

Mapping

Collected data are not useful until they have been produced in forms that can be read and interpreted. Historically, the fine art of map-making, or cartography, reproduced geographic information on paper maps, a process limited by the amount of data that could be included and the length of time it took to make a map.

Now, however, the volume and complexity of data have made traditional methods obsolete. While paper maps will always be used, the advent of digital data stored and managed by computer has changed how maps are made, and, perhaps more importantly, has added the digital map to the tools used for analysis.

With digital technology:

- ◊ maps can be more easily updated and produced;
- ◊ topology can be used to examine the relationships and interactions among geographic features;
- ◊ future and hypothetical situations can be modelled;
- ◊ new data can be uncovered through analysis and overlays which would otherwise be hidden; and
- ◊ data can be combined in various ways for analysis and processing.

For the past several years, Canada's mapping industry has been an authority on capturing digital geographic data and especially on converting existing analogue data into digital form. The federal Canada Centres for Mapping and for Geomatics are also leaders in these processes. Canada's National Topographic Data Base will contain topographic data covering all of the country's land mass and coastal waters digitized from existing topographic maps, as well as new digital data gathered by airborne photography. The complete series of 917 topographical maps at 1:250 000 scale was completed in digital form in 1989.

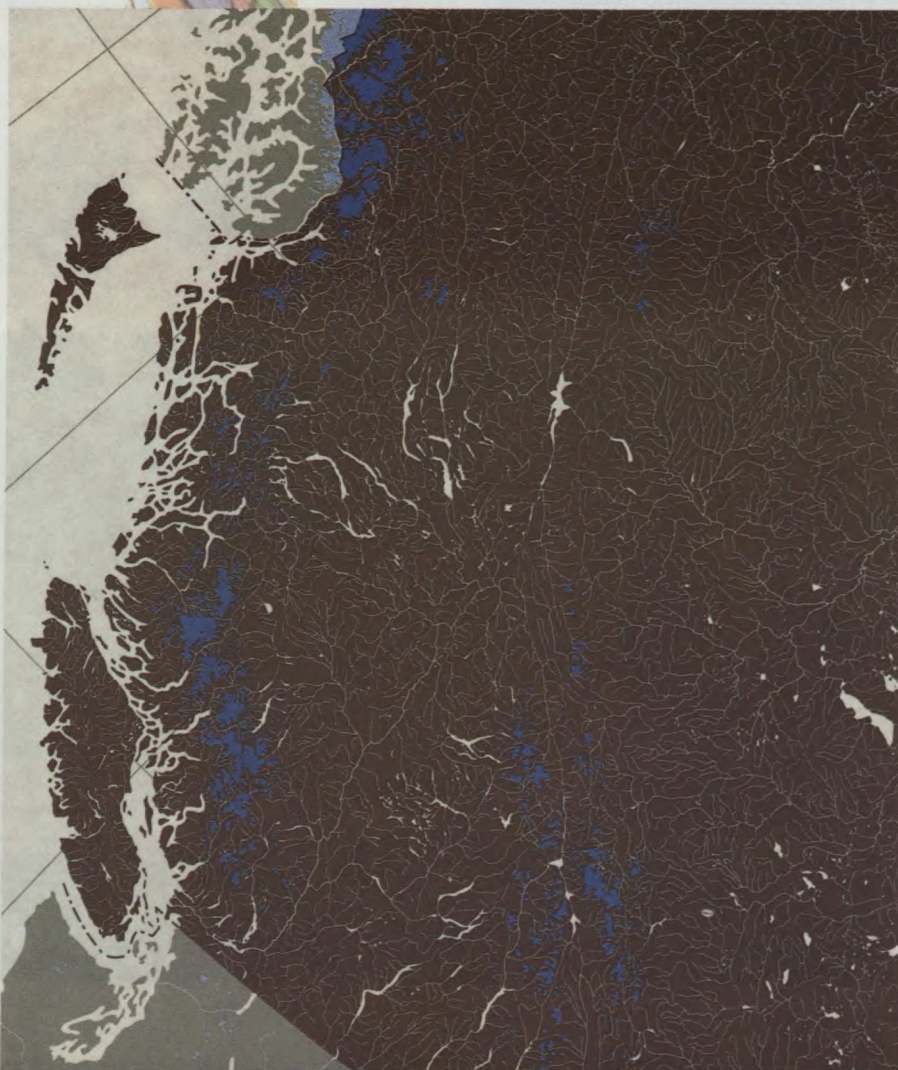
Work continues on the 12 922 topographic maps at 1:50 000 scale, which are scheduled for completion in digital form by the turn of the century.

This database will provide the foundation for future mapping activities and GIS development for federal and provincial governments and the private sector. However, the public and private sectors are already realizing benefits during the building of the database, including the development of new techniques, standards, formats and database uses as the project evolves.

Most important, perhaps, is the co-operative strategy being used. The federal government is working with

provincial governments and private industry to capture data and convert existing analogue maps. As a result, national standards and data exchange formats have been developed that are already having a substantial effect on the accuracy and usefulness of all data being used for mapping projects. Canadian knowledge of and experience in designing and building shared digital databases is a valuable international resource available to other nations that use geomatics tools for planning and decision-making.

This map showing drainage patterns on Canada's west coast is an impressionistic overview of the hydrographic network. Glaciers appear in blue.



Energy, Mines and Resources Canada