



# Ecosystem Remediation Services

## *Ecological Restoration and Revegetation*

### Ecosystem Services for Remediation

Revegetation is a critical component of industrial, community and government projects, such as infrastructure construction, contaminated site remediation, recreational area development and ecosystem restoration.

Although there are standard practices and techniques for promoting plant growth, they may not address stakeholder expectations. Improper planning and implementation of site revegetation can result in unnecessarily high costs, compromised site stability and stakeholder frustration.

#### Revegetation planning should include:

- ▶ Consulting with project stakeholders (e.g., regulators, engineers and local communities) to clarify expectations and to identify the most-valued species for the novel ecosystem services
- ▶ Selecting native plant species to facilitate ecosystem recovery
- ▶ Identifying practical and effective revegetation techniques and implementation
- ▶ Monitoring criteria to assess the ecosystem recovery success
- ▶ Contingency planning to account for potential pitfalls and unexpected events

The Saskatchewan Research Council (SRC) has many years' experience applying adaptive management strategies to revegetation planning and ensuring ecosystem recovery success under different conditions and budgets. We can help industry and governments achieve their environmental goals by recovering damaged ecosystems through proper revegetation planning and implementation.

### Specialized Expertise

SRC has decades of experience developing the science behind, and optimal application of, revegetation methods. Our remediation experts also have practical experience implementing these solutions as part of SRC's multi-year, multimillion-dollar remediation project that includes 37 abandoned mine sites in northern Saskatchewan.

Our knowledge and experience benefit any land reclamation or restoration project. Our experts can help identify possible ways to reduce costs and ensure stakeholder satisfaction, particularly with communities and regulators.



We have world-class expertise in environmental management, plant ecology, agroforestry and soil science, as well as experience planning and implementing revegetation projects, which is essential for land reclamation and restoration work. Our specific expertise includes:

- ▶ Applied revegetation research
- ▶ Soil conditioning and bioremediation
- ▶ Native plant species management
- ▶ Invasive species management
- ▶ Ecological restoration
- ▶ Agroforestry
- ▶ Geospatial Imaging Systems (GIS) and remote sensing analysis
- ▶ Sustainability appraisals for restoration projects
- ▶ Climate impact vulnerability assessments and adaptation strategies

## Ecosystem Services

SRC delivers cost-effective ecosystem recovery techniques that provide long-term sustainability. The following services can be applied to evaluating, developing and/or implementing revegetation initiatives, depending on the client's needs and stage of planning/implementation.

- ▶ Site assessments to identify solutions for efficient vegetation establishment
- ▶ Evaluation of preferred revegetation options and plant growth promoting technologies (e.g., soil conditioners, soil microbiota inoculants, seed coating, soil stabilizers, genetic engineering products) that provide the best balance between economy, community and environmental aspects
- ▶ Stakeholder and Indigenous community engagement to identify valued ecosystem components and desired ecosystem services for future land use
- ▶ Incorporation of local and traditional knowledge into the revegetation planning
- ▶ Development of site-specific revegetation plans
- ▶ Identification of native plant species based on local conditions
- ▶ Community involvement in revegetation implementation
- ▶ Quality assurance during revegetation implementation



- ▶ Invasive species inventory and control
- ▶ Revegetation monitoring
- ▶ Adaptive management of newly established ecosystems
- ▶ Independent, professional assessments of third-party revegetation techniques and technologies

## Sustainability is Key

While it's important to find the right scientific and technical solutions, it's also important to understand the total cost of implementing these solutions. Obtaining a social licence in the communities in which a company operates is vital for both its revegetation objectives, as well as how solutions are implemented.

SRC provides sustainability appraisals to help bridge the gap between industry and communities by comparing the economic, environmental and social attributes of revegetation options for each case. We have considerable experience working with Indigenous groups, northern communities, industry and governments.

In addition, we take climatic information into consideration when planning and implementing our solutions. We have a specialized team of environmental experts who apply climate vulnerability assessments to industry adaption strategies, for both operations and remediation.