

### ASSOCIATION DES CARTOTHÈQUES ET ARCHIVES CARTOGRAPHIQUES DU CANADA



NUMBER 149 / WINTER 2015

### ASSOCIATION OF CANADIAN MAP LIBRARIES AND ARCHIVES / ASSOCIATION DES CARTOTHÈQUES ET ARCHIVES CARTOGRAPHIQUES DU CANADA

MEMBERSHIP in the Association of Canadian Map Libraries and Archives is open to both individuals and institutions having an interest in maps and the aims and objectives of the Association. Membership dues are for the calendar year and are as follows:

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Les opinions exprimées dans le Bullein sont celles des collaborateurs et ne correspondent pas nécessairement à celles de l'Association.

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### ACMLA Bulletin Number 149 Winter 2015

### PRESIDENT'S MESSAGE

As I enter the last couple of months of my ACMLA presidency, I would like to extend my huge thanks to the Executive who have provided great leadership with Association activities, and to the committee chairs, our officers, conference organizers, the *Bulletin* editor and *Bulletin* authors, all of who have contributed to sustaining and improving our great association. I am also grateful to the members who came forward to work on the new bylaw and rules of procedure. In the next months and years to come we have a lot to look forward to!

### 2015 Conference and Annual General Meeting

The 49th annual conference and annual general meeting of the Association of Canadian Map Libraries and Archives / Association des cartothèques et archives cartographiques du Canada (ACMLA-ACACC) will be held in Ottawa from June 16th to June 19th, 2015. Our colleagues at Carleton University will be hosting the workshops on June 16th and the conference sessions will be held at uOttawa on June 17th to June 19th. For more information about the conference including registration details and the preliminary program, please visit the conference website at https://carto2015.library.carleton.ca/. We are also looking for volunteers to help out during the conference, if you are interested please email carto2015@acmla-acacc.ca.

### ACMLA at 50

2016 will be the 50th Anniversary of the Association of Canadian Map Libraries and Archives. In 1966, a small group of dedicated librarians and archivists started organizing the first "Conference on Map Libraries and Map Collections in Canada". The conference had around 70 map professionals in attendance and it took place at the Public Archives of Canada in Ottawa in June 1967. During that conference the Association of Canadian Map Libraries was formed, and twenty years later we became the Association of Canadian Map Libraries and Archives. Next year will be a very special year for our Association and we will celebrate it, with a special issue of the *Bulletin* and a birthday party at the 2016 Conference.

### **Board of Directors Nominations and Elections 2015-2016**

Last July our new bylaw was submitted and accepted by Industry Canada. One of the significant changes is the structure of our Board. So, in the weeks to come, the Nominations Committee will be struck, and members of ACMLA will receive a call for nominations for the following positions: President, Vice-President/President Elect, Past-President, Vice-President Professional Development, Vice President Communications and Outreach, Treasurer, and Secretary. Once the nominations are submitted, we will be conducting elections prior to the Annual membership meeting in Ottawa from June 16-19. I would like to encourage all members to consider running for an elected position on our Executive.

In brief, these are the roles and responsibilities of each position.

Vice-President/President Elect: The primary role is to liaise with the Association's members, oversee the mentoring program along with the President, and to develop recruitment strategies. The Vice-President/President Elect position shall serve the first year after their election as Vice President, the second year as President, and the third year as Past President.

President: Acts as the chief executive officer of the Association and presides over Association meetings. The President's primary responsibility is to provide leadership for the ACMLA.

Past President: The Past President is responsible for administering the Association's awards and applying for any available external funding that advances the Association's goals.

Vice-President Professional Development [2 years]: This new executive position will develop and maintain the professional development strategy for the Association, including facilitating the planning of the Annual Conferences.

Vice President Communications and Outreach [2 years]: This new executive position will develop and maintain a communications plan and strategy for the Association including, external communications on behalf of the Association about issues affecting our communities, and chairing the Communications Committee.

Treasurer [3 years]: The Treasurer manages the finances of the Association, including preparing and presenting the budget, maintaining financial records.

Secretary [3 years]: The Secretary records the minutes of all proceedings of the Executive Board and the Annual Meetings, ensures the maintenance of the archival record of the Association

For more details about each position, do not hesitate to get in contact with any current member of the executive.

