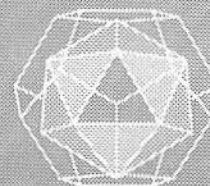
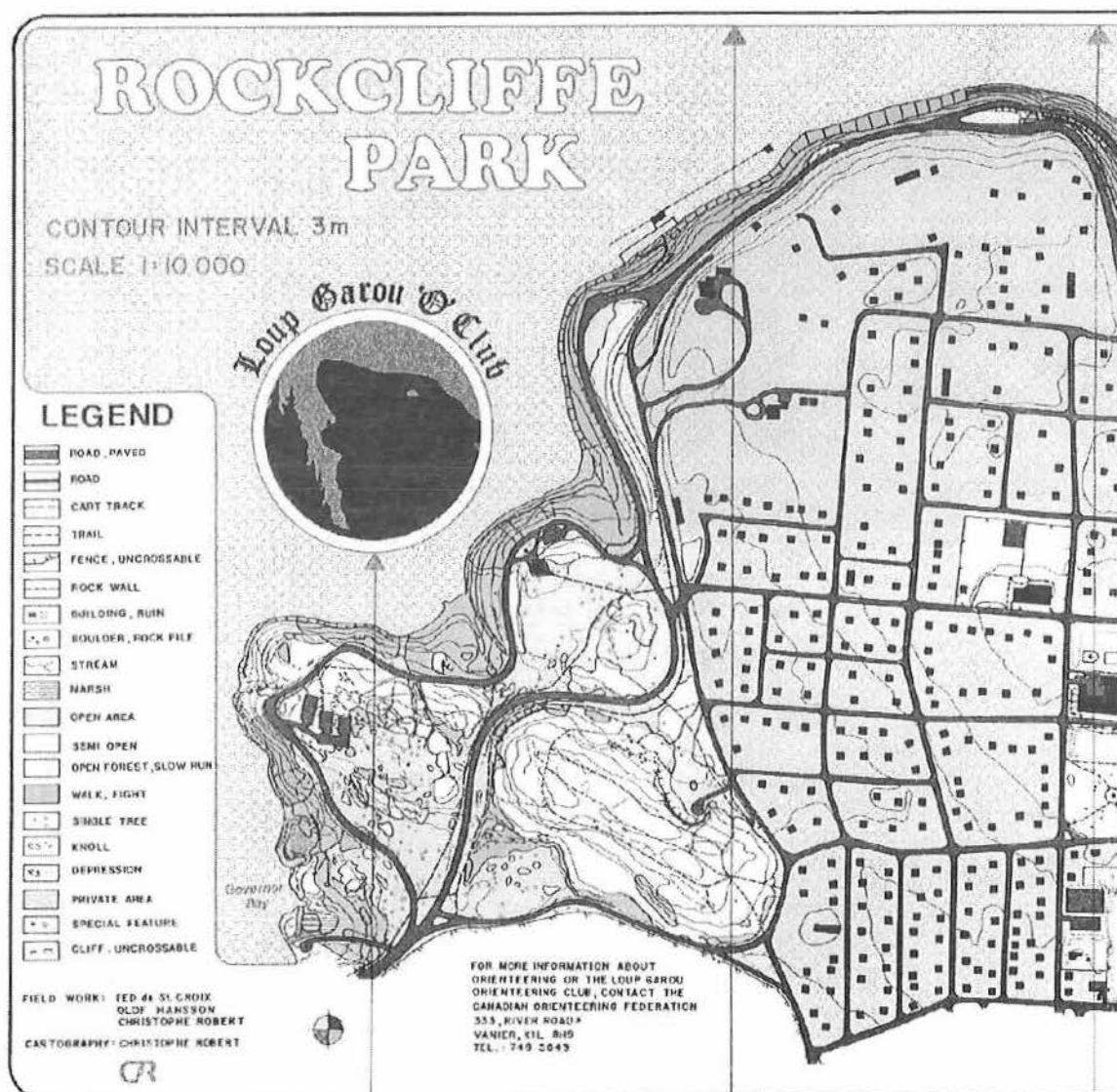


Cartouche



Newsletter of the Canadian Cartographic Association
Bulletin de l'Association canadienne de cartographie

Number 34, Summer, 1999
Numéro 34, été, 1999



The prestigious neighbourhood of Rockcliffe Park will be the site of this year's annual CCA orienteering event. The course promises to be challenging, especially if you find your way to the bedroom door of the Prime Minister's residence! More information regarding the orienteering event and other CCA sponsored events at this year's ICA is found on page 5.

Le prestigieux quartier du Parc Rockcliffe sera le site de la course annuelle d'orientation de l'ACC. La course promet d'être un défi de taille surtout si vous vous retrouvez à la porte de la chambre du Premier Ministre du Canada! Vous trouverez d'autres informations concernant la course ainsi que sur les diverses activités de l'Association à la réunion de l'ACI à la page 5.

Cartouche is published quarterly by the Canadian Cartographic Association. Members are welcome to submit articles for publication. Articles and notices submitted for publication are subject to editorial approval. Please address your submissions to the editor. It is the policy of the editor to provide dual language copy for editorial content and journal mechanics. All other articles will appear in the language of submission. While every effort is made to ensure accuracy of content, the editor cannot be responsible for errors in compilation, or loss of any item submitted. Opinions expressed in the editorials, submitted articles and letters are not necessarily those of the Canadian Cartographic Association. The Canadian Cartographic Association gratefully acknowledges the financial support given by the Social Sciences and Humanities Research Council of Canada.

Cartouche est publié trimestriellement par l'Association canadienne de cartographie. N'hésitez pas à soumettre des articles que vous désirez publier dans le bulletin. Les articles et annonces soumis pour parution sont sujets à l'approbation de la rédaction. Veuillez les adresser à l'éditeur. Selon la politique en vigueur, l'éditeur publié, en français et en anglais, l'éditorial ainsi que la description du processus de publication du bulletin. Les autres articles paraîtront dans la langue dans laquelle ils ont été écrits. Bien que beaucoup d'efforts soient déployés en vue d'éviter de tels problèmes, l'éditeur n'est pas tenu responsable des erreurs de compilation ou de la perte d'articles que leur seront soumis. Les opinions exprimées dans le cadre des editoriaux, des articles et des lettres publiées dans le bulletin ne reflètent pas nécessairement celles de l'Association canadienne de cartographie. L'Association canadienne de cartographie remercie vivement le Conseil de recherches en sciences humaines du Canada pour son apport financier.

Editor / éditeur:
Weldon Hiebert
Department of Geography
University of Winnipeg
Winnipeg, MB CANADA R3B 2E9
Tel / tél: (204) 786-9483
Fax / téléc: (204) 774-4134
E-mail / courr. élect: hiebert@uwinnipeg.ca

Translation / traduction:
Michel Fournier, Cartologie
Tel / tél: (514) 522-5715
Fax / téléc: (514) 522-5715
E-mail / courr. élect: acsg_mtl@mblink.net

CCA Mailing Address / Adresse de correspondance de l'ACC:
c/o Department of Geography
University of Calgary
Calgary, AB CANADA T2N 1N4
Fax / téléc: (403) 282-6561

CCA Membership Department / Département des adhésions de l'ACC:
Monika Rieger
Tel / tél: (403) 278-5069
E-mail/courr. élect: cca-membership@geog.ubc.ca

Web Site / Site Internet: www.geog.ubc.ca/~cca

Deadline for the next issue is:
August 31, 1999

La date limite pour la prochaine publication est:
31 août 1999

Milles excuses!!!!

Je désire exprimer mes plus sincères excuses auprès de la communauté francophone et en particulier à Michel Fournier, pour la grande faiblesse de la traduction dans la dernière livraison du bulletin *Cartouche*. Suite à des changements de dernières minutes, il ne m'a pas été possible de faire parvenir à Michel certains textes à temps, avant l'heure de tombée. J'ai donc dû utiliser une autre ressource pour effectuer la traduction, notamment sur la page couverture. Il est regrettable qu'une telle situation se soit produite et j'en suis le premier peiné. *Cartouche* est un bulletin de qualité qui est et sera toujours, un outil d'information et de promotion accessible pour tous les membres de la communauté, à travers le Canada. Soyez assuré que nous ferons tout ce qui sera en notre pouvoir pour éviter que ce genre de situation ne se répète dans le futur.

New Cartouche Editor / Nouvel éditeur de Cartouche

Effective with the next issue (#35), Gary McManus becomes the new editor of *Cartouche*. The next several months will be a transition period as I shift responsibilities to Gary. During this period, submissions for *Cartouche* can be sent to me (address on page 2) or you can send them directly to Gary (E-mail: gmcmanus@netcom.ca). I would like to take this opportunity to thank Gary for taking over for me and wish him well and much success as editor.

Grande nouvelle!!! Je me vois à regret de quitter l'édition de *Cartouche*. Suite à l'augmentation substantielle de ma tâche de travail, dans le contexte des compressions budgétaires, Gary McManus deviendra le nouvel éditeur de *Cartouche* à compter de la publication du #35. D'ici là, il y aura une période de transition où vous pourrez faire parvenir vos textes tant à Gary qu'à moi



Inside this issue / Sommaire....

Messages / messages

President's Message / mot du Président	3-4
Vice-President's Message / most du vice-Président	4

Interest Groups / Groupes d'intérêt

Map Production Technology / Technologie de production cartographique	6
Analytical Cartography & GIS / Cartographie analytique et SIG	7
History of Cartography / Histoire de la cartographie	9

Features / Les articles

CCA Events with ICA/ Événements de l'ACC	5
Candidates for Election / Candidats aux élections	10-14
Avenza Releases MAPublisher	15
Autour de méro	16
CNC Report	17
Geomatics Roadmap / Routières géomatiques	18

Other / autre

Welcome New Members	8
Calendar / calendrier	9
Atlases for Review	14
ArcView Guide	15
Rorschach's Map / Carte énigmatique	16
Notice of Constitutional Amendment / Avis de modification de la Charte	17
A Brief History in Time	19

ISSN 1183-2045

(voir adresses en page 2). Je profite de l'occasion pour remercier Gary de bien vouloir prendre le relais et je lui souhaite le plus grand succès dans sa nouvelle fonction d'éditeur.

