An alternative to removing vegetation during development construction

By Henry J. Kortekaas

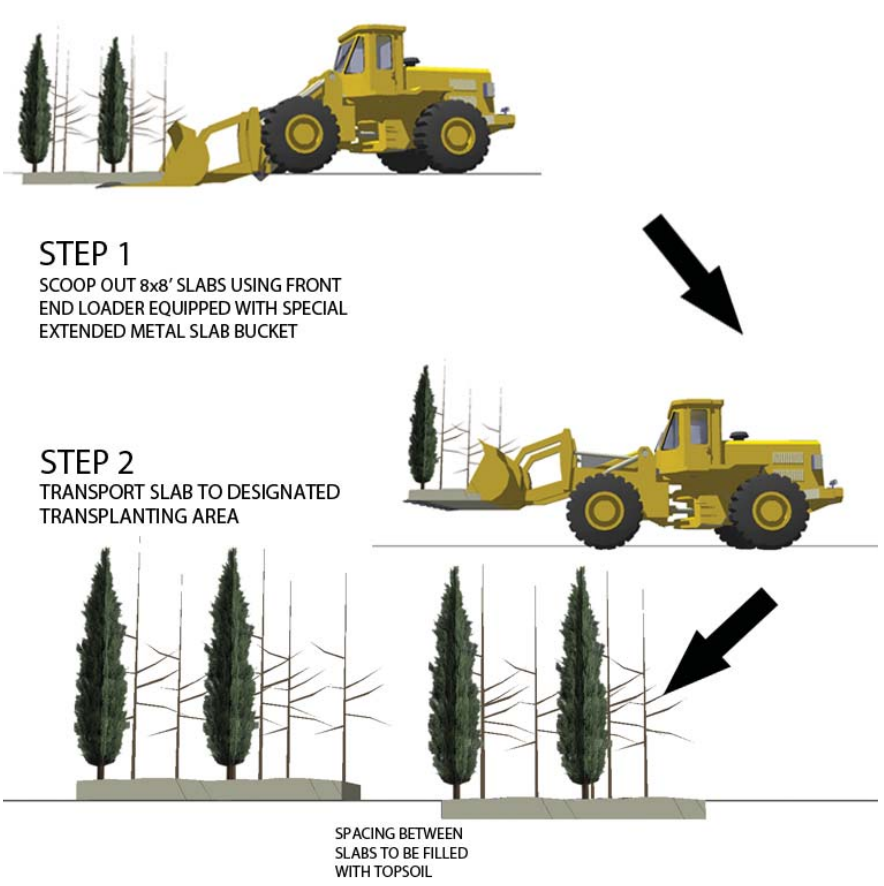
During the development construction process in Ontario, if a site's vegetation is locally common in an ecological sense, the standard practice is to remove all, or at least most of it. Mature wood lots, stream valleys and locally uncommon vegetation are usually retained as stipulated by approval agencies.

The development approval process is slow, and many vegetated sites or urban edge farms are scheduled for development years in advance through a municipality's official plan process. There are "land banks" owned by developers and what was once farmland now lies fallow.

Meanwhile, the former farm fields are being regenerated by early successional woody plant species. Over time, significant portions of the site become re-vegetated. After 10 to 20 years, the developer's earthmoving equipment finally arrives and significant areas of young vegetation are removed. However, there are alternatives.

For example, today's earthmoving technology can relocate significant swaths of young, existing vegetation. Large rubber-tired loaders with modified steel buckets can now be used to transplant large areas of early successional, understory plants, small wooded areas or even small streams. Whole ecosystems and their seed banks can be moved if warranted. This will ensure that common or rare plants and their ecological communities are relocated as a complete, functioning ecosystem.

Granted, plants cannot be too large, and soil depth and moisture conditions must be just right for this kind of relocation to be successful. The quality, type and depth of soil and subsoil, as well as the timing of transplanting, are extremely critical. Late fall, winter or early spring are the best times to move plants, as they are in their dormancy period, and weather and temperature conditions are best. Site conditions will also dictate when plants can be moved. Winter transplanting when the ground is just frozen for 10 to 12 in. is best. Machines can move over the frozen ground, while still allowing the rubber-tired loader's bucket to cut through the ground under the roots of the plants.



Case Study: Birchdale residential community

The proposed Birchdale residential community in North Courtice, Bowmanville, Ontario, was slated for development by both the local and regional official plan processes. An environmental assessment was carried out, resulting in recommendations for transplanting locally uncommon plants.

The environmental consultant recommended that each locally rare plant be potted and transplanted by hand. Henry Kortekaas & Associates recommended an alternative method using a skid steer to transplant "slabs" of vegetation. Slabs of plants, with their entire root systems intact, were moved to an appropriate location having generally the same or better soil, moisture, light and orientation conditions as the original site. The plant slabs were roughly 3 x 6 ft, with a topsoil depth of 8 to 10 in. In many cases, depth of topsoil and organic conditions were improved by this method, because the slab was placed over existing topsoil that had been scarified.

Case Study: New England Village, Wasaga Beach

The goal was the understory transplanting of a forest slated for development in Wasaga Beach, Ontario. The site vegetation consisted of mature sugar maple, beech, black cherry and white ash, with a regenerating understory veg-

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etation of sugar maple and white ash saplings. The site sloped towards a golf course pond, which had effectively drained the perched water table. This resulted in drier conditions for the mature maple-beech-oak woodlot. It had been stressed over the past seven to eight years, resulting in the decline and death of many of the mature trees.

The solution was to move the understory vegetation to preserve the woodlot. Existing understory vegetation was composed of young sugar maple saplings, avidly racing to the light openings left in the canopy by the dead or dying trees. They were growing in sandy loam soils about 8 to 10 in. thick over subsoil of sand and gravel. They can be moved, not individually, but in slabs of frozen soil, roots and plants that are 12 – 16 in. thick by 8 ft by 8 ft. Prior to the removal of the mature woodlot, as part of the development process, large, rubber-tired front loaders can move much of the understory vegetation that is regularly cut down.

Native tree saplings tend to grow more successfully if moved in this manner, rather than through transplanting individual trees using pots. This is due to their extensive, intertwining root system. The intent is to place the slabs of saplings in their final location if possible. If necessary, temporary holding areas can be designated for the saplings, which can then be moved again when the heavy construction is complete and receiving areas are ready for planting.

The slab technique of transplanting has been used in several other projects, resulting in a more successful preservation of natural vegetation while achieving significant cost savings. Large earthmoving equipment can, if used in an appropriate manner, provide very positive environmental benefits.

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