



statistical society of australia incorporated

newsletter

31 March 1997

number 78

14th Biennial Statistical Society Conference

Planning is progressing well for ASC14 (the 14th Biennial Conference of the Statistical Society of Australia Inc.) which will be held at Conrad Jupiters (on the Gold Coast in Queensland) on 6-10 July 1998. Why not mark these dates in your diary and enjoy "a warm winter conference in the Sunshine State"?

The theme of this conference is "Statistics in Context" so we are particularly looking for applications. Confirmed keynote speakers include John Hartigan (Yale University), Trevor Hastie (Stanford University), Frank Kelly (Cambridge University) and Doug Zahn (Florida State University).

We will be overlapping for one day with TIES - The International Environmetrics Society - who will be holding their conference at Conrad Jupiters on 2-6 July 1998.

At this stage, it is anticipated that there will be adjunct workshops on Recent Developments in Time Series, Bayesian Methods, Statistics Education and GENSTAT. These will be organized by Rodney Wolff, Tony Pettitt, Ruth Hubbard, and Jeff Wood, respectively, and these people should be contacted directly for further information on those.

As well as contributed paper and poster sessions, we are issuing an invitation to anyone who wishes to organize a panel session. During the conference, we do not intend to have any more than three parallel sessions (with no

parallel sessions during keynote addresses). We expect that panel sessions will be of 90 minutes duration and consist of 3-5 people who present views or results on a common theme, issue or question. If you are interested in organizing a panel session, please contact Kaye Basford who is chair of the program committee (via one of the addresses given below). Because of time constraints, not all proposed panels may be accepted. Selection will be based on importance, originality, focus, timeliness of topic, expertise of proposed panel and the potential for informative (and even controversial) discussion.

For more information, please see our URL:

<http://www.math.fsc.qut.edu.au/asc14.html>

or contact us via our e-mail address:

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Kaye Basford

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*The views of contributors to this Newsletter should not be attributed to the Statistical Society of Australia, Inc.
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CENTRAL COUNCIL

Notes from the meetings of the Central Council of the Statistical Society of Australia Inc. (SSAI) and the Australian Statistical Publishing Association Inc. (ASPAI) held at The University of Sydney on 19 February 1997.

The Australian Journal of Statistics

Simon Sheather has been appointed as the new Editor of the Journal taking over from Ian James who has held the editorship since 1991. The Council thanked Ian James for the tremendous job he has done over the past five and a half years.

The New Zealand Statistical Association (NZSA) voted in August 1996 to merge the *New Zealand Statistician* and the *Australian Journal of Statistics*. SSAI and NZSA have agreed to merge from the beginning of 1998. The merged journal will be produced in 4 issues a year by ASPAI. The volume numbering for AJS will continue with the title changing to *The Australian and New Zealand Journal of Statistics* from volume 40. The agreed editorial structure consists of a Methods Editor and an Applications Editor supported by a panel of Associate Editors. One editor will be a member of SSAI and the other a member of NZSA. One of the Editors will be designated the Coordinating Editor. The Coordinating editor's position will alternate between the two societies. The minor Rule changes needed to allow the merger to go ahead will be put to the Annual General Meetings of SSAI and ASPAI in July.

Negotiations have been continuing with a view to having the merged journal published and marketed by an international publisher. Over the past six months the President, Treasurer, Editor and publishing company representatives have been involved in extensive discussions relating to costs, editorial control and the service to be provided by potential publishers. A final decision on the publisher for the *Australian and New Zealand Journal of Statistics* should be made in the next two months after further consultation with the Executive of NZSA.

Accreditation

The first Accreditation Committee of SSAI was appointed at the February meeting. The committee is:

Dr Michael Adena	(Instat Australia Pty Ltd);
Dr Nick Fisher	(CSIRO);
Professor Richard Jarrett	(University of Adelaide);
Dr Jane Matthews	(Cancer Institute);
Dr Tony Swain	(Queensland Department of Primary Industry)
Mr Dennis Trewin	(Australian Bureau of Statistics).

The Accreditation Committee will now formulate guidelines for the accreditation process, and a call for applications for Chartered Statistician status should be made in the near future.

Code of Conduct

The Central Council received comments from the small group that was established last year to look at the possibility of our Society adopting a Code of Conduct. The key issue is whether the Code should be a set of guidelines like those adopted by NZSA or a rigid set of rules that are used to govern the profession as is the case with the Royal Statistical Society's Code. Members will be asked to comment on this issue based on a later article in next Newsletter.

Sections

Glenn Stone has been appointed as Chair of the Statistical Computing Section, replacing Tony Pettitt who has been chair of the section for seven years.

Phillip Dransfield of NRMA Research and Development has been appointed as Chair of the Young Statisticians Section replacing Susan Hoffmann who was Acting Chair until the WAYS meeting in 1996.

Conferences and Workshops

The Young Statisticians Section and the Industrial Statistics Section are arranging meetings to be held in Melbourne in October this year. Further details can be found later in the Newsletter.

Planning is well underway for the next Australian Statistical Conference, ASC 14, which is to be held 6-10 July 1998 at Jupiters Casino on the Gold Coast. Several satellite meetings associated with this conference are also being organised.

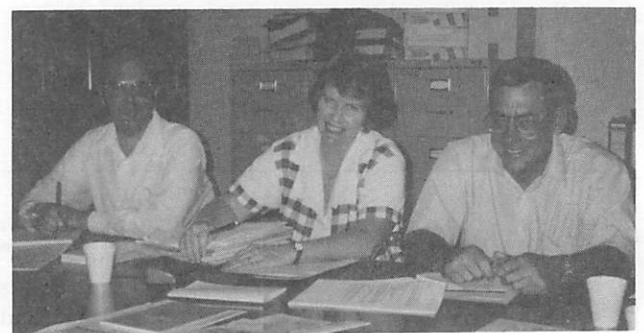
The South Australian Branch have accepted an invitation to host ASC 15 in Adelaide. The meeting will be held 3-7 July 2000.

A full report on the very successful SISC-96 conference is now available at the Society's Web site.

Annual General Meeting

The tentative date for the AGM of the Society is Tuesday, 15 July 1997. The time and place of the meeting will be announced in the next Newsletter.

Neville Weber



Neville Weber, Helen MacGillivray and Des Nicholls hard at work at the Central Council meeting.

