GIS/RS ALUMNI

NEWSLETTER

COLLEGE OF GEOGRAPHIC SCIENCES

VOLUME 1 **NUMBER 1** **SPRING 1993**

In This Issue...

NEWSLETTER

By Roger Mosher

Well, we finally did it. Its been several years since someone first suggested we put together an alumni newsletter, and... here it is. This first issue is written pretty much from our point of view, but that can change. It is our hope that you will take this opportunity to use this newsletter to communicate with your fellow alumni for old times sakes, or to get some particular message out. And if you're on the internet, don't forget the mailing list that we are setting up. Try it out. One special thing to notice is the new GIS/RS programs which David Colville describes at some length. We have a lot of hopes for this new format. The other articles in this issue are written by the staff describing various aspects of current COGS activities.

So send in your articles and expect to see the newsletter two or three times a year. Let us know how you like this issue and what else you might like to do with it.

MESSAGE FROM PRINCIPAL

By John Wightman

Welcome to our new GIS/RS Alumni Newsletter. You, our graduates, have built for your programs an unparalleled reputation across North America. We, at the College, benefit from this reputation by the rapidly increasing numbers of applicants each year and the recognition as a centre of excellence in geomatics technology.

As you will read elsewhere in the newsletter, our programs are evolving and in many areas growing closer together through our integrated studies option. Our equipment and networking resources continue to improve, which give the students of today resources unimagined by those of you who graduated four or five years ago.

The alumni of any educational institution is exceedingly important to its future success. While it is not our intention to solicit funds, we do depend upon you for job opportunities for current graduating students and for cooperative projects for senior students. Over half of our job placements this year have been the result of recommendations or referrals by former graduates. We continue to look for good cooperative projects. You know how the system works, so please keep the ideas coming.

Quite often we get requests for jobs requiring a number of years' work experience in GIS or RS. These jobs are not suitable for our current graduates, but may be of interest to you. Please let us know if you are looking for other positions. We may find a mechanism to place such opportunities on our bulletin board.

Watch for future alumni news and reunions at national conferences.

THE NEW GIS/RS PROGRAMS

By David Colville

Have you heard the news? There have been some pretty significant changes in the format of the GIS and RS programs offered at COGS. By emphasising more integration of these technologies, more optionality in course selection, more flexibility in the program duration, and an even larger selection of platforms and systems to train on, we feel we can provide a better learning environment than ever before.

As most of you know, the College of Geographic Sciences (known as the Nova Scotia Land Survey Institute prior to 1985) has been training people in the fields of Geographic Information Systems and Remote Sensing for more than a decade now. Remote Sensing training began in 1978 and GIS training began in 1980 (first as an application in the Scientific Computer Programming program and then as a separate program in 1985). The GIS and RS programs have for years now been offered in a three semester format over a twelve month period. They have evolved significantly over the years and their popularity has increased substantially.

In response to a rapidly evolving industry, the tremendous student work load of the three semester format, and the inability to add any more content to the curriculum, the COGS faculty and administration has substantially redesigned the GIS and RS program offerings. Beginning last September (1992), a two semester year (September to May) was established which results in either a **Geographic Information Systems Certificate** or a **Remote Sensing Certificate.** Graduates of this first year (and other candidates deemed to have an appropriate background) may then proceed to a second year of study (again September to May) which will result in an **Integrated Studies in GIS/RS Diploma.**

The Certificate year emphasizes the concepts, tools, and basic applications of these popluar areas of study and ensures that graduates are capable users of the technolgy. The Diploma year then builds on this work and provides greater technical expertise and experience. Emphasis is placed on applications development in response to client needs through course work and the Cooperative Project. The current curriculum for the two years is shown below.

On May 14th we graduated 30 students from the GIS and RS programs (see the graduation notice on page 8). About half of these graduates have applied to return for the second year. Right now, most of the people who have applied to return are working in summer employment positions with groups like: Canadian Parks Service, National Capital Commission, Forestry Canada, ESRI (Redlands and Toronto), and the Clean Annapolis River Project (see page 3). We feel the experiences gained in these positions will contribute significantly to the overall educational experience and will allow returning students to develop contacts for cooperative projects and possible future jobs. Most of the May 14th graduates who are not returning have either found full-time employment positions, are looking for work, or are planning to continue on with their education at some other spot. We wish them the best.

Your comments/suggestions about this new format and/or its contents are always welcome. Feel free to let us know what you think of it. And if you hear of any job opportunities let us know and we will pass on the word.