Mapping Software and Geographic Centres

Roger Wheate
University of Northern British Columbia

"I just want to make a map"

Perhaps the most common request I receive (apart from ... "which GIS should I buy") concerns general queries about mapping software that can create 'simple' maps without getting into the cost and complexity of GIS or CAD software. Usually the person or company has acquired digital data in the form of GPS and provincial data files and needs to output a basic location map with added point, line, polygon and text features. The need to provide georeferencing in order to combine data from different sources rules out using a graphic design package such as CorelDraw, Macromedia Freehand or Adobe Illustrator. The options available are not well defined for a limited budget under Cdn\$750 (US\$500). All are available for Windows, the first two also for Macintosh, alas none for Unix; the first three have online versions available for download.

Map Publisher (Avenza Inc: www.avenza.com)

One Canadian solution is MAPublisher, an 'add-on' package that works on top of either Illustrator or Freehand (unfortunately, Corel Corp. declined the opportunity to work with Avenza).

MapInfo (www.mapinfo.com)

The MapInfo desktop GIS/mapping software is widely distributed, and available for Macintosh and Windows platforms. Download demo version and Beta 5.5 online.

Quikmap (www.quikmap.com)

This is a B.C. product distributed by QUIKmap technologies, with a downloadable version 'Quikview 2000'.

Fugawi (www.fugawi.com)

Designed primarily for GPS data integration. You may recognise the name from an old high school joke, regarding a

navigationally challenged jungle tribe ("We're the fugawi").

No doubt, there are other products to 'just make a map': please send me your suggestions for the next issue of *Cartouche*.

Where is the geographic centre of an area?

Another question I was asked recently by the Canadian Broadcasting Corporation (CBC) was to determine the exact location of the geographic centre of the province of British Columbia. It seems that the mayors of two northern towns, Vanderhoof and Burns Lake both claimed this title, although the 'official plaque' is located in Vanderhoof. The geographic centre is usually determined as the weighted mean centre, that is, where is the balance point if you held a cut-out model of the area concerned.

Fortunately, GIS software makes this relatively straightforward as the label point for a polygon is automatically assigned to this centre. This turned out to be near a town named Stellako, near Fraser lake, almost exactly half way between the two contending towns. However a complication is added for any area that is non-contiguous, in this case, BC contains several islands, notably Vancouver Island and the Queen Charlotte Islands. I adjusted the linework to join these to the mainland, using a narrow causeway in order to create one total polygon and an inconsequential false area of land. As it was, these islands only moved the centre some 2km to the west.

A further consideration could have been the distribution of mountains, since land mass might better use surface area, rather than assuming a flat projection. However this would have a miniscule effect as BC's mountains are widely distributed (while in Alberta with all mountains in the west, this might pull its centre in that direction).

Another complication regards map projections: given the task in hand, the projection used for a geographic centre calculation should be equal area. A projection such as Mercator, for example would move the centre too far north (if the equator were the standard line).

The story continues: now the town of Fraser Lake has asked me to verify this, so that their Chamber of Commerce can list this as one of the local attractions. Have any other CCA members had any experiences with calculating geographic centres?

High resolution space imagery: another one bites the dust!

The GIS and mapping communities have been teased with the promise of high resolution commercial satellite data for map production and updating for more than two years. However to date, none of the planned satellites have been launched successfully. The Ikonos 1 satellite became the most recent casualty after it 'disappeared' shortly after launch. (<http://abcnews.go.com/sections/science/DailyNews/satellite990428.html>)

Conspiracy fans are beginning to suspect the military who have had high resolution imagery available for some decades, but have expressed reservations towards non-government sources of similar satellite data (5 metres or better). The US refused to help launch Canada's Radarsat 2 on the grounds that its 5 metre resolution data represented a 'risk to national security' (<http://www.cbcnews.cbc.ca/cgi-bin/templates/view.cgi?news/1999/02/18/cansat990218>) Landsat 7 was launched successfully on April 15 1999; however the resolution will be the same as for Landsats 4 and 5 (30 metres) except for the addition of a 15-metre panchromatic band (Landsat 6 failed shortly after launch in 1993). ☉

Tout ce que je veux, c'est faire une carte!

Roger Wheate
University of Northern British Columbia

La question qui m'a été le plus souvent posée ces dernières années (à part celle sur ... "Quel logiciel de SIG devrais-je acheter?"), touchait les logiciels de cartographie, notamment, quel logiciel permet de dessiner une carte sans avoir à faire face aux coûts et à la complexité des logiciels de SIG ou de CAD. Normalement, lorsque des individus ou des entreprises acquièrent des données provenant de SPS (GPS) ou de ministères provinciaux, ils ont besoin d'y associer une carte de base localisant des points, des lignes, des polygones ou des particularités. La nécessité de traiter des données géoréférencées provenant de diverses sources écarte l'utilisation de logiciels de conception graphique tels que CorelDraw, Macromedia Freehand ou Adobe Illustrator. Pour répondre à ce type de requête, il y a peu de choix abordable, surtout pour un budget inférieur à 750\$ CAN (500\$ US). Je vous propose donc quelques solutions, il s'agit de 4 logiciels disponibles sur Windows dont les deux premiers sont accessibles pour Macintosh et hélas aucun pour Unix. De plus, les trois premiers ont des versions directement téléchargeables.

Map Publisher (Avenza inc : www.avenza.com)

Le logiciel canadien MAPublisher est un ensemble de fonctions qui s'ajoutent aux logiciels Illustrator et Freehand (malheureusement Corel Corp. a décliné l'offre de collaboration avec Avenza).

MapInfo (www.mapinfo.com)

Ce logiciel de SIG/cartographie est largement distribué et est disponible sur les plateformes Windows et Macintosh. On peut obtenir les versions de démonstration et bêta 5.5 via internet.

Quickmap (www.quickmap.com)

Il s'agit d'un produit provenant de la Colombie-Britannique, distribué par QUICKmap technologies. On peut télécharger la version "Quickview 2000".

Fugawi (www.fugawi.com)

Conçu originalement pour l'intégration de données SPS. Pour certains, cela leur rappellera le nom d'une farce d'école secondaire à propos de défi d'une tribu de la jungle (Nous sommes les fugawi!).

Si vous avez connaissances de produits abordables pour réaliser des cartes, n'hésitez pas à m'en faire savoir, nous publierons vos suggestions dans la prochaine édition de Cartouche.

Quel est le centre géographique d'une superficie?

La Société Radio-Canada m'a dernièrement posé la question suivante : "Comment détermine-t-on l'emplacement exact du centre géographique d'un pays, plus particulièrement, le centre géographique de la province de la Colombie-Britannique? Il semble que les maires de deux localités septentrionales, soit Vanderhoof et Burns Lake, se disputent ce titre bien qu'il y ait déjà une plaque officielle à Vanderhoof. Le centre géographique est généralement déterminé en fonction du poids spécifique d'un centre soit, l'endroit où l'on retrouve le point d'équilibre sur une surface déterminée.

Par chance, avec les logiciels de SIG il est possible de trouver réponse à cette question car l'emplacement d'une étiquette pour un polygone est automatique positionné au centre de celui-ci. Ce qui en l'occurrence nous amène à situer ce point, pour la C.-B., à proximité de la ville de Stellako, près de Lac Fraser, soit presque exactement à mi-chemin entre les deux villes rivales.

Cependant, lorsqu'il est question de surfaces non-contiguës, les choses se compliquent quelque peu. En effet, dans le cas de la C.-B., la province compte de nombreuses îles dont celles de Vancouver et de la Reine Charlotte. J'ai ajusté le contour afin de les inclure avec le continent, en utilisant un tracé serré pour créer un polygone unique sans fausser la mesure de la surface du territoire. L'inclusion des îles n'a finalement eu pour conséquence que de déplacer le centre, de 2 km vers l'Ouest.

On pourrait également considérer la distribution des montagnes, selon l'occupation de ces masses sur la surface du territoire plutôt que de le considérer comme une projection plane sans relief. En C.-B. cela aura toutefois un effet négligeable puisque les montagnes sont largement réparties sur l'ensemble du territoire (ce qui dans le cas de l'Alberta attirerait le centre vers l'Ouest).

Il faut également tenir compte de la projection cartographique, on devra donc utiliser une projection qui permettra de conserver les surfaces égales. La projection de Mercator, par exemple, déplacerait le centre beaucoup plus vers le Nord (en supposant que l'Équateur est le parallèle de référence).

Ainsi va la vie, c'est maintenant la ville de Lac Fraser qui me demande de vérifier cette assertion, la Chambre de Commerce locale désirant mentionner cet aspect géographique dans la promotion de la localité. Si l'un d'entre vous connaissez une meilleure méthode (éprouvée) pour calculer avec exactitude le centre géographique d'une région, n'hésitez pas à me contacter.

L'imageries satellitaires à haute résolution mord à nouveau la poussière!

Depuis plus de deux ans maintenant, les communautés de la géomaticiens et de la

suite page 16

Canadian Cartographic Association Events in Conjunction with the ICA Meetings in Ottawa

Monday, 16th August:

The ICA icebreaker IS included in the resgistration fee for all CCA members.

Tuesday, 17th August:

The CCA Almost-Annual Orienteering Event

The orienteering 'challenge' will go again this year, following the fine tradition started at the Calgary meeting in 1995: cartographers can make maps, but can they read them? The 1999 event will hopefully draw a larger crowd than usual, given the 2000 expected attendees for the ICA meeting, and possibly international and regional team categories (we hear there will be 40 delegates from Sweden!). This year's course will be in the Rockcliffe area of Ottawa, home of the Prime Minister and many foreign embassies. It will incorporate river frontage, fine views and be followed by a pub night in order to replace lost fluids spent during the exertions of map reading, navigation and attempting to find Ed Dahl and Ute Dymon. This years' event is tentatively scheduled for Tuesday, August 17 in the afternoon. The almost-annual CCA orienteering event (\$5.00) will be followed by a pub night.

Wednesday, 18th August:

AGM luncheon (lunch provided)

Thursday, 19th August:

CCA Informal Bar-B-Q

There will be an informal, come as you are, Bar-b-Q for members of the CCA and guests at 1800 hrs, Thursday 19 August 1999 at the Canadian Forces Marina Uplands. Bring a bathing suit, and/or your beach volleyball shoes. Tickets will be sold at the ICA Registration/Events desk. \$10.00 ea. Transportation will be arranged. To get a feel for the venue, and to see a location map, check out: <http://www.uottawa.ca/~ddouglas/biog/boat/uplands.htm>

Pre ICA Meetings:

Just before the ICA symposium begins the Spatially Oriented Referencing Systems Association (SORSA) is meeting in Ottawa 11 to 14 August for its Workshop and Symposium. CCA members are invited to its Symposium on 13 and 14 August 1999. For further information please see: www.uottawa.ca/~ddouglas/sorsa

SORSA is also planning a one-day white water rafting trip on the Ottawa River on 15 August. The Executive of SORSA cordially invites members of the CCA to join in. This trip is not meant to be in competition with the more elaborate ICA three-day expedition, but

continued on page 19

Événements de l'ACC tenus conjointement avec la réunion de l'ACI à Ottawa

Lundi le 16 août:

Le "icebreaker" de l'ACI est inclus dans les frais d'inscription pour tous les membres de l'Association.