BRANCH REPORTS

South Australia

From Experiment to Observation

Jack McLean, Director, NHMRC Road Accident Research Unit, University of Adelaide gave a talk to the October Branch meeting entitled "From Experiment to Observation".

It is often assumed that the natural progression of scientific inquiry is from the observation of natural phenomena to more formal observational studies and then to that pinnacle of the art, the experiment. Of course, life is not always that straightforward. Very often it is not practicable, or morally acceptable, to conduct experiments. However, for the purpose of the presentation, attention was focussed on a few examples of investigations in which the results obtained from experiments are not consistent with those obtained from observational studies. Some possible reasons for the lack of consistency were offered as a basis for discussion. The presentation concluded with reflections on the limitations of scientific inquiry when attempting to evaluate the effectiveness of countermeasures for rare events such as road accidents.

Biographical: Jack McLean has masters degrees in engineering from Adelaide and environmental health from Harvard. His doctorate is in epidemiology and biostatistics from Harvard. He is President of the International Council on Alcohol, Drugs and Traffic Safety and a Board member of the International Research Council on the Biomechanics of Impacts.

Using Graphics to Improve the Utilisation of Germplasm Collections

Bronwyn Harch of CSIRO Mathematical and Information Sciences addressed the November Branch meeting on using graphics to improve the utilisation of germplasm collections.

Rapid increase in plant genetics resources activity worldwide has highlighted a new emphasis in the utilisation of germplasm collections. Users of germplasm collections not only require improved access to plant genetic resource material (referred to as accessions), but they also need relevant descriptive or summary information which can provide an overall representation of the diversity available in these large collections. Plant improvement scientists are discouraged from using many germplasm collections because of the difficulty in identifying desirable genetic material from these very large collections (often containing more than 1000 accessions). The statistical analysis of the diversity within germplasm collections provides a vital link between germplasm collections and their utilisation.

Exploratory methods of pattern analysis (ordination and clustering) were discussed, in conjunction with appropriate graphics, to highlight their ability to describe

and summarise the patterns of variability in germplasm data. The Australian peanut germplasm collection containing 819 accessions and the world peanut germplasm collection containing 11328 accessions, were used to illustrate appropriate statistical and plotting procedures.

Biographical: Bronwyn Harch is a post-doctoral fellow in CSIRO Mathematical and Information Sciences. She joined CSIRO in July 1995 after completing her PhD in the Department of Agriculture at The University of Queensland. The research carried out for her PhD focused on the application of pattern analysis techniques and was jointly funded by a Junior Research Fellowship from the Grains Research and Development Corporation (GRDC) and the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT).

At CSIRO, she is mainly involved in statistical consulting and collaboration with scientists from various CSIRO divisions including Land & Water and the CRC for Soil and Land Management.

Previously, Bronwyn completed a Bachelor of Science (Honours) in Australian Environmental Studies at Griffith University in Queensland. During the degree Bronwyn also took the option of concurrently completing a secondary teaching qualification with the Queensland University of Technology.

Overdispersion: Models and estimation

While Dr Demetrio was visiting the School of Mathematics at the University of South Australia from ESALQ, University of Sao Paulo, Brasil she addressed the December Branch meeting on the subject of overdispersion models and estimation.

Overdispersion models for discrete data were considered and placed in a general framework. A distinction was made between completely specified models and those with only a mean-variance specification. Different formulations for the overdispersion mechanism can lead to different variance functions which can be placed within a general family. In addition, many different estimation methods have been proposed, including maximum likelihood, moment methods, extended quasi-likelihood, pseudo-likelihood and non-parametric maximum likelihood. The relationships between these methods was explored and their application to a number of standard examples for count and proportion data was examined. A simple graphical method using half-normal plots was used to examine different overdispersion models.

Biographical: Dr Clarice G.B. Demetrio is an Associate Professor in the Department of Mathematics and Statistics at the Scola Superior de Agricultura "Luiz de Queiroz" (ESALQ), a campus of the University of Sao Paulo, Brasil. She graduated from ESALQ in 1975, obtained a Masters degree from there in 1978, completed a PhD at ESALQ in 1985 and was awarded a livre-docencia in

1995. Dr Demetrio's areas of specialty are the analysis of data using generalised linear models and the applications of statistics in agriculture.

Dr Demetrio is active internationally having been a member of the council of the International Biometric Society and currently an Associate Editor for the Journal of Agricultural, Biological and Environmental Statistics and a Member of the Editorial Advisory Committee of the International Biometric Society.

Immediately following Dr Demetrio's talk Branch members and their families celebrated the end of year by attending a barbecue at a nearby reserve. The event was well attended and enjoyed by all, in spite of an increasingly refreshing gully breeze.

Gary Glonek

Western Australia

Timing is Everything (Or how to use circular regression)

Professor Srinivas Jammalamadaka Rao, University of California at Santa Barbara, addressed the August Branch Meeting with the title 'Timing is Everything (Or how to use circular regression)'.

He began with a mini-lecture on circadian rhythms, or chrono-biology, pointing out that life processes in higher organisms are controlled by a plethora of timing mechanisms — the sleep-wake cycle, propensity for blood clotting, tolerance to pain, and so on. Chrono-therapeutics aims to construct treatment regimens which optimally exploit these rhythms. For example, a large mid-afternoon dose of asthma drugs appears to provide better night protection than regular dosing. Again, breast cancer surgery in the middle of the menstrual cycle shows a 30% increase in 10-year survivorship.

This introduction served to motivate the statistical treatment of directional data. Srinivas observed that there is a lot of work on descriptive measures, theoretical models, parametric and non-parametric inference, and he quickly reviewed some of these. But there exists little on regression and ANOVA modelling of directional data. The meeting was then treated to an interesting overview of the speaker's work on circular regression.

Suppose that $\mathbf{D} = \{(a_1, b_1), \dots, (a_n, b_n)\}$ represents independent observations on a pair of circular random variables (A, B) . For example, A might denote the time of administration of a drug, and B could be the time by which it is absorbed. How should we define the regression of B on A ? Srinivas proposes representing $g_1(A) = E(\cos B|A)$ and $g_2(A) = E(\sin B|A)$ as finite Fourier series to give the linear model.

$$\cos B = \sum_{k=0}^m [U_k \cos(kA) + V_k \sin(kA)] + \varepsilon_1$$

where the U_k and the V_k are parameters to be estimated from \mathbf{D} , and ε_1 is an error random variable. There is a similar form for $\sin B$, and the two error random variables have an arbitrary covariance matrix. Generalized least squares was suggested as the appropriate way of estimating all the parameters.

