1980 : tokyo
1982 : warsaw
1983 : the beginning
bernard gutsell
Canada

roger anson
United Kingdom
A MESSAGE FROM THE PRESIDENT ICA

Dear Colleagues: It is a pleasure to introduce the first issue of the Newsletter of the International Cartographic Association. The idea of such a publication was conceived at the Sixth General Assembly in Tokyo, 1980. It was generally felt there that the irregular, infrequently appearing Bulletin of the International Geographical Union, in which ICA news has been published since 1964, did not fulfil its purpose as an adequate cartographic news medium. Consequently, a separate ICA newsletter was recommended. Due to various circumstances, however, realisation of this project was delayed. Thanks to the initiative of Bernard V. Gutsell (the Canadian member of the ICA Publications Committee and Editor of the journal Cartographica), and the generous support of the University of Toronto Press, obstacles were removed, and now the manuscript of the first ICA Newsletter is here.

XITH INTERNATIONAL CARTOGRAPHIC CONFERENCE
29th July – 4th August, 1982, Warsaw, Poland

The 1982 Conference in Warsaw was a remarkable success in view of the political uncertainties in Poland. Participants numbering 437, representing 38 countries made the journey to Warsaw and their efforts were repaid by a meeting noted for a variety of interesting papers, a magnificent exhibition and hospitality from the host country that surpassed anything most visitors could have expected.

In total, 56 papers were presented in 9 sessions and one poster session. Most of the lectures dealt with the applications of known cartographic facts within applied situations and there was little evidence of the results of new and original research. Unfortunately, the quality of the visual presentation of materials relating to many papers left much to be desired. As during the Tokyo Conference, cartog...
jean-philippe grelot
france
Editorial

This is the 25th issue of the ICA Newsletter. This number should be an indication of the interest shown by the ICA Family upon the stimulation of new ideas among its members. This is the raison d'être of the Executive Committee, but the Newsletter should not only be a top-down media. We are now considering some changes for the journal in order to improve its accessibility. Some basic sections are natural:

- Sections of the meetings of the Executive Committee;
- Sections of the commissions and working groups;
- Publications;
- Joint activities with international sister societies;
- ICA Newsletters and other cartographic meetings.

Other sections could be added, especially from input given by many of you, the ICA Newsletter is your journal. The Executive Committee asks our readers to propose other sections to contact them.

The ICA Newsletter is intended for a large distribution during the 19th General Assembly and 17th International Cartographic Conference in Buenos Aires. For this reason, it contains a draft version of the terms of reference of commissions and working groups for the period 1993-1999 which will be decided during these events for final approval by the General Assembly during its final session.

The commissions and working groups are the fundamental tools and I would say raison d'être of the International Cartographic Association to achieve its objectives. The terms of reference are draft guidelines, but also for windows of the Association for its various policies: cartographers active or currently less active in the ICA, sister societies, international organization, etc. This letter should reflect your ideas upon cartography, the better they will serve the ICA. The opportunity of the meetings to interact will be crucial for the commissions and working groups and help them grow - and more profitable during the coming period.

From Philippe Goës, Secretary General of ICA

Contents

  1.5
  6.7
- Commission permanent sur l'histoire de la cartographie: since 1995-1995 perspectives: 8-6
- Publication Committee: Achievements 1991-1995: 10-10
- Commission on Cartography and Education: a report on the formation of a proposed Working Group of the International Cartographic Association: 11-43
- International Geographical Union: 20th International Geographical Congress, 63-14
- GIS/1995: 14
- Cartographia: 14-45
- Hydrography: 45-
ica news
nouvelles de l’aci
graciela metternicht
australia
Editorial

A notable success of the 1999–2007 period was the initiative to inform the membership of the ICA News newsletter. The opportunity to communicate with the members directly was a new experience for many, and the newsletter became a valuable source of information.

I wish all our community a merry Christmas and an enjoyable beginning to the new millennium.

New Executive Commission

Headquarters of the newly formed Executive Commission included the newly elected President and Secretary-General.