Mardi le 17 août:

Course d'orientation pratiquement annuelle de l'ACC

Eh oui! Notre traditionnelle course d'orientation, initiée lors de nos conférences à Calgary en 1995, aura encore lieu cette année. Ce sera dans le cadre merveilleux de Rockcliffe à Ottawa, lieu de résidence du Premier Ministre et de nombreux ambassades. Nous pourrions encore une fois vérifier si nos valeureux concepteurs de carte sont également en mesure de lire celles de leur collègue.

Les Conférences de 1999 attireront, nous l'espérons, un nombre de participant largement supérieur à la moyenne de nos rencontres (il semble qu'il y aura plus de 40 délégués en provenance de Suède et de nombreux autres en provenance de la Chine!). Le trajet de la course se déroulera le long de la rivière, donnant accès à des points de vue magnifiques. Le tout se poursuivra en soirée, dans un "Pub" où vous pourrez vous remettre de toutes vos sueurs et efforts de la course, de vos difficultés à lire la carte ou peut-être de vos tentatives pour rejoindre Ed Dahl et Ute Dymon. Vous ne voudrez certainement pas manquer cet événement qui aura lieu mardi le 18 août, en après-midi. Les frais d'inscription pour la "Course d'orientation pratiquement annuelle de l'ACC est de 5\$, suivi par une soirée de remise en forme dans un "Pub" local.

Mercredi le 18 août:

le dîner sera fourni lors de l'Assemblée générale annuelle

Jeudi le 19 août:

Barbecue sans cérémonie de l'ACC

Il y aura pour les membres de l'ACC un barbecue informel. Venez sans façon vous joindre à nous dès 18h00, jeudi le 19 août au "Canadian Forces Marina Uplands. Apportez votre maillot de bain et/ou vos chaussures de volleyball. Les billets, pour cet événement, seront disponibles à l'inscription de l'ACI, au coût de 10.00\$. Un moyen de transport sera mis à votre disposition pour vous y amener. Pour avoir une idée de l'endroit, vous pouvez consulter la carte sur le site internet <http://www.uottawa.ca/~ddouglas/biog/boat/uplands.htm>

Rencontre post-Conférences de l'ACI:

Durant la semaine précédant les Conférences de l'ACI soit, du 11 au 14 août, se tiendra le symposium et les ateliers de SORSA,

suite page 19

Using Scripts: Taking advantage of Customizable Mapping and Graphics Software

Byron Moldofsky
University of Toronto

One of the great advances in software in recent years is the capability for customizing that is afforded by writing scripts. "Script" is a generic term that can be used for additions or extensions to the software which is written in its "native" programming language, and integrated into its user interface. Scripts are essentially of two types.

The first type is strings of commands or operations basic to the software, which are strung together in sequence, and then invoked when called for. These are also known as 'macros' in some packages. Often there is a method made available for 'recording' these sequences, and then 'playing them back.' Word processing software usually has this capability and many of us are familiar with it in that context.

The second type of script includes programming which is additional to the basic operations or commands of the software application, and is custom designed to address a particular problem. These use the language of the software to add to the functionality of the package.

Now personally, I am no programmer, having only a rudimentary background in computer science. On top of that, I do not want to BE a programmer, since I did not become a map designer to spend hours sifting through reams of cryptic code. Fortunately, it seems there are others who did! I am referring here to those independent persons who contribute to the script libraries that are available on the web for many software packages. These are people who presumably have better things to do, but choose to spend their time in voluntary public service, solving problems for themselves, or answering desperate HELP calls from others, by writing custom scripts to fill their needs. And you do not have to be a programmer to download and use them.

One can speculate about the negative effects of computerization, and the Internet

in particular, on society, education, etc. Nevertheless, one cannot deny that GENEROSITY is also a hallmark of the Internet: there is an incredible amount of valuable STUFF one can get - data, images, programming - which people seem happy to part with, for anyone to use, as long as credit is given. I do not know how many of them have ulterior motives, but complaining would be churlish!

How to find Scripts

Many software companies have locations on their web sites where scripts are available. Some scripts may be company produced and endorsed. Often they are created by third parties, and usually not supported by the company. The web site may also include links to external script libraries, or to scripting news groups. News groups are often hotbeds of scripting activity. People trading ideas and asking for help with problems stimulate the process. Down to some specifics. Below are some examples of downloaded scripts for Arcview and Coreldraw which we have found useful in our work. As usual, I am using these because I am familiar with them. This is not an endorsement, and most other mapping and graphics packages have similar capabilities.

Example One: Arcview Scripts

Arcview is the ESRI software for browsing and editing ArcInfo data sets, which is acquiring ever more functionality with every new version. ESRI has a link from their web site which gives access to AMLs (macros) for ArcInfo, and scripts and extensions for Arcview written in Avenue, its programming language. There is a search facility to find scripts based on keywords, (www.esri.com - click on Arcscripts; or go directly to andes.esri.com/arcscrip/scrip/scrip.cfm). For years I cursed the powers that be at ESRI vociferously because some

simple tools essential for cartographic production were missing from Arcview. A prime example was the ability to specify colours in process colours - CMYK values, for off-set printing purposes. Finally, someone named John Grayson has written an extension to Arcview to solve this. An extension is an Arcview module which can be loaded as an add-on. Called *createcolors.avx*, it creates a colour menu allowing the user to add colours to an Arcview palette using the HSV, RGB or CMYK colour models. You can download the ZIP file from the ESRI scripts site, add it as you do any other Arcview extension, and simplify colour printing in the process. Another stubborn problem in Arcview has been generalizing features in shape files. ESRI itself has created a script which does a very decent job, using an adaptation of the Douglas-Peiker algorithm which is also used in ArcInfo. The script is called *genfeat.ave*. It is a raw script, and needs to be downloaded and compiled in your Arcview project, before it can be run. The comment lines in the file provide documentation, and the Help info in Arcview on how to create, compile and run Scripts is quite comprehensive.

Example Two: Coreldraw Scripts

Coreldraw also incorporates a scripting capability into its graphics software. Macro type "recording" of sequences of application commands is one of its functions. These macros are saved as *CorelSCRIPT (.csc)* files. Programming statements and functions in *CorelScript* are derived from the BASIC programming language, and are easy to read and adapt. Corel also provides a *CorelSCRIPT Editor*, in which these script files can be modified, or original files written, tested and debugged. There is a link to a news group for script users from the main Corel web site (www.corel.com/support/)

continued on page 8

My, How Things Have Changed!

Joe Piwowar
University of Waterloo

At the threshold of a new millennium, I wish to reflect, for a moment, on how the composition of the spatial information technology (SIT) profession has changed over the past thirty years and make a prediction of how it may look in the future. I focus this discussion around cartography, remote sensing, and GIS since I view them as the three cornerstones of the mapping sciences. (There are other sub-disciplines as well, such as geodesy, photogrammetry, and surveying, but their influence on SIT has not been as great as the first three.)

The 1960s witnessed the birth of the digital era in geography as government agencies and large corporations installed mainframe computer systems. The idea of being able to encode and store map information on a computer was intriguing and table digitizers were invented. By far, the highest proportion of SIT professionals were involved in developing automated cartography (Figure 1). Notably, there were a few visionaries, such as Roger Tomlinson and the Canadian Geographic Information System group, who weren't satisfied with just creating digital maps - they also wanted to experiment in combining different maps in a unified analy-

sis. Remote sensing was restricted to the folks at NASA and a few meteorologists.

By the mid-Seventies, Landsat 1 was launched and many had jumped onto the remote sensing bandwagon (Figure 2). Although the relative proportion of automated cartographers was considerably less than in the previous decade, their numbers were still strong and they were producing some of the basic algorithms that are still in use today. GIS had still not been noticed in the mainstream, but the GIS practitioners silently plodded on, believing in their technology.

primarily at the expense of those focussed on automated cartography. There was still a large proportion of practitioners involved in remote sensing, but increasing numbers saw remote sensing as merely an input into GIS.

The GIS boom of the 1980s continued into the 1990s. GIS now dominates the SIT profession (Figure 4). The relative proportion of remote sensing and cartographic professionals has diminished. GISs are now being used by people who have no formal training in geography, cartography or remote sensing. While, on one hand, this can be seen as a measure of the success of GIS, it should also be viewed as a warning flag that some of this development may be happening too quickly. Sound principles of map design are frequently abused in GIS output.

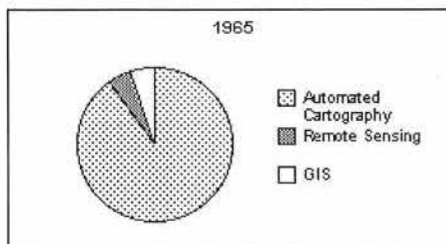


Figure 1: Relative Dominance of the Sub-Disciplines of Spatial Information Technologies Professionals: 1965 (Note to the figures: Although the knowledge base of most SIT professionals spans all of the sub-disciplines, it is assumed that most practitioners have a primary interest, or specialization, in one of the three subjects. "Relative dominance" does not imply changes in the absolute number of SIT professionals. Rather, it describes the primary interests of all those working in the SIT field.)

