

Ecological Consequences

From a paper presented to the Australian National Ceramics Conference

This article was first published in 'Pottery in Australia' in Vol 28, No 3, 1989

No matter which type of kiln or firebox we use, and each has its own merits, we are all burning wood. This is possible in Australia with our small population and large amount of surface space. Although we are still blessed with this spacious lifestyle, there is no room for complacency. If we are able to sustain our lifestyle, as wood-firing artist potters, we must bite the bullet now, and consider in what ways we can use wood, and from what sources we can collect wood for use in our kilns that will have the least detrimental effect on our environment. We are vulnerable to criticism from an uninformed public and must explain our position well, lest we be seen to be adding to the environmental malaise. Our forest cover has been squandered, chopped and burnt to clear land for agriculture and living space over the past 200 years, and that destruction of forest, although for a positive purpose - to sustain us - was carried out with no real gain as there was no use made of the timber that was removed. We cannot blame those people who went before us and cleared the land, as they didn't know what we now know. We can however blame ourselves and our peers if we continue to do the same. We must make every effort to utilise whatever waste wood is available, perhaps as byproducts of some industry or, for those fortunate enough to have the space, to actually grow trees for the purpose.

The world's fossil fuels and forests are a strictly finite resource and need to be managed carefully. Wood can be grown to meet the energy needs of a country, to stabilise and rejuvenate degraded soils, for construction materials, paper pulp, fodder and as a viable way of slowing or stopping what seems today as the inexorable spread of salinity in our soils. In addition, any tree adds to the green leafy biomass that purifies our air and takes carbon out of the atmosphere. Indeed, forest should be managed in this way, as we will always need energy, and other products; it is never too late to plant trees for the future, to conserve what we have left of our established forest, and to find better ways of utilising that part of the forest that we do harvest.

When forest is clear-felled and burnt, and then usually replanted with pines, most of the nutrient is leached out and lost before the plantation is

replanted. Pines also take different things from the soil; they use much more phosphorus, for instance, which is usually introduced artificially. The other major problem with plantations is that the whole forest is densely planted and of the one age. This has a disastrous effect on the native flora and fauna, particularly if the plantation is of an introduced species. The great ecological crime of the moment is the export of our unprocessed woodchips by foreign multinationals, and also the creation of dioxin by the mills that process here. We are the culprits here, because we are the ones demanding bleached white paper products. We are not boycotting over-packaging and we are not demanding recycling of paper, glass, metal and plastic. In England recently, the major producers of paper sanitary products decided to use only unbleached pulp because of the dioxin problem.

We have been exporting our reforestation technology to the Third World for some time, where we are all aware that it is sorely needed, but it seems that we are not aware of how important it is to start at home before we too end up in the position as the Third World. We have the chance and we have the resources, but we seem to lack the will. We still seem to see ourselves as 'the lucky country', eating at both sides of the magic puddin'.

Eucalypts have been grown for many years overseas as a renewable resource, but as well as eucalypts, Australia has many varieties of timber suitable for cultivation in a wide variety of habitats.

Australia, as an island continent, covers a vast range of habitats, the main body of our normally inhabited territory spreads from Tasmania to the Torres Strait islands. So it is not surprising to find an abundance of flora adapted to growing in an enormous range of climate, from bitterly cold through desert to the wet tropics.

In *Firewood Crops, Shrub and Tree Species for Energy Production, Volume 2* (National Academy Press, Washington DC, 1983), a report of an advisory committee on technology and innovation for the Board on Science and Technology for International Development (BOSTID), a study was carried out on plants that would be suitable for propagation around the world for use as firewood crops in a variety of habitats, from humid tropics through tropical highlands to arid and semi-arid regions.

Species were selected around the world, and over a third of those selected and proved were Australian species.

The Forestry Commission does not seem to have any major plans at this stage to replant our native forest, but there is a move afoot to do something positive in this direction.

Although there have been large areas of plantation created since the 1960s, they are inevitably pine trees. In fact, large areas of sound, native forests have been cleared specifically for the purpose of creating plantation pine.

The attitudes of the rural industries are closely paralleled by those of the current agro-forestry industry, which seems to be trying to pulp and chip the last of our remaining tall forests for export. When we consider that we have only some 7% of our initial forests left, this seems criminal, especially when it is for export as a primary product and doesn't employ many people, and these jobs are not well paid.

There will always be a need for timber in Australia for building if nothing else and there will always be a need to conserve forests. Putting aside international trade, if our children are to have timber to build their houses, fresh air to breathe and clean water to drink, we must start that planning and action now. We must conserve our remaining forest in National Parks, to preserve the genetic stock of flora and fauna, and restrict the suburban sprawl. Then we must replant mixed native forest on degraded agricultural land. This may mean that we accept a lower standard of living -as a consequence of being able to survive. Less timber can be harvested overall in order to establish a truly sustainable yield indefinitely.