Srinivas described extensions of these ideas, revealing a realm of generalized linear models for circular data. He ended by illustrating his work using some drug administration data.

An Application of Markov Random Fields to Motion Estimation and Segmentation

Dr Christine Graffigne (Université René Descartes) spoke about 'An Application of Markov Random Fields to Motion Estimation and Segmentation'. The goal of this work is to segment and estimate motion using data obtained from pairs, or a longer sequence, of pictures of the same scene taken at closely spaced times. The apparent motion of moving objects in these pictures is modelled in terms of a vector field of 'optical flow', and this is to be estimated using displacements of the 'same' image points.

The segmentation process partitions the images into apparently homogeneous regions, with the object of identifying boundaries separating 'different' regions or textures. The procedure for doing this uses Markov random fields, and there was much talk of the Hammersley-Clifford theorem, Gibbs laws, and so on.

Statistical Applications in Mining

On Tuesday 1st October, the Branch ran a very successful day-long workshop at Murdoch University on 'Statistical Applications in Mining'. More than 100 participants, many from mining companies, heard Professor Krige give the keynote address.

The October Branch Meeting opened with a short ceremony in which the SSA honours prize was presented to Miss Hai Dam of Curtin University.

Nonstationary Modelling approaches to Speech Recognition

The address for the evening was 'Nonstationary Modelling approaches to Speech Recognition', presented by Dr Roberto Togneri from the Centre for Intelligent Information Processing Systems (CIIPS), a research centre within the UWA Department of Electrical & Electronic Engineering. Roberto started by observing that recognizing isolated words, or speech from a small lexicon, or speaker dependent speech is a simple problem. The hard problem is recognizing continuous lexically complex speech from many speakers.

Current methodologies can be classified according to their modelling complexity. The lowest level is empirical modelling of a speech signal using time series methods. In the second level, one attempts to model the atomic elements of speech, such as phonemes, subwords, or even complete words. Models can be stationary, or not, and parametric, or not.

Whole-language modelling is the goal of the highest level methodology, and Hidden Markov Modelling (HMM) is the state-of-art technique for achieving this end. Roberto spoke at some length about HMM, as well as extensions allowing for non-stationarity, and a stochastic segment model. He ended with an account of a trajectory model which is being explored in CIIPS.

Members withdrew for sustenance at a local restaurant, where the observation was made that their speech became less recognizable as time advanced — clear proof that speech is nonstationary!

Consumers' Perceptions about Retail Value

Ms Jillian Sweeny, Department of Marketing & Information Management, UWA, spoke about an investigation into 'Consumers' Perceptions about Retail Value'. It is possible to build models for a holistic notion of 'value' as distinct from more common value attributes such as product price or quality. A model was tested using structural equation modelling of survey data gathered from a sample of consumers who were actively foraging for an electrical appliance.

The results obtained confirm conclusions drawn from earlier empirical studies of 'retail value'. In particular, it appears that consumers make judgements in terms of notional complexes such as 'retail value' as opposed to more atomic attributes. Jillian conjectured that consumer perceptions of value, and willingness to buy, are formed before entering a store. She suggested this has major implications for retailers and manufacturers.

End of Year Statistical Function

Branch members assembled at the Al Piccio Bistro for the end of year function. They were entertained by after-dinner speaker Peter Lane, especially imported for the occasion from Rothamsted under the sponsorship of the State Department of Agriculture. He painted images portraying some aspect of all heads of the Rothamsted Statistics Section from Fisher's predecessor through to the present incumbent. They were supported by aptly chosen poetry readings. Peter concluded by singing an anti *t*-test song and, by joining in the chorus, members collectively pledged to shun the *t*-test for evermore!

Tony Pakes

Canberra

Applying Experimental and Statistical Design to Practical Situations

The Canberra Branch held a workshop on this topic in October, attended by over 40 people.

Dr Michael Jones of INTSTAT opened proceedings with a talk on a survey of general practices. The implementation of the survey posed political problems, as well as practical problems associated with the fact that no register of general practices, as opposed to general practitioners, exists.

Dr David Pederson and Dr Alice Richardson of the University of Canberra followed on with a pair of quasi-experimental designs. One was a longitudinal study of memory loss in MS patients, the other a study of phosphorus in detergents and its effects on phosphorus levels in waste water.

Dr Simon Barry of the Australian National University (ANU) continued the theme of quasi-experimental design

with a study aiming to assess the factors influencing the formation and retention of tree hollows in wood production forests.

Miss Stephanie Hill of the Australian Bureau of Statistics (ABS) wrapped up the workshop by discussing the involvement of the ABS in an international survey of literacy. The initial questionnaire may well have taken respondents the best part of a day to complete, and so a balanced incomplete block design was used to reduce respondent burden, while still measuring three different types of literacy.

The workshop was followed by dinner, provided on-site in the form of a Laotian buffet. Laotian food is similar to Thai, but even tastier, and with daylight saving under way, a number of people chose to eat "al fresco".

After dinner, the usual Branch meeting was addressed by Dr Gabrielle Bammer of the National Centre for Epidemiology and Population Health. Her talk, entitled "Experimental Design meets Politics - The Case of the 'Heroin Trial' " explained the proposed design of the "heroin trial" in Canberra. As Gabrielle explained, the trial is not really designed to compare heroin and methadone, but to compare a choice of drugs (heroin, heroin + methadone or methadone alone) and no choice of drugs (methadone alone). An initial pilot trial would determine whether heroin worked as a treatment - whether the dose per person could be stabilised and whether there was enough capacity to move between heroin and methadone.

A second pilot trial would determine whether the randomisation of patients to choice/no choice would work. Then the full trial would determine any difference between the treatments. Gabrielle took us through the history of the consultations surrounding the proposed trial, and illustrated her talk liberally with cartoons from the newspapers, for the political aspect of the proposed trial has been much more widely reported than its experimental design.

Mortality Surfaces and Health Processes

The November meeting of the Branch is the Knibbs lecture. This year it was presented by Professor Chip Heathcote of the ANU on the somewhat gloomy (but nonetheless important) topic of mortality surfaces and health processes.

