As a forest owner I’ve accumulated a number of books on trees, but the one that I reach for the most is "An Eclectic Guide to Trees East of the Rockies(1)". It’s a very thorough book on Eastern tree species and discusses the cultural and economic value of trees throughout documented history. The author, Glen Blouin, has an extensive forestry background and is an award-winning member of the Society of Environmental Journalists. In my next few blogs I would like to share with you a few sections of Glen’s book because they may help put the topic of “trees and paper” in perspective.

**Part 1: The Economic Perspective,** I will touch on the economic and social value of trees and forests as they pertain to paper production. Below I hope to give you an overview of how forests can be managed in a professional and environmentally sensitive manner.

**Wood and Paper Industry**
Part of the history and reality of the forest is that people have cut down trees and used their wood. From prehistoric times, wood was the sole source of heat for cooking and warmth. Later, our Native people harvested firewood—they knew from experience which trees burned the hottest and longest—and used trees to construct their tipis, lodges, longhouses, canoes, implements, and weapons.

European settlers took it one step further. They not only cleared the forest for fuel, farmland, fencing, barns, houses, villages, and roads, but they began harvesting trees for market—the genesis of a forest industry in North America. Pines were cut for ships’ masts and spars, oaks for sailing vessels and barrels, hemlocks and chestnuts for tannin in the leather industry, other hard woods for potash, and pitch pine for charcoal, to name but a few.

Some people adamantly believe that we should not cut down trees for commercial purposes. The fact remains that trees do not live forever. Like people, they are born, live, and die. When sustainably managed, trees are a renewable resource, unlike cement and concrete, steel and aluminum, plastics, and oil and natural gas—all nonrenewable.

Nothing has the warmth of wood. Without harvesting trees, you could not sit comfortably in front of the fire in a log cabin, put your feet up on the coffee table, set aside the newspaper or magazine, and sit back and relax reading this book or any other.

The reality is that, whether we like it or not, we need wood, paper, and panel products, and wood comes only from trees that have been cut down. It is comforting to know that the wood comes from a continent where more trees are planted or naturally regenerated than are harvested. If those who manage the forest resource are prudent, professional, and environmentally sensitive, if those who process it are not wasteful and control their pollution output, and if those of us who consume it are moderate in its use and recycle whatever we can, future generations will continue to reap the same rewards nature has provided us. The economic importance of our forests—in these days when we all seem to be preoccupied with the booming high-tech industry—seems to be lost on some folks.
This economic importance is summarized in the Table below:

### The Economic Value of the Forest Products Industry

<table>
<thead>
<tr>
<th>Country</th>
<th>Direct Jobs</th>
<th>Indirect Jobs</th>
<th>Wages</th>
<th>Contribution to GDP</th>
<th>Annual Revenue/Sales</th>
</tr>
</thead>
<tbody>
<tr>
<td>USA</td>
<td>900,000²</td>
<td>3.8 million³</td>
<td>$87 billion²</td>
<td>$102 billion²</td>
<td>$235 billion Sales</td>
</tr>
<tr>
<td>Canada</td>
<td>222,500</td>
<td>363,700</td>
<td>$8.7 billion</td>
<td>$18.7 billion</td>
<td>$53.3 billion</td>
</tr>
</tbody>
</table>


Part 2—The environmental perspective; what it means to manage the forest in a prudent, professional, and environmentally sensitive manner, including an interview with a forester who has spent most of his working life doing this.

**Step 1 - It all starts with a Forest Management Plan!**

Proper forest management means following a good forest management plan. Below is an example of typical requirements that a company follows to manage large parcels of forest land (i.e. over 100,000 acres).

The management plan covers an 80-year planning horizon and is divided into five-year submission windows which divides the harvest over time.

One of the key planning tools is a computerized GIS mapping system (Geographical Information System) that stores vast amounts of data on environmental, economic and social elements of the managed forest area. The system is used for predictive modeling and is regularly updated based on aerial recognition and field observations by foresters.

Many forest areas are excluded from harvesting including protected or conservation areas, deer wintering grounds, buffer zones near watercourses and wetlands, sensitive wildlife habitat.

By law, large watercourses have a buffer zone of 60-100 meters and all other flowing water, including wetland at least 30 meters.

