

Restoration is required when disturbance in a natural area is unavoidable and requires clearing of vegetation. Every effort should be made to avoid these impacts, however the following guidelines should be followed in instances where this is not possible. It is critical to the success of the restoration planting that the range of site conditions be assessed as some level of site preparation will likely be required prior to planting. Site preparation is paramount as soil compaction, grading, altered hydrology, herbivory, and inadequate topsoil depths can seriously inhibit planting success of even the hardiest species and can limit the process of regeneration. There are also a suite of urban stresses that can hinder the growth of plantings including salt spray, pollution, pests, and altered micro-climate. These issues need to be dealt with on a site-by-site basis, but should be considered when developing restoration plans.

1. The proponent is responsible for ensuring that all plantings are native species and are suitable given the soil, moisture, and light conditions of the site, as well as any specific stresses. Cultivars of native species are generally not acceptable. While invasive species are not permitted, non-invasive exotic species may be used in some limited areas. Plantings should also be compatible and complementary to the existing vegetation communities.
2. Early successional species should be used alone or in concert with shade tolerant (i.e. late-seral species) to allow natural succession to ensue. Shade tolerant species can be used if conditions are favourable and in areas where a source of late-seral seed does not exist in order to promote succession.
3. In general, woody plantings should follow the standard densities of 1 metre on centre for shrubs and 5 metres on centre for trees. However, higher densities may be required depending on the situation (e.g. live staking, use of stock 100 cm or smaller, edge management, sensitive areas, or other site-specific situations).
4. Indicate that site stabilization will occur during or immediately following construction to avoid unacceptable levels of erosion. Depending on their suitability, various techniques may be employed including hydroseeding, or installing straw mulch or jute mats, etc. Although sod is acceptable as an interim measure, it will not be permitted as a permanent groundcover in natural areas and associated buffers.
5. Seeding mixtures should consist of quick-growing, non-invasive species. Manufacturers offer an assortment of mixtures that are suited to various conditions, including a slope stabilization mix, meadow mix, and wetland mix. In particularly sensitive areas, a seed mix consisting entirely of native species should be used to avoid the invasion of aggressive vegetation. Please refer to the *TRCA Seed Mix Guidelines* for further details. In areas where invasive species are a particular problem, eradication of these species may become a component of the restoration initiative.
6. Ensure that riparian planting coverage for a stream extends from the watercourse edge to a minimum of 10 metres on either side. For a valley, coverage should include plantings within the entire feature plus an additional 10 metres. Generally, we only require restoration in areas being disturbed.
7. Riparian plantings should be installed after the spring freshet to avoid being uprooted during high flows if planted the previous autumn. Mulch application may not be appropriate in riparian zones as this material can be easily washed away during high water periods. Alternative methods of dealing with competitive vegetation should be considered, however herbicide application is not desirable.

8. The objective is to establish at least 50% woody coverage through restoration in areas where the desired vegetation community is forest.
9. When selecting vegetation for plantings, try to achieve a degree of structural and species diversity.
10. If the area is very grassy, mulch and rodent guards may be needed to protect young tree stems. Larger planting stock may be required in these areas due to competing herbaceous vegetation. Maintenance plans should include watering during summer dry spells for the first 2-3 years after planting.
11. Other than in sites with competing herbaceous vegetation, we generally have no size requirements for vegetation to be planted. Typically, we prefer greater numbers of smaller-sized vegetation over fewer numbers of larger-sized vegetation. Planting large vegetation may cause more disturbance to the site.
12. Plans should indicate timing of the restoration works, as well as phasing if applicable.
13. Indicate how existing vegetation to be retained will be protected. Please refer to the *TRCA Edge Management Guidelines* for further detail.
14. Drawings should include a plan view showing planting locations, species and numbers, a detail showing the installation, and a note listing the species, size, and condition (i.e. bareroot, balled and burlapped, potted). The latter will ultimately dictate the season when works can be done. Bareroot stock should only be installed while dormant in spring or after leaf fall in autumn. Planting of balled and burlapped and container-grown stock can be installed at any time during the growing season if adequate water is supplied.

Note: *This document is dated July 2004 and is consistent with current policies adopted by the TRCA at this time. These guidelines are not meant to be exhaustive but present the typical requirements of the TRCA and are subject to change.*