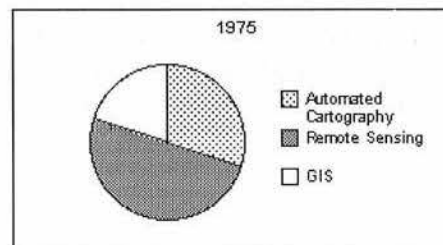


Figure 2: Relative Dominance of the Sub-Disciplines of Spatial Information Technologies Professionals: 1975

All of this changed in the 1980s (Figure 3). GIS had come of age. The 1980s was also the decade of the IBM PC and by the end of this period doing serious spatial analysis on a desktop computer was possible. The relative growth in GIS professionals came

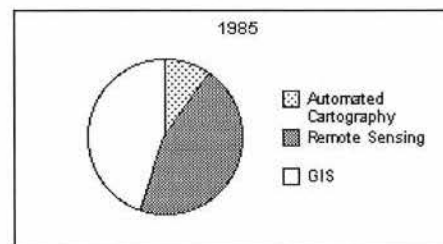


Figure 3: Relative Dominance of the Sub-Disciplines of Spatial Information Technologies Professionals: 1985

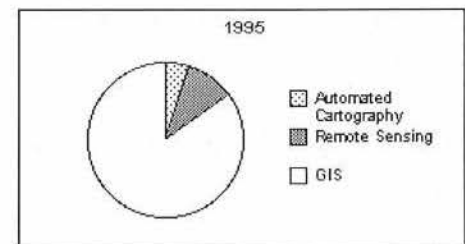


Figure 4: Relative Dominance of the Sub-Disciplines of Spatial Information Technologies Professionals: 1995

What does the future look like? In Figure 5, I suggest that the change between 1995 and 2005 will be less dramatic than over the preceding decadal periods. Remote sensing will see a slight increase in popularity as a suite of new generation of high-resolution and hyperspectral sensors are launched. I believe that we will also see the emergence of seamlessly integrated "spatial information systems" which embrace the traditional sub-disciplines of cartography, remote sensing and GIS in a unified package. (Yes, many software manufacturers claim to do this already but I have yet to see a truly integrated, comprehensive, and user-friendly system.)

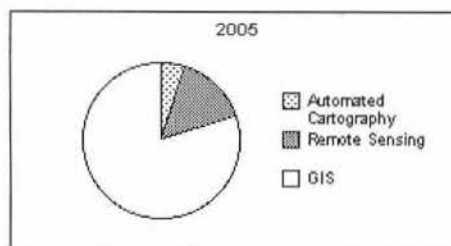


Figure 5: Relative Dominance of the Sub-Disciplines of Spatial Information Technologies Professionals: 2005

Beyond 2005, I expect that the borders between GIS, automated cartography and remote sensing - already fuzzy - will disappear. For example, we will see the emergence of systems running unattended that will automatically update established base maps with new information derived from satellite imagery. So instead of using topographic maps which were drafted ten years ago based on information which is even older than that, we will be able to retrieve the map which is current as of this morning, or yesterday.

Further, I expect that the number of individuals actively using spatial information technologies will soar, yet the number of actual SIT practitioners will begin to dwindle. This will be the consequence of SIT applications becoming so commonplace

and integrated into larger systems that there will be less need for dedicated professionals.

Now that you know what I think, let me know what YOU think! E-mail me at piwowar@uwaterloo.ca

Suggestions for Further Reading

Do you want to know more? Some of these ideas are discussed in greater detail in:

Estes, J.E., 1981. "Remote Sensing and Geographic Information Systems Coming of Age in the Eighties", *Proceedings, PECORA VII Symposium*, Sioux Falls, SD, Oct. 18-21, 1981, pp. 23-40.

Fisher, P.F. and Lindenbergh, R.E., 1989. "On Distinctions among Cartography, Remote Sensing, and Geographic Information Systems", *Photogrammetric Engineering and Remote Sensing*, Vol. 55, No. 10, pp. 1431-1434.

Taylor, D.R.F., 1993. "Geography, GIS and the Modern Mapping Sciences / Convergence or Divergence?", *Cartographica*, Vol. 30, Nos. 2 & 3, pp. 47-53.

[newsgroup.htm](#) - Click on Coreldraw8 - Scripting). We were looking for a way to use Coreldraw's Find and Replace wizard to replace one set of symbols with another. We wanted to replace squares output from ArcInfo with Coreldraw circles. One of my co-workers posted the question on the news group. A response came from a fellow in Ukraine named Alex Vakulenko. On his web site he has posted many Coreldraw scripts, and he decided to create one to do what we required. (www.vakcer.com/oberon/index.html - the script is called "Object Replacer" [objectre.csc]). It works like a charm. Since then we have created a few scripts of our own to solve cartographic problems. We designed one routine to rotate objects (symbols or text) and align them along a series of concentric circles (i.e., parallel to a projected graticule). Anyone who is interested in getting this may E-mail me and I will be happy to distribute it. Other scripts are available within the site for the online Corel Magazine at www.corelmag.com

Sharing the resource

Using scripts adds a valuable tool to the functionality of many mapping and graphic packages, a tool which may be underutilized. On the other hand, some of you may already have an extensive library of custom cartographic scripts for the software packages you use, or may be aware of other on-line sources for these. If you are willing to pool this information (particularly for Mapinfo, Illustrator, or other software packages I have not touched on here) please let me know by E-mail (byron@geog.utoronto.ca). I will post the contact information on the CCA web site so that we may share these useful resources.

Welcome New Members

Monika Rieger

Thanks to all the members who have so promptly renewed their CCA membership for 1999 and some for 1999/2000. (Yes, we are Y2K compatible!) I would also encourage those who still have yet to renew to do so and support your Association. The CCA would like to welcome the following new members:

Brotherton Library, University of Leeds	LEEDS UK	Mir Abolfazl	
Brian Bedford	GUELPH ON	Mostafavi	SAINTE FOY QC
Dr Aileen Buckley	EUGENE OR USA	Anthony Nyong	HAMILTON ON
Daniel G Cole	WASHINGTON DC USA	Esther Parker	VICTORIA BC
		N.Y.C. Public Library	NEW YORK NY USA
Marc Cormier	TORONTO ON	Julie A Rice	KENT OH USA
Tammy dePass	HAMILTON ON	Les Rieger	CALGARY AB
Anna Fehr	WINNIPEG MB	Dr Andre Skupin	NEW ORLEANS LA USA
Dr Glenn Holder	PETERBOROUGH ON	David Thibault	QUEBEC QC
Gerry James	PORT HARDY BC	Liu Zhonghai	SAINTE FOY QC



Brief News Items

James Murray
National Archives of Canada

If you are looking for a great gift idea, the Association of Canadian Map Libraries and Archives (ACMLA) might have the answer. The Association recently added two new facsimiles to its list of historic bird's-eye views of Canadian cities. Hot off the press are the bird's-eye views of Ottawa (dated 1876) and Hamilton (dated 1894). The Hamilton print is a very rare item. There is only one known example of this plan in existence and it is in private hands. The two new views join a list of six other titles already offered by the ACMLA: London (1872), Vancouver (1898), Waterloo (189-), Dawson City (1903), Halifax (1879), and St. John's (1879). All eight bird's-eye views measure 22" x 24". They are printed in colour on archival quality paper and sell for \$12.00 each. For further information, visit the ACMLA web site at www.sscl.uwo.ca/assoc/acml/acmla.html. Copies of the facsimiles may be ordered from Cheryl Woods, Map Curator, Serge A. Sauer Map Library, University of Western Ontario, London, Ontario, N6A 5C2 (phone 519-661-3424; E-mail: cawoods@julian.uwo.ca).

The Hermon Dunlap Smith Center for the History of Cartography at the Newberry Library, Chicago, recently announced the winner of the first Nebenzahl Prize for Dis-

sertations in the History of Cartography. The \$1,500 (US) prize goes to Dr. D. Graham Burnett, Cambridge University, for his dissertation *El Dorado on Paper: Traverse Surveys and Geographical Construction of British Guiana, 1803-1844*. The next Nebenzahl prize will be awarded in 2001. In addition to a monetary prize, winners receive a subsidized fellowship to support research related to their dissertation at the Newberry Library. For further information about submission requirements, please contact James R. Akerman, Director, Hermon Dunlap Smith Center, The Newberry Library, 60 W. Walton Street, Chicago, Illinois, USA, 60610-3380.

The 18th International Conference on the History of Cartography will be held in Athens, July 11-16. The Society for Hellenic Cartography, the National Hellenic Research Foundation (N.H.R.F.) and Imago Mundi Limited, in collaboration with the Hellenic Scientific Cartographic Society, is organizing this event. Sponsors of the conference include the J. F. Costopoulos Foundation, the Ministry of Culture, the Hellenic Military Geographical Service, and the National Bank of Greece. The conference program can be seen at <http://ihr.sas.ac.uk/maps/18thprsr.html>

July 26-30 juillet 1999
19th Annual ESRI International User Conference
San Diego, CA, USA
For information / pour renseignements:
Tel / tél: 909-793-2853 ext. 1-1363
E-mail / Courr. élect: uc99@esri.com

August 14-21 août 1999
ICA 1999 / ACI 1999
19th International Cartographic Conference / 19^e Conférence cartographique internationale
Ottawa, Ontario
For information / pour renseignements:
Tel / tél: (613) 992-9999
Fax / téléc: (613) 995-8737
E-mail / Courr. élect:
ica1999@ccrs.nrcan.gc.ca

September 19-24 septembre
XIX Brazilian Congress on Cartography
Recife, Brazil
For information / pour renseignements:
Tel / tél: 55 (21) 240 6901
Fax / téléc: 55 (21) 262 2823
E-mail / Courr. élect: sbccarto@fst.com.br

October 18-22 octobre 1999
International Symposium on GPS
Ibaraki, Japan
For information / pour renseignements:
Tel / tél: 81 (3) 5802 8644
Fax / téléc: 81 (3) 5689 7234
E-mail / Courr. élect:
GPS99@eri.u-tokyo.ac.jp

October 20-23 octobre 1999
NACIS
Williamsburg, Virginia USA

November 9-11 novembre 1999
GIS/LIS
Los Angeles, California USA
For information / pour renseignements:
ACSM
5410 Grosvenor Lane, Suite 100
Bethesda, Maryland USA 20814-2122

March 9-10 mars 2000
Géomatique 2000: Le millénaire de l'excellence / Geomatics 2000: Excellence in the New Millennium
Palais des congrès de Montréal
Montréal, Québec

Candidates for Election to the 1999/2000 CCA Executive

The CCA Nominating Committee is pleased to present the following slate of candidates:

Vice-President:

Patricia Chalk, University of Western Ontario
Eva Siekierska, Geomatics Canada

Chair, Cartographic Education:

David Broscoe, Algonquin College

Chair, Analytical Cartography and GIS:

Phil Dodds, Intergraph Corporation
Steven Prashker, Carleton University

Chair, Map Production Technology:

Ken Francis, Natural Resources Canada
Michael Shasko, Clover Point Cartographics, Ltd.

