

## ALTERNATIVES OF REFORESTING OIL SHALE OPENCASTS IN ESTONIA

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*In Estonia, reforestation has been considered to be the most sustainable way of restoring the productivity of land damaged by oil shale mining. As distinct reforestation alternatives give different results, three alternative ways of reforesting oil shale opencasts are compared: natural succession, and planting seedlings of either Scots pine (*Pinus sylvestris* L.) or black alder (*Alnus glutinosa* (L.)). For evaluation of these alternatives the emergy concept developed by Howard T. Odum was applied. This allowed estimating the environmental work and economic inputs required for developing total aboveground plant biomass and stocks of commercial wood in 30 year-old forest stands. The cost of total biomass production was lowest in natural stands. Highest public benefit per dollar cost and per dollar value came from naturally recovered stands. Thus, unassisted natural succession causes the lightest load on the environment.*

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