

# **Planning for Change through the use of Successional Vegetation Communities**

**Tim McCormick<sup>1</sup>, OALA, APALA, CSLA**  
**Daniella Giovanatto<sup>1</sup>, OALA, CSLA**

*<sup>1</sup>Stantec Consulting Ltd., Waterloo, Canada*

The planting of natural channels can fulfill many short-term objectives such as bank stability, erosion control, and thermal mitigation. However, the ultimate goal with this work is to establish or restore natural ecological processes within the landscape. This will encourage healthy, stable environments which will grow, flourish and develop into an ecologically stable landscape over time.

Whether the desired end community is a meadow, riparian buffer, or forest, the disturbed landscape of a newly constructed channel often presents challenges as the existing site conditions typically will not immediately support the desired community. The planting design must accommodate the current conditions while providing the necessary building blocks needed for the landscape to change and transition as the plants grow and mature through the stages of succession.

Using case studies and project examples this presentation will explore various techniques and practices that can be used to implement successional communities and accommodate a growing and changing landscape. This will be explored through the three stages of a project: Design, Construction and Monitoring.

**Design:** Successful design must be integrated with the engineering and hydrological solutions of any stream. There are several factors to consider for successional planting strategies during the design stage including: species selection, appropriate densities, anticipated mortality rates, age diversity, flooding limits, surface roughness within the system, sun exposure, moisture requirements, flood tolerance, soil conditions, habitat creation, and invasive species management.

**Construction:** During the construction stage we will explore the process of implementation, the sourcing of planting material, phasing, integration of work with the stream contractor and the landscape constructor, plant availability, implementation timing and contractor/designer communication.

**Monitoring:** It is critical that monitoring be completed to assess indicators of success and opportunities for improvements during both the design and construction phase of stream restoration projects. Short and long term monitoring programs contribute to a critical analysis of each project and provide information necessary to ensure the continued long-term growth and health of plant communities in successful streams and provide improved ecological function.

## **Biography**

Tim McCormick is a Senior Landscape Architect and ISA Certified Arborist with Stantec Consulting. Tim has spent more than 15 years working on stream and water course restoration, reforestation and naturalization. He applies a scientific approach to the design, implementation and monitoring of his projects. Tim has extensive construction management experience on projects ranging in complexity from simple planting assignments to complex multi-year ecological restoration plans.

Daniella Giovanatto is a Landscape Architect and Arborist at Stantec Consulting with several years' experience in restoration and naturalization projects across Southern Ontario. Daniella has a Bachelor of Landscape Architecture from the University of Guelph and is a full member of the Ontario Association of Landscape Architects as well as Certified Arborist with the International Society of Arboriculture.

Both Tim and Daniella strive to create landscapes that develop and evolve into functioning ecological spaces while respecting natural processes and change within the environment.