EXECUTIVE SUMMARY

Survey of Geographic Information Decision-makers

Prepared for:
GeoConnections
Natural Resources Canada

October 2006

pn5778

ENVIRONICS
R E S E A R C H G R O U P

Executive Summary

Conclusions

The findings from this research indicate that GeoConnections has successfully laid much of the required groundwork in the promotion of the CGDI as a geospatial information hub for organizations operating in the four theme areas. Many decision-makers in the four themes were aware of GeoConnections prior to being involved in the survey, and there is a wide range of areas where they see the CGDI being applicable for their organization. However, there is an ongoing need to promote the CGDI to organizations in these areas, as well as the need for continuing education efforts among decision-makers regarding the potential of the CGDI to have a positive impact on their organizations.

Decision-makers see metadata issues as less salient than do their technical experts, so additional education about the importance of metadata and technical standards may reap future rewards in terms of improved quality and completeness of data, the aspects most influencing confidence.

Expanded awareness and use of the CGDI should lead both to increased opportunities for the sharing of sources of geographic information. The CGDI is uniquely positioned to continue its leadership role in the promotion of guidelines and standards for the presentation and sharing of geographic information.

Because the target population uses a wide range of data types and categories, GeoConnections should focus its resources on the kinds of data used by more than one theme, such as aerial photography and road networks data, on a local or regional scale. That being said, each theme has identified its theme-specific data of importance, access to which should be facilitated via the CGDI. The Public Health theme stands out due to the nature of the sector and its heavy reliance on socioeconomic data.

Cost continues to be the most frequently cited barrier to the access and use of geospatial information, with human resource limitations also being a notable impediment, especially for those involved in matters of importance to Aboriginal Peoples. The target population looks to GeoConnections to address such barriers as a major part of its future efforts, in addition to improving content available through the CGDI.

Moving forward, GeoConnections should continue to make efforts to capture information about organizations requesting information about geospatial information access via the CGDI website and Discovery Portal. When contact with these organizations is made, permission could be sought to include them in future research to improve the CGDI. In this way a better contact database can be established, and reliable estimates regarding the make-up of the actual target population of geospatial information users may be developed.

GeoConnections may also wish to review the organization of its web sites to ensure that users can easily locate information, and that movement between the program site and the Discovery Portal is facilitated. Currently, there is no easily found link to the Discovery Portal from the main GeoConnections/CGDI site, which may in part explain why half of decision-makers have visited the GeoConnections site but only a third are aware of the Discovery Portal. The theme-based presentation of information on the CGDI site may not necessarily be the most effective arrangement from a user perspective, given that many organizations encompass two or more areas. Relatively basic issues (such as the URLs of the sites not matching the names given to them) may pose small barriers to easily locating and remembering the sites.

The following paragraphs are capsules on the four theme areas:

Environment & Sustainable Development

This theme comprises the largest population of users and their use of geospatial information is well established. Their data use is diverse: although the most common category of data is Land, they also use imagery, water, resources and infrastructure data. Their geographic information needs are frequently being met; GeoConnections' role may be one of "staying the course" with this population. Top kinds of geographic information for environmental organizations in the next five years include (in order of importance): watershed data; aerial photography; satellite imagery; land use and land cover.

Aboriginal Matters

A notable proportion of users in this theme are also involved in Environment and Sustainable Development and thus share many of the information needs of that theme, such as land and resources data. Organizations in this theme have more financial and human resource challenges in the use of geospatial information than might those in other areas. GeoConnections can play a role in helping to mitigate these issues. Top kinds of geographic information related to Aboriginal matters in the next five years include (in order of importance): land use; traditional knowledge; watershed data; satellite imagery; forest inventory and public water supply.

Public Safety/Security

Due to the nature of the organizations in this theme, their focus may not necessarily be on geospatial information collection and use per se, but they do have a significant requirement for information relating to infrastructure and resources data. Also due to the demands of their work, they have the greatest need for frequently updated information of all the themes. Top kinds of geographic information for public safety/security organizations in the next five years include (in order of importance): road networks; aerial photography; satellite imagery; street addresses; watershed data and emergency management/operations centres.

Public Health

The organizations in this theme place the lowest priority on geospatial information; it is simply one of a number of tools required for their successful operation. This theme is focused on socio-economic and infrastructure data. There is a special need to consider the resources needed to meet the unique requirements of health organizations. Top kinds of geographic information for public health organizations in the next five years (in order of importance): census data; population health indicators; emergency management/operations centres; health services delivery and reported disease incidences.

Key Findings (across all themes)

The following presents key findings drawn from this study.

Organizational use of geospatial information

- The vast majority of organizations gather or use geographic information as part of their operations; geospatial data is part of the day-to-day functions of seven in ten organizations and six in ten have a dedicated geomatics section or team.
- The average organization spends about 9 hours of staff time per week searching for geospatial information and about 27 hours per week using it.
- On average, organizations devote 29 percent of their annual operating budget to geomatics activities.
- Six in ten organizations say their specific group or division has an operating budget of under $1 million.
- Nine in ten organizations identify themselves as a geographic information *end-user*; four in ten are geographic information *suppliers*; three in ten are *application developers*, and one in ten are *application marketers*.
- Eight in ten organizations indicate geospatial information is either critically or very important to them currently, and a similar proportion expects its importance to increase in the next five years.