Commission

Commissioner of the Executive Commission: Jane Adams. New positions included:
1. Education and Training, Chair: Vivian Almeida (Brazil)
2. Map Production, Chair: Peter van der Meer (Netherlands)
3. Geography and Education, Chair: A. Malhotra (India)
4. ICA Design and Architecture, Chair: Prof. C. Ross (South Africa)
5. Science and Education, Chair: D. Brugger (Switzerland)
6. Heritage Conservation, Chair: D. T. Davison (Australia)
7. Communication, Chair: A. Malhotra (India)
8. Journals and Publications, Chair: D. T. Davison (Australia)
9. Membership, Chair: D. T. Davison (Australia)
10. Other Activities, Chair: D. T. Davison (Australia)

Commission 1999–2007

The Commission was established in 1999 to ensure the continuity and development of the ICA News newsletter. It included representatives from various countries and regions, including:
1. Education and Training, Chair: Vivian Almeida (Brazil)
2. Map Production, Chair: Peter van der Meer (Netherlands)
3. Geography and Education, Chair: A. Malhotra (India)
4. ICA Design and Architecture, Chair: Prof. C. Ross (South Africa)
5. Science and Education, Chair: D. Brugger (Switzerland)
6. Heritage Conservation, Chair: D. T. Davison (Australia)
7. Communication, Chair: A. Malhotra (India)
8. Journals and Publications, Chair: D. T. Davison (Australia)
9. Membership, Chair: D. T. Davison (Australia)
10. Other Activities, Chair: D. T. Davison (Australia)
1999 – 2007
from 2007
50th anniversary of ICA 2009

Dear Colleagues,

The International Cartographic Association (ICA) organizes a biennial event, the International Cartographic Congress, at various locations around the world. The 2009 conference was held in Beijing, China. This event is a significant occasion in the field of cartography.

Day 1: 9 June 2009

Welcome and Overview

Day 2: 10 June 2009

Celebrating the Future

ILA commissions

ILA exhibition

ILA participants

Welcome and Overview

ILA commissions

ILA exhibition

ILA participants

Welcome and Overview

ILA commissions

ILA exhibition

ILA participants

This special issue of ICA News marks the 50th anniversary of the ICA, a milestone in the history of cartography.

Sincerely,

[Signature]

Editorial Board

ILA (International Cartographic Association)
contents
International Cartographic Conference 2013

The preparations for the 26th International Cartographic Conference in Dresden, Germany have been the main focus of many people in the last several months. The Local Organizing Committee – Manfred Buchroithner, Dirk Burghardt, Nikolas Prechtel and Benjamin Schröter – are working hard on preparing the event. Secretary General Prof László Zentai and myself had the chance to get an update on the status of the preparations during a short visit to Dresden between 24-25 January 2013. We can expect a 5-day festival of Cartography and Geoinformation Science at the beautiful Conference Centre right by the River Elbe and close to the spectacular city centre of Dresden. For the first time ever the ICC 2013 will include two plenary sessions every day, one in the morning and one in the afternoon, giving all participants the opportunity to come together before selecting one of the eight parallel session streams afterwards. Inspiring keynotes are planned for the plenary sessions, some going beyond the subjects of our discipline but eventually adding new perspectives on topics of mutual interest. Also for the first time ever, we plan to have all ICA Commission chairs on stage, highlighting the relevance and plans for their respective Commissions. Many attractive accompanying events are planned for young scientists, national mapping agencies and commercial exhibitors.

ICC 2013 will bring together cartographers and GI Science specialists from across the globe. It will be a very important forum for presenting scientific papers that illustrate recent efforts of the research community, professional papers that describe the cutting-edge cartography employed by mapping organisations, and

president’s reports
ICA News

Mapping the First 50 Years of ICA

The International Cartographic Association (ICA) was established fifty years ago in Bern, Switzerland. Since its founding in 1959 by twelve western European countries and the United States, the ICA has grown to include over 80 nations as members. To date, the ICA has organized 14 general assemblies and 23 international conferences with a total of more than 4,000 papers presented. With the ICC 2009 conference in Santiago, Chile, conferences will have taken place on all six continents. As illustrated by the map at left, Europe has hosted 14 of the past 23 conferences. The international character of the ICA has always been reflected by the diverse origins of the members of the executive committees and its 11 presidents. The International Cartographic Conferences normally take place every other year and are usually complemented every four years by a General Assembly of the national representatives. The first General Assembly took place 1961 in Paris, France, where Professor Eduard Imhof from Switzerland was elected the first President of the ICA. In 2011, Paris will host the 15th General Assembly and the 25th International Cartographic Conference.