Nominations are now closed. Since there is only one candidate for Cartographic Education, David Broscoe is declared elected by acclamation. Elections will be held for the other positions, and a ballot form is enclosed with this issue of *Cartouche*. Vote for one candidate in each category, seal the ballot form in the brown envelope and mail it in the white envelope to:

Brian Klinkenberg
Chair, Nominating Committee
Department of Geography
University of British Columbia
Vancouver, BC
V6T 1Z2

Ballots must be received by **August 1, 1999**. Alternatively, bring the ballot form with you to the ICA in Ottawa, Ontario.

Personal profiles supplied by the candidates follow.

Candidats aux élections au Comité exécutif de l'ACC 1999/2000

Le Comité de nomination de l'ACC a le plaisir de soumettre la liste de candidats suivante aux élections au Comité exécutif de l'ACC 1999/2000.

Vice-président:

Patricia Chalk, University of Western Ontario
Eva Siekierska, Géomatique Canada

Chef, sur l'Éducation cartographique:

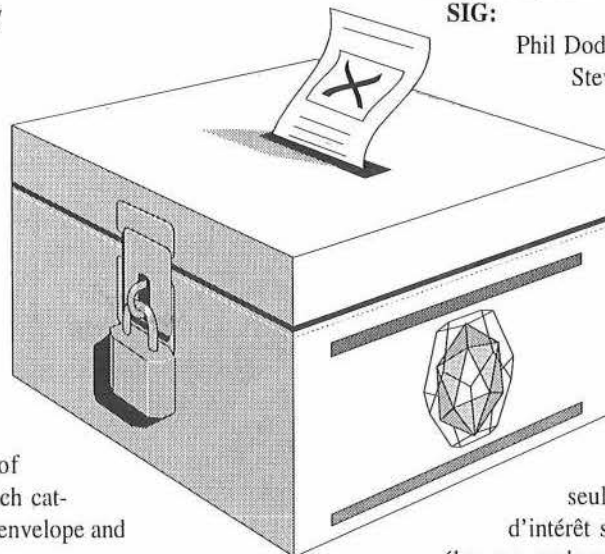
David Broscoe, Algonquin College

Chef, Groupe d'intérêt sur la Cartographie analytique et SIG:

Phil Dodds, Intergraph Corporation
Steven Prashker, Carleton University

Chef, Groupe d'intérêt sur la Technologie de production cartographique:

Ken Francis, Natural Resources Canada
Michael Shasko, Clover Point Cartographics, Ltd.



L'appel d'offre de mise en candidature est maintenant terminé. Puisqu'il y a seulement un candidat au poste de Groupe d'intérêt sur l'éducation, David Broscoe est déclarée élue par acclamation. Des élections auront lieu pour les autres postes et un bulletin de scrutin est inclus avec ce numéro de *Cartouche*. Votez pour le candidat de votre choix dans chaque catégorie, placez le bulletin dans l'enveloppe brune et cachez l'enveloppe, et postez le tout dans l'enveloppe blanche à:

Brian Klinkenberg
Président, Comité de nomination de l'ACC
Department of Geography
University of British Columbia
Vancouver (Colombia-Britannique)
V6T 1Z2

La date limite pour réception des bulletins par la poste est le **1 août 1999**. Alternativement, apportez le bulletin de scrutin à l'ACI à Ottawa (Ontario).

Une courte biographie pour chacun des candidats suit.

Vice -President / Vice-président

PATRICIA CHALK

Director of Cartographic Services,
Geography Department, The University of Western Ontario

Thank you for nominating me to run as VP; it would be an honour to serve the CCA in this role.

Listed below are three issues that I believe are integral to our Association - issues that I would monitor closely as Vice-President. I have elaborated on the third (financial matters) because it continues to be a difficult one to wrangle with, in spite of the best efforts of our membership. Qualifications relevant to fulfilling the role of Vice President, and ultimately President, conclude this submission.

Three Key Issues:

A team of volunteers holds executive positions in our Association. Since time is limited, I believe it is important to ferret out a few key issues and ensure that we address these issues to the best of our ability. The top issues would need to be agreed upon by the Executive, but the three that I would put out on the table for starters are:

1. Provide annual conferences with the content that members find useful and enlightening.

2. Provide members with a regular newsletter (*Cartouche*) focusing on issues relevant to the membership such as CCA activities and issues, innovative or timesaving cartographic techniques or teaching practices, theoretical issues for contemplation, useful Web sites. Does the newsletter need to keep its current publication frequency?

3. Retain a strong financial position that can support the services our members expect from their annual dues (e.g., conferences, newsletter, *Cartographica*, executive activities, and membership inventory). We need continued vigilance in this area and some new approaches to improving our position.

With governments cutting funds to associations like ours, the maintenance of a strong financial base now relies heavily on membership dues. Expansion of our membership is essential to improve our financial position and we must continue to attract a broad cross-section of cartographers as ongoing members. Our diversity is one of our strong points!

How do we attract new members? Efforts to expand our student base from the universities and colleges are already well underway, and need to be continued. Active young members bring innovative ideas and fresh new directions that nurture the CCA. What other trees should we be shaking in search of new members?

Proposal: Why not give the GIS tree a bigger shake! Let us improve the links with the GIS community by demonstrating the benefits of associating with a group of professional cartographers. The GIS community generates a large number of maps both in digital and print form, and therefore constitutes a largely untapped source of members. Individuals using maps in their GIS work would surely

benefit from their association with the CCA as our current members do, by broadening their education in the theoretical and practical aspects of cartography. The heightened possibilities for visualizing data and analyzing spatial relationships through GIS suggests that linkages with talented people using this medium should be sought out. This is one proposal to consider for widening our membership base - I welcome the membership to come forward with alternative or additional suggestions on how best to maintain a flourishing membership base.

Qualifications Relevant to Vice President Position:

- Almost twenty years experience in the field of cartography, sixteen as Director of Cartographic Services at The University of Western Ontario.
- Strong organizational, time management and planning skills.
- Experience working with volunteers and organizing two CCA conferences, most recently as co-chair for the 1998 CCA annual meeting in London.
- Frequent CCA conference contributor over past fifteen years.
- Enjoy the enthusiasm and diversity of fellow CCA members and value the professional activities of the association.

I hope you will give me your serious consideration for the position of VP of the Canadian Cartographic Association.

EVA SIEKIERKA

Geomatics Canada
Géomatique Canada

Education and Work Experience:

Eva emigrated to Canada in 1980 after completing her PhD in computer-assisted cartography at the Swiss Federal Institute of Technology, Zurich, Switzerland. Her Masters degree, in geography with a specialisation in cartography, is from Warsaw University in Poland. After finishing her degree, Eva worked as a research assistant in the Polish Academy of Sciences. Financial support from UNESCO's Man and the Biosphere Program allowed her to continue her studies abroad.

Eva's Canadian professional experience ranges from a research position in the Research and Development Section of the Mapping Services Branch (MSB) at Energy, Mines and Resources to Assistant Director of the Applied Research and Technology Service of MSB to teaching cartography part time at the University of Ottawa and Carleton University. She also held a one-year overseas teaching assignment at the International Institute of Aerial Surveys and Earth Sciences (ITC) in the Netherlands.

At present, Eva works as a manager in Mapping Services Branch of Earth Sciences Sector, Geomatics Canada, Natural Resources Canada, where she is responsible for projects on the formulation of a Science and Technology Strategy for Mapping Services Branch, and the development of Raster Map Products. In cooperation with Carleton University, she is participating in an international project on "Digital Mapping and Geographic Information Processing in Latin America" conducted by the Pan American Institute of Geography and History.

In the last ten years, Eva has been actively involved in the International Cartographic Association, as Chair, consecutively, of the Task Force on Women in Cartography, the Working Group on Gender and Cartography and, currently, the Commission on Gender and Cartography. During this time she also co-chaired the ICA's Commission on National and Regional Atlases, electronic mapping being her primary professional interest. Her work on Electronic Atlases has been widely published both in Canadian and international journals. Eva's professional contributions have also been recognized by the Earth Sciences Sector Merit award for exceptional job dedication, and by a commemorative medal for the 125th anniversary of Canada's Confederation, conferred for "significant contributions to compatriots, community and to Canada."

Eva's Plans for the CCA:

In the upcoming years, we should further strengthen cooperation between CCA and the international cartographic community, and increase the number of the CCA Commissions, Working Group and Special Interest Groups. We should also initiate joint research projects based on cooperative agreements and partnerships between academia, industry and government. Working together, we can accomplish more, more easily. Last, but not least, we should continue to have fun together during the AGMs (eg: , orienteering events)!

Chair, Analytical Cartography and GIS Chef, Groupe d'intérêt sur la Cartographie analytique et SIG

PHIL DODDS

Intergraph Corporation

Professional Affiliation:

Technical Consultant, Intergraph Corporation, Huntsville, Alabama
GIS and Cartographic applications

Education and Work Background:

B.Sc. in Geography from University of South Alabama

M.Sc in GIS and Geography from University of Alabama
Staff Cartographer in Graduate school
Map Librarian working on the GNIS project

Previous Involvement in the CCA:

Member since 1989, several verbal, poster and workshop presentations at Annual Meetings and of Sponsorship of various events

Goals As Chair of the Analytical Cartography and GIS Interest Group:

Intergraph has long been the leader in high end digital Cartography, but over the years with the emergence of PC work stations the gap has closed between the high and low end production systems. I would like to study this evolution and study different ways in which both high and low production systems can work to compliment each other. The evolution of the three tier architecture in the GIS industry is also of special interest along with GIS on the Web.

STEVEN PRASHKER

Carleton University

Biographical Sketch of Steve Prashker:

Steve Prashker received his Masters of Science degree in Meteorology from McGill University. Currently, he is an instructor and the Geoprocessing Applications Analyst for the Department of Geography at Carleton University in Ottawa, Canada. He teaches a fourth year course on Analytical and Computer Cartography, and coordinates the Geography Practicum and Field Course, and maintains the hardware and software in the department's Geoprocessing Laboratory. His interests include digital cartography, algorithm research, software development and computer graphics. His research focus has been on algorithm animations – animating geoprocessing algorithms in real time using computer graphics. He is the author of the GeoAnimations series of geocomputing algorithm animations, of which the ZAPPER Line Simplification System is part.

