FORESTRY SOUTH AFRICA

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ARBOR MONTH: Let's not forget the commercial forests

Forestry Explained: Our *Sustainable* Legacy

Celebrating the trees

What's Arbor Day all about?

How one man's passion has become a global phenomenon!

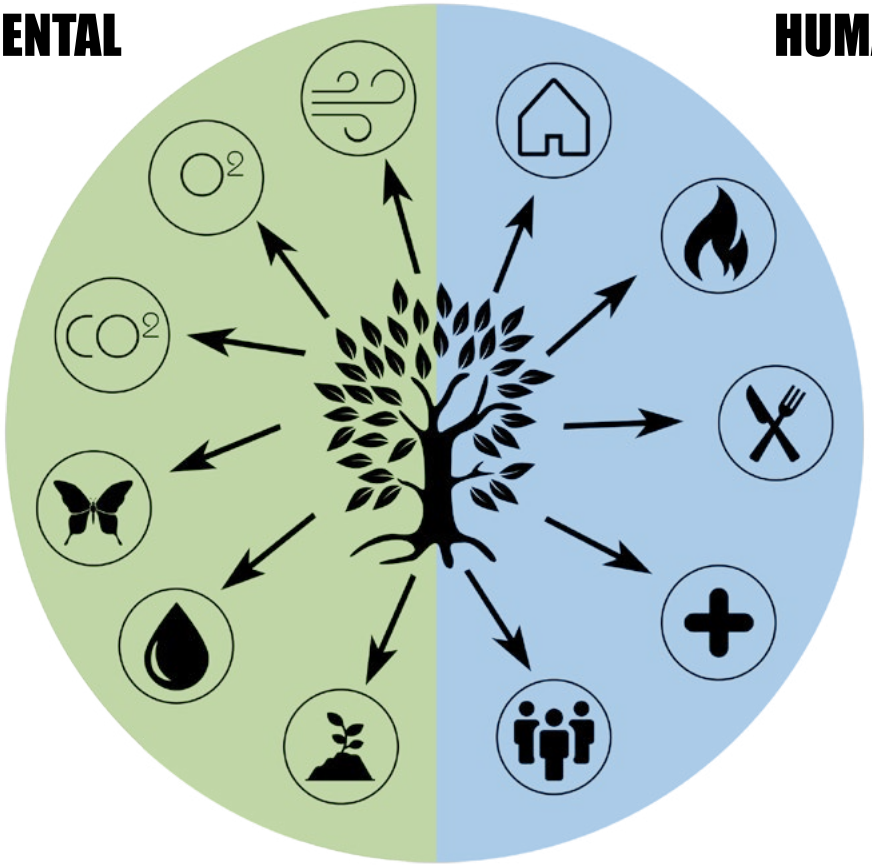
Arbor Day originated from the treeless plains of Nebraska, America, in 1872. It was here that Mr J. Sterling Morton persuaded the local agricultural board to set aside a day for planting trees. Using his position as editor of Nebraska's first newspaper, he encouraged participation in the event by publishing articles on the value of trees for soil protection, fruit, shade and building materials. Within two decades Arbor Day, named after Mr Morton's home Arbor Lodge (also a leafy shady recess formed by trees and shrubs), was celebrated in every US State and territory.

WHY CELEBRATE TREES?

Trees, and by extension forests, have provided us with two essential services since the dawn of humankind - oxygen and food. As we have evolved so has our dependency on trees increased.

ENVIRONMENTAL SERVICES

HUMAN BENEFITS



ENVIRONMENTAL SERVICES

AIR QUALITY - Trees remove dust and other particulates from the air, substantially reducing air pollution levels. They also act as natural wind breakers.

OXYGEN - Trees release essential oxygen during photosynthesis.

CARBON SINKS - Trees use carbon dioxide during photosynthesis, storing carbon (carbon sequestration)and acting as carbon sinks to help reduce global warming.

WILDLIFE - Trees provide homes, shelter and pantries for a huge variety of different animal and plant species.

WATER QUALITY and QUANTITY - Trees store and absorb rain water while removing pollutants before replenishing groundwater stores.

SOIL PRESERVATION - The tree's root system binds soil particles together reducing the potential for increased soil erosion.

HUMAN BENEFITS

SHELTER - Trees both in their natural form and processed into lumber and timber have provided shelter for mankind since the dawn of time.

FUEL - Half of the planet's population still relies on wood for shelter and fuel for cooking and warmth.

FOOD - Fruit, nuts, berries, leaves, bark, roots and plant extracts have all been part of the diets of our earliest ancestors.

MEDICINAL - There are over 100 active ingredients derived from plants, with aspirin derived from the willow probably being the most notable.

