Fungis

Newsletter of the
Far North GIS Users' Group Inc
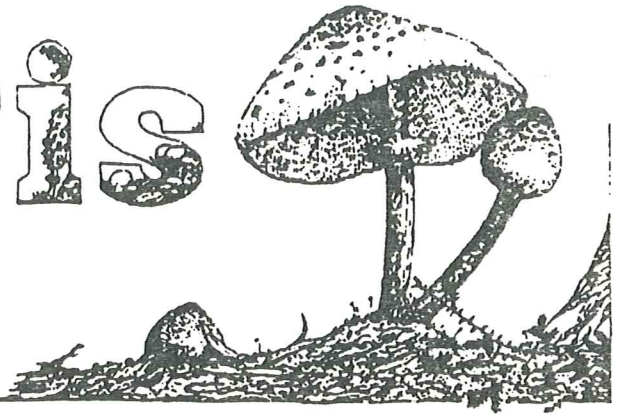
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FNGIS Newsletter   July - September 1996

NARGIS 97 28 th. to 30 th. April 1997
for more info EMAIL

cairnsman@internetnorth.com.au

Q-Rail Wired.

Queensland Railway's ambitious plan to use GPS units to position locomotives on its rail network is on-track for delivery in early 1997, according to a note from one of the contractors, Tait Electronics. Your Editor attended a Workshop run by Tait in Townsville in late May and I was most impressed with their equipment.

Tait have teamed with GPS specialist Spectralink to provide the $2.4 million system. It involves the design and supply of a combined communications and location package for each of the 658 locomotives in Queensland, plus 80 base stations. Each base station covers a rectangular cell, and communicates with all the locos in that cell.

The radios change base stations as they move from cell to cell without operator intervention, so that the driver can remain in continuous contact with controllers. Controllers in their turn, know the location on the 10,000 km. of Queensland's railway lines of each loco, automatically.

The project is being managed by Tait Electronics in Brisbane. The Tait radio and its control head are being engineered by Tait Applications Engineering in Christchurch. The GPS control system is being manufactured by Spectralink in Brisbane.

Netnews.

TNT
Microimages now provide a free version of TNT products for use by students and learning professionals, to be downloaded from Microimages' homepage at http://www.microimages.com
These TNTlite versions of the TNTmips and TNTview professional products provide the same integrated facilities as the professional products. limiting only the sizes of the geographical data objects they can use or create.

NDAR

The national directory of Australian resources is a metadatabase or directory containing descriptions of some 4500 datasets and related information about Australia's natural resources. Subjects such as geoscience, vegetation and petroleum resources, and soils are covered through databases, bibliographies, maps, organisations, directories and indexes.
The existing descriptions, although mainly comprehensive in relation to the number of metadata attributes used, will shortly be replaced by a new core set of attributes being finalised by a working group of the Australian New Zealand land information council.
NDAR is found on the Web at
http://www.nric.gov.au/nric/data/easysearch.html
Queries on email to Mr. Peter Golding at
pgolding@henric.nric.gov.au

Monash University.

The GIS lab at Monash Uni has set up a home page at http://shiva.arts.monash.edu/gislab.html
Mr. Jim Peterson, the director of the lab, says they will soon have lists of recent research publications and postgrad theses.

Catalogue of GIS sites.

ESRI has recently opened a jump station at
http://www.esri.com/services/jumpstation/jumpstation.html
The jumpstation lists hundreds of useful links to other GIS related sites around the world. Jumpstation sites are categorised as government, educational, non-commercial, commercial and others.
Users can submit their own GIS site if they want to put information on the jumpstation.
ESRI's regular home page is at
http://www.esri.com

What's Brewing.
Cruise the sites and find all sorts of interesting and weird ingredients in brewing your own beers.
http://beer.apana.org.au
Yes of course it is an Aussie site.

Who is the AMAZON KING ?

The bubble bursts.
check out the Christmas edition of FUNGIS for the big exposure.

Rice Environmentally Monitored with GPS.

For many years the humble rice field has supplied one of the most important staples in the world. However, the environmental impact of rice crops can be significant and therefore requires accurate monitoring and control. For the department of Land and Water Conservation (DLWC) in Deniliquin, Victoria, monitoring how much rice is grown and where is an ongoing effort.

The DLWC is responsible for ensuring that rice is grown in adherence with established environmental guidelines that set out the type of soil suitable for rice growing. The main aim of these guidelines is to restrict water movement to the watertable which will lead to the development of high watertables and ultimately, soil salinisation. Currently, over 150 rice growers are monitored by the DLWC stretching 120 kilometres to the east and west of Deniliquin and around 80 kilometres south. Field locations change on a yearly basis in order to ensure ongoing compliance with the "suitability of soil" requirements for rice growing.

Recently the DLWC has invested in **Trimble's** Pro XL system to facilitate their activities. Current use of the Pro XL system is focused primarily on the mapping and measurement of rice areas. Each area is mapped by field staff who drive around the rice crops with the Pro XL system mounted on a 4-wheel bike.

All data captured is differentially corrected by post-processing before it is imported into the departments existing GIS, Genamap. The information gained from the fields measured not only gives an indication of how much rice is grown, it is also used to calculate how much water is required for irrigation purposes.

Previously, measurement was undertaken using aerial photography which was carried out in January - around 3 months after the rice is planted. Once the photos were taken, further measurement was required to correct any photographic errors introduced by hill slopes, altitude and the angle of the photographs. The Pro XL system has significantly reduced this time lag as measurement can now begin as soon as the banks are filled in November. This increase in productivity is joined by substantial financial savings, both of which were highlighted to the department following a recent field measurement which was completed entirely by a Pro XL system. A total of 140 rice crops were measured in just 28 days at an estimated cost of around $8,000.

