.

Since I am here as a consumer advocate, I will refer to standard M1-15 which is the "Standard for the Purchase of Treated Wood Products." Section 1.1 reads, "Wood products to be used in permanent locations where exposed to decay or attack by other wood-destroying organisms should be impregnated with a preservative chemical(s). Only those species and preservatives are listed in the Use Category System Standards that have previously been found suitable for use in this particular application, or sufficient test information has been submitted to warrant their inclusion."

Chromated Copper Arsenate treated wood is the only wood that qualifies for consumer purchase in the Virgin Islands, according to this standard. Certainly no research was done on lumber for "use in" our "particular application." Our conditions of use are far more challenging than those in the United States, including Hawaii. The impact of failure is the loss of our homes, not just an appendage to our homes. The cost of replacement is beyond the means of most homeowners. We are in the heart of hurricane country. The structural integrity of our homes will be tested.

We in the Caribbean need a forever product. CA-C is a great product for many applications. It is just not the right product for our use in many applications. I have used CA-C as an example because that is what is sold at the lumber yard on St. John. I am sure I could have made the same argument using any other copper co-biocide alternative.

We in the general pest control industry are going through the same types of changes that the wood preservation industry is going through. We used to have chemicals with forty year residuals, and shared the philosophy "the more chemical the better." In the pest control business, we are fortunate that we just had a philosophical change. We now try to eliminate problems by having a much better understanding of the pests themselves, and limit pesticide applications to specific areas where that type of pest will be harbored. We then choose a specific active ingredient and formulation, based on the area of application as well. To our advantage we have a tool box, with a variety of chemicals to use. This is more in line with Alan Preston's vision than what treated wood end users have available.

In the *Book of Standards*, the Use Category System is praised for its simplicity. Complexities arriving with the standardization of alternatives to CCA lumber for residential use need to be addressed. If we are going to change our standardization criteria, to meet the evolving needs and perceptions of consumers of treated wood, we are simultaneously going to have to change the Use Category System to address the new complexities we have created.

The introduction to the UCS says that "the strength of the UCS and its focus is that all wood uses can be placed into one of five major Use Categories that clearly describe the exposure conditions that specific wood products can be subjected to in service." The Introduction to the *Book of Standards* states that AWPA is an international society but in some ways AWPA is acting as if domestic issues were its only concern.

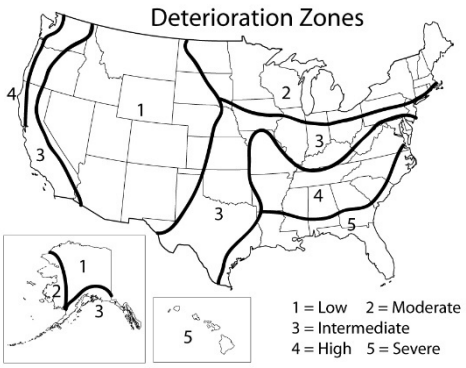

Figure 7. Deterioration zones from the *AWPA Book of Standards*

The deterioration zone map (Figure 7) doesn't look like that of an international organization. While the Use Category System's pride in simplicity was fine in a CCA world, it is no longer satisfactory for Caribbean users of treated wood. We use treated lumber in places that make it difficult to impossible to replace. Treated lumber fails faster here.

Issues relative to disposal vary with location as well. Caribbean Basin users shouldn't be forced to use a product that is more harmful to their environment, based on regulations for protecting a different and distant environment. The EPA's 2008

RED on Chromated Arsenicals looked at the Ecological Risk of the continued use of CCA lumber and said, "Aquatic organisms eliminate arsenic and chromium with little bioaccumulation." It continued to say, "Of the three metals, copper is considered the most toxic to aquatic organisms." This is of special interest to us in the Lesser Antilles where our landfills are generally on a hillside above the sea. As you know copper makes up only 18 ½% of the active ingredients in CCA-C and over 96% in Copper Azole C. Our coral reef marine environment is already severely challenged.

These are changing times and the Use Category System will undoubtedly address the changes. I know there is a proposed change for the creation of a new Use Category to be discussed at a technical committee meeting later this week. I will also be submitting a proposal for consideration at the fall meeting. It would call for the creation of a new Use Category UC4D - Ground Contact Caribbean Basin. This would designate use in a geographical area where conditions are so extreme, that local building codes require all framing members be pressure treated, and where runoff into the offshore marine environment is of more concern than groundwater contamination.

We in the Caribbean face too much uncertainty, and the consequences of failure are too grave for us to continue to be forced to use unproven and untested treatments that are more harmful to our environment. Our homes and our marine environment are at stake.

The concerns that lead to the changes regarding residential use of CCA would not be impacted if the Caribbean were defined as the separate and distinct Use Category we truly are. If industrial treated products were then returned to use in residential applications in the Caribbean, it would have no impact on stateside uses or on stateside landfills.

The EPA reminds us repeatedly in the 2008 RED on Chromated Arsenicals that in many cases there is no direct replacement for CCA lumber. For us in the Virgin Islands there is no direct replacement for CCA lumber in many uses.

This has been a great learning experience for me. One of the most amazing things I have learned is what a mammoth task falls on the AWPA's shoulders and how little support it gets from those it serves, especially the consumer. In closing, I just want to thank all the members of this organization for giving me the opportunity to speak to you, and for all your hard work towards achieving this association's mission.

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