My goal as Chair of the Analytical Cartography and GIS Interest Group would be to serve the members of the CCA by attempting to keep abreast of and reporting on any new technologies or trends within the discipline. As an educator, I hope to share some of my thoughts and techniques in teaching this material, and I would like to write about the technical issues and problems associated with the technology.

Chair, Map Production Technology / Chef, Groupe d'intérêt sur la Technologie de production cartographique

KEN FRANCIS

Map Design Specialist, Mapping Services Branch
Natural Resources Canada

Education and Work Experience:

Certificate in Cartography, College of Geographic Sciences, 1983
B.Sc. (Geography), Memorial University of Newfoundland, 1986
M.A. (Geography), Carleton University, Ottawa, Ontario, 1996

My introduction to work as a professional cartographer began with pen and ink on mylar and vellum. Within a year, I was using a Macintosh and various software packages to prepare files for freelance clients. At the Mapping Services Branch, I deal with technology issues surrounding reproduction methods, and designing maps both for print and for the internet.

I believe it would be valuable to have the Map Production Technology Interest Group provide a meeting place for those of us who are engaged in the technology dependent (and often solitary) work of freelance cartography. Ideas surrounding technology may be shared, problems raised and advice given on anything of concern: upgrading software and hardware, dealing with scanning and output resolutions, getting the most from your service bureau, the best choice of file format for certain circumstances, web map design, converting files from one computing platform to another, and so on.

MICHAEL SHASKO

Clover Point Cartographics, Ltd.

As a GIS and resource consultant:

- compiled and analyzed mapping data to meet specific client needs.
- developed new and innovative solutions to meet client needs.
- analyzed project data requirements and regularly reviewed evolving data needs.
- adapted data from varying source types to minimize margin of error.

As an ARC/INFO AML programmer:

- constructed ARC scripts to facilitate plotting, production, and database functions.
- developed programming routines for ARC/FME translations.
- created standard production and plot AMLs.

- directed development of standard map grids and translation routines.
- developed specialized documentation packages to address complex programming issues.

As Clover Point Cartographics Ltd. office manager:

- coordinated and allocated human and computer resources to meet client needs efficiently.
- supervised project teams and support staff.
- worked with support staff to manage company and project finances.
- generated responses to RFPs.
- trained staff on new software applications.

As director of Clover Point Cartographics Ltd.:

- supervised Clover Point's role in joint project submissions.
- coordinated company activities with fellow directors.
- developed company HR and operating policies.
- developed and maintained office systems and procedures to support client needs.

Software in use:

ARC/INFO (UNIX, NT, PC), Visual Basic, MicroStation, FoxPro, CorelDRAW, QuickBasic, dBASE III+IV, SAS.

Professional Experience:

- Head of Research and Development, Clover Point Cartographics Ltd. since 1994.
- Director, President, and Office manager, Clover Point Cartographics Ltd. since 1992.
- Founder, Clover Point Cartographics 1990.
- Sessional lecturer (*Techniques in GIS and Statistical Analysis*), Univ. of Victoria 1990-97.
- Personal services contractor delivering GIS, mapping, and data analysis services to several BC government offices and Statistics Canada 1990-92.
- Editor of the quarterly GIS publication, the *PICS/URISA Bulletin* 1991-92.

Education:

- MBA degree (intellectual property, production mgmt.), University of Victoria 1997.
- MSc degree (Geography/ GIS Applications), University of Victoria 1989.
- BSc degree (Honours Geography), University of Victoria 1986.

Publications and Reports:

Lush, Barb and Shasko, Mike, *Location Modeling in British Columbia, Proceedings: Thirteenth Annual Symposium on GIS* (pp. 335-337). Vancouver: 1999.

Shasko, Mike, *Projecting Provincial Data, Proceedings: GIS '95 International Symposium on GIS*. Vancouver: 1995.

Shasko, Mike, and Keller, C.P. *Assessing Large-Scale Slope Stability and Failure within a GIS*, Proceedings: GIS '91 International Symposium on GIS (pp. 319-27). Vancouver: 1991.

Shasko, Mike, *Towards Slope Stability Assessment in a Geographic Information System*, (Masters of Science thesis). Victoria: 1989.

Shasko, Mike, *Residential Morphology of Victoria* (Bachelor of Science thesis). Victoria: 1986.

Shasko, Mike, *City of Victoria Real Estate Atlas*. Victoria: 1981.

Professional Association Membership:

- Canadian Association of Geographers 1985-96
- Pacific Institute of Cartographers 1987-94
- Canadian Cartographic Association 1982-present

Position Statement:

Mike started Clover Point in 1991 as a mapping/GIS services company. Focusing on production and spatial programming, the company has grown to 15 people experienced in data compilation, cartographic output, and resource analysis.

Mike brings to the CCA Map Production and Technology Interest Group an avid interest in current and future mapping technologies that provide mechanisms to enhance spatial processing and analysis. He is keen to work with individuals and organisations to define, collect, produce, and disseminate ideas and scripts people in the industry can hopefully integrate in their daily operations.

Chair, Cartographic Education Chef, Groupe d'intérêt sur l'Éducation cartographique

DAVID BROSCOE

Algonquin College

Professional Affiliation:

Professor, GIS Technology Program, Algonquin College, Ottawa, Ontario

Education/Experience:

M.A. Geography, Carleton University, 1993

Cartography Technician Diploma, Algonquin College, 1977

I worked as a cartographer in private industry for a number of years, including several years of experience in Africa. After returning to school, I completed a thesis which examined city morphology using texture measures, and which attempted to tie morphology to cultural practice. Since 1992 I have been a professor at Algonquin

College, teaching a range of subjects from Map Design to GIS Projects to programming.

Previous service to the CCA:

Member since 1992

Represented the CCA in meetings about the potential merger of Canadian Geomatics Associations

Presented papers and/or chaired sessions at conferences for the CCA, the ACSM, the CAG and other organizations

Position Statement:

As spatial information becomes more accessible and the task of creating maps from that information becomes easier, the need for an understanding of cartographic principles has never been greater. Our challenge is to deliver those principles and to make them appear relevant to a wider audience, in an age where a map may be created using a few clicks of the mouse. Through Cartouche columns, the CCA web site and conference sessions, I will explore these issues and attempt to forge more flexible links between Cartography and related disciplines.

Atlases for Review

The Atlas Editor for *Cartographica* has the following atlases for review. If you are interested in reviewing any of the atlases, please contact me at the address below:

The Nebraska Sandhills, The Human Landscape

Atlas of Nazi Germany

Atlas of Oregon Wildlife

Lines of Country: An Atlas of Railway and Waterway History in Canada

The Population of Britain

Atlas électronique de l'évolution de l'agriculture du Québec 1981-1991

An Atlas of English Dialects

An Atlas and Survey of South Asian History

Atlas of the Middle East

National Atlas of Norway (This atlas is in Norwegian)

Contact:

Dr. Ute J. Dymon

Department of Geography

Kent State University

Kent, Ohio 44240

USA

Email: UDymon@kent.edu

Avenza Releases MAPublisher 3.5

Avenza Global Technologies Corp., of Burlington, Ontario, Canada, the developers of MAPublisher®, are pleased to announce the release of MAPublisher® Version 3.5 for Macromedia Freehand 8 for the Macintosh PowerPC operating platform (released November 25, 1998) and MAPublisher® Version 3.5 for Macromedia Freehand 8 for the Microsoft Window 95/98 and NT operating platforms (released May 4, 1999).

MAPublisher is a suite of GIS and cartographic plug-in tools that allows the import of top GIS and CAD file formats into high-end graphic and illustration environments with all the attribute databases intact and ready to use.

Included in this suite of powerful mapping filters are import tools, projection editors, legend tools, labeling tools, database management tools and many others comprising a complete cartographic solution.

New MAPublisher Version 3.5 includes the following features:

- Improved file import so that you can more effectively import common GIS file formats (ARC/INFO Generate, ArcView Shapefile, MapInfo MID/MIF, AutoCAD DXF, and USGS formats) into the vector graphics environment with all database attributes intact.
- Table Management tools that allow the import of external database tables for merging and linking to existing map layers as well as creation, editing and deletion of separate data tables.
- Automated raster image registration.
- Automated labeling based upon attribute data.
- Export to MapInfo MID/MIF and ArcView Shapefile formats.
- Search, query and select by data attribute.
- Buffering and joining of vectors based on simple or attribute values.
- Automated legend creation based upon attribute data that enables automated legend value assignment for multiple legend elements based on either unique values or a user-controlled value range.
- Automated filter for conversion of map native coordinate system to various traditional scales.

MAPublisher Version 3.5 is available at \$299 for a limited time only, after which it will be available at the regular price of \$495.

For further information please contact Avenza at 905-639-3330, E-mail: info@avenza.com or visit the company's website at <http://www.avenza.com>

MAPublisher 3.5 Available for Review

I have 2 copies of MAPublisher 3.5 (one each of the Mac version and Windows version) available for review in a future issue of *Cartouche*. If anyone is interested in reviewing this software, please contact me (*Cartouche* editor, address on page 2) and we can make the appropriate arrangements. As an incentive, you can keep the software!

ArcView GIS/Avenue Developer's Guide, 3rd Edition

OnWord Press is pleased to announce the release of *ArcView GIS/Avenue Developer's Guide, 3rd Edition*. The new edition, which is based on ArcView GIS Release 3.1, is again written by well-known author Amir H. Razavi and will be on bookstore shelves by the end of May.

Highlights of the *Developer's Guide* include all-new chapters on programming Spatial Analyst extension, using Dialog Windows, plus Programming Report Writer and CAD Reader Extensions. Readers familiar with the previous edition will also appreciate the expanded coverage of programming with Shape Files and scale-based graphics, as well as the practical demonstrations and examples of programming code, featured in the third edition.

Intended for intermediate and advanced ArcView GIS users, the *Developer's Guide* will show readers how to customize the ArcView GIS interface; create, edit and test scripts; produce hardcopy maps; and integrate ArcView GIS with other applications. A diskette bound in the back of the book has been fully updated for use with ArcView GIS 3.1. The diskette features updated scripts and additional utility programs for readers' use in developing their own Avenue applications.

Orders for *ArcView GIS/Avenue Developer's Guide, 3rd Edition* are now being accepted. Individuals interested in purchasing the 400-page *ArcView GIS/Avenue Developer's Guide, 3rd Edition* (order number 1-56690-167-7, US \$54.95) are invited to contact the OnWord Press customer service team at 505-474-5130 or 800-4-ONWORD (toll-free in the USA and Canada only). Volume discounts and complimentary copies for instructors interested in reviewing the book for possible course adoption are also available.