Geographic Information Systems & Remote Sensing

First Semester	Second Semester[1]
Fundamentals of GIS	Advanced GIS
Fundamentals of RS	Information Systems
Introduction to Programming	Spatial Modelling and Analysis
Introduction to Computers	RS Systems and Applications
	Advanced Image Processing
	Directed Studies

Integrated Studies in GIS/RS

First Semester[2]	Second Semester
Advanced Applications	Resource Information Management
Integrated GIS/RS	Directed Studies
Radar Remote Sensing	Cooperative Project
Spatial Statistics	
Algorithms in C	
Cooperative Project Preparation	

1. Students are required to take 4 of the 6 courses listed
2. Students are required to take 4 courses plus Cooperative Project Preparation

COMPUTER CENTRE

By Pearle Chambers

Our computer centre consists of five labs plus a number of computers and terminals scattered throughout the building.

The Prime lab is now a Sunroom. It contains a Sun 4/670mp Server, two RISC 6000, ten IBM PS2's, Tektronix graphic terminals, a X-station, digitizing tables and printers, all on an Ethernet network using TCP/IP and X-window terminal emulation software. This lab supports the processing of geographic information under the ARC/INFO system from ESRI and the CARIS system from USL, image processing under EASI/PACE and Erdas, database management under Ingres, programming training in C and Fortran.

The Vax lab will be upgraded this summer. The VT125 graphic terminals will be replaced by IBM compatible computers with X-Window emulation software and the Vax 11/785 will be replaced by a Alpha workstation. This lab will be used for programming training in Fortran, image analysis and computer graphics.

One microcomputer lab is equipped with 20 486-based machines linked on a NOVELL LAN also using TCP/IP to access the UNIX systems. This lab is used for geographic information packages(SPANS,PC ARC/INFO), image processing, (PC EASI/PACE),CADD packages, Desktop Publishing and PASCAL and C programming.

Another microcomputer lab contains 386-based machines used for training, plus word processing, spreadsheets, database, and survey and mapping packages.

The data capture lab contains digitizers and scanning devices plus several 486 microcomputers.

By next fall we expect to have added the 386 lab and the data capture lab to our Novell Network. Specialized output devices include a Calcomp Color electrostatic plotter, and HP 8 pen plotter, an I/Oline plotter, several Tektronix ink jet copiers, a CANON bubble jet copier as well as five laser printers with Postscript options.

There is also a Prime 4050 mini computer that is used to teach Fortran and for data storage. This is also accessed from TCP/IP. Our PT-200 terminals now reside in the Survey II classroom.

We have become an Internet site which means we have access to news groups, electronic mail, other university libraries, etc., anywhere in the world.

ANNAPOLIS BASIN COASTAL ZONE PROJECT

By David Colville

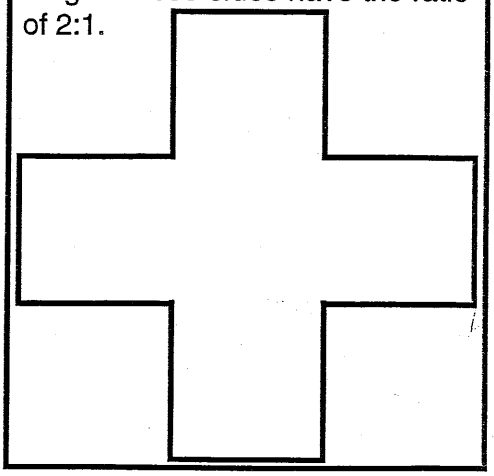
This spring the Clean Annapolis River Project (CARP), ASA Consulting Ltd., and COGS have been working on a proposal to develop environmental management support applications using the Annapolis Basin as a test area. The Annapolis Basin Coastal Zone Project (ABCZP) proposal was submitted to the Centre for Environmentally Sustainable Economic Development (CESED) and was recently approved thus allowing work to begin.

CARP is a charitable community corporation created to facilitate the sustainable utilization of the resources of the Annapolis watershed. CARP will be responsible for the day-to-day supervision of the project. ASA Consulting Ltd. is a Dartmouth based company who specializes in ocean science and engineering for resource management, environmental impact assessment, and industrial planning. They will continue to develop their software for environmental modelling and will apply it to the Annapolis Basin area. COGS will provide geomatics expertise (GIS, RS, data management, etc.) to the project.

