16-HARVEST SCHEDULER

The scheduling of harvests with or without a prescribed fire is determined by this module. Note that this process takes place outside the LANDCARB model, and although this model does have this capability, a simpler system is used for the Forest Sector Carbon Calculator.

Stand Level. At the stand level, all the grid cells are harvested in harvest years. For the past, the user supplies the year that past harvest events impacted the stand. For future harvests the user supplies the interval between harvest events. This information is used by a scheduler program to determine the years in which harvest occur. Harvests always occur exactly on the specified year, but within a year the percent of the stand disturbed (i.e., percent disturbed parameter) may be adjusted among cells to achieve an approximation of the target disturbance. For example, when the parameter Percent Disturbed is set at 100%, then the interval not affected by the value of Percent Disturbed. Moreover, all the stand grid cells will be simultaneously impacted. This is also true when this parameter is set to a value that can sum to 100% (e.g., 10, 20, and 50%). This is because each grid cell can be divided up into a number of parts that eventually will cover the entire grid cell exactly. However, when the parameter Percent Disturbed is set to a number that will not sum exactly to 100% (e.g., 45%) then the grid cells will receive variable amounts of harvest to achieve the desired value of Percent Disturbed.

Landscape Level. At the landscape level not all stands will have harvests the same year. It is assumed that there are sufficient stands to maintain a regular spacing between harvests. However, when harvest intervals are extremely long (i.e., longer than the number of grid cells in a landscape), then in some years harvest will not be possible. To determine the cells to be harvested, the program first determines the average number of entire cells that need to be harvested to achieve the desired regular interval of harvests. When the total number of stand grid cells being simulated cannot be divided evenly by this number of stands then the number of stands harvested each year varies. However, the program tries to keep this as close to the target as possible.

At the landscape level stands that have recently been disturbed by wildfire will not be harvested; there is a minimum stand age that is subject to harvest. This is currently set at no younger than 90% of the target harvest interval.

Stands in a landscape are harvested sequentially in the overall grid work of stands, but this has little practical impact because stands are independent of each other. To achieve the values specified in the Percent Disturbed parameter, the landscape level uses the same procedure as at the stand level. That is, it allocates harvests to stands so as to achieve as close to the desired percent as possible. **Note that at the landscape level, Percent Disturbed is implemented within stand grid cells. It does not remove that proportion of stand grid cells from disturbance.** Therefore all cells will eventually be disturbed. If one wishes to have a landscape in which there are different harvest regimes in different locations, then the best way to achieve this is to run a simulation for each

management system and then to combine them after the fact with an area weighted average.

Different harvests regimes may be linked within stands at the landscape level. For example, if thinnings occur in stands between clear-cut harvest, then these harvest regimes can be coupled.

Checking the Realized Regime. The degree to which the target intervals and Percent Disturbed are achieved at either the stand or landscape level can be checked by looking at the Harvest Events graph or by Run Output file under Output Files-Log Files window.