Harvesting road areas and road construction are part of the plan. Bridge construction requires approval and is closely monitored to minimize impacts to the aquatic ecosystem. The type of bridge installed depends on the size of the watercourse drainage area.

To the left, forest management plans provide a roadmap and instructions for foresters and contractors when working in the field.
**Step 2 - Cruising**

Each block of a management plan is cruised by foresters who complete a field assessment using geo-recorders (data recorders with GPS tagging). The data is then uploaded to the GIS system to determine the real harvest area which is usually smaller in size than what was originally planned, due to environmental and other conditions.

Recorded data includes tree species, number of trees per hectare, tree age and condition, watercourses, raptor nests, den sites (ex: bobcat, bears, etc.), and many more indicators.

**Step 3 - Harvesting**

Different forest areas are treated differently based on tree age and species structure. There can be over 12 different types of harvest treatment specifications, including shelter wood, selection cut, strip cut, commercial thinning and many more.

Certified loggers are used to conduct harvesting. They are trained in forest certification, such as the Sustainable Forestry Initiative (SFI) and Forest Stewardship Council (FSC) requirements, and also trained by the company to respect environmental guidelines and regulations which are specified in the company’s ISO 14001 environmental management system.

In many cases, state-of-the-art “harvesters” with on-board GPS are used to conduct harvesting based on uploaded GIS data from the forest management plan.

The harvested trees are used for many purposes including lumber for construction, pulp for papermaking, and in some cases, viscose pulp for the textile industry. In many cases 25 percent or less of the harvested trees are used for pulp, and even less goes to printing and writing paper.

Much of the wood fiber used in pulp production for paper-making is coming from sawmill chips, a by-product of sawmills that manufacture lumber for construction.

To the left, a harvest block five to 10 years after harvesting. We need to think of the forest as a renewable ecosystem that will replenish itself based on proper long-term management techniques.

**Step 4 - Post Harvesting**

Harvest blocks are audited by companies and regulators to check for oil, waste, and soil rutting. Any issues identified are repaired based on local regulations and standards.
Over the next few years the sites are surveyed to determine the need for replanting. In certain areas, natural regeneration may be adequate to re-establish a healthy forest.

To the right, tree-planting has provided thousands of North American college student’s summer employment and income.

Documentation is Key!

Many of the operations and rules outlined above are well documented in written policies and procedures which are a key part of any ISO 14001 environmental management system.

Harvesting contractors and foresters follow a “Green Book” and posters outlining policies and procedures for emergencies, waste disposal, equipment requirements, training requirements, instructions to follow near watercourse crossings, forest and logging road location and maintenance, buffers required around sensitive habitats. The contractor work order includes detailed instructions to follow in the field.

It helps to know the many guidelines, regulations and standards that govern sustainable forest management in North America. These are important to keep in mind given that we all benefit tremendously from forest products, whether it is paper, lumber or the multitude of other products that are derived from wood.

Please remember all the people who make an effort to do the right thing when managing our renewable forestland for the long term. Think of them next time you find yourself using a woodlands road to enjoy a weekend of fishing, hiking, biking or bird-watching.

There are over 21 million acres on 42,000 Tree Farms across the U.S. throughout its history, ATFS has relied on celebrity Tree Farmers to relay its message to the public. Celebrities include actor Andy Griffith, actress Andie MacDowell, former President Jimmy Carter, and Rolling Stone keyboardist Chuck Leavell.
The American Forest Foundation (AFF) and The Trust for Public Land (TPL), co-leaders of the Forest Climate Working Group, attended “Building with Wood: Jobs and the Environment,” where more than 100 attendees discussed the environmental benefits of building with wood and opportunities to advance the use of wood in construction.

Promoting the use of forest products from responsibly-managed forests in the United States creates a number of significant benefits consistent with President Obama’s Climate Action Plan, including strategies to mitigate carbon emissions, and ensuring forests and forest-based communities are prepared in the face of a changing climate.

By making the case for more wood in buildings, the USDA is calling attention to the value of sustainably grown forest products in storing carbon throughout the building’s lifecycle, which helps maintain America’s working forests and supports rural economies. The 22 million family forest owners who own more forestland than the federal government need healthy markets to maintain healthy forests. By increasing demand for sustainably harvested wood, families can reinvest resources back into their land.