A mortality surface sits above a time/age plane, and involves recording the state Dead or Alive for members of birth cohorts across the plane. Chip presented a regression model for the logit of the probability of death at each time/age, and illustrated the model with data for French males from 1800 - 1990. Features of the data were

- the peaks in mortality for young men in wartime
- ridges across all age groups associated with epidemics, cold winters and the like
- the disappearance of ridges, and a decrease in mortality for the elderly, after World War II.

Up to 40 parameters are needed to model all these features.

A health process is a generalisation of a mortality surface, where the states Dead and Alive are partitioned into different states of health and different causes of death. Health processes can be visualised as a stack of mortality surfaces above a single time/age plane. However Chip reported some formidable computing problems associated with the estimation of regression parameters for health processes.

Two discussants responded to Chip's lecture: Dr Christabel Young of the ANU, and Dr Richard Madden of the Australian Institute of Health and Welfare. Christabel endorsed Chip's cohort approach to modelling mortality, and pointed out that Knibbs himself had hinted at the same approach as early as 1917. She also listed a number of possible developments to the models, including

- adding the status "carer" to health processes
- modelling the joint health status of a married couple, or a whole family

Richard Madden, wearing his book collector's hat, produced a copy of Knibbs' 1917 report. He also placed on the record some oral history held at the ABS which states that contrary to rumour, Knibbs did write the full 500-page report, and not his second-in-command. Finally, Richard described an extension to health processes, where weights are attached to different states, leading to "quality of life" measurements. Certain assumptions made about the equality of experience of people in each state mean that no one methodology is accepted by all as "the" measure of quality of life.

Following the speakers and discussion, dinner was held on the 15th floor of the Lakeside hotel, commanding a fine view over said lake.

Wildlife and Woodchips: Statistical Science in Biological Conservation

The final meeting of the year was a relaxed affair, addressed by Dr David Lindenmayer of the Centre for Resource and Environmental Studies at the ANU, and Dr Mike Austin of CSIRO Wildlife and Ecology.

David spoke about two projects combining statistical science and biological conservation. The first concerned mountain ash forests in Victoria and the small furry animals, such as possums and gliders, within them. Where do they occur in the forest and why do they occur where they do? Answers to these questions should assist forest companies in managing the forests for both their economic and their ecological value. Logistic regression models were fitted, and the number of tree hollows in the forest turned out to be very important. From radio tracking of animals it was discovered that one animal may use up to 20 hollows over a two year period. Hollows take 120 - 400 years to form, while forests are currently logged on a 40 - 50 year rotation.

The second project was dubbed the Tumut Fragmentation Project. Huge areas of pine forests have been planted in

the Tumut area, with areas of native forest interspersed. Bird populations are of particular interest there, but two main problems arise: how to survey patches of native forest that vary in size from 1 to 45 hectares, and how to allow for variability in bird spotters' skills.

Mike's work focussed on trees, which are easier to deal with because they stand still while you count them. He spoke about surveying forests and how simple random sampling is not employed in forest surveys, since it's just not practical to traipse through the bush for 3 days to reach some randomly selected site. A representative sample, based on assumptions about the way altitude, rainfall and geology affect vegetation, is more usual.

Mike then discussed a project aiming to predict the vegetation in south-eastern NSW in the year 1750. Data was available, from other experiments, for about 10000 sites throughout the area. Generalised additive models were used to predict the occurrence of 86 species of tree at 2.8 million 1 hectare sites. In the end a map was produced showing 20 classes of forest and their likely distribution in NSW 250 years ago. Such models could also be used to look forward, at the effect of climate change on vegetation patterns.

The meeting concluded with a barbecue on the CSIRO Black Mountain site, just a few metres from the meeting venue.

Alice Richardson

New Statistical Tool for Financial Modelling

S+GARCH

The first commercially available GARCH (Generalised Autoregressive Conditional Heteroscedasticity) software which can handle both univariate and multivariate models

S+GARCH can be used to model and predict changing variance and correlations for any multivariate time series

Check out the web entry at www.mathsoft.com/splsprod/sgarch/sgarch.html
or contact *CSIRO Mathematical & Information Sciences* (note our new name)

Phone: (02) 9325 3175 *Fax:* (02) 9325 3200 *Email:* S+enquiries@cmis.csiro.au
<http://www.dms.csiro.au/world/S-PLUS/>

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SPECIAL INTEREST SECTIONS

Young Statisticians

Activities of the Young Statisticians Section – Ways '97

I am pleased to report that the Young Statisticians (YS) section of the society has been rather busy over the past few months. As indicated in the last issue of the newsletter, we have been seeking volunteers to be state/regional YS representatives and numerous positions have been filled - here are contact details for the representatives we have at the moment:

- YS Chairperson: Phil Dransfield, NRMA
 Phone: (02) 9292 1531
 Email: Phillip.Dransfield@nrma.com.au
- ACT Rep: Anna Poskitt, ABS
 Phone: (06) 252 7954
 Email: anna.poskitt@abs.gov.au
- NSW Rep: Susan Hoffmann, NATA
 Phone: (02) 9736 8295
 Email: shoffmnn@nata.asn.au
- Newcastle Rep: Jayne Fryer, John Hunter Hospital
 Phone: (049) 213 551
 Email: MDJLFR@cc.newcastle.eud.au
- Sydney Rep: Ky Mathews, University of Sydney
 Phone: (02) 9351 2535
 Email: mathewsk@agric.usyd.edu.au
- Wollongong Rep: Virginia Wehway, BHP Research
 Phone: (042) 523 456
 Email: wheway, virginia.vl@bhp.com.au
- SA Rep: Michelle Lomimer, Univ. of Adelaide
 Phone: (08 8303 7929
 Email: mlorimer@roseworthy.adelaide.edu.au
- Victorian Rep: Michael Kunkler, Insureware
 Phone: (03) 9526 6951
 Email: inswrerd@world.net
- WA Rep: Jason Boland, Data Analysis Australia
 Phone: (09) 386 3304
 Email: jason@daa.com.au

We are still seeking representatives for Queensland, Northern Territory and Tasmania - so if you are in one of these states and would like an opportunity to enhance your professional development, please contact Phil. If you would like to know more about the YS in your area, contact your local rep.

In recent months there have been two YS dinners in Sydney: on 29 October 1996 there were nine attendees and on 11 February 1997 we had 15. These dinners are for anyone interested in the YS section and we encourage undergraduates to come along and meet some of the your statistical professionals throughout Australia. A significant number of YS also attended the NSW branch

meeting/dinner in November and we hope this continues for future meetings (and in other states!).