The ABCZP will provide funding for two summer positions for GIS/RS students starting the first of June. The students will be based at COGS for the summer and will, in addition to other tasks, compile a digital database of the Annapolis Basin area. This database and the development efforts by ASA Consulting will then provide the basis upon which cooperative projects will be completed by the two students in their Diploma year of study. The ABCZP has been approved as a two year project and thus there will be a need for two more summer students next year and two more cooperative projects.

WHIZ QUIZ

With only two straight cuts on the shape below, fit pieces into a rectangle whose sides have the ratio of 2:1.



TIM BITS

By Tim Webster

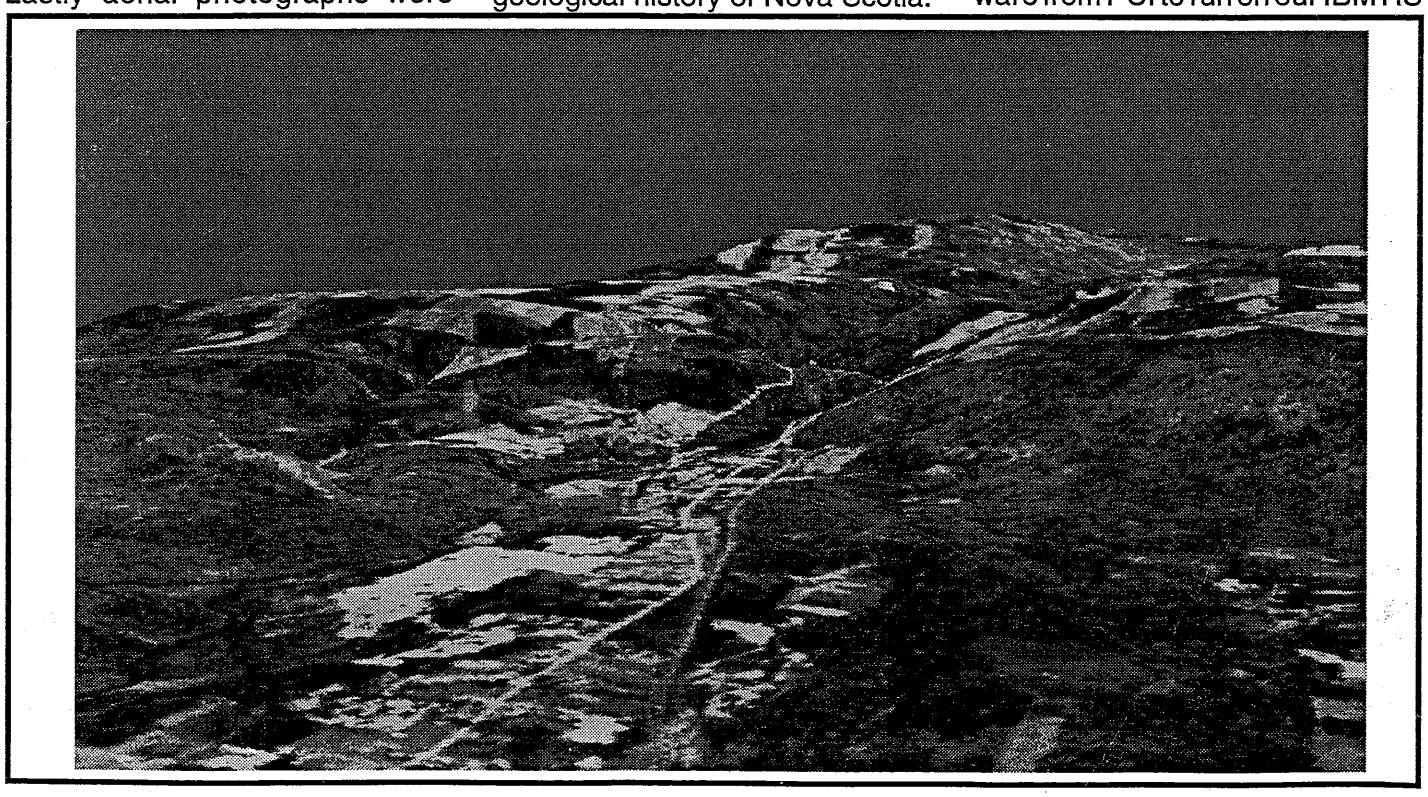
In the past three years that I have been at COGS teaching Digital Image Processing, mainly on EASI/PACE and GIS on SPANS, the changes have been constant with the equipment upgrades and the new format. This being our first year in the new format we did not have any cooperative projects, so consequently the Advanced DIP class undertook four term projects. They all turned out quite well with some pleasant and not so pleasant surprises. Here is a brief description of the projects, software and data used.

