



Management Recommendations for Riverbottom Forests in Southern Manitoba

Harvesting

General

All harvesting should be limited to the winter months when the ground is frozen and snow covered. This will prevent soil compaction and damage from rutting.

All stumps should be cut as low to the ground as possible as this tends to promote stump sprouting.

Harvesting is not recommended along the channel shelf as this area is more vulnerable to erosion when trees are removed.

Selective Cutting

Selective cutting is preferred over clearcutting in most circumstances, except in oak stands. There are two selective cutting systems which can be used:

- 1) Removal of several small groups of mature trees (less than one half hectare in size) at one time.
- 2) Removal of individual trees throughout the stand.

In a selective cut, up to one third of the stand could be harvested at one time. Care should be taken to remove both poor and better quality trees during the initial harvest.

Subsequent selective cuts could be made in 5 to 10 years, once natural regeneration has become established. In these subsequent cuts care must be taken to protect these young trees.

Clearcutting

Clearcutting could be an option for floodplain stands where:

- the stand has been previously grazed and grass is prevalent;
- the stand is overmature and badly deteriorating; or
- the stand is made up of poor quality trees.

The area of each clearcut, called a cut block, should be no larger than 2 to 3 hectares. These should be spread throughout the stand.

Clearcutting is preferred for oak stands. Cut blocks should be at least one-half hectare in size to promote the ideal conditions needed for natural regeneration of oak. Maximum cut block size should also be 2 to 3 hectares.

One or two dead or dying trees should be left standing in any clearcut for cavity nesting birds or animals.

Reforestation

Both recommended harvesting techniques (selective cutting or clearcutting) will typically result in adequate natural regeneration through stump sprouting or seed germination.

Planting may be desirable, or even necessary, in some floodplain stands if:

- the area was previously grazed and there is significant grass competition;
- the quality of the existing stand is extremely poor and there is a desire to improve the future stand condition through the planting of better quality seedling stock; or

- the landowner wants to introduce higher value tree species to the stand, create or improve wildlife habitat or add to the aesthetics of the woodlot.

Planting in oak stands should only be necessary if there is a poor acorn crop the year prior to harvesting and/or if the stand is too old to generate sufficient stump sprouting. Sprouting typically declines as the trees reach maturity (80 to 100 years).

Planting Techniques

These techniques can be applied to stands harvested using either the selective or clearcut system. They may also be used when planting seedlings into a stand that has not been cut.

Site preparation will be needed on most areas prior to planting. For each seedling, a 60 cm by 60 cm area should be cleared of competing vegetation and the mineral soil exposed. Manual tools such as a planting spade or motorized brush saw scalping attachment can be used to create these planting sites.

In heavy grass areas, brush mats (covers made of synthetic or natural materials that can be placed on the ground around a seedling to help control competition) or herbicides registered for woodlands management can be used. If using herbicides, always follow label directions.

Trees should be planted at approximately a 3 m by 3 m spacing (approximately 1100 seedlings per hectare). Protection tubes can increase early seedling growth and protect them from wildlife browsing and girdling. These should be removed within 3 to 4 years after planting or before they begin to restrict a seedling's diameter growth.

Stand Tending

Due to the rapid growth of most riverbottom tree species, brushing or weeding will not typically be required during the first few years after harvest. Some oak stands could be the exception as heavy grass, herbaceous and woody competition could reduce oak seedling survival. These stands should be manually brushed. Care should be taken to prevent damage to the oak seedlings that are often well hidden under the competing vegetation.

Spacing or thinning treatments should begin approximately 4 to 5 years after harvest (7 to 8 years for oak). The preferred tree species should be thinned to leave a 2 m by 2 m spacing around the most vigorous seedlings. All woody stems competing with the desired crop trees should be removed. Stump sprouts should be thinned before they reach 10 cm in diameter, leaving only the best one or two sprouts per stump. The best sprouts to leave are those growing closest to the base of the stump as they will be the least affected when the parent stump decays.

Pruning of lateral branches should begin at the same time as thinning. Do not prune more than one third of the canopy at any one time.

Light thinning should occur every 5 to 10 years after the initial thinning, until the trees reach marketable size. Pruning could be done at the same time. Pruning of lateral branches to an approximate height of 5 m is sufficient to produce quality sawlogs.

Begin selective cutting once the trees reach a marketable size.