On a more formal front, Phil attended the central council meeting, held in Sydney on 20 February 1997, and is trying to set up a "steering committee" for the YS section. I have been elected a NSW Branch councillor and will be speaking at a meeting of the ACT branch later in the year. We are also looking into nominating a YS to speak at a meeting of the NSW branch.

However, our biggest activity for the year is of course the Workshop for Australia's Young Statisticians (WAYS '97). Michael Kunkler is the head organiser and his contact details are above. A meeting was held in December 1996 to establish a "plan of action" and I'm sure that any additional assistance would be welcomed.

The workshop will be held on 1 to 3 October 1997 at Melbourne University (web site <http://www.hutch.com.au/~inswrems/ways97htm>) and we are looking into linking up with the Industrial Statistics section conference which is being held the same week. We have applied for a grant from DIST and are also seeking other corporate sponsors. It is hoped that we will be able to subsidise student attendees and assist with transport costs for those YS coming from "further away".

There are also a number of overseas YS gatherings this year, which Melissa Dobbie (our YS contact on the ACT branch council) found; see the listing at the end of the newsletter for details. Information about them was initially circulated via the 'youngstats' email list. Please let us know if you hear of any more (I thought I heard a rumour about one being held in the USA).

We are planning to use the email list as a primary forum for discussion within the YS group, so I strongly encourage anyone who has email and an interest in YS (academics please tell your students about it!) to join by sending a message to: listproc@maths.anu.edu.au with no subject and the one-line message:
 subscribe youngstats <your name>

If you would like to hear more about, assist with or even just comment on the activities of the YS section, please contact any of the abovementioned representatives. See you at a Statistics Society meeting or YS dinner soon!

Susan Hoffmann

Survey and Management Section

Moves towards a Swiss Center for Research on Survey Methods

The Swiss Federal Statistical Office (SFSO), will be establishing its headquarters in Neuchatel in 1998, and is taking the opportunity to improve statistical research on methodological issues associated with official statistics. A chair in applied statistics is being established on a joint

basis between SFSO and the University of Neuchatel. This is the first step towards developing a joint SFSO/University Center for Research on Survey Methods. Applications for the position of Professor of Applied Statistics are currently being called for, with further information available from Professor F. Hainard, Faculty of Laws and Economics, University of Neuchatel. The formation of this centre will be another boost in the research capacity on survey methods, and will be a development to be watched with interest by those in this field.

Susan Linacre

Statistics in the Biological Sciences

Many members of SSAI interested in Statistics in the Biological Sciences will also be interested in Biometrics 97 - the conference being organized by the Australasian Region of the International Biometric Society. It will be held at Wirrina Cove Paradise Resort (approximately 1 hour 20 minutes drive south of the centre of Adelaide in South Australia) on 1-4 December, 1997. Any interested persons are invited to attend.

The themes of Biometrics 97 are animal abundance, nonlinear models, mixed models, and computing in biometry. The tentative list of invited speakers include Steve Buckland (St. Andrews), Hugh Possingham (Adelaide), Garrett Fitzmaurice (Oxford), Patty Solomon (Adelaide) Arthur Gilmour (Orange), Bill Venables (Adelaide) and Gary Glonek (Flinders). More details will be available in the first flyer and on the web pages as time goes by.

The Biometrics 97 Conference Web site has URL:

<http://www.adl.dms.csiro.au/biometrics97>

For further information, contact:

Convenor: Dr Ari Verbyla
 Mail: Biometrics 97, Department of Statistics,
 The University of Adelaide, SA 5005
 E-mail: biom97@maths.adelaide.edu.au
 Phone: (08) 8003 3218
 Fax: (08) 8303 3696

Kaye Basford
 Chair

Industrial Statistics

Preliminary notice about 2nd Australian Conference on Industrial Statistics

- Proposed location: near Melbourne
- Dates: Sunday 28 to Tuesday 30 September 1997
- There will be a single stream of activities
- We are aiming to have about 60 attendees

Statement of intent

This conference will focus on industrial case studies. Speakers will be strongly encouraged to give warts-and-all accounts of real industrial projects in areas such as chemical processing, mineral processing, manufacturing and business decisions. Review or theory papers should be linked to case studies. Some of the case studies may be presented in an extended format involving audience discussion of alternative approaches to the posed problems.

The conference will focus on the two major themes of communication and recent technical developments. These themes are complementary in that a successful industrial statistician needs skills in both areas. Subthemes may include the ones listed below. The final choice will depend on the case studies submitted.

1. Communication

- Describing our value to industry
- Describing technical statistical work to non-statisticians
- Being sensitive to the nature of the real problem and to the views and expertise of other people
- Understanding how senior managers think, and thereby helping them to make the best use of statisticians

2. Recent technical developments

- Graphics for data analysis and for presentation
- Data organisation and management
- Data mining (i.e. analysis of large and complex data sets)
- Applying Bayesian thinking in industry
- Time series
- Experimentation

We would welcome additional suggestions about technical themes

Please let us know if you are interested in coming to ACIS2, contributing a case study, giving a talk, or wish to suggest changes in emphasis of the Conference.

Teresa Dickinson can be contacted on phone number (03) 9545 8013, email Teresa.Dickinson@cmis.CSIRO.au

Geoff Robinson can be contacted on phone number (03) 9545 8014, email Geoff.Robinson@cmis.CSIRO.au

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Geoff Robinson

KEN FOREMAN LECTURE

The Ken Foreman Lecture, a joint lecture between the Australian Bureau of Statistics and the Statistical Society of Australia, will be held in Canberra on Tuesday 8th April. The invited speaker will be Professor James Durbin (recently retired Professor of Statistics, Department of Statistics, London School of Economics and Political Science) and the title of Professor Durbin's address is "The State Space Approach to Time Series Analysis and its Potential for Official Statistics". The discussants will be Professor Des Nicholls (Department of Statistics, Australian National University) and Mr Geoff Lee (Methodology Division, Australian Bureau of Statistics). The lecture will be at 5:45 pm at the Manning Clark Centre, Australian National University.

The Ken Foreman Lecture was instituted in 1996 to commemorate Ken's very substantial contribution to survey methodology in Australia. The inaugural lecture was given by the Australian Statistician, Bill McLennan, as part of the Sydney International Statistical Congress in July last year, and it is intended that in those years

coinciding with the running of the biennial Australian Statistical Conference, the lecture will be included in the conference program.