1. The use of CASI imagery (airborne high resolution digital imagery) to monitor forest regeneration of a clear cut area in Labrador was the focus. The integration of elevation and slope was used to determine the effects of terrain. Lastly aerial photographs were scanned and integrated to merge with the multispectral CASI.

2. Landsat and SPOT data were merged for the Halifax area. This group generated the best 3-D stereo image which was plotted on our Calcomp colour electrostatic. Elevation data was merged with the imagery to produce an image that if viewed with red and blue "stereo 3-D glasses" gives you a sense of depth.

3. The next group, self named the "geoheads" , were working on a geological application in central Nova Scotia. They used elevation, airborne SAR, Landsat and ERS-1 data to map lineaments and structural patterns along the St. Mary's graben. The project was in conjunction with Dr. Brandon Murphy of St. Francis Xavier University in Antigonish, NS. Dr. Murphy visited COGS and gave an interesting talk to the staff and students on the geological history of Nova Scotia.

4. The last group attempted to break some new ground producing digital orthophotos. The methodology involved scanning black and white 1973 aerial photography of the Valley and orthorectifying it. An orthophoto by definition has been corrected for camera orientation, lens effects and relief. The region is covered at a 1:10,000 scale digital base. The contours are at a 5m interval, the photography was ~1:36,000. The contours were converted to a Digital Elevation Model within ARC/INFO and merged with the imagery in EASI/PACE. Problems were encountered in the ortho rectification process, the version of this module was still in beta form. The images were rectified to the 1:10,000 base using only X,Y coordinates. The photography was then merged with the 1992 Landsat TM image the College acquired this year. The TM imagery was used to generate the colour and the photo was used for the high spatial detail. Near the end of the term we received a version of the FLY software from PCI to run on our IBM RS



(TIM BITS Continued from Page 4)

6000 systems. The FLY allows you to "fly" over the imagery in real time.Several data sets were experimented with in the evaluation of this new technology. 1:250,000 elevation data was merged with our 1982 Landsat TM imagery and flights were made up and down the Valley from Cape Split to Bridgetown. A whole new meaning to the term "took a trip and never left the College". The geoheads flew over shaded relief images merged with the geology. The Halifax group flew in and out of the harbour and the CASI group generated dramatic views of the clear cut. The most impressive display was draping the photography+TM composite image over the 1:10,000 DEM. The texture of the airphoto and the colour of the TM image when viewed in 3-D was extremely useful in interpretation of the area. The graphic that is accompanying this discussion is an example of one of the frames from FLY. The image is of the Nictaux Falls area which is south of Middleton, NS. You are looking south in the image towards South Mountain. Highway 10 can be seen on the valley floor before it splits either side of the Nictaux valley. I can't wait to see what they come up with next!!!

Other news:

Angela Templin, Sally O'Grady and myself will be presenting two 6 day workshops in June and July to Geography Teachers. Valley Visions Geomatic and Education Services (Angela Templin) and myself developed the course. It will focus on RS/GIS including several CD ROMS imagery and multimedia examples. Hands on exercises using the Antigonish data set (TM, SAR, DEM, 1:250,000 digital base) with the IDRISI geographic analysis package.

Many of the exercises were adopted from two correspondences courses in the midst of development. A "GIS Primer" written by Angela and a "RS Primer" written by myself. Both of these courses are designed with IDRISI and the digital data is supplied. It is hoped they will be offered by extension services this fall.

On that same note we will be presenting a 3 hour workshop at an International Geography conference to be held this August in Halifax.

Some past news involved myself and four student assistants to produce a workshop at the Canadian Conference on GIS '93 in Ottawa this March. The workshop was presented with Graeme Bonham-Carter and Danny Wright of the Geological Survey of Canada. It was entitle "Modelling in a GIS" and utilized SPANS. A series of 1 day workshops has been completed by myself and AERDE Environmental Research (Dirk Werle) entitled "Digital Imagery for GIS Users". This was sponsored by the Atlantic Canada Committee on Remote Sensing and was held in the capitals of each of the Maritime provinces.

On a last non-academic note, the COGS hockey team had it's most successful year to date in the Bridgetown Hockey League. The team fought its way to the semi-finals. With the vigor of a young team; stars from planning, toughness from surveying, finess and goaltending from GIS/RS, experience and penalties from a GIS/RS instructor, and finally coaching and doormen from the survey department and front office. The fan support was tremendous and the battles raged both on the ice and in the stands. It will be a tough act to follow.