Autour du métro

Plans des environs des stations de métro de Montréal

Michel Fournier
Cartologique

Depuis quelques années, l'administration de la Société de transport de la Communauté urbaine de Montréal (STCUM), multiplie les efforts cartographiques pour essayer de faciliter la circulation de ses usagers. Après la carte du réseau, il y a eu les plans de quartier dans les stations de métro puis un mini-atlas du réseau des stations de métro. Ce petit atlas centré sur les 65 stations de métro vise avant tout à informer l'usager du transport en commun sur leur environnement.

Au premier abords, l'atlas est attirant et recelle bon nombre d'éléments qui en font un ouvrage à posteriori fort utile et nécessaire. On retrouve donc, pour chaque planche, le tracé d'une ou plusieurs lignes de métro avec les quais d'embarquement et la zone piétonne sous-terreine, les accès/sorties aux stations ainsi que les trajets du transport par autobus (régulier, de pointe et de nuit) et ferroviaire avoisinant (train de banlieue-zone urbaine seulement). Cela facilite grandement l'utilisation du réseau. L'ajout des adresses civiques aux coins de tous les îlots est un atout considérable pour qui veut se déplacer en ville. La consultation de ce mini-atlas est facilitée par un onglet de couleur au bas de la page, correspondant à la couleur de la ligne de métro concernée.

Hormis les immeubles abritant les stations de métro, des immeubles-repères sont intégrés tels que: institutions scolaires et hospitalières, lieux de culte, édifices

administratifs, des services publics (pompiers, bureau de poste, ...), des centres commerciaux, quelques infrastructures culturelles (musée, cinéma, théâtre,...) et touristiques (hôtel), des espaces verts (parc, cimetière, ...). La toponymie omniprésente prend quelques fois trop d'importance et tient compte gauchement d'une hiérarchisation fonctionnelle de la taille des artères. En

complément, en cherchant bien, on peut trouver les postes de taxis.

L'intégration des différents modes de transport en commun en font un Atlas riche en informations toutefois, bien que le lecteur moyen n'en

fera usage que pour consulter une ou deux planches à la fois, il ne se rendra probablement pas compte de certaines faiblesses qui amenuisent l'impact et la lisibilité de l'ouvrage dont: le choix des échelles, des couleurs, la taille des pictogrammes. Malgré l'évidence de la progression des stations de métro sur une ligne, une carte repère montrant la couverture réelle des planches serait souhaitable, considérant le recouvrement aléatoire entre celles-ci.

STCUM, *Autour du métro-Plans des environs des stations de métro de Montréal*, 1995, 66 pages. (9.50\$) STCUM 270195-414030



de la page 4

cartographie sont excités à l'idée d'utiliser les données de satellites commerciaux à haute résolution, pour la production et la mise à jour de cartes. Pour le moment, aucun des lancements prévus de satellites, n'a pu remplir cette mission avec succès. Récemment, le satellite Ikonos 1 est devenu la dernière victime de ces échecs à répétition puisque peu après son lancement, il est disparu. (<http://abcnews.go.com/sections/science/DailyNews/satellite990428.html>)

Les futurs utilisateurs de ces images commencent à soupçonner les militaires de quelques malversations plutôt accommodantes pour ceux-ci puisque qu'ayant déjà accès à l'imagerie à haute résolution, depuis plusieurs années, ils ont exprimés une certaine réticence à la diffusion de ce type de données (résolution de 5 mètres ou moins), à des organismes non-gouvernementaux. L'armée américaine a par ailleurs refusé son aide pour le lancement du satellite canadien Radarsat 2 car, selon eux, la résolution de ce satellite (5 mètres) représente un potentiel danger pour la sécurité nationale. (<http://cbcnews.cbc.ca/cgi-bin/templates/view.cgi?news/1999/02/18/cansat990218>). Le 15 avril 1999, le satellite Landsat 7 a été lancé avec succès toutefois, sa résolution est la même que celle de Landsat 4 et 5 (30 mètres) à l'exception de la bande panchromatique qui elle est à 15 mètres (Landsat 6 s'est éteint peu après son lancement en 1993).

Rorschach's Map Carte énigmatique

Notre énigme provient de Roger Wheate. Puisqu'elle n'est pas très difficile à trouver, nous ne vous donnerons pas d'indice. Vous trouverez la réponse ci-dessous.

This issue's blot is courtesy of Roger Wheate. It is not too difficult, therefore no clues will be given. The answer to this blot is revealed below.



Réponse : Albanie Answer: Albania

Report from the Chair of the Canadian National Committee for Cartography and the CIG Technical Councillor for Cartography

Peter Keller
University of Victoria

Hello fellow cartographers. This will be a brief report since you will find me struggling to keep up with the challenges of putting together the scientific programme for ICA Ottawa 1999, getting Canada's four year report ready as a special issue of GEOMATICA, and doing all the other things that need to be done as chair of the Canadian National Committee. I am pleased to inform you that we are making good progress on most fronts and "so far so good." I am very appreciative of the excellent service and support from Lloyd Bowler and his office in Ottawa with respect to conference business, and from Cliff Wood, Mike Pinch and Carol Railer as far as the report is concerned. I could not even imagine going to work to face ICA conference business without the exceptional support at the University of Victoria from Nieves Forcada and Ken Josephson.

I am thrilled to be able to tell you that we have over 580 Canadian entries for the Barbara Petchenik Children's Map Competition. Taking over late in the game, Erin Kuyvenhoven did magic to get the word out, and the response from the community has been fantastic. We have entries from coast to coast to coast. A judging panel will meet in Victoria May 20/21 to try and select maps to go forward to the international competition. A note of thanks to Geomatics Canada and especially Bob O'Neil for helping find

funds to subsidize the cost of assembling the judges in Victoria.

Canadians active with ICA Commissions and Working Groups have been busy preparing their reports for the August meeting. A note of thanks to Jackie Anderson, Eva Siekierska and Tim Davis for their active roles leading their respective ICA Groups. The Canadian National Committee has made a number of nominations to the ICA executive for the 1999 - 2003 period. Alberta Wood has agreed to let her name stand for nomination for one of the Vice President positions of the ICA. Jackie and Tim have agreed to be nominated to carry on with leadership of their working groups. Monika Rieger has been nominated as a corresponding member for the Commission on Maps and Graphics for the Blind and Visually-Impaired People. I continue to work on a number of other nominations from Canada.

There is little to report about efforts to reorganize the professional association status of the Canadian geomatics community. The CIG and sibling associations continue to explore options, and I again encourage all associations with an interest in geomatics to partake in these discussions.

Have a great summer and see you in Ottawa in August.

Peter Keller
Chair, CNC for Cartography

Notice of Constitutional Amendment

Procedures for the Election of Officers:

Currently in CCA elections, votes are sent in or brought to the annual meeting, counted there and candidates notified just prior to the annual general meeting.

The motion is to modify this procedure such that marked ballots would be received eight (8) weeks prior to the annual meeting and candidates notified of the results at that time. This would enable candidates to plan attendance ahead of the meeting and facilitate the gathering of the new full executive at the annual meeting. (Proposed by Carolyn Weiss, seconded by Cliff Wood). This motion will be voted on at the annual meeting, Ottawa, August 18, 1999.

Avis de modification de la Charte

(mise au vote lors de la prochaine assemblée générale à Ottawa, le 18 août 1999)

Procédure pour l'élection d'un Officier:

Normalement, lors d'élections à l'ACC, les bulletins de votes complétés sont expédiés par la poste ou encore, déposés lors des conférences annuelles, le dépouillement est effectué sur place et les candidats sont avisés du résultat lors de l'Assemblée générale annuelle.

L'amendement vise à modifier cette façon de procéder puisque les bulletins de vote doivent être, normalement, reçus 8 semaines avant l'Assemblée générale annuelle ce qui pourrait permettre d'aviser les candidats à ce moment. Ainsi, les candidats élus pourront planifier leur présence à l'Assemblée générale annuelle, favorisant ainsi la réunion de tout les membres du nouvel exécutif, lors de l'Assemblée générale annuelle. (Proposition de Carolyn Weiss, secondée par Cliff Wood)

Geomatics Virtual Technology Roadmap

*George J. Emery
Industry Canada*

Industry Canada is pleased to announce the launch of Canada's Geomatics Virtual Technology Roadmap (VTRM), a fully interactive site designed to bring the geomatics sector together to exchange knowledge on what technologies are required to meet future customer demands.

Input for the VTRM has been derived from Canada's geomatics stakeholders opinions, including academia, industry, national associations and government. More than eighteen months of planning, consultations and meetings across Canada have resulted in the development of a fully interactive, bilingual (English/French) site where viewers can see various papers about Canada's geomatics sector, are encouraged to submit their views, learn about research opportunities and partnerships, participate in discussion forums and visit other interesting geomatics sites around the world.

We are trying to establish a "virtual" dialogue between the developers of geomatics products and services in Canada with the users of those same products and services across Canada and around the world so we can continue to build innovative products based on markets defined by the user communities. Collaboration among those stakeholders inside and outside of Canada will be critical to the delivery of geomatics products and services in the future. We're in a knowledge-based industry that continues to evolve daily, and we encourage all practitioners, users and those who simply espouse a general interest to join us in the dialogue by investing their time on the VTRM, responding to various sections of the reports and forecasting tools, and suggesting new areas to explore. In particular, we hope research and development partnerships can be found as a result of people using the VTRM on a frequent basis.

The VTRM is the result of an industry-led technology roadmapping process facilitated by Industry Canada in partnership with Natural Resources Canada and certain firms and industry associations. For more information on Technology Roadmaps, visit Industry Canada's Strategis pages at www.geomatics.ic.gc.ca/

Technologie virtuelle de cartes routières géomatisées

*George Emery
Industrie Canada*

Industrie Canada est heureuse d'annoncer le lancement de son site totalement interactif de son système virtuel de cartes routières géomatisées (SVCRG). Il a été conçu pour permettre le couplage de secteurs géomatisés et pour permettre l'échange sur les connaissances technologiques requises pour rencontrer les demandes futures de la clientèle.