### **Appointed Positions and Standing Committees**

Of course, there is more to our Association than our Board of Directors. We are always looking for members to contribute to committee work. In addition to our established Nominations and Elections and Awards Committees, we will be creating a Communications Committee to support communications and outreach for the Association. Finally, we have several appointed positions: Membership Officer, Editor of the Bulletin, Publications, Webmaster, and Regional Representatives. If you are interested in becoming more involved with the Association, keep an eye out for a call for expression of interest for vacant committee positions and appointed positions.

Best Regards,

Rosa Orlandini ACMLA President

### **GEOGRAPHIC INFORMATION TECHNOLOGY IN EDUCATION**

### International Geographical Union Regional Conference (IGU) Report

Krakow, Poland, August 18-22, 2014 "Changes, Challenges and Responsibility". Eva Dodsworth University of Waterloo

#### IGU 2014

The 2014 Regional Conference of the International Geographic Union (IGU) was held on August 18-22 in Krakow, Poland. There were 1374 participants from 64 countries and regions including Poland, Germany, Japan, China, Africa, USA, Canada and many others. The conference was organized by the consortium of eight geographical research institutions from Poland, and took place at the Jagiellonian University, which celebrated its 650th anniversary that year. The theme of the conference was "Changes, Challenges and Responsibility" which drew attention to the constantly changing environment, society and economy which encourages researchers to find new methods to understand the changing world.

The opening ceremony was held on August 18th, 2014 in the Auditorium Maximum of the Jagiellonian University (city centre). A number of individuals delivered speeches, including Dr. Jacek Majchrowski, Mayor of the City of Krakow. Professor Leszek Kosinski gave a plenary opening lecture on the "Relevance of Geography". A short piano recital was offered by Mateusz Mateja providing participants with a sampling of traditional Polish music.

The conference activities were comprised of IGU commission sessions, thematic sessions, workshops and posters. The sessions were slotted into 31 different sub themes, or categories, with each sub theme offering 4 presentations per scheduled time slot. There were a total of

1171 oral presentations and 227 posters, all of which were assigned to a specific theme. The theme that I presented in and the sessions that I attended was "Geographic Information Technology in Education". The sessions took place in three buildings of the Jagiellonian University Faculty of Biology and Earth Sciences.

The conference provided high quality researchcentered presentations and opportunities to meet faculty and researchers from many countries around the world. There were many networking and social opportunities, from the Icebreaker, to an outdoor social event, a gala dinner and salt mine tour.

The closing ceremony was held on August 22nd and it concluded with a talk by Dr. Vladimir Kolosov, President of IGU. It was announced that IGU will be coming to Quebec in 2018.

### Session Highlights and Reflections

From August 19th – 22nd I attended several sessions that focused on teaching strategies and using geo-technology in the classroom. There was certainly the common theme of instructors struggling with teaching GIS or geo-related technology and concepts to students. At the other end of the spectrum another re-occurring theme was encouraging instructors who were not very knowledgeable in the GIS or mapping field to embed the theme and technology into the classroom. Both themes I have struggled with myself for many years so these talks hit close to home and

provided me with suggestions for improving my teaching and mentoring strategy for new users.

A valuable selection of talks also provided me with ideas for how to successfully embed GIS technology into the classroom, offering specific project ideas and curriculum samples. Very importantly, the presentations provided me with some insight as to why many instructors choose not to use GIS. Understanding their hurdles will encourage me to reach out in different ways to them. Many have spoken about the importance of creating pedagogy that will standardize training users in GIS - both students and teachers. Having agreed upon models and practices is certainly something that I will share with my colleagues with hopes of creating standardized teaching kits for introductory GIS sessions for students, faculty and staff.

# Bringing GIS and Spatial Literacy into the Classroom

For many years I have struggled finding innovative and interesting ways to capture students' attention when it comes to teaching GIS. Years ago, I started with a definition of what GIS is, then I moved on to showing a live example of what the software program ArcGIS can do. Now I start with something simple – showing online maps and Google Earth, my attempt at having students relate to the technology. In fact this approach is what my own presentation at IGU was about, and fortunately I have attended other talks with a similar theme at this conference. It was refreshing to learn that many instructors have also struggled teaching GIS to students and learn how they have modified their lectures and classroom activities to find a successful way to transfer knowledge.