Well till next time,

cheers.

16th Canadian Symposium on RS

By Manou Akhavi

The program for the 16th Canadian Symposium on RS contains three paper from COGS:

1. The Utility of Remotely Sensed Digital Image Data for Permafrost Degradation and Sub-Surface Condition Change Detection along the Norman Wells Pipeline Right of way. by: Kim Tofin/Manou Akhavi (oral presentation)

2. Remote Sensing and GIS Integration for Forestry Applications in the Rocky Mountain Foothills, near Calgary Alberta. by: Dan Stebbins/ Manou Akhavi (poster presentation)

3. Evaluation of Spot, C-Band SAR and DEM for Detection and Classification of Chignecto Bay Wetlands, Nova Scotia. by: John Watson/Manou Akhavi (poster presentation)

Now Its Your Turn

Bet you thought your were just going to laze back in your easy chair, feet up, junk food by your side, TV turned on and you tuned out. Not likely!! Get out that paper and pen, oh what the heck, turn on your computer (was that a scream I heard) and share some of your experiences with us.

This is your newsletter and you are valuable in its development. We look forward to your suggestions and articles. There are a number of ways that you can send us these articles; mail, fax, electronic mail or use Word Perfect and send us the diskette. Also don't forget to put your artistic talents to work, cartoons etc. can be scanned.

Please send articles before the end of August to the College.

Attention: Alumni Newlsetter

Look forward to hearing from you.

KONRAD'S CORNER

By Konrad Dramowicz

THE BORDERLANDS OF GIS

Hi, my name is Konrad and I want to share with you some theoretical ideas that may have, in my opinion, many practical aspects not only in GIS but in the everyday life.

Let me introduce myself for the people who do not know me. I am a GIS instructor delivering courses for GIS/RS, as well as for the Computer Programming Technician, and Scientific Computer Programming programs. Having a Ph.D. in Geography(1973), I came to Canada from Poland in 1987. In 1989, I graduated from COGS with a GIS diploma. Since then, I am responsible for teaching such courses as; Fundamentals of GIS, Algorithms of Spatial Analysis, Mathematics, Advanced Mathematics, Calculus, Statistics, Operations Research and others.

Now, here is the idea for this issue. I found it in the Russian book "Theorems and problems of Markov processes", published in 1967 (Who buys today such strange books?). The idea belongs to the set of problems called 'optimal stopping' or 'optimal choice'. You can apply this idea for the optimum choice (stopping to search) of a best husband, wife, lover, house, campsite, GIS system, corn flakes brand, beer brand, etc., you name them.

So, the best method of choice is to skip over *kn* - 1 objects, and then select the first object that is better than all the previous ones. The number *kn* is the smallest integer number under the following condition of inequality:

$$\frac{1}{k} + \frac{1}{k+1} + \ldots + \frac{1}{n-1} \leq 1$$

The only thing you should know in advance is *n*, the number of tested objects (houses, GIS systems, candidates for marriage, etc.). This number seems to be dependent on such factors, as your temperament, financial status, time delay, freqeuncy of contacts, and many others. It looks like the method has worked for me few times (so far). If you have problems with calculations (mathematics !) send me an email at (konrad@cogs.ns.ca) or apply the simplified version. In the simplified version:

kn = n/2 or (n + 1)/2 if *n* is odd.

Figure what is your own *n* and have fun. However, in practice you also need a little of luck, I guess.

NETWORKING

By Piotr Proszynski

Yes! COGS is an Internet site, and (almost) all the computers within the College are interconnected (ethernet). But what does it mean for the staff, students, and possibly for you, our alumni?

Well, from the alumni perspective the most important is that:

- the Internet connects the whole world; one can communicate with others or access resources, e.g. in Australia or Finland, within seconds. Hence, If you have an Internet address, then it does not matter where you are; we can communicate throught electronic mail, transfer files, or even "talk"
- our internet *domain name* is

cogs.ns.ca

Besides the standard Internet addressing ***loginname@cogs.ns.ca***, also:

*firstname.lastname@**cogs.ns.ca***

works as eMAIL address of any person having an account here

- any file transfer must be individually arranged; we <u>are not</u> an *anonymous ftp site*(yet).

