

Paper: it's not so bad after all

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There is a lot of hype about the topic of "environmental printing" in our industry. The subject matter ranges from the latest trends in eco-friendly packaging to environmental industry standards to debates about greenwashing. In an age of transparency, where consumers can surf the Internet and social media sites to learn about any given company, there is no hiding from important issues. Consumers have more environmental awareness than ever before and have higher environmental expectations of the organizations with whom they choose to do business.

An intriguing environmental printing topic that has been getting a lot of buzz lately is the recognition that using paper is not all that bad after all! Even virgin paper that is traditionally thought of as being harmful to the environment is now being recognized as "not so bad," and part of a sustainable future. Now don't get me wrong, improper harvesting and deforestation practices are anything but environmentally friendly, but our common understanding of the role paper plays in our environmental landscape is starting to change. It is now clear that electronics and digital waste are creating equal, if not bigger problems than paper in our landfills due to large volume and non biodegradable properties. In the age of digital device proliferation, our society produces an enormous amount of electronic waste.

In this environmental edition of Graphic Arts Magazine, we will uncover why paper products are not always as bad as they seem and provide a greater insight into the current misconceptions, facts, figures, and viable eco-solutions for a sustainable paper based future.

Paper vs. Pixels

Although we know that saving trees and not wasting paper contributes to a healthier and more sustainable environment, it is not yet clear whether electronic devices such as e-readers or tablet computers actually offset the environmental impact of paper. Current reluctance from e-reader manufacturers to share information makes it difficult to understand the true impact of electronic reading devices as compared to their paper counterparts. The unwillingness to share manufacturing materials and methods used, make our green calculations estimations at best.

While the majority of a book's carbon emissions happen upfront, in the paper-making process (about 70%), e-readers require continuous energy throughout the life of the product. A book does not require any additional energy to sit on a shelf, whereas electronic books require energy to be stored on a server, as well as to be downloaded and displayed on e-readers. This function is then repeated and multiplied across innumerable computers and electronic devices. The e-reader itself must also be powered by an outside power source, contributing to the energy expenditure. If you read at night, the light bulb you use will expend more energy than it takes to charge an e-reader, however if you are a daylight reader, paper books prove more energy efficient.

In their quest to debunk paper misconceptions, Apache Superior Printing Ltd., points out that, "Paper itself is a renewable resource that also biodegrades without any additional process required. Nearly all paper can be, and is recycled, and many papers now use a certain percentage of post-consumer pulp for their production." In addition, they point out that printing companies are required by law to neutralize any chemicals used in the printing process, so there are fewer environmental issues.

According to a New York Times article entitled "How Green is my iPad?" by Daniel Goleman and Gregory Norris, they have estimated that it takes approximately 40 to 50 paper books to equal the impact of one e-reader in terms of fossil fuels, water use and mineral consumption. In addition, trace amounts of exotic metals can be found in many e-readers and those metals are often mined in war-torn areas of Africa. It is not to say that e-readers are not great products, simply that we need to better understand the bigger picture and the full scope of the "paper vs. pixels" debate before we can rubber stamp one or the other as being the better environmental choice.

Greenpeace estimates that e-waste now makes up 5% of all municipal solid waste worldwide, nearly the same amount as all plastic packaging. To put into context how much e-waste is dumped into landfills each year, if the amount generated annually was put into containers on a train, it would wrap all the way around the entire world. Now that's a lot of e-waste!

Although most electronic products can be recycled, many are deposited straight into landfill sites. Little known to consumers, there are many e-waste recycling programs already available across Canada. For example, the City of Toronto, in partnership with the Ontario Electronic Stewardship, will



pick up and recycle unwanted consumer electronics for free. The city is doing a great job marketing this e-waste diversion program in a fun and lighthearted way. Check out Chuck & Vince's "We Want It!" e-waste recycling commercial and other City of Toronto initiatives here: www.toronto.ca/ewaste.

Debunking Forestry Myths

"If a tree falls in a forest and nobody is around to hear it, does it make a sound?" Stephen Thuerig, graduate of Lakehead University's Faculty of Forestry with a Bachelor of Science, literally lives and breathes the forests of Northern Ontario (he probably hears the falling tree!). Thuerig is a certified Compliance Inspector and works with documents like Forest Management Plans that are overseen by the Ministry of Natural Resources. He believes that forestry and paper products can truly be sustainable if managed properly.

"It's not like oil that when you remove it from the ground it's gone. Forests that are properly managed can grow back and prosper and move through a natural life cycle."