Previously, costs began at $25,000 for the aerial photographs - before any adjustments were taken.

According to Bob Phillis of the DLWC, the Pro XL system will be used for further applications including electro-magnetic surveys. These will provide information on soil salinity to aid in the location of suitable pump sites and sewerage areas.

Ambulances - Saving lives with GPS.

In the public safety business, a moment can mean the difference between a life saved and a life lost. Vital decisions must be made by dispatchers in the time between when a call comes in and when an emergency vehicle goes out. How long does this take? It is called response time - and it is the goal of every public safety organisation to make it as small as possible.

Recently Melbourne's Metropolitan Ambulance Service (MAS) invested in an Innovative system, designed to ensure their service runs more efficiently.

The MAS system was implemented by Intergraph and Phillips. It uses a CAD package in conjunction with a mobile data communications infrastructure, mobile data terminals and in-vehicle ancillary equipment.

A principle feature of the MAS system is the inclusion of a **Trimble** SVeeSix™ GPS receiver in each vehicle. In order to provide even greater location accuracy differential GPS is used. Using Trimble's new Inverted Differential Base Station technology, location accuracy of ± 2 metres is provided. This provides Automatic Vehicle Location (AVL) for the entire fleet of 225 vehicles.

The use of **Trimble** GPS enables the MAS to more efficiently manage and direct its resources, therefore improving response times and ensuring that the most suitable resources are dispatched for every emergency situation.

Using GPS enables the Melbourne Metropolitan Ambulance Service to meet their goals - and save more lives.
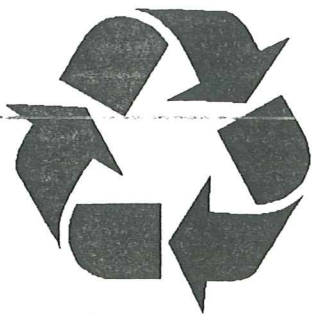
Environmentally aware Local Authorities - Take Note.

Clarence City Council, in Tasmania, will enjoy a more efficient approach to waste management following a recent trial using **Trimble** Pro XL systems. Field staff followed garbage trucks and recorded the number of bags of garbage collected at each stop. The data is being used for the City's GIS to model the best garbage collection route.

The articles and snippets on Trimble GPS systems has been reproduced with permission of Trimble Australia from their inhouse journal *DownUnder Australia Vol 3 No 1.*

For Sales, leasing or general information contact our good friend GARY ESSEX of Herga Instruments.
Email: herga@tpgi.com.au

GIS - where the heck are we?

Our annual Seminar in early June and held at the James Cook University Cairns Campus, was most successful. The attendance was in excess of 50 delegates and our Trade Display area was graced by eleven companies, all of which demonstrated superior quality products, regrettably my offer of enormous plugs in this superior journal did not produce the odd freebie GPS unit or even a beta version of ArcView3. Furthermore Intregraph peddlers pushing Ouzo are not welcome at my table.

The venue was first class and served well as a dress rehearsal for next year when we host the 1997 NARGIS Seminar from 28 - 30 April.

As is our wont with the annual Seminar we showcase the far North Queensland GIS community and have an opportunity to have presentations on the latest developments and updates on the many ongoing projects

I was most impressed with our first Paper, Dr. Andrew Johnson presented "Implementation of a community based GIS - a case study from the Herbert River Catchment.

Sharon Bruce, "Forrestation" got several people off-side, I don't know if I mostly enjoyed her presentation or the apoplectic looks on several faces, anyway well done Shazza we needed to have a non GIS type to pull us into line.

Chris Newman from Weipa gave us a well rounded paper as did Narelle Barton from Cairns City.

The balance of papers were delivered from some of the members of the old school, Warwick Sayers, Brett Buckley, Kris Kristensen, Arnon Accad used part of his delivery to deliver his defence to Sharon and of course from the Mareeba DNR the Froth and Bubbles meister Terry Webb.

As is usual, the two day event was a forum for many private discussions and renewal of old friendships. Some hardy Fungisites went to Georges Greek Taverina. I am told it was a most enjoyable time. many of the items in this newsletter are sourced from such publications as **Spatial Business and GIS User**, both publications of South Pacific Science Press, Wendy Chapman the Publisher graciously permitted reproduction from both. **Arc News** from ESRI plus the odd press release from Mark Billing of ESRI Brisbane. **Map Info** is also well covered with contributions from our MapInfo man on the spot, Robert Crossley and the odd snippet from **ERSIS** Landscapes Newsletter.   **Trimble's** in house magazine also contributes from time to time due to Chris Lintott from Trimble Aust. and of course Gary Essex from Herga Instruments.

Contributions from commercial organisations are always most welcome and I promise your product will receive the plug it deserves, particularily if you do as Mark Billing and send the script in MS Word format on a 3.5 floppy.

As I said at our Recent Workshop in Mareeba, it would be great to get some copy from within the Membership. It is always of interest for us all to know a bit about what is going on in other areas. We all lead pretty intense lives in our workplace and can tend to be a bit insular. So make this old Irish coot happy and send me your masterpiece, on 3.5 floppy in MS Word or any W.P. package really.

After considerable lobbying from on high I have abandoned the Telstra tangle at Microsoft Net and shopped locally, my new Email is.
taimalan@internetnorth.com.au

Alan.

3D MAPPS

ERSIS recently released 3D Mapps. the 3D visualisation application for MapInfo.

The first version of this product. 3D Mapper. met with great success when it was released in January 1995.

However. it was obvious there were still some feature improvements and additions that could be made. From the first release of the product ERSIS began gathering and collating feedback from local MapInfo users and MapInfo resellers throughout the world.

