

Appendix 1: Full Cycle Trees

Full Cycle Trees

Full Cycle Trees are stems that are left on managed forest sites to mature, grow old, die, fall to the ground, and decay – in other words to complete the full life cycle of a forest tree. The purpose of this is to provide the full range of ecological structures that are found in natural forests on managed forest sites. These full cycle trees are required to maintain habitat, maintain biodiversity, store and filter water, and maintain soils.

The Management Plan for W1832 sets a goal of diverting 15% of net timber management site productivity to create and maintain full cycle trees. This target will be met through individual tree retention and small patch retention. The final number of stems per hectare required to achieve this goal is not known at this time. The full cycle stems will become very large as they mature, and will take up much more growing space per tree at age 500 than they currently do at age 100. If 15% of the current young stems in the stand were left on site to become full cycle trees, they would likely come close to fully stocking the site with 100% crown closure at age 250. This is not what we wish to achieve: protected old growth forests will be found within protected areas in W1832 and the surrounding landscape. Within the timber management zones, we wish to maintain old growth structures, but to grow repeated timber crops in the space beneath and around the full cycle trees.

The exact number of full cycle stems per hectare will be determined over time, with experience, modelling and monitoring. At this early stage in the process, sufficient trees will be left to allow future managers to make informed, responsible decisions.

Trees that will become full cycle trees will be chosen from the largest, healthiest trees currently on a site. More than enough of these large trees will be left after initial intermediate cutting in W1832 to supply initially required full cycle trees. These stems are highly desirable crop trees from a timber manager's viewpoint, but they are also the most desirable stems from an ecological perspective. They have robust trunks and full healthy crowns, and large healthy root systems. They can thus resist windthrow, withstand heavy snow loads, and grow rapidly to full mature size. These trees will also produce abundant seed crops for regeneration, and may be genetically better suited to the site than the smaller, weaker trees in the current stands.

The location and species of designated full cycle trees should be mapped and recorded in a record keeping system. The trees themselves should be marked. The purpose is to communicate the intent in leaving the trees, and the location of the trees, to future forest users long after current forest managers have passed on. As is common in ecoforestry, what we are describing is the need for "people management", in addition to forest management.