Being "networked" for over one year now, we appreciate the advantages, see some shortcomings, and plan for improvement. It seems that upgrading the line between Wolfville (Acadia) and the College from relatively low 9.6kbps to the range of 56kbps is the most burning need: without it being done neither can we really "tap" the Internet resources, nor offer ours to the world (one has to remember that , traditionally, GIS/RS people are interested in rather hugh files...). For now, we are happy with what we have got; setting some internal rules lets us utilize the connection very well. At least from the technical point of view; the philosophical question whether or not the wonder child called "networking" will grow up into something better than its wasted sister TV remains open...

In the near future:

- How we organize College - Rest of the World data transfer using ftp and/or eMAIL over 9.6kbps line

- Looking for reserves: some configuration details and performace analysis for COGS computer systems.

What would you like to know? Any questions, comments and suggestions will help.

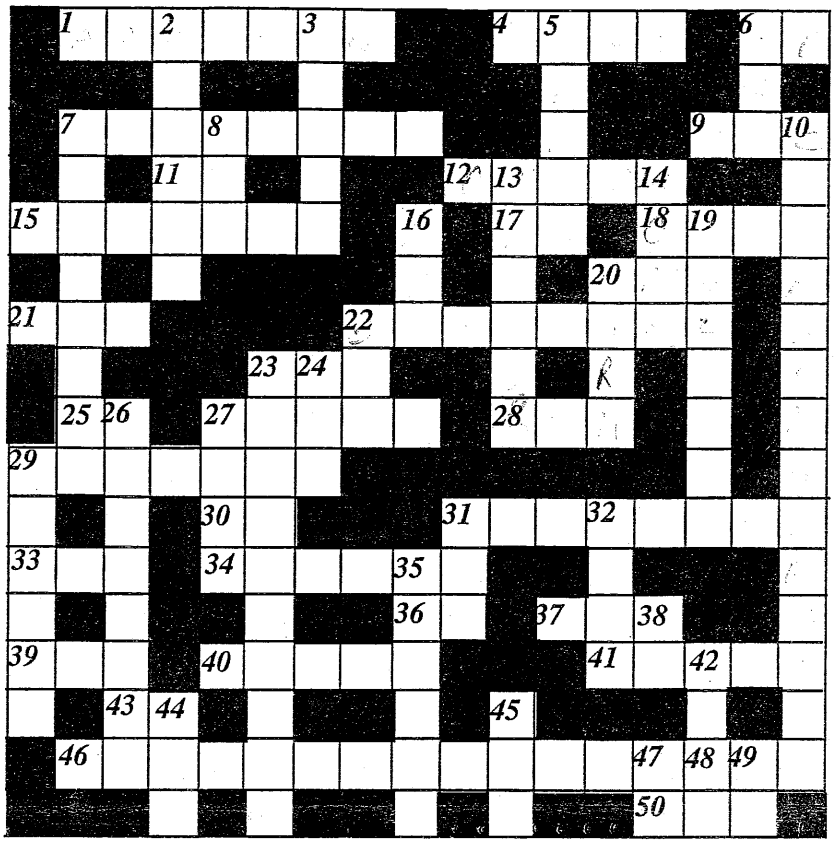
CROSSWORD

ACROSS

1. GIS Software developed by ESRI Inc.
4. A reputable educational institute in GIS/RS.
6. Denoting the ratio of the circumference of a circle to its diameter.
7. An arc of 90° that is one quarter of a circle.
9. Point on a map with known locations used to define the transformation of map coordinates from system to an other.
11. Go __ get something .
12. Miniaturized electronic circuits on a wafer of silicon.
15. Suite of colors used to display information .
17. Meet you __ the soda shop.
18. A set of procedures for encoding and manipulating bearings, distances and angles of survey data into a graphic representation.
20. Set of widely separated computers connected together.
21. Type of projection.
22. High speed connection within a network that connects shorter, usually slower circuits.
23. The computer's internal storage, processing and control circuitry.
25. Sound made when hard of hearing.
27. Impact printer that simulates typescript by a typewriter.
28. Portion of a computer's primary storage that does not lose its contents when the current is switched off.
29. An object or aspect of the earth's surface, such as a road, vegetation or townsite.
30. MS_DOS command to create a directory.
31. This is the __?__ program , it won't ruddy well work.
33. A low-power display used in laptop computers.
34. A function of information systems allowing for a general search through a DATA BASE.
36. Type of satelite imagery.
37. A graphic representation of spatial relationships and spatial forms.
39. A color bit-mapped graphics display adaptor.
40. A point on the ground vertically below the observer.
41. A midnight food for computer programmers.
43. Acquisition of information about the properties of an object or phenomenon using a recording device that is not in physical contact with the object.
46. The analysis of the relationships between an object and similar surrounding objects, used in image processing.
50. Enables programs to work with more than 640K RAM under DOS.