The map uses the Ginzburg VIII projection, which distributes parallels with unusual increasing spacing, strongly inflating polar regions. This arrangement creates the required space for an enlargement centred on Europe, which is necessary to show all conference locations. The map background is Tom Patterson’s Natural Earth II (see Tom’s profile in ICA News No 59, June 2003).
agata ciołkosz-styk

My family home was always full of maps. As a young girl I liked to travel with my parents having a road atlas on my lap. Since then I became amazed how lines on maps turn into roads and symbols denote real objects. I realized that knowing the cartographic language the maps are constructed with leads to a better understanding of the surrounding world.

This desire for understanding the world, its environmental processes and human interactions, led me to study geography at the University of Warsaw. After graduating I decided to do my masters in cartography as I had a premonition that it would give me a broader perspective on geography and its various areas of specialisation. My masters thesis was devoted to Polish topographical maps and their social and political determinants. That work showed me that maps should be treated not only as an effective tool for studying reality but also as an artefact, i.e. a product of the human mind which reflects contemporary and historical situations. During my cartographic studies I engaged in many additional initiatives, e.g. mapping urban areas, co-establishing a cartographic section of the Students' Geo-Science Club and

www.dgfk.net

KN Kartographische Nachrichten – Cartography and Geographic Information News – is the only cartographic journal of the German language area. The journal is among the oldest cartographic periodicals world-wide. It was established in 1951 as the journal of the German Society of Cartography (DGFK). In 1976, the journal has become the joint periodical publication of DGFK, the Cartographic Commission of the Austrian Geographical Society (ÖKÜ), and the Swiss Cartographic Society (SGK).

Apart from the early years, KN Kartographische Nachrichten is being published every two months, comprising about 60 pages per issue. It changed format several times and currently has a standard A4 (210 x 297mm) page size. Since 2004, the journal is reproduced in four process colours.

Each issue contains from four to six scientific articles on almost all aspects of cartographic development and research. So far, the articles are predominantly in German (with English summaries), but papers in English are also accepted. All articles are peer reviewed by relevant experts.

KN Kartographische Nachrichten also publishes short articles about recent technical developments in practical cartography and reports from national, as well as international cartographic conferences and other relevant events. Supplementary sections comprise regular accounts of activities in the German, Austrian and Swiss cartographic societies and

Recent cover of the KN Kartographische Nachrichten journal

ic database containing abstracts and citations for academic journal articles.

The aim of KN Kartographische Nachrichten is to be a platform for internal and external information exchange at a national level and a representative journal of the German speaking
CPD (the consumer) is addressed. Secondly, there is a range of suppliers of CPD resources including commercial companies, educational establishments or international learned societies. Thirdly, the material delivered also forms part of the model: there is a wide range of content, available material, and dissemination method.

The second paper entitled The Changing Face of Cartographic Education and Training has been prepared by three Commission members, Professor László Zentai, Professor Maria Cecilia Bonato Brandalize and Associate Professor David Fraser, for the ICC 2011 conference. This paper discusses the issue faced by many cartographic departments and programs around the world. That is the demise of cartography as a discipline in its own right and the dispersal of cartographic theory and practice into many and varied education programs representing other disciplines.

Imre Demhardt explaining some cartographic principles in the Focuse Library of Southern Methodist University, Dallas, Texas | Photograph courtesy of Eiri Liebenberg

Geospatial Analysis and Modeling
fromto.hig.se/~bjg/ica/

Commission Activities
A special issue on geospatial modeling and visualization, developed from the 3rd ICA Workshop on Geospatial Analysis and Mod.