Some of the presentations that I found more relative in my field of work were by faculty who were using Google Earth to supplement the learning experience. Although Google Earth is widely used in K-12 classrooms, it has only recently become a popular tool to use in the post-secondary environment so I was happy to hear about the different subjects that have embedded Google Earth into their course and project work – First Nations, second languages, historical studies, Ancient Greece, and digital humanities to name a few.

It was refreshing to attend presentations that discussed specific GIS projects in classrooms. When instructors wish to move beyond GIS basics and create course assignments around the technology, it enables the students to interact with the product more. There were three presentations that specifically discussed geocaching. In one, a couple of instructors from Aachen University shared the results of their "Uni-Geocaching' project for a course in economic geography, a playful and fun approach to gaining spatial orientation and research skills. Students travelled in groups to different locations in the city with their mobile GPS and when they arrived at specific landmarks they found Caches that asked them to find answers to questions using a number of online resources like newspaper articles, podcasts, photographs or QR Codes. When the questions were answered correctly, they were provided with coordinates for the next landmark. Customized software was created for this project and each student had a copy on their mobile phone or tablet. It was good to see that geocaching can be successfully used in upper academic courses.

Another project that required "field work" was discussed in a presentation highlighted in a GIS workshop that is held every summer in Hiroshima, Japan, teaching not only mapping skills but informing students of atomic bomb effects. Students went out and conducted their own field work looking for signs of atomic bombing. Then they mapped their field notes atop of air photos using an open source GIS program, "Chizutaro". Combining real life experiences (walking through locations of bombing) with virtual enhances learning. This is a similar approach that I see several geography and environmental courses using as well – in person visits and then mapping using GIS.

There really is nothing more satisfying than

seeing students engaging with the technology and gaining so many skills while doing it. I've been fortunate enough to be part of several courses that invited me to work with the students. It can be frustrating however when there are students that can truly benefit from working with GIS but the instructor is not willing to work with the technology in the course. The following section will speak to why this may be the case.

### Teachers' Reluctance to GIS in Classrooms

There had been several presentations that discussed the reasons behind why instructors may not be using GIS or mapping technology in classrooms. Some stated that lack of regional or national geography standards may be the cause, or that GIS simply isn't taught in secondary schools and therefore there is little interest in post-secondary courses. Some point to lack of student interests, whereas others point to lack of teacher interest and expertise.

A talk by two faculty from Friedrich-Alexander University of Erlangen-Nuremberg (Höhnle, Schubert) discussed research results that shed light on why instructors may not be integrating GIS into their course curriculum. Other speakers have mentioned some of these reasons as well.

1) inadequate teaching examples,

2) lack of integrating GIS in teacher training at university,

3)unsustainable further training activities for teachers,

4) didactical conditions,

5)GIS-promoting conditions at the school,

6)lack of access to and availability of geodata,

7) inadequate software solutions, and

8)lack of co-operation and interest of the students.

I can certainly speak to many of these as I have had conversations with faculty, colleagues and co-workers in the past who have discussed many of the above reasons. The most difficult is finding and developing adequate teaching examples (1). This may be due to the amount of time that it takes to prepare for the class, or that there is simply no customized examples available to use from teaching portals and the lecture/activity needs to be created from scratch. Teachers simply don't have the time to create customized lectures and activities for every class.

2) My own research has shown for example that librarians who don't pick up GIS in schools will find it difficult to pick up while training at work. I have argued for GIS education in Library Schools for several years now so that all librarians would have some level of spatial literacy skills, making on-going training (3) easier and more welcoming.

Promoting GIS (5) is of course a large portion of our job responsibilities and I think it's an integral part of having GIS embedded into the classroom. Many aspects of GIS need to be promoted – the value, the uses, reallife benefits, software, data and assistance.

Access to and availability of GIS data (6) is one of the most important because one can't create a map without the layers of the Earth, and (7) one can't create a map without the software. Getting buy-in from students (8) is crucial but this is dependent on the instructor and how GIS is introduced.

