

## TECHNICAL NOTE

### **Three Years After: Early Stand Re-Entry in Reduced Impact Logging of Neo-Tropical Forests**

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Several polycyclical harvest systems define the process of reduced impact logging (RIL) in the neo-tropics. As a rule, after the first RIL harvest, the area is left undisturbed for 25 to 35 years - or the chosen rotation. This constraint reduces the ability of the forest manager to adjust to changes. The option to re-enter a stand after a given period but before the planned rotation age would allow the forest manager to examine trends in timber prices - harvesting when prices are high or delaying harvest when prices are low - and to accommodate changes in species demand, harvesting species that were previously non-commercial. Indeed, to accommodate delays due to problems such as heavy rain or broken machinery, current forest legislation in Brazil allows for re-entry into a harvested stand for up to one year. Although an anathema to many RIL advocates, a re-entry harvest would introduce much-needed flexibility into the system.

This note introduces the option of a second entry into the harvest area. A recent study conducted by the Fundação Floresta Tropical, a Brazilian NGO, which for the past 8 years has been training foresters in RIL techniques, shows the potential for delaying reentry further with little damage to the original stand. Here we briefly discuss the results of this field trial of re-entry logging in the Brazilian Amazon, conducted three years after the original harvest. To the author's knowledge, this is the first such field trial conducted in the Brazilian Amazon.

The trial was conducted on a 50 hectare plot on the Fazenda Cauaxi located near Paragominas in Eastern Pará, Brazil. The first harvest in 1997 was of 20 m<sup>3</sup> per hectare

and the second, in 2000, of approximately 5 m<sup>3</sup> per hectare. The results of the re-entry trials showed that all secondary roads could be re-used in the re-entry harvest, as could all of the log decks. Of the 50 hectares in the block, 3.21 hectares (6.42%) were affected in the first harvest. During the re-entry logging, an additional 0.39 hectares (0.08%) were opened for secondary skid trails, creating a total area affected of 3.60 hectares (7.2%) after the re-entry logging. Of the 50 hectares in the harvest area, only 1.28 (2.56%) was re-used. This included the total re-use of secondary roads and log decks, the partial (50%) re-use of main skid trails - the rest of which were untouched - and less re-use (8%) of secondary skid trails. Almost one half of the area re-used is considered to be permanent infrastructure designed to be reusable for the second harvest cycle (secondary roads and log decks). The damage on the reused areas (50% of the main skid trails and 8% of the secondary skid trails) is that of some additional soil compaction and the postponement of the regeneration process. The conditions of the field trial were such that estimates of this additional damage were not available. A simple cost benefit analysis of the re-entry logging was done and compared to estimates of single harvest RIL. The results show a weighted average cost - for the two harvests - per cubic meter for the re-entry logging of \$14.12, equivalent to a four percent increase over the single RIL harvest value of \$13.56 per m<sup>3</sup>.

The results of this trial suggest that re-entry logging is possible in well-planned and executed RIL systems in the neo-tropics with little marginal damage to the stand.