History of Cartography
www.icahistcarto.org/

International Symposium in Arlington, Texas, USA
The ICA Commission on the History of Cartography held a successful Symposium at the University of Texas at Arlington (UTA) from 10-13 October 2010. The commission meeting was held in conjunction with the 7th Biennial Virginia Garrett Lectures on the History of Cartography on 8 October 2010, and the Fall of participants were from the US, but others came from as far afield as Croatia, Hungary, South Africa, Brazil and the UK. On the closing day a separate session gave Prof Matthew Edney of the University of Wisconsin and Prof Roger Kain of the University of London the opportunity to explain their views in regards to the future development of Volume 5 of the History of Cartography Project of the Chicago University Press. Volume 5 of this prestigious publication will deal with the cartography of the 19th century.

To complement the Symposium, a special issue of the Journal of Cartography is in preparation.
intriguing as the use of public participatory GIS for understanding landscape values, application of fuzzy multi-criteria analysis for siting of medicinal vegetation, investigation of patch connectivity for brushtail possums and mapping endemic dolphins.

The next day started with an interesting keynote from self-confessed 'Mapsmith' Roger Smith, and then moved into the NZ Government mapping, with Geoff O'Malley and Andrew Ferrel (Land Information New Zealand) illustrating the past successes and future challenges faced by the New Zealand national mapping agency. Ken Field (Esri) entertained the audience with his provocative and superbly illustrated talk on re-imagining the art of cartography, while Anthony Robinson (Pennsylvania State University) talked about the challenge of designing map symbols for emergency management.

In the afternoon Prof Georg Gartner (ICA President) outlined the role of the ICA in modern cartography, followed by a thought-stimulating Panel discussion with the keynote speakers. The day was rounded off by a fabulous Gala Dinner with great entertainment.

David Fairbairn began the final day with some interesting perspectives on how cartography is incredibly relevant in today's world, although there was a fair amount of debate over the 'Art' of cartography. William Cartwright talked about individual geo-narratives, following a WW1 Australian soldiers' journey to battle, after which we went on to a more recent

GeoCart 2012 in pictures: (top row from left) Aileen Buckley, Geoff Aitken, one of the plenary sessions; (middle row) Ken Field, Georg Gartner, Michelle Cooper, David Fairbairn; (bottom row) William Cartwright, Prof Cartwright addresses guests at GeoCart 2012 Gala Dinner, Antoni Moore | Photography Marney Brosnan

AutoCarto 2012

The Cartography and Geographic Information Society (CaGIS) held its...
august 2013
22-23: ICA Commission on the History of Cartography, ICA Commission on Atlases and Joint ICA Working Group / IGU Commission on Toponomy Joint Workshop | Historical Maps, Atlases and Toponomy | Leipzig | Germany
22-24: ICA Commission on Maps and the Internet Meeting | Historical Maps, Atlases and Toponomy | Plzen | Czech Republic | gis.zcu.cz/kartografie/ICA_Commission_Meeting/

september 2013
24-25: LADM 2013 : 5th International Land Administration Domain Model Workshop | Kuala Lumpur | Malaysia | wiki.tudelft.nl/bin/view/Research/ISO19152/LADM-2013Workshop/

october
03-04: Géomatique/Geomatics 2013 Symposium | Montreal, Quebec | Canada | www.geomatique2013.com/
09-11: GIT4NDM 2013 : 5th International Conference on Geoinformation Technologies for Natural Disaster Management | Save the Earth with Informed Solutions | Mississauga, Ontario | Canada | www.widm.igrdg.com/5thGit4NDM.php

november
06-08: URISA Caribbean Chapter’s Regional Workshop | Sint Maarten
21-22: LBS2013 : 10th Symposium on Location Based Services | Save the Earth with Informed Solutions | Shanghai | China | www.lbs2013.org/
conference publications


International Cartographic Exhibition Catalogue

ICC 2011 Proceedings (USB flash drive)

Cartographica, Vol 46, Issue 2, Summer 2011

The Cartographic Journal Vol 48, No 2, May 2011

Dear colleagues,

The preparatory activities for the 26th ICC taking place in Dresden, Germany, are well on their way. In order to keep abreast of the latest developments feel free to check www.ICC2013.org. This site will continuously be updated and show the major issues of the ICC programme.

See you in Dresden!