The presentation did an excellent job summarizing the perspective of the teacher, but also all the other aspects that the teacher may not have control over. Relating this to uWaterloo, there may be instructors who have certain factors discussed above, but may not realize that the librarian can assist with teaching material (1), with data (6), with promotion (5), and so forth. It was great to see what a role the library plays in the life of a course, and that the relationship between faculty and the librarian is a partnership.

There was an excellent presentation offered by a professor from North-West University South Africa (van der Westhuizen) who summarized geospatial abilities of geography teachers in South Africa. He too mentioned that the lack of training of teachers, and lack of time to learn GIS software is a major contributor to why GIS in not promoted in upper secondary schools.

### **Training for GIS Users**

There were many presentations that covered the integral role of geography standards and how they guide proper training techniques in both teachers and students. Faculty from Ghent University (Ghent, Belgium) discussed the difference between U.S. geography standards and those in many European countries. U.S. standards are very focused on GIS and create many graduates from GIS programs. European researchers describe GIS in education as unsuccessful due to the lack of instructor knowledge and the lack of education standards in the curriculum. There are online programs available to teachers, such as the iGuess project (www.iguess.eu), but they have been deemed by the presenter as not using specific curriculum standards. The iGuess project is an EU-funded project that aims at developing teacher training courses to promote the uses of GIS in teaching. The course contains methodologies, guidelines, good practices and exercises for using GIS in the classroom.

An online project that was recommended as a starting point for teachers was Digital Earth (www.digital-earth.eu), a portal for those using geospatial resources to connect with others for the purposes of learning and teaching. It aims to network people for purposes of sharing tools, technologies, learning and teaching approaches, training, curricula development and more.

There have been multiple efforts made to create a framework for teaching instructors and improving curriculum creation and teacher preparation. GeoCapabilities, a project by the U.S. National Science Foundation and the European Commission's COMENIUS program is one example that was discussed to offer teachers examples of several national standards. In my experience I have learned that there are many online resources that offer assistance with GIS instruction planning but Europe has a number of teaching portals that can assist teachers with their struggles planning a class or developing teaching examples.

I have heard from several presenters who have demonstrated other websites that can be used to find sample assignments, project templates, exercises and an entire GIS course framework. Some are regulated by regional geography standards, and others are simply a sandbox for instructors to share their work. There are some areas in Europe that do not have concrete geography standards or teaching styles. In Malaysia for example, geography is an elective course in upper secondary education, thus the number of courses using GIS in universities is very low. At the opposite end of the spectrum, in Portugal, GIS was incorporated into the upper secondary school geography classes since the early 1990s. Teachers rely on an instruction portal, GEORED to access lesson plans and software.

#### **GIS and Map Services Abroad**

After meeting IGU participants from many areas of Europe and Asia, I have learned that GIS and map services are not offered in the same way that they are in many institutions in Canada and in the U.S. Many non-North American institutions don't have a GIS presence in libraries at all. GIS services are offered through the faculty of Geography, where GIS is taught. It's not common for students who are not enrolled in GIS to actually use the technology in other courses. GIS is considered a subject more so than a tool, however I have spoken with some faculty members who are in the Sciences and they have partnered with Geography faculty on joint GIS projects so perhaps this trend will slowly change.

A lot of data are open so I have learned that students and faculty simply download the data online, or they use open data from university portals. Again, the Library does not play a part in collecting or disseminating data, nor teaching how to use them in GIS programs. Equally as surprising were two site visits I made outside of the IGU conference. I visited the Jagiellonska University main library (Bibltioteka Jagiellonska) in Krakow as well as the University of Wroclaw, in my home town, Wroclaw (old Berlin). The library in Krakow had a floor dedicated to maps, however the maps were considered to be 'special collections' and were not open to the public. I was asked to sit in a quiet study room, fill out forms, know the exact name and year of the maps I required, and then wait while a staff member went into the storage area to retrieve the maps for me. This is of course quite different from the open stacks we are used to in many North American libraries. Most library users enjoy browsing through map cabinets to find gems that they may not know exist, which is not possible with a closed stack system. In order to visit the library beyond the main floor, I had to register for a library card.