Taking full advantage of the new 32 bit technology. ERSIS have been able to address all of the major issues raised and are pleased with the latest version of the product.

In addition to *an improved user interface and greater speed (3D Mapps can easily handle TIN models over 100.000 points)*. new features include:

- the ability to shade for aspect. height and slope based on a user specified sun position for 3D views now as well as 2D views:
- and the ability to drape vector data over a 3D view.

Vector draping over a 3D model
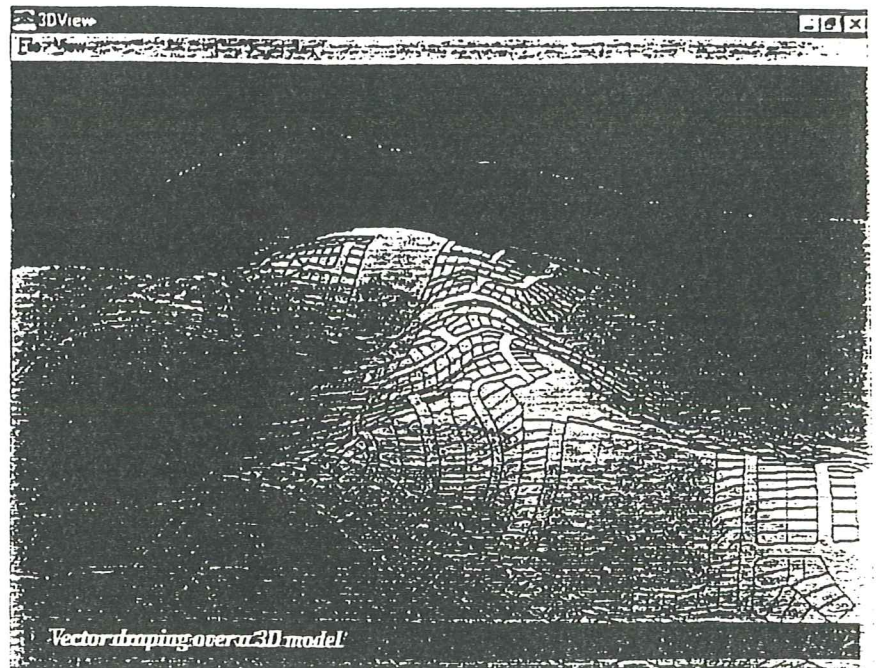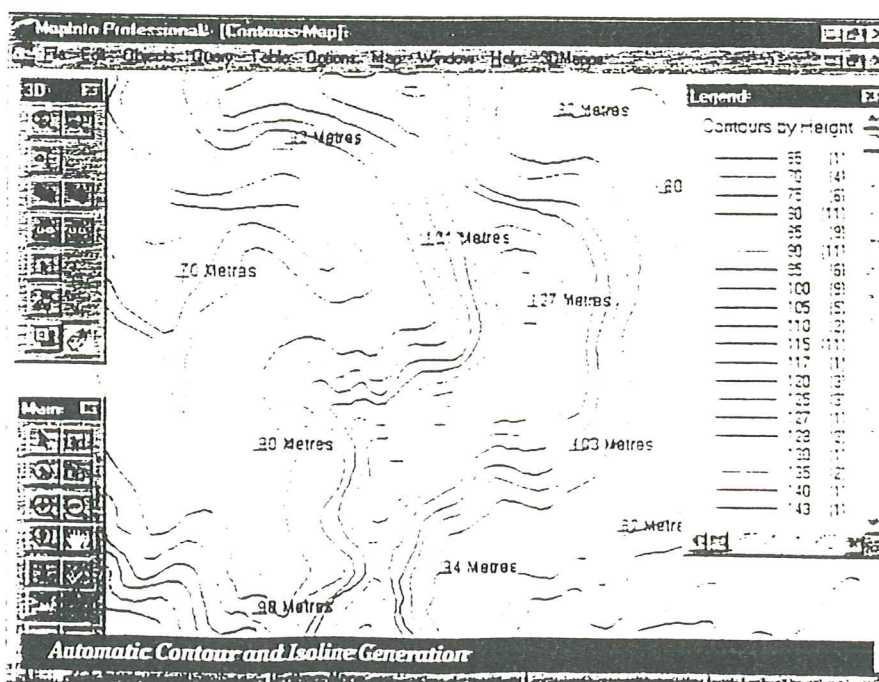
3D Tools.

Height. slope and aspect maxima. minima and averages can be obtained for both linear and area objects. Arbitrary cross sections can also be generated.

Contours can be generated over 3D models given user specified contour intervals. The resulting contour lines are stored as MapInfo tables together with a height field.

Automatic Contour and Isoline Generation

2D and 3D thematic shading provide for easy interpretation of four types of essential information:

- *Height shading* depicts terrain by colouring the model based on the height.
- *Aspect shading* shades to represent the direction of each facet.
- *Slope shading* shades based on the steepness of the ground.
- *Hill shading* takes into account the position of the sun and generates shading to show where hills and valleys are.

3D views from any perspective are simply generated by clicking the mouse on the desired view point and then dragging the mouse in the required view direction. 3D Mapps generates a hidden line. perspective view of how the terrain would appear looking from the specified position.

The user has control over height above ground. camera type (normal. narrow/wide angle) vertical exaggeration and level of detail.

3D Mapps features are easy to use dialogue boxes and tool bars and a familiar Windows menu structure.

3D Mapps works with MapInfo Professional and runs under Microsoft Windows 95 and Windows NT.

ESRI to start shipping ArcView ver 3 soon.

We were given a really interesting demonstration at our recent Seminar on **ArcView GIS** by Mark Billing, Queensland Manager for Environmental Systems Research Institute, Australia.