Kinds and importance of geospatial information

- The kinds of geographic information currently in use are to a large extent dependent on theme area and organizational focus. However, some data are common to many themes, such as aerial photography, road networks, cadastral/land parcels, digital elevation models/topography (relief), satellite imagery, and administrative boundaries.[1] Similar types of data are also expected to be of importance in the next five years.

- Organizations in the four theme areas use a broad spectrum of geospatial information, with considerable overlap. However, the Public Health theme focuses on socio-economic information.

- Lack of awareness and access is the main reason for not using most currently desired types of geospatial information; however, cost is the main barrier for those not currently using imagery-based data (aerial photography, light distance and ranging (LIDAR) or satellite imagery).

- Most indicate that the geospatial information they need is predominantly local or regional in scope.

- Imagery data (satellite, aerial photography and LIDAR) are among the types of data not currently being used although organizations express the most interest in this data content. Accessibility and cost are the major reasons why organizations are not using desired types of geographic data.

- Only two in ten organizations require data to be updated daily or more frequently. A greater need for frequently updated information is expressed by organizations in the Public Safety and Security theme.

- Few organizations say all their needed base data are available in a dependable, standardized way.

- Base data sets (frameworks) that would make the biggest difference to their organizations should they be made available at no cost include aerial photography, satellite imagery, digital elevation models, watershed data, road networks and cadastral/land data.

- Half of current users report that geospatial information is of critical importance to their operating unit or group currently; even more (six in ten) believe geospatial information will become significantly more important in the next five years.

- Organizations in the four theme areas expect to continue using as broad a spectrum of geospatial information in the near future as they are using now.

Sources of geospatial information

- Provincial/territorial governments, the federal government and internal collection are the most mentioned sources for obtaining geospatial information.

- Quality of data is the highest rated factor influencing confidence in geospatial information, followed closely by the data's completeness, who collected it (the source) and how the data were collected. Metadata issues are not generally rated as highly, although metadata describes such information.

Formats of geospatial information

- Three-quarters of current geospatial data is available electronically. Aboriginal Matters organizations are the most likely to report use of information in hard copy format and Public Health organizations are the most likely to report their data as available in soft copy. However, the format of geographic information used in the four themes runs the gamut from still predominantly paper to fully digital.

Sharing of geospatial information

- Eight in ten organizations in the four theme areas report sharing geospatial information either internally or externally. Most sharing organizations indicate that sharing is part of their mandate or that they share for the public good, and half share on a reciprocal basis. Few report sharing geographic information for cost recovery or profit.

- The types of geospatial information shared echo the types currently in use, and sharing is most likely to occur on an internal basis, or with regional or provincial governments. Half also share with federal government departments and with non-government, non-profit organizations.

- Those who do not share geospatial information cite privacy/confidentiality issues or licensing and ownership barriers.

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1   These are not cited in order of importance.

- Cost and privacy/confidentiality barriers are noted by those who do share as the most important barriers to remove to facilitate sharing.
- Road networks, aerial photography, land use, administrative boundaries and watershed data are the most likely types of geospatial information to be shared.
- While three-quarters of organizations report sharing geospatial data via e-mail or storage devices, two-thirds still share some information in hard copy format. Fewer take advantage of the Internet as a method of sharing data. One one-third indicate using web services (WMS, WFS).
- The most frequently used technical standards or specifications for data sharing are FGDC, OCG and ISO, but many data sharers use no standards.

Barriers to access and use of geospatial information

- By far the most commonly mentioned top-of-mind barrier to **accessing** geospatial data is cost, followed by availability/accessibility and data quality. Privacy and confidentiality issues are a major access barrier for a higher proportion of those in Public Health.
- Cost is also the most mentioned top-of-mind barrier to the **use** of geospatial data, followed by staffing, availability/accessing and data quality. The majority of organizations rate financial constraints and the cost of data as being a very serious barrier; human resource limitations are very serious for more of those involved with Aboriginal matters.
- Decision-makers are most apt to mention data accuracy or currency as top-of-mind issues affecting their trust of data or sources.

On-line geospatial information and tools

- Over half of the decision-makers in the four theme areas say they use on-line geographic information and tools or portals at least weekly or several times a month; a quarter report using these on a daily basis.
- Half say they were at least somewhat familiar with GeoConnections and the CGDI prior to the survey. Half report having visited the GeoConnections website, usually to learn more about the program. (Previous familiarity is highest among those in the Environmental and Sustainable Development theme.) The majority of site visitors found most or all of what they went there to find, although some noted that locating geospatial data was challenging.
- Only a third report being aware of the Discovery Portal, suggesting that additional promotion of this resource is needed to attract potential users.
- The ways in which GeoConnections is seen to be a fit to organizations are theme-specific, but three-quarters report some fit in the environment or resource management area.
- The GeoConnections website and an electronic newsletter are perceived as the best way for GeoConnections to disseminate further information about the CGDI.
- Users most look to GeoConnections to address barriers to the access and use of geospatial information (such as policy, data sharing or licensing issues), improving content (thematic data) available through the CGDI, addressing cost issues as well as providing more training or workshops.