DOWN

2. A depression caused by a meterorite.
3. In electronic mail, to lose one's self control and write a communication that uses derogatory, obscene, or inap propriate language.
5. To revolve around.
6. Canadian based image analysis software package.
7. Hierarchical data structures based on the principle of recursive decompostion of space into square tiles.
8. Type of prompt.
10. Two values uniquely defining a point within a reference system.
13. A technically sophisticated computer enthusiast who enjoys making modifications to programs or computer systems.
14. To digitize an image with a periperial device.
16. Programming language named after Lady Augusta, Countess of Lovelace.
19. Sometimes you only get_____ to do it right.
20. An optical disk drive with storage capacities of up to 1 terabyte. This disk becomes a read-only storage medium after data is written to the disk.
22. An internal pathway along which signals are sent from one part of the computer to another.
23. A device used to detect the location of holes by using alight source and a row of solar cells.
24. Type of chart.
26. All the physical components or peripherals of a computer system.
29. The selective process to remove certain spectral or spatial frequencies to highlight or enhance features in an image.
31. A model of terrain relief in the form of a matrix.
32. Type of tide of minimum range occurring at the first and the third quarters of the moon.
35. A series of alphanumeric characters.
38. Same as 6 across.
42. Function allows for the display of progressively smaller or larger areas.
44. Type of access method.
45. A computer software system with which spatial information may be captured, stored, manipulated, analyzed, displayed, and retrieved.
47. To __ or not to ___ .
49. Abbreviation for the States.



By Sally O'Grady

For your rating check page 8 !!!!!

GRADUATION 1993

This year's graduation ceremony was held on May 14,1993. It was attended by staff, family, friends, honoured guests and past graduates. The opening remarks were given by John F. Wightman, followed by a graduation prayer by Rev. Dr. Philip G. A. Griffin-Allwood. This years valedictorian was Thea Danica Langille. The guest speaker was Neil Anderson, Director of Planning and Development, Canadian Hydrographic Service. It was a long awaited day for the hard working students. Congradualations to all those who perservered the rigors of learning and are leaving the college with well deserved credentials. This year's excitment was boosted with an increase in prizes and scholarships. For the students who set such high standards for themselves and received an award, the recognition was gratifying. The day did not go past without an outstanding afternoon tea put on by the Lawrencetown Ladies Auxilary, it was appreciated by all those who attended.

The number of graduates within each program are listed below.

Computer Applications & Programming
Geographic Information Systems Cert. - 27
Remote Sensing Cert. - 3
Computer Programming Technician Cert. - 6
Scientific Computer Programming Diploma - 4

Mapping Department
Planning Technology Diploma - 6
Cartographic Technology Diploma - 6

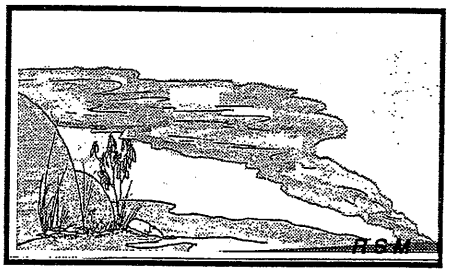
Survey Department
Survey Technologist Diploma - 18
Survey Assistant Cert. - 5
Survey Technician Cert. - 30

CROSSWORD PUZZLE RATINGS

Now is your chance to rate yourself on your level of computer expertise.

Number answered correctly.

56	GIS/RS/Computer Weenie GET A LIFE
54-56	Expert - Your on your way to mastering this profession.
50-53	User - OK, so you know a little this, a little that!
40-50	GIS/RS computer impersonator
30-40	GIS/RS want-a-be (perhaps get out those old text books)
0-30	GIS/RS refresher course needed- check out the COGS correspondence courses!!!



CLASSIFIED

WANTED:

Cooperative Projects for second year GIS/RS students. Take the opportunity to work with a student on a Cooperative Project throughout the 93/94 school year. You can only benefit from these projects as the students are willing to work long and hard with relatively little or no cost to you. Remember how valuable your co-op experience was.

Please contact David Colville at the College.

MISSING ALUMNI:

Much to our dismay we have not been able to contact the following graduates. If anyone knows their whereabouts please inform them thatwe have published a newsletter and would like to get them on our mailing list.

