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Living Woods *Magazine*

No.38 ■ Winter 2015 ■ £5.00

New Era Woodlands

Changing ways for Mike Abbott & Living Woods

Tree of the Year

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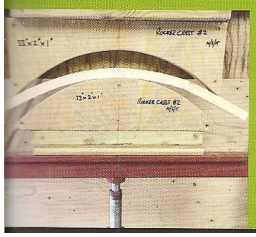
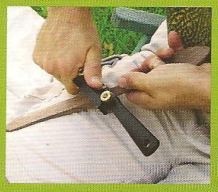
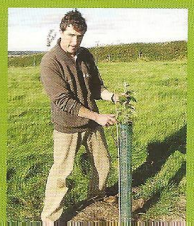


Building with cob
Spokeshaving spoons
Planting trees
Steam bending chairs

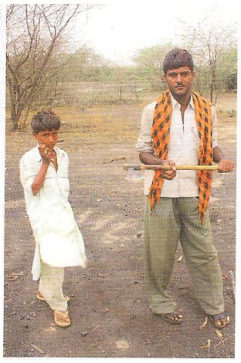




Charcoal in India

Debbie Bartlett reports on new raw materials being used to produce charcoal in Gujarat, India

PHOTO: SARAH MILLIKEN



Charcoal makers showing their felling axe (above) and the site of a charcoal burn (below)

Over the last three years I've been involved in a partnership project, funded by the British Council UKIERI programme, with GUIDE, the Gujarat Institute for Desert Ecology. This is based in Bhuj (you might just remember the catastrophic earthquake of 2001) in the Kachchh district of Gujarat State. This is a desert region up in the far North West of India, adjacent to the border with Pakistan.

The deserts here are not, as might be imagined, of sand, but are salt deserts with sea water coming in from the west with the monsoon winds, flooding the Great and Little Rans (the grey areas on the map). The high temperatures cause this to evaporate leaving a sparkling crust of brilliant white salt. This has high economic value and a nomadic workforce is involved in harvesting, the subject of the award winning film *My Name is Salt*, which is well worth watching.

Degradation

The basis of the economy of Kachchh has traditionally been milk production, from cattle, buffalo, sheep and camels. Concern about the spread of the desert, caused by degradation of grazing lands and increasing salinity, led to the introduction of a South American plant, *Prosopis juliflora*, also known as Mesquite. This has been highly successful at stabilising the desert but it has now become a significant problem by invading grazing land with impacts on traditional livelihoods and on native wildlife. This problem is not specific to Gujarat, and *P.juliflora* was, in 2004, identified as among the top 100 least-wanted species in the world by the IUCN Invasive Species Specialist Group and it has been extensively researched in other parts of India and elsewhere in the world where it has been introduced.

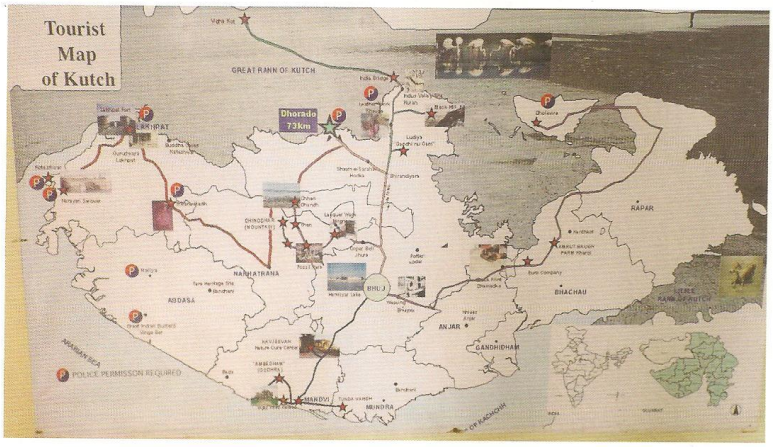
While it might seem that removal of this invasive species would be the obvious solution, there is a problem as it has become an important source of income for local people. In addition to the value of the woodfuel and high quality charcoal produced from it, the non-timber forest products include gum, honey, and wax. Charcoal making in particular has expanded in the last two decades and is generating significant revenue. A few years ago the policy of encouraging charcoal production to reduce the area of Prosopis was put forward; however, communicating this to local people, who are largely illiterate, has been problematic, particularly as there can be confusion between the 'bad' *P. juliflora* and the 'good' native *P. cineraria*.

Despite this, lorries laden with sacks of charcoal are a frequent sight. Prosopis grows with a shrubby habit and responds well to coppicing with small axes and slashers. The cut wood is stacked up, and the leaves (which dry almost instantly) are used as tinder. The burn takes three nights and the charcoal burner (and there may just be one working alone) stays to watch it for the whole time.

Raw material

The charcoal maker interviewed, Mr Bachubha Sodha, feels that *P.juliflora* is the best raw material as it can be used for charcoal making immediately after having been cut and it gives a better conversion rate than other species. He combines charcoal making with dairy farming, both cattle and buffalo. After firing the charcoal is sewn into 40kg sacks, using a twig as a needle and string as thread. Each of these sacks sells for 220 rupees (equivalent to about £2.20). The demand for charcoal is high, with ready markets in the cities for domestic fuel as well as from industry, such as the ceramic tile

PHOTO: SARAH MILLIKEN



Sewing up sacks of charcoal (above) and a map of Kutch (left). Wood stacked ready for burning (below)

factories which are found locally. This seems to be a positive approach to managing an invasive alien species. It is perhaps a pity that *Rhodendron ponticum* does not (as far as I know) make good charcoal.

Biochar

There is much interest from scientists in this part of Asia in using biochar to restore deserts and arid lands to fertility, with at least one Exeter retort being used over the border in Pakistan. We asked if any difference was noticed in the vegetation growing after a burn but, despite quite a lot of fine material being left on the ground, no difference was discernible.

Details *Debbie Bartlett is Principal Lecturer in the Faculty of Engineering and Science, University of Greenwich. She has been actively carrying out research into the socio-economics and wildlife aspects of coppice woodland management over 20 years. She can be contacted at d.bartlett@gre.ac.uk.*