“Our mission is to conserve land for people, and having strong forest products markets will help to advance that mission by protecting jobs in rural America and providing resources for forest management,” said Jad Daley, climate conservation director at The Trust for Public Land. “Healthy, well-managed forests also help slow climate change by sequestering carbon dioxide—U.S. forests capture almost 13 percent of U.S. emissions at current levels.

**CF Printing & Postal Services Sustainability**

The CF Printing Services strives to meet the printing needs of CF as well as our other partners, while at the same time promote the importance of having a sustainable print shop. We only print on paper that comes from managed forest farms. Here are a few ways that the CF Printing & Postal Services is being and promoting sustainable printing practices.

The CF Printing & Postal Services only buys and prints on recycled and FSC, COC and PEFC paper. We are doing our part for CF Sustainability.

What are (FSC) Forest Stewardship Certification, (COC) Chain of Custody and (PEFC) Programs for the Endorsement of Forest Certification?
What is Forest Stewardship Certification?

The FSC System There are two parts to the FSC system:

1. Forest Management
   Certification ensures that the forest is managed to high standards covering social, environmental, and economic issues.

2. Chain of Custody certification traces the wood from those forests through all stages of processing and distribution.

Any product made of pulp or paper has the potential to be certified as long as the wood used in the product that originates from FSC-certified sources. Wood is an important material for all paper manufacturers. The FSC certification system allows these professionals to know they are doing the right thing, and taking business away from other companies that may still be supporting illegal, unsustainable, unverified logging activities. The intent of the FSC system is to shift the market to eliminate habitat destruction, water pollution, displacement of indigenous peoples and violence against people and wildlife that often accompanies logging.

Why does FSC certify forest management in natural forests?

Natural forests throughout the world are threatened by global demand for forest products which will not only continue, but also accelerate. Much of the world's remaining natural forests still suffer from illegal exploitation, poor management, and conversion to other land uses, commonly resulting in severe degradation or complete destruction. It was these very concerns that led them to establishment of FSC in 1993.

FSC promotes the equitable incorporation of social and environmental considerations when decisions are taken to manage forests. Under FSC certification, civil and indigenous rights are respected, areas of high social and environmental conservation value are maintained or enhanced, natural forests are not converted, highly hazardous pesticides and genetically modified trees are prohibited, and harvesting must meet national laws and international treaties.

Why does FSC certify forest management in the tropics?

As the biodiversity hotspots of the world, tropical forests are vital to the existence of millions of indigenous people, and possess a unique set of social and environmental attributes. When decisions are taken by societies, industries, or communities to further explore tropical forests, it is particularly important that FSC standards are met.

FSC promotes the equitable incorporation of social and environmental considerations when decisions are taken to manage forests. Under FSC certification, civil and indigenous rights are respected, areas of high social and environmental conservation value are maintained or enhanced, natural forests are not converted, highly hazardous pesticides and genetically modified trees are prohibited, and harvesting must meet national laws and international treaties. It is in the tropics where FSC standards can result in substantial social and environmental improvements and ultimately support the conservation and long-term maintenance of these forests.

How does FSC avoid certifying forests that are illegally logged?

Principle 1 of the FSC Principles and Criteria requires forest managers to comply with all applicable laws and international treaties which must be independent verified by an FSC accredited certification bodies.

FSC also has strict requirements to control the non-certified material in FSC-Mixed Sources products. The non-certified material must comply with FSC Controlled Wood a standard which ensures the material comes from forests that are not harvested illegally. This must also be independently verified before it is mixed with certified material.

These certification requirements as well as accreditation control mechanisms ensure that FSC is not unwillingly certifying illegal logging. FSC is monitoring its performance and continuously improving the system to deal with particular difficult or new issues.
What is the problem and what solutions does FSC offer?
Forests provide us with clean water, fresh air and they even help combat global warming. They also provide food, medicine, and important natural resources, such as timber and paper. If managed responsibly, forests and plantations benefit people – both people dependent on forests and the global community at large.

However, in some countries as much as 80 percent of the timber is harvested illegally, often involving the violation of human rights and destruction of protected forests. A key factor behind the threats faced by natural forests is the perception by many societies that they lack economic value. The extraordinary social and environmental value of forests in comparison to other land uses is often not considered. In other words, forests are often converted to other land uses which lack many of the social and environmental values of forest but promise higher economic returns.