The University of Wroclaw's website indicated that their map collection was housed within the Faculty of Geography Map Room. When I went to visit the room, it was closed as the staff member left early. According to the hours posted on the website and on the door, the staff member left at least an hour before posted closing time, which was extremely unfortunate for me as I was not able to return the following day to see how their map collection was organized

### **Concluding Thoughts**

This conference has highlighted a different perspective of GIS education for me. I feel now that Canadians and Americans take their geography education for granted. Some countries have very strict education standards and don't permit web-based GIS learning (Dr. Wang Chen from Taiwan presented on his ministry standards which prohibit teaching GIS using Google Maps because it doesn't teach the full potential of GIS). As mentioned earlier researchers from Malaysia discussed how GIS is not integrated into the school system because geography is a non-compulsory subject in high school. With few resources spent on teaching geography, students perceive the subject as dry and not interactive with technology.

There's no question that learning GIS provides numerous skills and benefits. One presentation (Singh, and Kleeman, Van Bergen) discussed a study that revealed that teaching students geography content using GIS to deliver the information was much more successful in student retention, then teaching the content using conventional methods. The students also appeared to be much more motivated to learn the subject matter. Another research project also compared teaching conventionally vs using GIS. A talk by faculty from Utrecht University (Favier, van der Schee) revealed that lessons using geospatial technologies contributed significantly more to the development of students' higher order thinking skills (geospatial relational thinking).

It was an excellent conference and provided so many different viewpoints from all around the world. Sometimes we simply assume that the world is small and that we should do things the way others do, but sometimes stepping out of our culture will provide us with inspirational ideas that may encourage positive changes. This conference certainly was an eye-opener to me, and I took advantage of not only attending every session I could, but also I had excellent discussions with the attendees to learn more about their institutions and the GIS services that those institutions offer.

Eva Dodsworth is the Geospatial Data Services Librarian at the University of Waterloo library where is specializes in teaching GIS and maprelated content to the university community. Eva's interests include historical cartographic research, teaching geoweb applications and historical GIS.

### A CO-OP STUDENT'S REFLECTIONS ON LAND USE ANALYSIS: CREATING AN AGRICULTURAL LAND USE MAP OF THE REGIONAL MUNICIPALITY OF WATERLOO

Alex McVittie University of Waterloo

It was the first week of my co-op position as a GIS Specialist at the Geospatial Centre at the University of Waterloo, and work was going quite well - I was working on my training package at the time and it wasn't overly busy with clients yet. While I was working on answering some of the questions in the package, I overheard some of my co-workers discussing a request from a faculty member to assist with creating an agricultural land use map of the region. Apparently the last soil survey was conducted in 1983 and in the last thirty-two years the region has developed and changed significantly. After contacting numerous goernment agencies, my co-workers concluded they may need to manually create the database using orthoimagery.

This didn't sound like an easy task to do by any means, but I thought that perhaps remote sensing would do a better job of identifying the different crop types. So before I knew it, I was suddenly put in charge of a large project on my second day on the job.

I prodded and poked around at various research papers for identifying crop type using spectral signatures, but all the papers were far beyond my scope of knowledge, involving large complex mathematical formulas and terminology that sent me on long google searches leaving me even more confused. After a day or so of this research, my manager received an email back from OMAFRA suggesting that we try doing classification using the annual crop inventory data set published by AgriFoods Canada. After a couple quick verifications, this dataset seemed to be the miracle solution we were all looking for.

The dataset can be downloaded either by UTM zone or by province, and it is a 30m resolution

classified raster dataset, accompanied with documentation explaining what each cell value represents. I clipped the large raster data set to the regional boundary, converted it to a vector dataset, applied symbology and submitted it to my manager, thinking this was the end. This was only the beginning to a month long project with a Master of Development Practice assignment and workshop.

From a basic land use analysis perspective, this data set works perfectly well - you can see what percentage of the region is urban and developed, which percentage is covered by coniferous forested areas, and so on. However, from a planning perspective, this is far too generalized. For instance, there is a classification of land referred to as "Pasture and Forages" which falls under areas that are golf courses, parks, large backyards, and animal pastures. This causes a large issue for determining animal productivity in the region - you'll end up with false information if you account for someone's backyard as being active animal pasture. Furthermore, someone who is growing corn recreationally in their backyard should not count towards the total area of corn being grown by farmers. This is a huge issue that was brought up by the professor that wanted this data for his masters class. Another requisite was knowing how much urban area was being used as residential land use, and what parts were industrial/commercial. The data set that I had created required a fair bit of reworking, as it was far too detailed in some ways, and not detailed enough in others.