This new release marks a turning point for the desktop mapping and GIS community.

It features an extensible software architecture that delivers a scalable platform for GIS computing. The developers have produced a series of *plug-in* modules that can be mixed and matched to dramatically extend the functional capabilities of **ArcView**.

Two extensions are **ArcView Spatial Analyst** and **ArcView Network Analyst. They add on to provide the Professional Edition.** They add a whole suite of sophisticated, fully integrated, geographic analysis tools for Raster- Vector spatial analysis and geographic network analysis and routing to ArcView while retaining the intuitive, easy-to-use graphic user interface. The appropriate extension functionality can be selected from a variety of internal, external and even user defined options, tailoring application solutions to best meet the user's needs.

Extensions included with ArcView Standard Edition.

☐ Database Themes Extension.
☐ Image Data Extension.
☐ CAD Reader Extension.
☐ Digitiser Extension.

The standard version includes a variety of new as well as improved features.

Enterprise Client/Server DBMS access.

Utilising ESRI's Spatial Database Engine which is a multi user client/server system providing fast access to large seamless geographic databases.

New Map Creation Tools. Now providing comprehensive map creation and editing tools. New ways to display and visualise your data thematically, include multivariate chart symbols, dot density maps, and normalization. The legend editor is also enhanced to provide greater control over how data are classified and making it easier to create highly customised legends. The *Digitiser Extension* enables support for tablets as input devices for ArcView for Windows. The tablets can be used in conjunction with the editing functions to create or edit your own geographic data

sets, or as a pointing device instead of the mouse. ArcView lets you define how features are entered using a very flexible snapping environment that supports snap to vertex, snap to boundary, snap to the endpoint of a line, or snap to the intersection of a line.

The Enhanced CAD Data Integration. Enables ArcView GIS to read a variety of the most popular CAD data formats directly as ArcView vector data sources, ver3 now includes direct support for MicroStation DGN files, as well as AutoCAD release 13 DWG drawing files and binary DXF files.

New and Enhanced Symbol control. You now can choose the marker and line symbol's scale when the scale of the view is changed. Scale control is now also an option for Text labelling. Using scaling symbols you will be able to perform functions like creating line symbols for roads with line widths that approximate the actual width of the roads on the ground. This relationship will remain correct as you change scale.

Rotating Marker Symbols. Based on TrueType fonts can now be rotated. You can specify the angle when you draw point features from the palate.

Multilevel Undo. This excellent feature permits you to step back through an entire edit session, if necessary to the point of the last explicit save.

Using Avenue ,the ArcView customisation and development environment that is also bundled with the standard package, you can create buffer polygons around any feature.

New Developer Tools.
ArcView GIS Ver 3 includes a variety of new tools to make it easier for corporate partners and application developers to create applications using ArcView and Avenue, including popup menus, tool menus and customisable project window and document user interfaces.

PC ArcInfo Ver 3.5 also coming real soon now.

For those of you poor non Government types who have PC ArcInfo here is a breakthrough. The latest version has some really excellent features and brings us up to a

level that matches many of the Workstation Ver 6 features.

Enhanced Windows Extensions. Now all graphic modules can operate within the windows environment.

Improved ArcInfo Compatibility. Although the PC version coverages are single precision the IMPORT and EXPORT commands handle double precision interchange files. The new PC version includes the full and sophisticated map projection capabilities of Workstation ArcInfo including over 46 projections, 30 spheroids, and 200 datums.

Other Additional Improvements.
Improved Windows graphic support and the ability to translate ArcView shapefiles, TIGER94, and MIF files.

It is rumoured that this will be the final PC version of ArcInfo as ArcView now takes on the lower level mantle.

WinMAP SDK

The WinMap Software Developers Kit (SDK) from ProGIS is designed to make it possible for software developers to create geographic viewing and querying systems quickly on a PC without having to learn complicated GIS systems.
The product includes the WinMAP Development Station, the PROGIS Import Tool, WinGIS Plus, sample applications, free maintenance releases for 12 months, and 2 days training at LIStech.
The WinMAP DS is a DDE/OLE-supported database engine for spatial relationships, ie. tools which allow developers to build fully integrated geo-multimedia applications.
With the ProGIS Import Tool, developers don't have to learn to code polygons when importing map attribute data.
WinGIS Plus, an exact copy of a full WinGIS system, simply creates a base map from digitising and manual input, or through importing from industry standard data sources.
WinMAP SDK is database independent. Its DDE/OLE Tools link the WinGIS turbo spatial engine to virtually any database supporting DDE or OLE.
WinMAP LT run-time licences are used to deploy completed applications with unique sets of data to endusers. A good example of this is the ProGIS World Atlas, in which the WinMAP LT mapping application was linked with a data source application that contained country capital, population and area data. Pro-

grams and data can be password-protected so that no one else, even with a full WinMAP SDK package can acess the data.
WinMAP SDK is available from LIStech Australia. Enquiries to Mr. Andrej Mocicka on +61-3-97620022 or email:
listech@msn.com

On-Line GIS Here now.