Les paramètres du SVCRG proviennent des intervenants-clés en géomatique des milieux académiques, de l'industrie, d'association nationale et des ministères concernés. Plus de 18 mois de planification, de consultation et de rencontres à travers le pays ont été nécessaires pour permettre le développement de ce site bilingue entièrement interactif. Les usagers pourront y consulter de nombreux documents traitant de divers aspects sur la géomatique canadienne. Ils sont également encouragés à transmettre leurs points de vue, à prendre connaissance des opportunités de recherche et de partenariat, à participer aux forums de discussions et à consulter d'autres sites en géomatique à travers le monde.

Avec ce site, nous espérons établir un dialogue "virtuel" entre les développeurs canadiens de produits et services en géomatique et les utilisateurs de ceux-ci à travers le Canada et le monde. Cette interaction nous permettra d'élaborer des produits innovateurs basés sur les besoins réels de la communauté. La collaboration entre les intervenants tant canadiens qu'étrangers deviendra de plus en plus critique pour la livraison de produits et services géomatiques dans le futur. Nous vivons actuellement dans une industrie où la connaissance évolue quotidiennement et nous encourageons tous les praticiens, les usagers ou tout simplement ceux qui témoignent de l'intérêt pour le domaine à se joindre à nous dans ces échanges, en investissant du temps sur le SVCRG, en répondant aux diverses sections du rapport et outils de prévisions et en nous suggérant de nouvelles directions à explorer. Nous espérons que la consultation régulière du site permettra d'obtenir des résultats qui favoriseront le partenariat en recherche et développement.

Le SVCRG est le résultat d'une technologie de pointe de carte routière rendue accessible par Industrie Canada en partenariat avec le ministère des Ressources Naturelles et quelques entreprises et associations. Pour de plus amples informations sur la Technologie des cartes routières, consultez les pages du site Stratégies d'Industrie Canada www.geomatics.ic.gc.ca/

from page 5

if you could not make the larger three-day trip, perhaps you will consider this one.

White Water Rafting trip to the Mighty Calumet wilderness of the Ottawa River: Class 4 Rapids (Colorado River in Grand Canyon is Class 5) Cost: \$95.00 each. Qualifications: Just be a reasonable swimmer, and not afraid of the water. You will have life jacket, and helmet, and all required safety equipment, supplied. A wet suit can be rented, but in August I do not think you will need one. Sunday August 15th from 0830 to 1900, a great day in the Canadian outdoors. see: <http://www.ottawaadventures.qc.ca/>

For more information regarding these events, contact David H. Douglas at dhdad@uottawa.ca

It is now too late to register at the special CCA rates (\$325); full registration is \$800+GST, (one day rate is \$350). Students can still volunteer to assist for 24 hours total over the week, and have registration fees waived: contact Lloyd Bowler (lbowler@nrcan.gc.ca).

de la page 5

l'Association des systèmes de référence objet-orienté spatialement (ASROS). Les membres de l'ACC sont invités à assister au symposium les 13 et 14 août 1999. Vous pourrez obtenir plus d'information en consultant le site internet : <http://www.uottawa.ca/~ddouglas/sorsa>

L'ASROS organise une descente de rivière en eaux vives dans les rapides tumultueux de la rivière des Outaouais (Ottawa), pour la journée du 15 août. L'exécutif de l'ASROS invite cordialement les membres de l'ACC à se joindre à eux. Cette activité ne sera pas en conflit avec l'expédition de trois jours de l'ACI toutefois, si vous ne pouvez participer à l'expédition, peut-être vous laisserez-vous tenter par les sensations fortes dans les rapides.

Descente de rivière en eaux vives dans le site naturel de Calumet sur la rivière des Outaouais (Ottawa); les rapides de la rivière sont classés de niveau 4 (ceux de la rivière Colorado dans le Grand Canyon sont classés de niveau 5). Le coût pour l'activité est de 95.00\$ par personne. Pour y participer, vous

devez : savoir nager et ne pas avoir peur de l'eau. Durant la descente, vous porterez une veste de sauvetage et un casque, l'équipement de secours sera disponible sur les lieux. Si vous le désirez, vous pourrez louer sur place une combinaison toutefois, je ne pense pas que cela soit vraiment nécessaire au mois d'août. Donc, dimanche le 15 août, ce sera un Grand Jour pour les loisirs extérieurs dans les annales canadiennes. Consultez le site internet : <http://www.uottawaadventures.qc.ca/>

Pour obtenir plus d'information à propos de cet événement, n'hésitez pas à contacter David H. Douglas à dhdad@uottawa.ca

Il est maintenant trop tard pour s'inscrire au tarif spécial de l'ACC (325\$), le paiement complet de 800\$ (+TPS) est maintenant requis, le tarif journalier est de 350\$. Les étudiants peuvent encore participer sans frais à l'événement, en échange d'une participation bénévole maximale de 24 heures durant la semaine. Pour ce faire, contactez : Lloyd Bowler (lbowler@nrcan.gc.ca)

A Brief History of Time

IN THE BEGINNING (of the digital era in geography), God (inspired some lesser subordinates here on earth to cause to be) created Automated Cartography. God (and us earthlings, too) saw that it was good.

ON THE SECOND DAY God saw a need for us mortals to get spatial data into digital form so He created digitizing tables. God (and optometrists, chiropractors and others whose coffers have swelled as a result of us toiling long hours over these wondrous devices) saw that it was good.

ON THE THIRD DAY God said, "There's gotta be a better way to get spatial data into a computer," so She created Remote Sensing. Although God's plans had limited resolutions at first, the mists slowly parted and we were able to see the earth in all the colours of the rainbow. God saw that it was good to view the world from a new perspective, even if things still looked a little fuzzy.

ON THE FOURTH DAY God said, "Let the spatial databases be divided into two." And so it was. God called the vector parts "arcs" and the raster parts "grids." Someone (I'm sure it wasn't God) said, "Let the rasters be faster but the vectors be corrector." God saw that it was good, if not a little confusing.

ON THE FIFTH DAY God saw that Automated Mapping and Remote Sensing were lonely so He said, "Let the Automated Mapping and the Remote Sensing come together into a single mass." And out of their bellies He took a choropleth and a pixel and fashioned a new sibling, which He didn't know what to call so He left it up to us. We have been agonizing over names like Geographic Information Systems, Geographical Information Systems, Spatial Information Systems, Cadastral Mapping Systems, and so on, ever since. Anyway, God saw that it was good.

ON THE SIXTH DAY God said, "Let the schools produce every kind wild beast, every kind of cattle, every kind of reptile, and every kind of geo-spatial mapping professional." God blessed them, saying, "Be fruitful, multiply, and fill every government agency and private corporation with spatial technologies and conquer them." God saw that it was good since it kept a lot of geography instructors employed.

ON THE SEVENTH DAY God reflected at the wonder of all of Her creation and said, "Oh my God! What have I done?!" She passed out into a coma.

Courtesy of Joe Piwowar

The Canadian Cartographic Association *L'Association canadienne de cartographie*

CCA Executive / Exécutif de l'ACC:

President / Président:

Roger Wheate
University of Northern British Columbia
Prince George, British Columbia V2N 4Z9
Phone/Tél: (250) 960-5865 Fax/Téléc: (250) 960-5587
E-mail/courr. élect: wheate@unbc.ca

Vice President / vice-Président:

Michel Fournier
Cartologique, 1853 boulevard Pie IX
Montréal, Québec H1V 2C7
Phone/Tél: (514) 522-5715 Fax/Téléc: (514) 522-5715
E-mail/courr. élect: acsg_mtl@mlink.net

Past-President / Président-sortant:

Brian Klinkenberg
University of British Columbia
Vancouver, British Columbia V6T 1Z2
Phone/Tél: (604) 822-2663 Fax/Téléc: (604) 822-6150
E-mail/courr. élect: brian@geog.ubc.ca

Secretary-Treasurer / secrétaire-trésorier:

Charles Conway
Memorial University of Newfoundland
St. John's, Newfoundland A1B 3X9
Phone/Tél: (709) 737-7912 Fax / téléc: (709) 737-4000
E-mail/courr. élect: cconway@morgan.ucs.mun.ca

Interest Group Chairs and Appointees:

Présidents des groupes d'intérêt et les personnes nommées:

Analytical Cartography and GIS / Cartographie analytique et SIG:

Joseph M. Piwowar
University of Waterloo
Waterloo, Ontario N2L 3G1
Phone/Tél: (519) 888-4567 ext. 6563 Fax/Téléc: (519) 888-6768
E-mail/courr. élect: piwowar@watleo.uwaterloo.ca

Cartographic Education / Éducation cartographique:

Ute Dymon
Kent State University
Kent, Ohio USA 44242-0001
Phone/Tél: (330) 672-3226 Fax/Téléc: (330) 672-4304
E-mail/courr. élect: udymon@kent.edu

History of Cartography / Histoire de la cartographie:

Jeffrey Murray
383 River Road, RR3
Merrickville, Ontario K0G 1N0
Phone/Tél: (613) 995-9519 Fax/Téléc: (613) 996-8982
E-mail/courr. élect: ac295@freenet.carleton.ca

Map Use and Design / Conception et utilisation des cartes:

Ada Cheung
COGS, RR 1
Lawrencetown, Nova Scotia B0S 1M0
Phone/Tél: (902) 584-2073 Fax/Téléc: (902) 584-7211
E-mail/courr. élect: cheunga@sun1.cogs.ns.ca

Map Production Technology /

Technologie de production cartographique:

Byron Moldofsky
University of Toronto
Toronto, Ontario M5S 1A1
Phone/Tél: (416) 978-3378 Fax/Téléc: (416) 978-6729
E-mail/courr. élect: byron@geog.utoronto.ca

Cartographica Editor / Éditeur de Cartographica:

Michael Coulson
University of Calgary
Calgary, Alberta T2N 1N4
Phone/Tél: (403) 220-6587 Fax/Téléc: (403) 282-6561
E-mail/courr. élect: coulson@acs.ucalgary.ca

Canadian National Committee Chair /

Président du Comité national canadien:

Peter Keller
University of Victoria
Victoria, British Columbia V8W 3P5
Phone/Tél: (604) 721-7333 Fax/Téléc: (604) 721-6216
E-mail/courr. élect: keller@geography.geog.uvic.ca

CCA Representative on the Canadian National Committee / Délégué de l'ACC au Comité national canadien:

Iain Taylor
North by West Maps, 5830 Chain Rock Drive
Halifax, Nova Scotia B3H 1A1
Phone/Tél: (902) 425-0668 Fax/Téléc: (902) 425-1338
E-mail/courr. élect: mapman@hfx.andara.com