



Water is life

The availability of freshwater resources is what determines the choices that can be made in every sector of society. No community can be established without this resource. Growing cities always need more of it. Every industrial development requires a guaranteed supply of water. Agriculture depends on its availability.

Canada is blessed with about 20 per cent of all the available freshwater supplies on earth. Its rivers were the highways for settlement — huge waterway systems, such as the Great Lakes and the St. Lawrence Seaway, reach deep into the North American continent. One province alone has more than 250 000 lakes.

This abundance inspired the creation of a very large and diversified scientific, engineering and technical capability to harness water resources and to manage freshwater supplies. Canadians were pioneers in aerial surveying of the country's waters, only some of which are within reach of those who wish to use them.

At the earliest opportunity, Canada took advantage of the new information available from satellite overflights. Government led the way by providing the ground receiving stations and the core of the technical capabilities to receive, process, display and interpret the flood of images.

A private industry was born as a result of the transfer of technologies and the funding of continuing research and development into spaceborne and airborne instruments. A stream of innovations produced user-friendly hardware and software for water managers to take control of solving their own problems.

Widespread applications

The expertise of Canadian remote sensing companies in the entire field of water resources is being exported to every continent. Applications range from entire national water resource assessments to watershed planning at the local level. Such challenges as erosion, sedimentation, flood analyses, shoreline changes and coastal zone management can now be met with the assistance of remote sensing techniques. Indeed, remote sensing can be said to be the technology that has made water resource management a practical reality on an affordable scale.

MONITEQ's software extracts concentrations of chlorophyll, suspended solids and dissolved organic materials from water colour, shown in this enhanced image of a river discharge into a lake.