RS/80	Roger W. Allen	RS/82	Ronald J. MacLeod
RS/89	Lorrie R. Agnew	RS/81	Terry J. Mallinson
RS/87	Michael E. Cassidy	RS/80	Vinve Mallinson
RS/88	Salvatore Carboni	RS/87	Karen L. March
RS/91	Maria Lynn Daley	RS/84	Richard L. Morin
RS/92	Ross Lloyd Downey	RS/83	Christopher Morely
RS/83	Mary Lou Everett	GIS/86	Ann G. Pierce
RS/86	Jon R. Faulkner	RS/85	Patricia M. Quinn
RS/89	Edward W. Fong	RS/83	Dennis L. Robinson
RS/78	Lindon H. Garron	RS/84	John E. Sims
RS/87	Steven A. Gaudet	RS/87	Barry Watson
RS/83	Linda R. Hall Statts	RS/85	Sherry Wittmann
RS/86	Clark F. Henry	RS/89	Tamara Rachel Young
GIS/88	Philip J. Lucas		

NOTICES:

Thank you for your responses concerning grads not on the GIS/RS alumni list. Anyone on this list is automatically put on our newsletter list. If you know of any other grads, or anyone else, who would like to receive the newsletter, please get them to contact us and we will put them on our newsletter list. An updated newsletter list will be sent out with the next issue of the newsletter.

GIS/RS FACULTY (et al.)

NAME	TITLE	eMail
ADMINISTRATION		
John F. Wightman BSc, BEd, MSc,FGAC, CC,CLS,FRGS,PEng	Principal	jfw@.cogs.ns.ca
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Marlin Gould BBA	Programming Instructor	gould@.cogs.ns.ca
Roger Mosher	Programming/GIS Instructor	roger@.cogs.ns.ca
William F. Power	Programming Instructor	
Piotr W. Proszynski MSc Eng, PhD	Programming Instructor Assistant System Administrator	piotr@cogs.ns.ca
Timothy L. Webster BSc	RS/GIS Instructor	tim@.cogs.ns.ca

GIS/RS Alumni Newletter is published by the College of Geographic Sciences for the GIS/RS graduates.

Designed by Sally O'Grady

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Phone: (902) 584-2226

Fax: (902) 584-7211
eMail: alumni-request@cogs.ns.ca

EMAIL

We have established an email distribution list that allows you to send messages to those registered on this list. This has been setup to share information with any alumni. If you would like to be on this list please send us an email address and we will add your name.

With more and more users having access to email this is a good way to communicate with everyone on the distribution list at the same time.

alumni-request@cogs.ns.ca

CALENDAR OF EVENTS

May 17,1993
Municipal GIS Seminar, Hosted by UMA Engineering Ltd. at the College of Geographic Sciences, Lawrencetown, N.S.

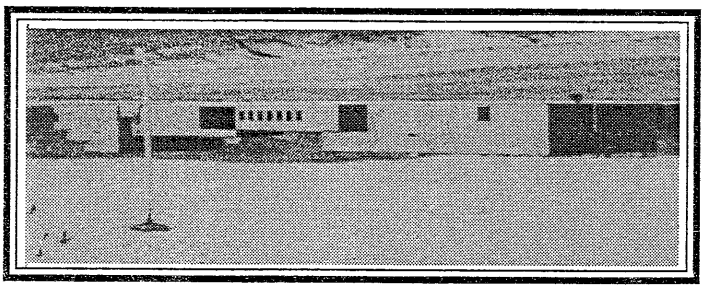
May 28,1993
NSDNR WORKSHOP, Hosted by Lorraine M. Tighe, CANMAP Research Institute, held at the College of Geographic Sciences, N.S.

June 7 - 10
16th Canadian Symposium on Remote Sensing, Sherbrook Convention Centre, Delta Sherbrook, 2685 King Street West, Sherbrook, Quebec. For further information contact Norm O'Neill at: Phone (819)821-7965 or Fax (819)821-7944.

June 14 - 19 or July 05 -10
GIS/RS Introductory Course for HighSchool Geography Teachers, College of Geographic Sciences, 50 Elliott Road, Lawrencetown, Annapolis County, N.S. For further information contact John Wightman at: Phone (902)584-2226 or Fax (902)584-7211.

August 3 - 7
Annual meeting of National Council for Geographic Education(NCGE), Halifax Sheraton, Halifax, N.S. For more information phone (412)357-6290 or Fax (412)357-7708

November 2 - 3,1993
Geomatics Atlantic Ninth Annual conference World Trade and Convention Centre,Halifax,N.S. Contact Ivan Ford, Chairman Technical program committee phone(506)453-2112



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