Manfred Buchroithner, Congress President

www.icc2013.org

icc reports
ica affiliate members

Association of Polish Cartographers | Poland | www.polishcartography.pl
Attn: Dr Ing Joanna Bac-Bronowicz | joanna.bac-bronowicz@up.wroc.pl

Bundesamt für Kartographie und Geodäsie | Germany | www.bkg.bund.de
Attn: Prof Dr Ing Hansjörg Kutterer | hansjorg.kutterer@bkg.bund.de

Centro Argentino de Cartografía | Argentina | www.centroargentinodecartografía.org
Attn: Prof Carmen Alicia Rey | ccc@centroargentinodecartografía.org

Chinese Cartographic Association (Chinese Taipei) | Taiwan-China | www.ccartoa.org.tw
Attn: Dr David Ding | davidydcd@gmail.com

Dubai Municipality | United Arab Emirates | www.dm.gov.ae
Attn: Ali Mohammed Alameri | aameri@dm.gov.ae

East View Geospatial | United States of America | www.geospatial.com
Attn: Kent Lee | matthew.tanaka@cartographic.com

Eko-Graf Cartographic Publishing House | Poland | www.ekografl.pl
Attn: Roman Janusiewicz | ekograf@ekografl.pl

Esri | United States of America | www.esri.com
Attn: Mark Cygan | mcygan@esri.com

Faculty of Geo-Information Science and Earth Observation (ITC), University of Twente | The Netherlands | www.itc.nl

Moscow State University of Geodesy and Cartography | Russia | www.miiguik.ru
Attn: Prof Vasily A Malininikov | igm@miiguik.ru

National Hydrographic Office | India | www.hydrobhart.nic.in
Attn: Rear Admiral SK Jha, NM | ja-inho-navy@nic.in

National Land Survey of Finland | Finland | www.nls.fi
Attn: Heikki Ursin | heikki.ursin@nls.fi

Navionics Hydrographer | Italy | www.navionics.com
Attn: Francesco Pezzana | pezzana@navionics.it

Ordnance Survey | United Kingdom | www.ordnancesurvey.co.uk
Attn: Paul Naylor | paul.naylor@ordnancesurvey.co.uk

Polskie Przedsiębiorstwo Wydawnictw Kartograficznych (PPWK) | Poland | www.ppwk.pl
Attn: Dr Beata Konopka | copernicus@ppwk.pl

Regional Centre for Mapping of Resources for Development (RCMRD) | Kenya | www.rcmrd.org
Attn: Dr Hussein O Farah | rcmrd@rcmrd.org

Regional Centre for Training in Aerospace Surveys (Rectas) | Nigeria | www.rectas.org
Attn: Prof Isi Ikuhia | rectas@oaufe.edu.ng

SuperMap Software | China | www.supermap.com
Attn: Li Ni | jini@supermap.com

Surveying and Spatial Sciences Institute (SSSI) | Australia | www.sssi.org.au
children’s map gallery
focus
50 years of ICA general assemblies 1961-2011

A report on the first General Assembly of member nation delegates to the ICA, held in Paris from 29 May to 3 June, 1961, was published in the *Internationales Jahrbuch für Kartographie (IJK)* (International Yearbook of Cartography) printed in Germany in 1961. It deals with the founding of ICA and the subsequent development of the association into a well-governed and established professional international organisation. The text below paraphrases the report in the Yearbook.

The necessity of establishing not only a regional but also an international exchange of methodical and technical achievements in the field of cartography suggests itself more and more. For this reason Dr Carl Mannerfelt (Sweden) invited experts of different countries as early as 1956 to a working session, the so-called Esselte Conference. In 1958, a second session of this kind was held...
is included in the conference programme, which also features an exhibition highlighting new cartographic products. The exhibition entries are evaluated by a jury, and the best products are selected to represent Norway at the International Cartographic Exhibitions. Over the last seven ICA Exhibitions (1999-2011), Norwegian maps won nine awards.

gives a good insight of the cartographic activities undertaken by the government institutions and private industry. The report can be accessed from www.geomatikk.ntnu.no/norwaycartography/.