Professor James Durbin is the recently retired Professor of Statistics, Department of Statistics, London School of Economics and Political Science. Professor Durbin's recent work includes:

- advances made in time series analysis based on state-space methodology with S.J. Koopman (London School of Economics and Political Science);
- five months spent at Statistics Canada as a research fellow. Professor Durbin worked with B. Quenneville on developing the theory for a state-space approach to benchmarking;
- joint work with M. Cordero on structural shifts, outliers and heavy tailed distribution in state-space models.

Susan Linacre

CONFERENCE REPORTS

GENSTAT 96 Conference & Workshops

Over the period 30 November to 6 December 1996, some 75 people made their way to the Waite Agricultural Research Institute, University of Adelaide to attend GENSTAT 96. These 6 working days were spent participating in 3 one-day workshops followed by a 3 day statistical conference, both of which were to focus on the themes of GENSTAT and longitudinal data. The organisers are to be congratulated for scheduling specific topic workshops in conjunction with this conference. A number of participants made the positive comment that these opportunities were the first they had received to refresh their training in selected topics, as well as providing the chance to discuss with 'experts' the methodologies they were using in practice.

The first workshop was lead by Peter Lane from Rothamsted, who took us through GENSTAT 5 Release 3.3 for Windows. Just when I had prepared a growing list of questions stemming from the quirks of Release 3.2, Peter showed us this new release which seems to have a number of useful improvements, particularly those of data entry. With our appetites whet for a better GENSTAT environment, it is a little disappointing that (at the time of writing) we are still awaiting distribution of the necessary diskettes.

Granville Tunnicliffe Wilson and Peter Lane conducted the second workshop on 'Modelling Dependence between Time Series'. Granville showed us a number of new or improved time series procedures from Lancaster University which have not yet found their way onto the official library. This comprehensive workshop was another invaluable opportunity to experience in one day what would have taken an individual literally months to cover via a time series text.

Roger Pane from Rothamsted lead the third workshop on 'The Analysis of Repeated Measures'. Roger covered approaches which included the analysis of *ad hoc* summary statistics; Genstat's approach to checking the covariance matrix for compound symmetry in analysis of variance; ante-dependence analysis; generalized estimating equations and new REML facilities to model correlations between random effects.

Then followed three days of presentation of individual papers. Copies of the abstracts as Word attachments may be obtained via email from Ray Correll (Ray.Correll@cmis.csior.au).

While all were of a high standard, aspects of a number of papers remain with me. Graham Wilkinson reminded us that GENSTAT t has experienced quite a difficult period of conception, gestation, birth and infancy. Despite these somewhat painful times, GENSTAT has continued to mature and expand in sophistication. Angela Reid gave a clear description of her use of 'ANOVA, REML and GLMM to Analyse Colon Cancer Risk'; I have adopted the option of a wheat bran breakfast cereal rather than the vitamins A, C, and E in order to reduce my abnormal colon cell counts, but I certainly won't be consuming both.

Murray Hannah presented his usual thought provoking paper, this time titled 'Grazing Trials and Replication', and astounded us with his trellis-graphics-like graphics via GENSTAT. Leigh Callinan's paper on 'A Method for Modelling Autocorrelated Residuals' gave a practical application of water infiltration down a soil profile. Emlyn Williams gave a moving paper on 'Using GENSTAT for Selection Indices in Tree Improvement'; so moving was Emlyn's section on fixed and random effects that the steel in the back-rest of chairman Jeff Wood's chair snapped (*a la* Uri Geller), thereby giving Jeff an instantaneous floor-level-view of the proceedings. Arthur Gilmour and Sue Welham showed great detective skills in their who-done-it paper 'REML Developments in GENSTAT'. Not only did they note evidence of varietal and spatial variation in a cropping trial example, they also modelled patterns of variation between plots which were judged to be caused by the driving habits of the tractor operator.

Our clever organisers again showed 'people' skills when they used a cocktail party on the steps of Urrbrae House to encourage all participants into a group photo. The photographer worked hard to synchronise everyone's attention, and had a novel way of getting us to smile by backing himself into the thorns of the rose garden behind him. The evening meal and walk at the Warramong Sanctuary was most pleasant indeed, even if one of the guides kept making comparisons of the number of native animals one could keep from extinction based on the wage of just one Public Servant.

So to Ray, Rita, Angela, Trevor, Chris and Jeff, we extend ($n+1$)! cheers for a job well done.

Terry Koen

AUSTRALASIAN CONFERENCES

CONFERENCE SUMMARY

New Zealand Statistical Association 48th Annual Conference, 9-11 July 1997, University of Auckland.

Information: Associate Professor David J Scott, Department of Statistics, Tamaki Campus, The University of Auckland, PB 92019, Auckland, New Zealand; tel. +64 9 373 7599; fax: +64 9 373 7177; email: d.scott@auckland.ac.nz or dscott@scitec.auckland.ac.nz. (Further details in this issue.)

2nd Australian Conference on Industrial Statistics, 21-23 September 1997, Mt Macedon near Melbourne.

Information: Teresa Dickinson tel. (03) 9545 8013; email Teresa.Dickinson@cmis.CSIRO.au and Geoff Robinson tel. (03) 9545 8014; email Geoff.Robinson@cmis.CSIRO.au. For both, fax (03) 9545 8080; postal address CSIRO, Mathematical and Information Sciences, Private Bag 10, Clayton 3169. (Further details in the Special Interest Section of this issue.)

Workshop for Australia's Young statisticians - Ways '97, 1-3 October 1997, University of Melbourne, Parkville, Victoria.

Information: Michael Kunklet, c/o Insureware Pty Ltd, 22 Wellington St, St Kilda VIC 3182; tel (03) 9526 6951, fax (03) 9529 2663, email inswreid@world.net, <http://www.hutch.com.au/~inswrems/ways97.htm>. (Further details in Young Statisticians Section of this issue.)

Epidemiologic study design and multivariate data analysis, 3-7 November 1997, Hobart.

Information: Ms Wendy Spencer, Executive Officer, Menzies Centre, GPO Box 252-23, Hobart, Tasmania, 7001; fax: (03) 6226 7704; email: W.Spencer@menzies.utas.edu.au. (Further details in this issue.)