A Sydney company is moving rapidly towards the provision of GIS facilities down the telephone line. RPMapping has licensed the New South Wales cadastre from the Land Information Centre in Bathurst, added information from the Land Titles Office and is intent on putting the whole package on line within the next few months.
A customer, equipped with no more than a terminal package, will be able to dial-in via a modem to a server, and download any relevant part of the state cadastre identified via street name and number, or lot number. Presented with the cadastre, the user can then identify ownership and pricing details on any of the surrounding properties.
During a demonstration of the system, RPMapping company manager, Nigel Jays demonstrated a live version of the product using data from suburban Manly. He says the company is aiming the service at real estate agents, valuers and others with an interest in land ownership and pricing. The company already offers a text-based service into this market. For a cost of $40 per week, about 1000 users in NSW and a similar number in Queensland access land ownership records. However, as with any text service, it can be difficult to extract the right information about the right properties, hence the mapping function has been introduced.
Jays has a long history in the GIS industry. He was involved in the creation of the first commercial spatial datasets in Australia- the road centrelines created by Peripheral Systems. He says his mission at RPMapping is to create innovative GIS products. Apart from the text and graphic dial-up projects, he is also working on a project to bring low-cost digital aerial photographs to local governments in the Sydney area. The company has obtained recent photographs of the entire metropolitan area from The Entrance in the north to Bargo in the south and inland as far as Blackheath in the Blue Mountains. By using photographs captured serendipitously, RPMapping is now able to offer coverage of typical local government areas for as little as $1000. The coverage offers a minimum pixiel size of 0.6 metre

A WORD FROM OUR CHAIRMAN

The Far North Queensland GIS User Group has elected its Committee for the 1997 term(refer Editors list) and as the Chairman of that Committee I would like to take this opportunity to present to all members, the direction I would like to see us take and the goals I will be attempting to achieve.

As the GIS Supervisor of the Cairns City Council the most frustrating comments I hear regularly from the general community is *"what is GIS"* and even after an attempt to explain, their next comment is usually *"so you draw maps"* I believe the advancement of Information Technology and more specifically Geographic information Systems has been so rapid that *"the man on the street"* has been left behind to the point of restricting practical applications of this Technology.
Therein lies one of the main goals of FUNGIS .The active promotion of GIS to the man on the street .
GIS should be end user driven, identify & educate the potential end users and we have achieved one of our goals.
The Education System (Primary Secondary & Tertiary)is a definite target area

FUNGIS should be the forum for all members to achieve a better working knowledge of what developments are occurring in all areas of our Industry
and improving the Efficient Communication Capabilities of FUNGIS is another of my goals
This Newsletter and a more active involvement by all Committee Members
in its production will be a priority.

Any User Group is only as active as the number of active members driving it and interest needs to be generated by FUNGIS for existing and potential new members to become more interested in what we are doing ,(sometimes the more controversial the better) .With the current Committee , a wide cross section of the GIS Community is represented ; but there is more .and we need to get to them by generating an interest that they will respond to .The identification of those particular interest is the challenge.

NAGIS 97 is the biggest GIS event to occur in Australia. The success of this Seminar will ensure GIS and associated Technology will receive the publicity & promotion never available before or again in North Queensland.
FUNGIS has a responsibility to do everything in its power to make it a success both financially & technically with the Committee as the focus for the identification, coordination & implementation of all Resources available .
It will be successful.

In conclusion I am looking forward to a productive & fulfilling 1997 Term with all members of the Committee prominent in the promotion & development of FUNGIS & GIS.

Yours Truly

Peter Swain

Chairman
Far North Queensland User Group Inc.

Telephone and Fax Numbers

Telephone	Facsimile

Chairman Peter Swain
507 371   313 521
News Letter Editor Alan Stafford
981 400   982 156
Treasurer/Secretary Utz Wellbrock
303 900   923 323
CSIRO Rep Warwick Sayers
918 800   913 245
Private Industry Rep Robert Crossley
314 877,316 041\314 877
DNR Rep   Sharlene Blakeney
928 549
NARGIS '97 Convenor   Les Searle
523 227   510 851

The following six and a bit pages consist of a listing of our mailing list, showing Name, Organisation, Postal Address, Phone and Fax and Email id. There are doubtlessly some amendments required in the listing. Please fax these to Judith Searle at 523 227. There are several persons on the listing who are not financial, please check the financial status on your mailing sticker and if you are one of the guilty ones please amend the situation real soon. After all having membership is a tax deduction, and face it, you have to be pretty miserable to take advantage of our organisation, this incredible journal and the workshops and not contribute a few lousy dollars.

Editor.

Sandro Condurso
Atherton Shire Council
PO Box 573
ATHERTON Q 4883
Ph (070)911311 Fax (070)914300
Email

Andrew Hooper
Babinda Sugar Limited
PO Box 56
BABINDA Q 4861
Ph (070)671200(W) Fax (070)671576
Email

Andrew McCleave
Brazier & Motti
595 Flinders Street
TOWNSVILLE Q 4810
Ph (077)721144(W) Fax (077)722557
Email brazmot@ozemail.com.au

David Calcino
BSES
PO Box 122
GORDONVALE Q 4865
Ph   Fax
Email

John Reghenzani
BSES
PO Box 566
TULLY Q 4854
Ph (070)681488(W) Fax (070)681907
Email

Peter Swain
Cairns City Council
PO Box 359
CAIRNS Q 4870
Ph (070)507371(W) Fax (070)313521
Email Cccpj@internetnorth.com.au

Janine Cowan
Cairns Port Authority
PO Box 594
CAIRNS Q 4870
Ph (070)523888(W) Fax (070)521493
Email

Rob Harris
Cairns Port Authority
PO Box 594
CAIRNS Q 4870
Ph (070)523888(W) Fax (070)521493
Email

Peter Blackwood
Cape York Land Council
PO Box 2496
CAIRNS Q 4870
Ph (070)519077(W) Fax
Email

Pat Ryan
Babinda Sugar
PO Box 56
BABINDA Q 4861
Ph (070)671200(W) Fax (070)671576
Email

Dave Kirchener
Brazier & Motti
39 Pease Street
MANOORA Q 4870
Ph (070)323377(W) Fax (070)323399
Email brazmot@ozemail.com.au

