



THE COMPANY PROFILE

Geomorphic Solutions, a member of The Sernas Group Inc., is dedicated to the protection and enhancement of fluvial and coastal systems, and the fostering of a better environment. In support of these goals, we advocate a science-based, interdisciplinary approach to study, protect, and restore geomorphic systems and resolve environmental issues.

Geomorphic Solutions, is a science-based consulting firm specializing in applied geomorphology and geomatics. Geomorphic Solutions was founded to provide expertise in earth and geographical sciences. Over the last six years it has grown from its founding member to a team approaching 20 specialists. Over that period, the group has expanded to include several disciplines including fluvial and coastal geomorphology, environmental science, and geomatics. With our expanding range of services we have met the needs of our growing list of clients. We are recognized for our depth of knowledge which serves both public and private sector clients.

THE TEAM

The Geomorphic Solutions team is comprised of highly qualified staff with training and experience in geomorphic and associated environmental sciences. Our group is organized into specialized teams with expertise in riverine and coastal geomorphology, process sedimentology, and geomatics that allow us to explore geomorphic and environmental issues in the appropriate context.

Dr. Paul Villard, P.Geo., General Manager/Senior Geomorphologist
Dr. Jeffrey Doucette, Geomorphologist, Project Leader
Mr. Kevin Tabata, M.Sc., Fluvial Geomorphologist, Project Leader
Mr. Imran Khan, P.Geo. (Limited), M.Sc., Fluvial Geomorphologist
Ms. Wendy Baldin, B.E.S., Geomatics Coordinator
Ms. Heather Miles, B.Sc., Geomatics Analyst
Ms. Lisa Webster, B.A., PG (GIS), Geomatics Technician
Ms. Suzanne St. Onge, M.Sc., Environmental Scientist
Mr. Paolo Sacilotto, B.Sc., Environmental Scientist, Field Services
Mr. David West, B.Sc.(Eng.), E.I.T., Geomorphic Systems Analyst
Ms. Nicole Chow, M.Sc., Geomorphic Systems Technician
Ms. Cara Hutton, B.Sc., Geomorphic Systems Technician
Ms. Shauna Fernandes, B.Sc., Aquatic Habitat Technician
Mr. Michael Lawson, Dipl. Geo., Restoration Technician
Ms. Meagan Horn, B.A., Restoration Designer



OUR RANGE OF SERVICES

GEOMORPHOLOGICAL CHARACTERIZATION

- Geomorphological inventories and baseline data collection
- Channel stability and aquatic habitat assessments
- Sedimentological studies

Characterization of the current state of 'health' and stability of fluvial and coastal features is the first step in effectively protecting, managing and in many cases rehabilitating these systems.

Geomorphic Solutions has the tools to provide inventories, baseline data and sensitivity analyses for both fluvial and coastal systems. A comprehensive knowledge of current applied science and techniques provides relevant assessments and inventories to help build successful resource management frameworks.

CREEK AND SHORELINE RESTORATION

- Natural channel design and fish barrier mitigation
- Coastal habitat restoration
- Regulatory permitting and environmental inspection
- Erosion and sediment control
- Construction supervision
- Effectiveness and compliance monitoring

Geomorphic Solutions has the experience and capacity to take channel rehabilitation and realignment projects from conceptual design to completion. Our services include innovative design solutions, and current state-of-the-art science approaches to restoration.

We manage projects from the initial assessment stage, including scoping opportunities and constraints through conceptual and detailed design, regulatory permitting, construction supervision and post-construction effectiveness monitoring.

GEOMATICS

- Spatial database development
- Spatial data analysis and geoprocessing
- Environmental modelling
- Remote sensing
- Cartographic Products
- Real-Time Kinetic (GPS) and Total Station Surveying
- Customized Solutions

Geomatics provides a crucial link between field information and the final solution provided to the client. Geographic Information Systems (GIS) is a discipline that effectively translates large quantities of data and complicated data relationships into a visual output that clients can easily interpret and understand.

FLUVIAL AND COASTAL HAZARD ASSESSMENT

- 100-year erosion rates and erosion setbacks
- Meander belt widths
- Coastal hazard setbacks
- Infrastructure Risk, and Scour Assessments

Delineating hazard lands associated with rivers and shorelines is an integral component of the planning and development process. Geomorphic Solutions has the expertise to provide defensible, science-based delineation of geomorphic related hazards, conforming to Provincial and Conservation Authority regulations.

HYDRAULIC AND MORPHOLOGICAL MODELLING

- Sediment transport modelling
- Erosion threshold assessments
- Shoreline morphological evolution modeling
- 2- and 3-dimensional flow modelling
- Watershed scale transport routing

In addition to our strong belief in field based assessments, we also conduct modelling of hydraulic and morphological processes using off-the-shelf and in-house models. Modelling can be used to support and compliment field observations. It allows estimation of future conditions and evaluation of alternative scenarios.

In support of stormwater management, our modelling expertise and services can assist with the development of effective, site-appropriate stormwater management plans. Capabilities include channel sensitivity analysis and erosion assessments to support of effective stormwater solutions that limit impacts to natural watercourses. Post-development effectiveness monitoring can also be provided.

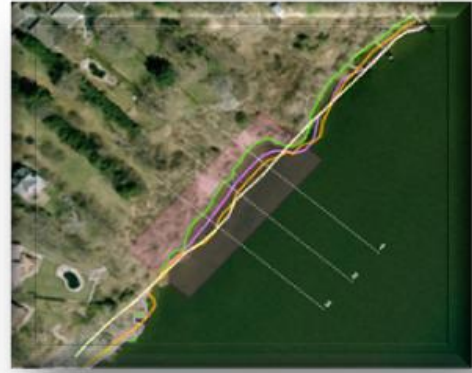
OTHER SERVICES

- Peer-review
- Applied and primary research
- Training and outreach

Along with peer-review and outreach, key staff contribute to the field through both primary and applied research.

MEMBERSHIPS

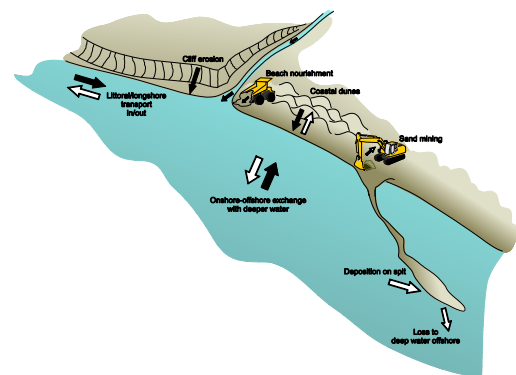
- Professional member - Association of Geoscientists of Ontario
- Professional member - Association of Professional Engineers and Geoscientists of the Province of Manitoba
- Canadian Association of Geographers, Canadian Geomorphology Research Group
- Canadian Geophysical Union
- Canadian Water Resources Association
- International Erosion Control Association
- Partnership for River Restoration and Science in the Upper Midwest
- Society of Ecological Restoration International
- Soil and Water Conservation Society



Recession rates of the natural shoreline determined using digital orthophotography and GIS software



Restored channel one year after construction and prior to vegetation establishment in the spring



Graphical representation of common sediment sources and sinks along a shoreline