Terje Midtbø and Kristoffer Kristiansen | GeoForum | Norway

Terje Midtbø (left) and Kristoffer Kristiansen judging a map at the National Map Exhibition; they also represent Norway at the ICA General Assemblies | Photography Marianne Meinich
### ICC 2011 :: Facts and Figures

<table>
<thead>
<tr>
<th>Category</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>icc 2011 participants</td>
<td>1,498</td>
</tr>
<tr>
<td>Full</td>
<td>740</td>
</tr>
<tr>
<td>Senior / student / Africa</td>
<td>278</td>
</tr>
<tr>
<td>One / two days</td>
<td>416</td>
</tr>
<tr>
<td>Accompanying persons</td>
<td>64</td>
</tr>
<tr>
<td>Visitors / Press</td>
<td>92</td>
</tr>
<tr>
<td>Commercial exhibitors’ personnel</td>
<td>134</td>
</tr>
<tr>
<td>Participants at technical visits</td>
<td>162</td>
</tr>
<tr>
<td>Bibliothèque nationale de France (BNF)</td>
<td>45</td>
</tr>
<tr>
<td>Institut de recherche pour le développement (IRD)</td>
<td>20</td>
</tr>
<tr>
<td>Institut géographique national (IGN)</td>
<td>90</td>
</tr>
<tr>
<td>Service hydrographique et océanographique de la marine (SHOM)</td>
<td>7</td>
</tr>
<tr>
<td>Meetings</td>
<td>16</td>
</tr>
<tr>
<td>ICA Commission and Working Group Workshops and Tutorials</td>
<td>14</td>
</tr>
<tr>
<td>Other events</td>
<td>2</td>
</tr>
<tr>
<td>Exhibits at International Cartographic Exhibition</td>
<td>602</td>
</tr>
<tr>
<td>Maps</td>
<td>442</td>
</tr>
<tr>
<td>Atlases</td>
<td>110</td>
</tr>
<tr>
<td>Digital products</td>
<td>48</td>
</tr>
<tr>
<td>Globes</td>
<td>2</td>
</tr>
<tr>
<td>Maps at Children’s Map Exhibition</td>
<td>186</td>
</tr>
<tr>
<td>5-8 years old</td>
<td>46</td>
</tr>
<tr>
<td>9-12 years old</td>
<td>82</td>
</tr>
<tr>
<td>19-15 years old</td>
<td>58</td>
</tr>
</tbody>
</table>

### ICC 2011 :: Origin of Presentations

- **Poster (197)**
- **Oral (480)**

<table>
<thead>
<tr>
<th>Country</th>
<th>Presence</th>
</tr>
</thead>
<tbody>
<tr>
<td>France</td>
<td>32</td>
</tr>
<tr>
<td>USA</td>
<td>9</td>
</tr>
<tr>
<td>Brazil</td>
<td>27</td>
</tr>
<tr>
<td>Germany</td>
<td>22</td>
</tr>
<tr>
<td>Switzerland</td>
<td>18</td>
</tr>
<tr>
<td>Russia</td>
<td>19</td>
</tr>
<tr>
<td>Poland</td>
<td>11</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>9</td>
</tr>
<tr>
<td>China</td>
<td>6</td>
</tr>
</tbody>
</table>

### ICC 2011 :: Published Papers and Posters

<table>
<thead>
<tr>
<th>Topic</th>
<th>Paper in Journal or Book (77*)</th>
<th>Paper in Electronic Proceedings Only (404*)</th>
<th>Poster (197)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Semiotics, map perception, cognition and knowledge</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Digital technologies and cartographic heritage</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maps and geo-db production techniques</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Geospatial analysis</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Use and user issues</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Geo-spatialization, augmented and virtual reality</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Generalisation and multi-scale representation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SDI, standards, ontologies and integration</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mapping from satellite imagery</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maps, GIS and hazards &amp; disasters</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>History of cartography and GIS Science</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maps and the Internet</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Art, culture and cartography</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Education and training</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>National and regional atlases</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Data quality</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maps, GIS and sustainable development</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spatio-temporal modelling and issues</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maps, GIS and society</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
access
30 years
30 years
61 issues
6 editors
1,084 pages
ica news
your news