Drewe Burgess
BSES
PO Box 122
GORDONVALE Q 4865
Ph   Fax
Email

Bill Webb
BSES
PO Box 216
SARINA Q 4737
Ph   Fax
Email

Hopkins
C&B Consultants Pty Ltd
PO Box 59
INNISFAIL Q 4860
Ph (070)612211(W) Fax (070)614631
Email

Bernie Bergstaller
Cairns Port Authority
PO Box 594
CAIRNS Q 4870
Ph (070)523888(W) Fax (070)521493
Email

Steel Davis
Cairns Port Authority
PO Box 594
CAIRNS Q 4870
Ph (070)523888(W) Fax (070)521493
Email

Noel Todd
Cairns Port Authority
PO Box 594
CAIRNS Q 4870
Ph (070)523888(W) Fax (070)521493
Email

John Brooksbank
Cape York Land Council
PO Box 2496
CAIRNS Q 4870
Ph (070)519077(W) Fax
Email

Roger Cribb
Cape York Land Council
PO Box 2496
CAIRNS Q 4870
Ph (070)519077(W) Fax
Email

Doug Pease
Cardwell Shire Council
34 Bryant Street
TULLY Q 4854
Ph (070)681033(W) Fax
Email

Charlie Georgees
Compound Holdings P/L
PO Box HP83
HERMIT PARK Q 4812   .
Ph Fax
Email

Brett Buckley
CSIRO
PO Box 780
ATHERTON Q 4883
Ph Fax
Email

Warwick Sayers
CSIRO
PO Box 780
ATHERTON Q 4883
Ph (070)918800(W) Fax (070)913245
Email Warwick@tfrc.csiro.au

Belinda Wilson
CSIRO
Davies Lab.
TOWNSVILLE Q 4810
Ph (077)538507(W) Fax (077)538650
Email

P Allen
CSR
Victoria Mill
INGHAM Q 4850
Ph (077)764203(W) Fax (077)761958
Email

Michael Roati
CSR Victoria Mill
PMB
INGHAM Q 4850
Ph (077)761958(W) Fax (077)761958
Email

Sharon Bruce
Department of Natural Resources
PO Box 210
ATHERTON Q 4883
Ph (070)911844(W) Fax (070)913281
Email

David Eppworth
Cape York Land Council
PO Box 2496
CAIRNS Q 4870
Ph (070)519077(W) Fax
Email

Chris Newman
Comalco Aluminium Ltd
PO Box 284
WEIPA Q 4874
Ph (070)698978(W) Fax (070)698305
Email 100252.1306@compuserve.com

Dr Andrew Johnson
CSIRO
PMB PO
AITKENVALE Q 4804
Ph (077)538507 Fax (077)538650
Email Andrewj@tvadmin.tvl.tcp.csiro

Kelvin Russell
CSIRO
Maunds Road
ATHERTON Q 4883
Ph Fax
Email

Sam Ebert
CSIRO
Davies Lab.
TOWNSVILLE Q 4810
Ph (077)538507(W) Fax (077)583650
Email

Angela Murray
CSIRO Davies Lab.
PMB PO
AITKENVALE Q 4814
Ph (077)538507(W) Fax (077)538650
Email

Tony Marino
CSR Victoria Mill
PMB
INGHAM Q 4850
Ph (077)764203(W) Fax (077)761958
Email

Mary Portefaix
Department of Environment
PO Box 2060
CAIRNS Q 4870
Ph Fax
Email

Attention Surveys
Department of Natural Resources
PO Box 210
ATHERTON Q 4883
Ph Fax
Email

Geoff. Mills
Department of Natural Resources
PO Box 937
CAIRNS Q 4870
Ph (070)523981 Fax
Email

Simon Allison
Department of Natural Resources
PO Box 156
MAREEBA Q 4880
Ph (070)922555 Fax (070)923939
Email

Susan Kempson
Department of Natural Resources
PO Box 1054
MAREEBA Q 4880
Ph (070)928555(W) Fax
Email

Murray Smith
Department of Natural Resources
PO Box 156
MAREEBA Q 4880
Ph (070)922555 Fax (070)923939
Email smithm@mbw_gis1.nth.dpi.qld.g

Peter Wilson
Department of Natural Resources
PO Box 1054
MAREEBA Q 4880
Ph (070)928555(W) Fax
Email

Lisa Rutten
Dept Local Government & Planning
PO Box 5194
CAIRNS Q 4870
Ph (070)528749(W) Fax (070)528866
Email

Jim Monaghan
Dept of Tropical Environment and Geol
James Cook Universi
TOWNSVILLE Q 4811
Ph   Fax
Email jmonaghan@cathar.jcu.edu.au

Wal Mayr
ERSIS Australia
PO Box 3055
SOUTH BRISBANE Q 4101
Ph (07)38447744(W) Fax (07)38442400
Email

Graeme Browning
ESRI Australia
PO Box 659
SPRING HILL Q 4004
Ph (07)38313210 Fax (07)38313214
Email

Les Searle
Department of Natural Resources
PO Box 937
CAIRNS Q 4870
Ph (070) 523227 (W Fax (070) 392935
Email Les.Searle@dnr.qld.gov.au

Sharlene Blakeney
Department of Natural Resources
PO Box 1054
MAREEBA Q 4880
Ph (070)928549(W) Fax
Email

Senaid Philip
Department of Natural Resources
PO Box 1054
MAREEBA Q 4880
Ph (070)928555(W) Fax
Email

Terry Webb
Department of Natural Resources
PO Box 1054
MAREEBA Q 4880
Ph (070)928555(W) Fax
Email

Leath Stewart
Department of Primary Industries
PO Box 1054
MAREEBA Q 4880
Ph (070)928555(W) Fax
Email

Brett Woodhead
Dept of Environment and Heritage
PO Box 2066
CAIRNS Q 4870
Ph   Fax
Email