Principles and Criteria
Here is a summary of some of the points the FSC Principles and Criteria require. Many of the points listed below will appear almost basic – but in many places, even these basic requirements are not fulfilled. This is where FSC can have the biggest positive impact.

- Prohibit conversion of forests or any other natural habitat
- Respect of international workers rights
- Prohibition of use of hazardous chemicals
- Respect of Human Rights with particular attention to indigenous peoples
- No corruption – follow all applicable laws
- Identification and appropriate management of areas that need special protection (e.g. cultural or sacred sites, habitat of endangered animals or plants)

What is Chain of Custody?
Chain-of-Custody (COC) is the path taken by raw materials harvested from an FSC-certified source through processing, manufacturing, distribution, and printing until it is a final product ready for sale to the end consumer. COC certification allows companies that manufacture and market forest products to label them with the FSC brand consistent with FSC policies.

WHY IS COC NECESSARY?
While consumers already select forest products based on species, grade, visual characteristics, etc., they now can identify products that provide an assurance of social and environmental responsibility on the part of the producer. To do this, the FSC system requires that material be tracked from the certified source, through the manufacturing process. This aspect of the system is the basis for any credible certification system and is the link between consumer preference and responsible, on the ground performance.

WHO CONDUCTS THE CERTIFICATION ASSESSMENT?
FSC accredits independent, third party auditors to conduct COC certification assessments of interested companies. Although the accredited certifiers assess companies based on FSC’s policies for COC, each certifier uses his own
evaluative process. This allows FSC to remain outside the assessment process and supports the integrity of the policies and the FSC system.

**WHO MAKES SURE THAT COC WORKS?**
The accredited certifiers audit systems to track certified material in each client’s specific context. The certifiers review each client annually in their handling of certified wood in the production process. FSC then conducts annual audits of each accredited certifier to make sure they are following established policy guidelines for the COC process.

**What is Program for the Endorsement of Forest Certification?**
PEFC is a global umbrella organization for the assessment of and mutual recognition of national forest certification schemes developed in a multi-stakeholder process. These national schemes build upon the inter-governmental processes for the promotion of sustainable forest management, a series of on-going mechanisms supported by 149 governments in the world covering 85 percent of the world's forest area.

Some 25% of the world's forests are managed by 2 billion families and community members, with 40 percent of forests in the North owned by 30 million families and 25% of forests in the South owned or managed by communities.

**The CF Printing & Postal Services promotes sustainability by encouraging our customers to:**

1. Duplex printing *(print on both sides)*
2. Use smaller font sizes.
3. Print and mail newsletters twice per year rather than quarterly.
4. Making the most of your mailings by listing more than one event on postcards, therefore you will be printing and mailing less.
5. Print on demand, print what you need when you need it (not by bulk).
6. E-mail duplicating request and item to be printed to CF Printing Services at printshop@cf.edu.
7. Proof your document well before printing.
8. Limit the proof copies to just one.

**The CF Printing & Postal Services environmental goals:**

1. Use digital printing presses. Digital printing presses uses 100% non toxic toner.
2. Our equipment does not generate or use alcohols, chlorinated solvents, acids, or flammable materials.
3. We purchase our printing products and equipment from Eco friendly companies.
4. We recycle printed one sided paper for other uses.
5. We use ink that is environmentally safe.
6. We practice waste prevention and management practices.
7. Print full sheets to reduce cutoff paper waste.
8. Continue to connect with the local community by developing strong partnerships with other nonprofit organizations.
9. Reduce energy cost by using energy printing efficient equipment in our print shop.
10. Encourage businesses and CF departments to request a corrected mailing list from the CF Postal Services.
11. Expand our services to meet the needs of CF and the community while searching for ways to improve our sustainability goals.

**CF Printing & Postal Services sustainability results:**

1. Check out our recycled and biodegradable all occasion cards in the post office. We use our shredded paper to make these beautiful cards that you can plant and they will grow herbs and flowers.
2. Don’t buy scratch pads we have plenty. We take paper that’s been printed on one side and cut it in fourths or halves, use chip board for backing and glue bind them.