With the dire implications of using wood as a fuel, what with the shortage of forest, the Greenhouse Effect, the global warming, and the destruction of the ecosystem, and too many people on a small, fragile planet, one has to think very carefully before rubbing two sticks together. With all this I think that there is still a place for wood as a fuel for the artist potter. As there will always be timber used for some worthwhile and ecologically sound purpose, so will there always be timber off-cuts for use for other worthwhile secondary purposes, and I rate wood-firing among these. From this point of view, I think that wood-firing for the artist potter has an

optimistic future, but we must do it responsibly. Just as there will always be art, so will there always be ceramics as an artistic form, and the sooner that we stop wasting precious fossil fuels on processes that can be sustained by other means, the better, i.e. greater use of solar-, wind-, tidal- and thermal-powered electricity generation. We must use mill off-cuts and other 'waste' products such as sawdust to fuel our kilns, to forestall waste of energy sources and recycle creatively and constructively; most of us are already doing this, as many of us are aged hippies and living semi-alternative lifestyles, but although our use of energy in kilns is minor, even insignificant compared to the use of energy of the greater whole of society, there is no room for complacency. If we expect everyone in all facets of life and business to cut their energy use by 20% in the next decade (as the scientists at the Kyoto conference will be urging, which will not be enough, but probably more than we can expect to achieve), then we must do the same. Even if we are recycling waste fuel, we are still emitting CO₂ from our chimneys. The answer lies in shorter firings and better-insulated kilns, to cut fuel consumption and CO₂ emissions to as low as we can get them. I see no reason why this should limit our artistic expression in any way. It just means we will have to work harder to find the solutions. As many of us live in the countryside, there is a potential to collect usable dead timber from the sides of fire trails in the bush. I feel that this is a suitable source of fuel, because the local fire brigade comes along every few years and flashes the area (called 'hazard reduction') and all this fuel is wasted at no positive productive result, just a lot of smoke and CO₂ in the atmosphere. It is important, however, to mention that it is not ecologically sound to remove the tree tops and bark from the bush, as they contain 90% of the total nutrients of the tree, and this should be left behind to fertilise the next generation of growth.

Many people seem to think there is a strong possibility of a coming world crisis. My personal model for combating this is first to approach the problem as if it is a world crisis that has already happened, and we are now just seeing the impact of the results. Having discussed the ecological implications of wood-firing, it is appropriate to confront the real problem, and that is to develop strategies for long term solutions to our predicament, so that we may live happy, fulfilled and healthy lives regardless of whether we wood-fire or not.

We cannot look to politicians for the answers here as they are blessed with 3 1/2-year vision, and many are blind to reality anyway. Nonetheless, lobby politicians by phone and mail; start with your local council and work your way up and try to get the right decisions made. Don't feel guilty about obsessively pushing your point of view. The big corporations do it all the time, and even employ full-time professional lobbyists to do it for them. There is big money being made in destroying and polluting the environment and there are big bills to be paid by you and me for letting it happen. It was civil disobedience at home that stopped the Vietnam war; it was the tide of public opinion that saved the Franklin River.

In our own life we must try to conserve voluntarily, big changes can be effected by using less electricity. Install solar hot water. Drive a smaller, four cylinder, fuel-efficient car, without air-conditioning; don't drive if you can walk, ride a bike or use public transport. Grow your own vegetables, eat less meat. Demand that the next house you live in is solar efficient and heated and cooled by passive means. If you feel cold, wear more clothes.

If strategies like these are put in place, and we are all honest about our gross overuse of resources, then we can make changes. If we don't make the changes voluntarily, then they will be forced on us so we might as well implement them on our own terms. We are the generation that has squandered most of the world's resources. We were quick to accept convenience and treat it as essential so we must now initiate the reconstruction of our society's values from the yuppie motto of 'greed is good' to 'just enough will do'.

In conclusion, I must state that I'm not a Luddite or pessimistic. Technology will provide answers, but we must make sure that it is implemented equitably and on a human scale.

Artists must move from a perspective of reflecting and analysing society to one of leadership by making works that show the way and positively influence society's direction. Living lives that lead by example.

Stephen Harrison is a potter, with Janine King he established the Loopline Pottery at Balmoral Village near Picton in NSW in 1976.

REFERENCES

- The Fragmented Forest by Larry Harris, University of Chicago Press, 1984.
A Countryside Reeling by Chris Watson, CSIRO,
The Bulletin, January 1989.
The Colong Bulletin No. 113, March 1989.
Forests and Timber Vol. 24, 1988.
Friends of the Earth Newsletter, April 1989.
Ecopaper Collective, PO Box 451, Leichhardt, NSW 2040.
Sweden's Factory Forests by Linda Gamlin.