Peter Denelzen
Douglas Shire Council
PO Box 357
MOSSMAN Q 4873
Ph (070)982822(W) Fax (070)981062
Email

Mark Billing
ESRI
PO Box 659
SPRING HILL Q 4004
Ph (07)38313210(W) Fax (07)38313214
Email mbilling@esri.oz.au

Rose Eggleton
ESRI Australia
PO Box 659
SPRING HILL Q 4004
Ph (07)38313210 Fax (07)38313214
Email reggleton@esri.oz.au

Paul Hill
ESRI Australia
PO Box 659
SPRING HILL Q 4004
Ph (07)38313210(W) Fax (07)38313214
Email

Mark Sharkey
FNQEB
PO Box 358
CAIRNS Q 4870
Ph (070)502777(W) Fax (070)502701
Email

Peter O'Connor
Fugro/Trimble
PO Box 474
FERNY HILLS Q 4055
Ph   Fax
Email

David Bruce
Genasys II
Unit 10 / 41 Park R
MILTON Q 4064
Ph   Fax
Email

Larissa James
GHD Surveys Pty Ltd
PO Box 819
CAIRNS Q 4870
Ph (070)511422(W) Fax (070)511428
Email

Ron Kerkwyk
Herbert Cane Protection & Productivit
PO Box 135
INGHAM Q 4850
Ph   Fax
Email

Ray Delai
Herbert Resource Information Centre
PO Box 366
INGHAM Q 4850
Ph (077)763233(W) Fax (077)760007
Email

Steve Turton
James Cook University
PO Box 6811
CAIRNS Q 4870
Ph   Fax
Email gesmt@jcu.edu.au

Jeremy Scriven
Jeremy Scriven and Associates
PO Box 355
MOSSMAN Q 4873
Ph (070)981148 Fax (070)981814
Email jscriven@ozemail.com.au

Rob Mackenzie
FNQEB
PO Box 358
CAIRNS Q 4870
Ph (070)502777(W) Fax (070)502701
Email

Peter Wallace
FNQEB
PO Box 358
CAIRNS Q 4870
Ph (070)502777(W) Fax (070)502701
Email

Jeff. Shearin
GBRMPA
PO Box 1379
TOWNSVILLE Q 4810
Ph   Fax
Email

Bruce Hammond
GHD Surveys Pty Ltd
PO Box 819
CAIRNS Q 4870
Ph (070)511422(W) Fax (070)511428
Email

Mike Mehonoshen
GHD Surveys Pty Ltd
PO Box 819
CAIRNS Q 4870
Ph (070)511422(W) Fax (070)511428
Email

Ray Quabba
Herbert Cane Protection & Productivit
PO Box 135
INGHAM Q 4850
Ph   Fax
Email

CSR Ltd
Herbert River Mill
PMB
INGHAM Q 4850
Ph   Fax
Email

Pauline Catt
JCU, Centre for Remote Sensing
James Cook Universi
TOWNSVILLE Q 4811
Ph   Fax
Email

Bob Pentecost
John MacIsaac & Associates
PO Box 5174
CAIRNS Q 4870
Ph (070)313288(W) Fax (070)314944
Email

Bruce Sandy
Johnstone Shire Council
PO Box 887
INNISFAIL Q 4860
Ph (070)302278(W) Fax (070)617685
Email

Utz Wellbrock
Mareeba Shire Council
PO Box 154
MAREEBA Q 4880
Ph (070)303900(W) Fax (070)923323
Email utz@internetnorth.com.au

Alan Stafford
Mossman Central Mill
PO Box 523
MOSSMAN Q 4873
Ph (070)981400(W) Fax (070)982156
Email taimalan@internetnorth.com.au

Bruce Parkinson
Mulgrave Central Mill
PO Box 21
GORDONVALE Q 4865
Ph Fax
Email

Tony Williams
Natural Resource Assessment Pty Ltd
PO Box 5678
CAIRNS Q 4870
Ph (070)315122 Fax (070)516740
Email

Chris Trounce
Niugini Mining Chillagoe
Frew Street
CHILLAGOE Q 4871
Ph Fax
Email

Gerard Byrne
Queensland Transport
PO Box 1876
CAIRNS Q 4870
Ph (070)313382 Fax (070)316294
Email

Robert Crossley
Robert Crossley & Assoc.
10 Trinity Street
CAIRNS Q 4870
Ph (070)314877 Fax (070)316041
Email

Jeremy Conversi
Sinclair Knight
316 Sturt Street
TOWNSVILLE Q 4810
Ph Fax
Email

Peter Craze
Mareeba Shire Council
PO Box 154
MAREEBA Q 4880
Ph (070)303900(W) Fax (070)923323
Email

Allan Rudd
Mossman Cane Protection & Productivit
PO Box 191
MOSSMAN Q 4873
Ph (070)981334 Fax (070)982156
Email

Owen Lewis
Mulgrave Central Mill
PO Box 21
GORDONVALE Q 4865
Ph Fax
Email

Jeff. Mustard
Natural Resource Assessment
5 Scott Street
CAIRNS Q 4870
Ph (070)511584(W) Fax (070)516740
Email

Charlie Georgees
Niugini Mining Chillagoe
Frew Street
CHILLAGOE Q 4871
Ph Fax
Email

Richard Rudd
Northair Surveys
2 Kearney Street
MAREEBA Q 4880
Ph Fax
Email

Robert Bass
Robert Bass Licensed Surveyor
11 Jade Crescent
LAKE PLACID Q 4878
Ph Fax
Email

David Wilson
School for Field Studies
PO Box 141
YUNGABURRA Q 4872
Ph (070)953656(W) Fax (070)953633
Email DWilson@internetnorth.com.au