SOCIAL - Trees improve quality of life, are aesthetically pleasing, hold emotional connections for some and are steeped in cultural heritage and traditions.

Celebrating South Africa's trees

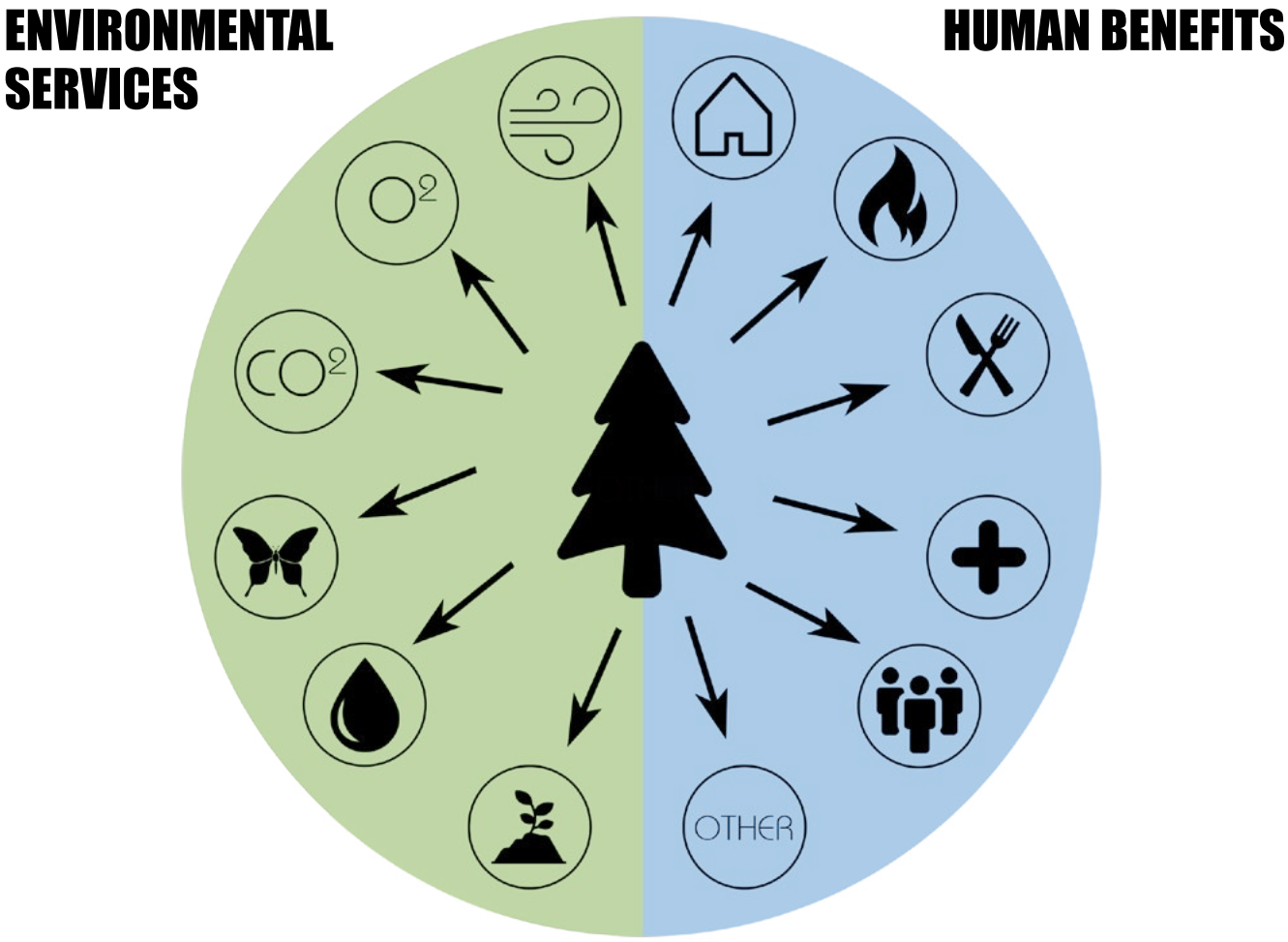
South Africa has been a relative late comer to the Arbor Day celebrations, with its first official Arbor Day in 1983. The event captured the imagination of thousands of people who recognised the need for raising awareness of the value of trees. By 1999, collective enthusiasm for the importance of Arbor Day in South Africa inspired the national government, to extend Arbor Day to National Arbor Week and now Arbor Month.

During the first week in September schools, businesses and organisations are encouraged to participate in community "greening' events to improve the health and beauty of their local environment.

Every year two trees (one common the other rare) are chosen as the 'Trees of the Year'. The aim is to encourage people to plant these across the country so that they are not lost to us and future generations.

