

## **Eradication of *Phytophthora cinnamomi* from infested *Eucalyptus marginata* (jarrah) forest during large scale mining operations**

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*Phytophthora cinnamomi* is widespread throughout the *Eucalyptus marginata* (jarrah) forest in the south-west of Western Australia. Alcoa of Australia Ltd. mine bauxite in both infested and uninfested forest and rehabilitates 350-400 ha of mined forest annually. *P. cinnamomi* is unevenly distributed throughout the areas to be mined, with infested areas adjacent to non-infested areas. In order to minimize the spread of *P. cinnamomi* from infested to non-infested areas, detailed mapping of infestations is used to design detailed hygiene plans. As a result of eradication trials reported at previous IUFRO meetings, we now believe it is feasible to return infested mine pits to pathogen-free post mining. In addition, it will allow strict hygiene practices to be relaxed along haul roads, as these can be made pathogen-free post-mining. This will result in substantial savings in transport costs as *Phytophthora* free road building material will not need to be sourced. As *P. cinnamomi* is a poor saprotroph eradication methods are based on ensuring haul roads, topsoil, overburden (soil horizons not suitable for bauxite extraction) stockpiles and sumps (drainage points designed to collect water running off roads) are kept plant-free for 2-3 years. Where necessary metham sodium and other fumigants will be used. We will report on (1) the fallow, herbicide, fumigation methods being used to eradicate the pathogen, (2) the traditional and molecular genetic approaches being used to monitor the effectiveness of treatments to kill all survival stages (chlamydospores, zoospores, oospores, and stromata), and (3) approaches to containment that will ensure the pathogen is not inadvertently spread during the 2-3 year fallow period prior to revegetation. Successful outcomes will allow many hundreds of hectares of previously *Phytophthora* infested forest to be returned to a pathogen-free forest post-mining.