APORS'97, Fourth Conference of the Association of Asian-Pacific Operational Research Societies within IFORS, 30 November - 4 December 1997, World Congress Centre, Melbourne, Victoria

Information: APORS97, c/o PR Conference Consultants Pty Ltd, PO Box 326, BALWYN VIC 3103, or Pam Richards, e-mail: APORS97@sci.monash.edu.au; tel. (03) 9816 9111; fax: (03) 9816 9287. (Further details in Newsletters 76 and 77.)

Australasian Biometrics Conference, 30 November - 4 December 1997, Adelaide.

Information: Ari Verbyla, Department of Statistics, University of Adelaide, Adelaide SA 5005; tel. (08) 8303-3218; fax. (08) 8303-3696; e-mail biom97@maths.adelaide.edu.au. (Further details in Newsletter 77 and this issue.)

14th Australian Statistical Congress, 6-10 July 1998, Jupiter's Casino, Gold Coast.

Information: ASC14, School of Mathematical Sciences, Queensland University of Technology, GPO Box 2434, Brisbane QLD 4001; Email, asc14@qut.edu.au; Facsimile, (07) 3864 2310 (Further details in this issue.)

New Zealand Statistical Association

48th Annual Conference
9 - 11 July 1997
University of Auckland

Themes of the Conference are Bayesian Statistics including Markov Chain Monte Carlo, and Statistical Ecology. It is expected that there will also be sessions on Official Statistics, Biostatistics, Statistical Theory, and Statistical Education. Contributed papers in any area of statistics will however be accepted for the conference program.

Keynote speakers who have accepted invitations to speak at the Conference are Peter Hall (ANU), Luke Tierney (Minnesota), Steve Buckland (St Andrews), Keith Worsley (McGill), and Richard Huggins (La Trobe).

Peter Hall's talk will be presented jointly with the joint meeting of the Australian Mathematical Society and the New Zealand Mathematics Colloquium, which is being held in Auckland from July 7 to July 11.

Steve Buckland is to present a Workshop on Line Transect and Distance Sampling for Estimation of Wildlife Populations on the morning of July 11. The Workshop and the sessions on Statistical Ecology are intended to be interdisciplinary, bringing together researchers from Biology, Ecology and Statistics.

Accommodation has been reserved for participants in the student residence Grafton Hall which is close to the University.

The deadline for submission of abstracts is May 23, 1997.

For further details concerning the Conference, or to register your interest, there is a link on the home page of the Statistics Department at the University of Auckland (<http://www.stat.auckland.ac.nz/>). Alternatively, contact Associate Professor David J Scott, Department of Statistics, Tamaki Campus, The University of Auckland, PB 92019, Auckland, New Zealand; Phone: +64 9 373 7599; fax: +64 9 373 7177; email: d.scott@auckland.ac.nz or dscott@scitec.auckland.ac.nz

Please let us know if you are interested in coming to ACIS2, contributing a case study, giving a talk, or wish to suggest changes in emphasis of the Conference.

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Geoff Robinson can be contacted on phone number (03) 9545 8014 and email address Geoff.Robinson@cmis.CSIRO.au.
Both have fax number (03) 9545 8080 and address CSIRO, Mathematical and Information Sciences, Private Bag 10, Clayton 3169.

Epidemiologic study design and multivariate data analysis

3 - 7 November 1997

The Menzies Centre for Population Health Research will host a five day course in Hobart, Tasmania.

Teachers: Dr Kenneth J. Rothman, Professor of Public Health, Boston University & Dr Stan Lemeshow, School of Public Health University of Massachusetts

This course will provide theoretical and practical training for epidemiologists and professionals of related disciplines in study design, inferential concepts, statistical modelling and computer applications. The course is actually two interwoven courses covering a variety of topics, including concepts of causation and inference, epidemiologic measures, design of case-control and cohort studies, confounding and other biases, and epidemiologic assessment of interactions. Statistical topics will include a review of linear and multiple regression modelling strategies but will emphasize the use of logistic regression analysis for medical and epidemiologic research. Formal computer labs will take place each evening following the lectures.

More information: To be placed on a mailing list to receive further details on this course please send your contact details to:

Ms Wendy Spencer, Executive Officer Menzies Centre,
GPO Box 252-23, Hobart, Tasmania, 7001; fax: 03 6226 7704;
email W.Spencer@menzies.utas.edu.au

Australasian Biometrics Conference of the International Biometric Society (Biometrics 97)

November 30 - 4 December 1997

Wirrina Cove Paradise Resort
Second Valley, South Australia

The major themes of the conference will be on generalized linear mixed modelling, environmental modelling and ecological statistics

General Information: Biometrics 95 was held in Coolangatta in September, 1995. The 1997 conference, like its predecessor will be a friendly and enjoyable gathering that will make the most of Adelaide's fine weather, in a resort atmosphere.

The conference venue is Wirrina Cove Paradise Resort, about 1 hour 20 minutes drive south of the centre of Adelaide. Transport to and from Adelaide airport will be arranged for delegates. Co-ordination of flight times and bus times will be a task undertaken by the secretariat.

The conference will commence on Sunday evening with a welcoming BBQ (with catering for vegetarians). Formal sessions will begin on Monday December 1 and the conference will close after lunch on Thursday December 4.

Major themes: Animal abundance, nonlinear models, mixed models, and computing in Biometry.

Call for papers: Contributed papers are invited in any area of Biometry and especially in line with the major themes. Papers will be presented by lecture format, of 20 or 25 minutes duration, with 5 minutes question time.

Abstracts of one A4 page are to be prepared using the template which will be available from the web site (see below). An alternative will be available for those who do not have access to the web site. Abstracts must be received by September 1, 1997.

Registration will include all morning and afternoon teas and lunches, the welcoming BBQ and the conference dinner. The cost will depend on the level of sponsorship received, and this is currently being negotiated.

Conference Airline: Ansett Airlines has been appointed the conference airline. There will be major advantages travelling with Ansett and details will be provided in subsequent messages and in information on the web site given below.

Accommodation: Single or twin share accommodation including breakfast will be \$100 per room. Triple share including breakfast is \$125 per room. There may be other options as building work is currently in progress at Wirrina.

For more information, please contact: Ari Verbyla, Convenor, Biometrics 97, Department of Statistics, University of Adelaide, Adelaide SA 5005; tel: (08) 8303-3218, fax: (08) 8303-3696, e-mail: biom97@maths.adelaide.edu.au

Further information will be available electronically as well as through the conference organisers.