TREES ARE TREES

When discussing the benefits of natural forests, commercial plantations are often ignored. Plantation forests provide many of the same environmental services as their natural counterparts and also contribute to the economy and the need for job opportunities in the rural areas.



ENVIRONMENTAL SERVICES

AIR QUALITY - Commercial trees, like their indigenous neighbours, remove dust and other particulates from the air reducing air pollution and increasing air quality.

OXYGEN - One mature tree can produce enough oxygen to sustain two people for a whole year. Currently there are 1.2 million hectares of commercial forests in South Africa. It is difficult to correctly estimate the exact amount of oxygen being produced at any one time as the trees are all at different stages in their life cycle. Be that as it may, plantation forestry in South Africa is a major oxygen producer.

SOIL CONSERVATION – Commercial plantations contribute to the prevention of excessive soil erosion though their deep rooting systems. After harvesting soil loss is minimised through the use of best management practices.

CARBON SINKS - Sustainable harvesting of timber plantations can help mitigate the effects of climate change. Trees store carbon in their trunks, branches and leaves (above ground), their roots (below ground) in leaf litter and soil. Carbon remains stored during a tree's lifetime and even when its timber is harvested and processed. Young trees sequester (take up) carbon at a faster rate than older ones, making plantations often a far bigger carbon sink than existing indigenous forests. Current research is underway to determine the contribution that plantations make to reduction in carbon dioxide.

WILDLIFE - Biodiversity in a plantation forest is lower than the vegetation that it replaced, however it is not often appreciated that forestry owned and managed land in South Africa provides refuge for many biodiverse species. For example a number of indigenous bird species have expanded their distribution in response to the favourable habitat provided by commercial forestry plantations.

In addition 25% to 30% of forestry owned land – 425,000 hectares - remains unplanted. This includes extensive areas of mainly grassland, as well as fynbos, riverine ecosystems and wetlands. Natural forests cover a fraction of the land surface of South Africa, but 25% of this rare biome is conserved in commercial timberlands. These strips or areas of natural habitat connect populations of wildlife otherwise separated by a host of transformed habitats (urban dwellings, mining, agriculture and forestry). Natural areas are managed, monitored and conserved by the forestry industry with the focus on maintaining and improving their conservation value.

So while biodiversity in the plantations themselves is lower than the adjoining natural habitat, when viewed at the landscape level, forestry owned land is far from a "green desert".

WATER QUALITY & QUANTITY - Commercial trees also store and absorb rain water, removing impurities before replenishing groundwater stores. However, there is no getting past the fact that plantation forestry removes approximately 3% of South Africa's annual rain water from the catchment system. Much of this is simply lost as it is caught on the forest canopy and evaporates; the rest is used by the trees during photosynthesis. While this is still far less than the 60% used for irrigated crops, in a water scarce country like South Africa every drop counts. That is why heavy water use restrictions have been placed on the industry, dramatically reducing any further afforestation and limiting changes to currently planted areas. The forestry sector is also in the process of removing plantations from all wetlands found on forestry owned land, as well as all other alien invasive species. Working alongside environmental NGOs life WWF South Africa and Working for Wetlands, the sector is improving the water course running through forestry owned and managed land and in the process, improving the biodiversity found there. Forestry is also the only industry that actively pays for the rain water it uses, in the form of annual water use licences.

HUMAN BENEFITS

SHELTER – In both the developed and developing worlds, timber contributes significantly towards the construction of homes and other infrastructure. In modern homes, trusses, timber joists, window sills, furniture, veneers, wooden panels like MDF (medium density fibre board), laminates carbon fibre, adhesives, asphalt, paints and dyes all have their origins in wood.