"Silviculture" is defined as "the practice of controlling the establishment, growth, composition, health, and quality of forests to meet diverse needs and values." Thuerig and his team work every day to help promote silviculture and programs that will help us maintain sustainability for our country and world.

In speaking with Thuerig, he clarified some important forestry misconceptions that impact members of the printing industry, as well as the communication we are having with our customers about paper. Let's look at three forestry myths.

MYTH #1: Clear-cutting is always bad

If you are anything like me, "clear-cutting" is thought of as a bad word. It seems like a quick and easy way for harvesters to gather large amounts of lumber efficiently and cheaply, with little to no regard for the natural environment.

Cue: Evil music.

Enter: Bulldozer-like machine, black smoke pouring out its stack.

A small bunny looks on wide-eyed, as the driver tries hard to contain his bellowing, sinister laughter...



Interestingly enough, "clear-cutting" isn't always bad. Thuerig debunked this myth by explaining that clear-cutting in certain areas is approved by the Ministry of Natural Resources because it helps emulate the forest's natural lifecycle. Not to say that all clear-cutting is acceptable, but it has a time and a place and plays an important role. For example, in Northern Ontario, clear-cutting is a common practice because foresters are trying to emulate naturally occurring forest fires that help promote young forest regrowth. In today's society, forest fires are controlled, so as not to harm the neighbouring communities. Clear-cutting, practiced within certain forests, supplements what would typically be destroyed by fire. However, clear-cutting would not be the right solution for a forest in Southern Ontario, for example, because rampant forest fires do not occur naturally there. The ministry will therefore approve more appropriate cutting and harvesting methods that mimic the naturally-occurring forest lifecycles in a given area.

MYTH #2: Third-party forestry certifications are always worth the additional cost

Forestry Stewardship Counsel (FSC) is a third party sustainable forestry certification that you have likely heard a lot of buzz about in the last few years. FSC certification is based on a "chain of custody", whereby every stage of the process (from harvesting to final product) must be managed and held accountable for ensuring that the paper was sourced responsibly. FSC logos commonly appear on paper products, but can also be used for other lumber products that fall outside of the scope of the pulp and paper industry.

Canada has the most certified forests in the world. Consumers are not always trusting of the forestry industry and of the government who controls these areas, and so third-party certifications (such as FSC or SFI) allow for an objective standard and certification. However Thuerig does not believe that these expensive third-party certifications are always necessary and these millions of dollars could be better spent elsewhere.

He believes that the money could be better spent maintaining roads that support forestry efforts, as well as providing additional support to important tree planting programs that replenish our forests with new tree growth to foster sustainability. In addition, the money could be spent to help logging communities, dependent upon the forestry industry, to gain critical stability in volatile times.

MYTH #3: Cutting down trees is always bad for the environment

Cutting down trees as a way to reduce atmospheric carbon emissions is backwards to what we've always been taught – trees absorb carbon dioxide and produce oxygen, right?

It's important to understand that trees are almost 50% carbon and they do release greenhouse gases. Therefore, when an entire truck of harvested trees leaves the forest, half of that truck is carbon that has just been removed from the atmosphere.

These controversial claims leave some environmentalists leery of the impact of cutting down more trees to help control greenhouse gas emissions.

Frank Keppler at the Max Planck Institute for Nuclear Physics in Heidelberg, Germany claims that trees and plants emit up to 30% of the world's methane, a powerful greenhouse gas. Keppler has done extensive research into this phenomenon and cautions organizations to rethink programs where they allow reforestation efforts to offset carbon dioxide emissions (as part of the Kyoto protocol, for example).

In addition, Chris West of the American Forest Resource Council states that "using a chainsaw to improve the health of these forest ecosystems is a viable tool." In West's argument, he claims that loggers can preemptively thin overgrown forests that have a tendency to burn and release tons of carbon dioxide into the environment.

There is a lot more research to be done in this area, but these are very interesting viewpoints relative to current environmental efforts. There is a lot of misinformation and miscommunication about forestry sustainability and environmental issues, and Thuerig believes that the public is not necessarily well informed. What is known is that harvesting trees that will be turned into functional products is a great use of this renewable raw material.

For more great information about paper and paper facts, TAPPI (The Leading Technical Association for the Worldwide Pulp, Paper and Converting Industry) has created a fantastic paper resource website called "Paper University": www.tappi.org/paperu.

Lessons from the Zero Waste Home

When it comes to consumption and disposal, whether through recycling programs or waste intended for landfill, there is so much we can learn from the Johnson family, whose intention is to live simpler and lighter for our planet.