The Biometrics 97 Conference Web site has URL
<http://www.adl.dms.csiro.au/biometrics97>

email: biom97@maths.adelaide.edu.au

mail list: To subscribe to the biometrics97 email listemail to majordomo@maths.adelaide.edu.au with the following one line message in the BODY of the email (NOT in the subject)
subscribe biometrics97

Up to date information will be sent to you automatically as the details of the conference develop.

14th Australian Statistical Congress

6-10 July 1998

Jupiter's Casino, Gold Coast, Queensland

Programme Chair	Assoc Prof Kaye Basford
Local Organisation	Mr Walter Robb
Postal Address	ASC14 School of Mathematical Sciences Queensland University of Technology GPO Box 2434, Brisbane QLD 4001
Email Address	asc14@qut.edu.au
Facsimile	(07) 3864 2310

OVERSEAS CONFERENCES

UK Young Statisticians Meeting (YSM97), 7-8 April 1997, Lancaster University, England.

Information: <http://www.maths.lancs.ac.uk:2080/~mab023/YSM97.html> or see the November 1996 issue of RSS News (page 26).

Third International Conference on Health Effects of Low Dose Radiation: Challenges for the 21st Century, 11-14 May 1997, Stratford-upon-Avon, UK.

Information: Rachel Coninx, Conference Executive, BNES, One Great George Street, London SW1P 3AA, UK; fax +44 (0) 171 233 1743.

International Symposium on Contemporary Multivariate Analysis and Its Applications, 19-22 May 1997, Hong Kong.

Information: Multivar 97, c/o Dept. of Mathematics, Hong Kong Baptist University, Kowloon Tong, Hong Kong; fax: +852 2336 1505; tel: +852 2339 5056; email: multivar97@hkbu.edu.hk

1997 Joint Statistical Meetings, 10-14 August 1997, Anaheim, California.

Information: American Statistical Association, 1429 Duke St, Alexandria, VA 22314-3402, USA; email meetings@asa.mhs.com

10th European Young Statisticians Meeting, 18-22 August 1997, Warsaw, Poland.

Information: W. Florczak (florczak@impan.impan.gov.pl), Institute of Mathematics, Polish Academy of Sciences, ul. Kopernicka 18, PL-51617 Wroclaw.

IASS/IAOS Satellite Meeting on Longitudinal Studies, August 27-31, 1997, Jerusalem.

Information: Gad Nathan, Central Bureau of Statistics, 91905 Jerusalem, Israel; Fax: +972-2-6553-319; E-mail: gad@olive.msc.huji.ac.il or Susan Linacre, Australian Bureau of Statistics, PO Box 10, BELCONNEN ACT 2615, Fax: 61 6 252 5239, Email: sisd.exec@abs.telememo.au

International Society for Bayesian Analysis, Fifth World Meeting: ISBA97, 16-18 August 1997, Istanbul, Turkey.

The Fifth World Meeting of the International Society for Bayesian Analysis (ISBA) will be held in Istanbul Turkey during August 16-18, 1997 as a satellite meeting to the 51st Session of the International Statistical Institute (ISI) in Istanbul.

Information: Dr David Dowe, Department of Computer Science, Monash University, Clayton, Vic 3168; email dld@cs.monash.edu.au; fax: (03) 9905-5146; <http://www.cs.monash.edu.au/~dld/>; Hamparsum Bozdogan, Department of Statistics, The University of Tennessee, Knoxville, TN 37996-0532, USA; tel: +1 (423) 974-1635 fax: +1 (423) 974-2490; email: bozdogan@utk.edu or Refik Soyer, Department of Management Science, Monroe Hall 403, The George Washington University, Washington, DC 20052, USA; tel: +1 (202) 994-6445; fax: +1 (202) 994-4930; email: soyer@gwis2.circ.gwu.edu

IMS and Bernoulli Society European Regional Meeting: Mathematical Statistics and its Applications to Biosciences, first week in September 1997, Rostok, Germany.

Information: F. Liese, W.R. Richter, University of Rostok, Germany.

Spruce Conference - Statistical Aspects of Health and the Environment (SPRUCE IV), 8-12 September 1997, the ITC, Enschede, The Netherlands.

The fourth SPRUCE international conference, on the theme Statistical Aspects of Health and the Environment will take place at the ITC, Enschede, The Netherlands, from 8 to 12 September 1997. The aim is to bring together statisticians working in the field of health and the environment, to discuss recent progress in this field and to investigate opportunities for future needs. It will cover crucial areas as Toxicology, Epidemiology, Waste disposal/remediation, Monitoring management and Agriculture and the food chain. An international group of speakers will present the state-of-the-art in these areas. Amongst those who have already agreed to speak are: Luisa Bernardinelli, Johan Bouma, Sir David Cox, Sarah Darby, Paul Elliott, Tony Gatrell, Neils Keiding, Suresh Moolgavkar, Andreas Papritz, Sylvia Richardson, Wouter Slob, Richard Smith and Jim Zidek. The proceedings will be published by J. Wiley as a volume of the Statistics for the Environment series.

For further information, registration and request for the second circular including a call for abstracts please contact A. Stein, ITC, P.O. Box 6, 7500 AA Enschede, The Netherlands. Email: spruce@itc.nl.

International Meeting on Multidimensional Data Analysis NGUS'97, 10-12 September 1997, Bilbao, Spain.

Information: Kormele Fernandez-Aguirre, Avda, Lehendokari Aguirre, 83 (48015) Bilbao, Spain.; fax 34 4 479 7554; email ngus@bs.ehu.es; internet <http://www.et.bs.ehu.es/ngus97.html>.

International Biometric Society (ENAR) Spring Meeting, 27 March - 1 April 1998, Pittsburgh, Pennsylvania, USA.

Information: ENAR Conference Manager, 11250 Roger Bacon Dr., Suite 8, Reston, VA 22090 USA; fax +1 (703) 435-4390.

Seventh International Congress of Ecology, Frontiers of Statistical Ecology with Environmental Statistics, 19-25 July 1998, Florence, Italy.

Information: Prof. Wolfgang Urfer, Department of Statistics, University of Dortmund, D-44221 Dortmund, Germany, tel. +49 231 755-3121, fax +49 231 755-5303, email urfer@omega.statistik.uni-dortmund.de or Dr Phil M. Dixon, Savannah River Ecology Lab, University of Georgia Drawer E, Aiken SC 29802, USA, tel. +1 803 725-2472, fax +1 803 725-3309, email dixon@srel.edu.

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