Optimal tree rotation times for eucalypts: When leaves are swept in a world of global warming

Wednesday 17 April 2013 1 – 2 pm, light lunch will be provided

Professor Gardner Brown Professor Emeritus, University of Washington

Seminar Room 9 Level 2, JG Crawford Building 132, Lennox Crossing, ANU

Millions of hectares of Eucalypts are planted in even-age forests in developing countries. The trees drop leaves and these are commonly swept and used for fuel. Trees draw nutrients from the soil, a non-renewable resource whose rental rate rises at the rate of interest.

If plantation rotation times are decreased, the nutrient demand increases as young actively growing trees require more nutrients. Nutrients are not returned to the soil from the fallen leaves. The mathematical structure of this variable rotation time problem is novel.

The model shows that when the rental rate of nutrients rises above the net unit value of the leaves, sweeping stops. The soil capital continues to fall because the tree owner is a net user of soil capital. The rental rate rises until it strikes the price of fertiliser, a backstop technology and the balance of the economic analysis. Subsequent rotation times are then constant. During this relaxed discussion, Professor Brown will present the findings from the formal model.

Professor Gardner Brown received his PhD from the University of California, Berkeley in 1964. His extensive career includes his time at the University of Washington, 1965-2001. He is a visiting professor at the Universities of Cambridge, Gothenburg, Stanford and Aix-Marseille III. Professor Brown is an Association of Environmental and Resource Economics Fellow since 2007, a Rockefeller Foundation Environmental Fellow, and Resources for the Future University Fellow since 2000. He was awarded the AERE Publication of Enduring Quality Award 2007 and has an honorary doctorate from University of Gothenburg in 2001.

His most recent areas of research are in the field of renewable resources including forestry, bioeconomics and population dynamics of fish, rhinos, antibiotics, endangered species (northern spotted owl), and waterfowl. He has done widespread work on the economics of metapopulation models. Earlier research included some of the first work in non-market valuation including the development of the hedonic travel cost method.

This seminar is presented by the Centre for Water Economics, Environment and Policy, Crawford School of Public Policy, in partnership with Fenner School of Environment and Society.

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Registration & further enquiries

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This seminar is free and open to the public

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