Meet the "Zero Waste Home" (www.thezerowastehome.com). If you have not heard about the zero waste home you need to know about this amazing family. It is not always feasible to live in a zero waste world but there are amazing lessons that we can take away from this family's gutsy initiative.

On garbage day... they simply don't have any garbage for pick up. They make a conscious effort to compost their waste and not use products with consumer packaging. They have a small amount of recycling curbside, but they are trying to pare that down too.

Now the Johnson family is not living in the middle of a forest eating soybeans out of a recyclable tin can either. They own a beautifully minimalist home in Mill Valley, California where they enjoy life to the fullest...only with less. Some have criticized mother, Bea Johnson, for their lifestyle (including only allowing her two sons to have enough toys to fill two clear bins, most of which is Lego). However, she tells critics that they are able to do more as a family and be more creative with less stuff weighing them down.

"Refuse, refuse, refuse. Then reduce, reuse, recycle (and only in that order)" is stated clearly on the banner of the Zero Waste Home blog.

When thinking about reducing our environmental footprint the three R's come to mind: reduce, reuse and recycle. Many of us are guilty of favouring one of them over the others: recycling. The Johnson family is different in that they are focusing on "refusing"—battling waste higher up-stream—which is a far more proactive means to a sustainable end.

If you would like to learn more about the zero waste home and the initiatives that this family is committed to, you can find them here:

Blog: www.thezerowastehome.com

Twitter: [@zerowastehome](https://twitter.com/zerowastehome)

Tangible Solutions

For every member of the printing and paper industry out there, I have some good news. How do we promote environmental sustainability? Use paper. That's right — part of the solution is to keep using paper.

As Dr. Patrick Moore, Co-Founder of Greenpeace, boldly states: "Forestry is the most sustainable of all the primary industries that provide us with energy and materials... To address climate change, we must use more wood, not less. Using wood sends signals to the marketplace to grow more trees."

As an alternative to using endangered wood or old growth forests, we can multiply our sustainability efforts by using fast-regenerating renewable resources, like bamboo. Bamboo is the fastest growing woody plant in the world and according to Green by Design, this miracle plant can grow up to two inches per hour (that's 24 inches per day!). "Holy bamboo shoot, Batman!"

Bamboo grows at an astonishingly fast rate and it also regenerates quickly after harvesting, thriving in less-than-perfect soil conditions. This plant also aids in reducing soil erosion, helping neighbouring rivers by preventing silt from affecting the aquatic life balance. Bamboo is inexpensive and can be used to manufacture a myriad of different products, from wood flooring to paper, and its young shoots are even edible for human consumption. For these reasons and more, bamboo has been called "the world's perfect renewable resource."

Another important aspect to the sustainability big-picture is continuing to recycle paper (mainly to save landfill space versus saving trees). According to Statistics Canada, recycling programs have improved greatly from fifteen years ago. They found that income and education level have no bearing on recycling use and households who have access to recycling programs use them equally. Canadian households diverted approximately 3.6 million tonnes of materials from landfills by recycling, which was an increase of 65% from only four years prior. This statistic is a double-edged sword in that it is great that we are recycling more as a society, however we are likely consuming more packaging too, helping to inflate this figure.

No matter the solution, sustainability is critical. Whatever action we take moving forward must be a long-term, sustainable solution.

The Final Cut

As my favourite paper salesman, Michael Scott, once said: "limitless paper in a paperless world." Although I'm sure Michael was not intending to make a statement about sustainability, we really can have "limitless paper in a paperless world" if we manage our forests properly and make it a priority to continue sustainability efforts.

As human beings on planet Earth, it is in our best interest to reduce our environmental footprints. There is however, a lot of misinformation about the paper industry. Moving to an "e-this" or an "i-that" simply for the sake of being greener is not always the best option. So if you were debating whether or not to buy that e-reader for environmental reasons versus continuing reading paper books, it really comes down to how much reading you do. If you will read more than approximately 50 paperback novels on your e-reader, which many people can do in a matter of months, then it may be worth the investment from an ecological standpoint. However, if you are a casual reader who only reads occasionally on vacation or at the beach, it may not be worth purchasing a reader strictly for the environmental benefits.

We must do our best to stay attuned for misinformation and continue to learn what each one of us can do to minimize our impact. Education will empower today's industries and future generations with critical knowledge to effect positive action.

Lastly, as much as we in the printing industry do not want to hear it, Goleman and Norris make a great final point, "All in all, the most ecologically virtuous way to read a book starts by walking to your local library."