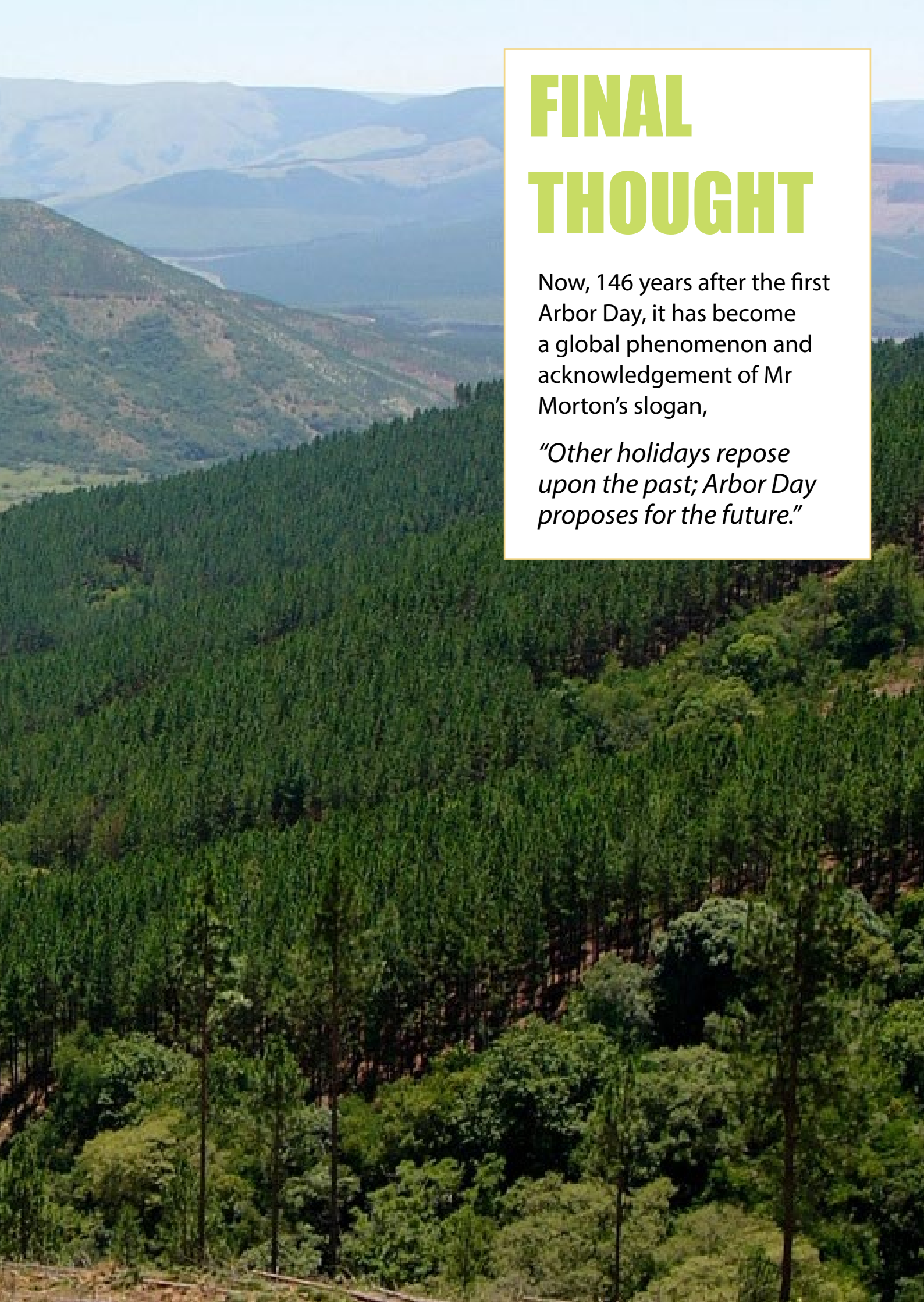
FUEL - Plantation forestry biomass is quickly becoming a renewable alternative to fossil based fuels with contributions such as bio-fuels and bio-oils. Already, a number of SA sawmills are burning off-cuts to generate the energy they need to run their mills and feeding any excess into the national energy grid. While this does release carbon, this carbon was originally taken from the atmosphere, so its release is considered 'carbon neutral' and thus a greener alternative to fossil fuels.

FOOD - Plantation forestry doesn't conjure up culinary images, however a number of household staples are produced from our forests. Eucalyptus blossom is an essential winter food source for honey bees, with many forestry owners having their own hives and honey harvesting initiatives. Cellulose, more commonly associated with paper making, is also an important component of texturisers and emulsifiers. Flavourings and preservatives are produced from lignin. Then there is xylitol, a low calorie sugar alternative derived from hemicellulose. As a result a wide variety of every day foods contain "wood", from yoghurt to chewing gum.

MEDICINAL - It is not just medicines being derived from plantation forestry. The plastic coatings used for pills are also a product of the lignin tall oil process, which has cosmetic applications as well.

SOCIAL - From natural attractions, idyllic picnic spots and wedding venues to mountain biking and hiking, there are an array of publicly accessible tourism and recreational pursuits found on forestry owned and managed land. Just check out the www.forestryexplained.co.za recreation page!

OTHER - Forestry and forest products sector has invested heavily in research, technology and innovation to turn waste and by-products into low carbon products and provide added benefits for society. These include products that are already available like thermoplastics, natural fibre dyes and essential oils. Future products currently in development include bio-plastics that have the potential to address global issues such as alternatives to plastic or metal. Wood technology even has the potential to one day produce flexible LCD screens or make aviation safer thanks to their antifreeze potential.



FINAL THOUGHT

Now, 146 years after the first Arbor Day, it has become a global phenomenon and acknowledgement of Mr Morton's slogan,

"Other holidays repose upon the past; Arbor Day proposes for the future."