Tony Horwood
South Johnstone Mill
Japoon Road
SOUTH JOHNSTONE Q 4859
Ph (070)642200(W) Fax
Email

John Tait
South Johnstone Mill
Japoon Road
SOUTH JOHNSTONE Q 4859
Ph (070)642200(W) Fax
Email

Kris Kristensen
Trinity Inlet Management Programme
PO Box 6896
CAIRNS Q 4870
Ph (070)316738(W) Fax (070)316721
Email

Trevor Fuelling
Tully Sugar
PO Box 441
TULLY Q 4854
Ph (070)681222(W) Fax
Email

Rod Wright
Tully Sugar Ltd
PO Box 441
TULLY Q 4854
Ph (070)681222(W) Fax
Email

Brendan Sandes
Wet Tropics Management Authority
PO Box 2050
CAIRNS Q 4870
Ph (070)520564 Fax (070)311364
Email

Michael Stott
Wet Tropics Management Authority
PO Box 2050
CAIRNS Q 4870
Ph (070)520564(W) Fax (070)311364
Email

Ross Macaw
#10 10th Ave
ATHERTON Q 4883
Ph Fax
Email

Alex Thomas
PO BOX 100 JCU
DOUGLAS Q 4811
Ph (070)976503 Fax
Email

Alex Thomas
PO Box 100
JAMES COOK UNI Q 4811
Ph Fax
Email

Geoff Whaling
Telecom
PO Box 184
TOWNSVILLE Q 4812
Ph Fax
Email

Francis Crome
Tropical Ecologist
PO Box 447
ATHERTON Q 4883
Ph (070)968280(W) Fax (070)968391
Email fcrome@ozemail.com.au

Mike Coleman
Tully Sugar Ltd
PO Box 441
TULLY Q 4854
Ph (070)681222(W) Fax
Email

Arnon Accad
Wet Tropics Management Authority
PO Box 2050
CAIRNS Q 4870
Ph (070)520564(W) Fax (070)311364
Email

Earl Saxon
Wet Tropics Management Authority
PO Box 2050
CAIRNS Q 4870
Ph (070)520564(W) Fax (070)311364
Email

Jane Wickers
Wet Tropics Management Authority
PO Box 3153
CAIRNS Q 4870
Ph (070)520564(W) Fax (070)311364
Email

Bob Peever
Sircom Street
CROYDON Q 4871
Ph Fax
Email

Janet Elders
2 Dunnes Road
EAST PALMERSTON Q 4860
Ph (070)502537(W) Fax
Email Cccpj@internetnorth.com.au

Patricia Poutanen
PO Box 599
MAREEBA Q 4880
Ph Fax
Email

Brian Hard
PO Box 111
YUNGABURRA Q 4872
Ph (070)953687 Fax
Email

Rick Holland
PO Box 168
YUNGABURRA Q 4872
Ph   Fax
Email

Guy Carpenter
4 Alamanda Close
YUNGABURRA Q 4872
Ph (070)953309(W) Fax (070)913245
Email guy@bushnet.qld.edu.au

The Above Listing was deliberately left non Alphabetic order to encourage you all to seriously peruse and submit changes. We shall, in the new year publish the amended listing.

Introducing GIS to Schools.

At the recent workshop in Mareeba, DNR the forum discussed introducing GIS to the local schools as a User Group project and a hopeful promotion for the NARGIS '97 Seminar.

A steering committee was formed.

Chair: Alan Stafford.
DNR: Terry Webb and Susie Kempton.
Cairns City: Peter Swain.

no doubt others will find themselves coopted to this most important project. We refer you to the words of wisdom of our Chairman " The active promotion of GIS to the man on the street. GIS should be end user driven, identify and educate the potential end users and we have achieved one of our goals. The Education System (Primary , Secondary and Tertiary) is a definite target area."

Anyone, either an attendee at the recent workshop or those who could not attend, who feel they have some input to this project please contact any of the Sub committee.

Computer may not be culprit.

As many of us sit at a computer all day, many days of th week and stare at the VDU, you may find yourself attributing some or all of your visual problems to this exposure.

As the video tube emits a form of electro magnetic radiation, you might feel it possibly can harm your eyes.
But international studies have shown that little or no x-rays or ultraviolet rays are emitted by vdu's.
The tiny emission is well within safety standards and is no greater than common fluorescent lighting. The facts are none of these rays even penetrates the outer layers of the eye and none gets close to the lens or the retina.

Working long hours at a terminal may produce eye symptoms, such as irritation, difficulty in *focusing* and bluriness, as well as nechaches and backaches.

In setting up most computers, not enough attention is given to proper design of the workstation, to lighting. ar to the position of reflecting surfaces.
Seat height is important, and proper adjustments of the angle at which VDUs are viewed.
Periodic rest breaks are essential for adequate comfort and relief of fatigue. If necessary wear prescription glasses. Uncorrected astigmatism or other refractive errors can cause eye fatigue.

This snippet of information came from " Your Eyes" the inhouse newsletter of Bruce Mellick Optomerist.

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                                    receive up to 5 copies of the News-Letter to a single mailing address.

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        FNQGIS Secretariat
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        Lake Placid   4878

The Far North Queensland Geographical Information Systems User Group Inc. (FNQGIS) is a non profit organisation established as a local forum for knowledge exchange on GIS, and to promote the use and awareness of GIS in the far north. This Newsletter is published quarterly, and distributed free to members.

Articles and Paid Advertising are always welcome. Material should be submitted to the newsletter editor Alan Stafford. Phone 070 981 400 bus. home phone/fax 070 981 128 or P.O. Box 523 Mossman 4873. Email: taimalan@internetnorth.com.au