The biggest issue that we had with classifying the data was that we did not have parcel data newer than 2007 for the North Dumfries

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township. While we had information as current as of 2014 for the rest of the region, we had no choice but to use 7 year old data for North Dumfries, which may have led to a slight inaccuracy of the data set. To obtain the updated land use codes for the region, I downloaded the 2014 Teranet land use code file in tabular format, and performed a tabular join based on pin values, selecting the option "Keep only matching records" instead of "Keep all records". This allowed us to easily see how much data was missing and then evaluate that section by hand to determine if it needed updating.

Thankfully, North Dumfries has not developed any new subdivisions or areas in the past 7 years as far as I could tell, so we were able to still use the 2007 parcels for that area. By overlaying the updated parcels layer with the entire 2007 parcels layer, I was able to remove the old version of the updated parcels by applying the Erase tool. Then I was able to simply use the Merge tool to merge the two layers (2014 parcels and the 2007 North Dumfries parcels) together into one updated parcel layer. This parcel layer will allow us to determine what falls within urban usage (urban corn growth, large backyards, etc) and what is actually agricultural use.

Seeing as all agricultural things are accounted for already, I then proceeded to remove all the parcels without a land use code (these are primarily parking lots and road networks), as well as the parcels with an agricultural land use classification and an open space classification. With these parcels removed from the layer, I used the Intersect tool to get a parcel layer that also included the agricultural data within the parcel. By applying a field calculation to the gridcode (numerical value that represents the land use type), I added 1000 to all of these values so that you could differentiate between corn grown in an urban setting (1147) and corn grown in a rural setting (147). I then applied the Erase tool so that this area was removed from the regional land use layer, and then merged it together so there were new classifications. I applied this same methodology using parks and green spaces (obtained from the Region of Waterloo), except this time adding 2000 to the gridcode value. By applying this methodology to the data set, we can now determine how much corn is being grown in a rural setting, and how much corn is being grown in an urban setting, solving all the planning and land use classification issues that were with the original dataset.

One thing to keep in mind with this data is that AgriFoods Canada reports an accuracy rate of at least 85%, so the data may be slightly inaccurate. However, this is about the most accurate data set you can have without collecting the data yourself on the ground using a GPS unit.

Once the data was cleaned up and organized, students in the Masters workshop were given a four hour workshop on GIS, teaching all the novice users how to work with ArcGIS. They had one week to work as a team to create a land use map of the Region using the data provided to them. The results can be seen in Figure 1.1. This map will be shared with the Region of Waterloo where it will be posted on their website.

The final map consists of thirteen layers which total 100% of the land use in the Region of Waterloo. The breakdown of classes are:

- Woodland and Trees 11.2%
- Water 1.28%
- Urban Woodland and Trees 4.75%
- Urban Farming 4.40%
- Orchards and Vinyards 0.19%
- Other 1.05%
- Non Productive Land Type 0.58%
- Grassland 18.75%
- Rural Farmland 38.51%
- Non-Residential Parcels 4.72%
- Green Spaces 1.02%
- Transportation Network 6.32%
- Residential Parcels 7.36%



## Classification of Land Types Within the Region of Waterloo in 2013

Figure 1.1. Classification of Land Types within the Region of Waterloo in 2013.

Alex McVittie is a co-op student at the Geospatial Centre for the Winter term. He is a second year Geomatics student in the Faculty of Environment, minoring in Computer Science. Alex specializes in spatial analysis and database management using ArcMap and ArcCatalog, as well as gaining high scores in Geoguessr (https://geoguessr.com/). Alex can be contacted at ajmcvitt@uwaterloo.ca.

### WHAT'S MAGIRT UP TO? CURRENT AND FUTURE ENDEAVORS

Paige Andrew Librarian, Pennsylvania State University

I was pleased to receive a note from ACMLA *Bulletin* editor, Eva Dodsworth a few weeks ago asking if I could share what is rattling around with your map librarian colleagues in the United States, and particularly those of the Map and Geospatial Information Round Table (MAGIRT) of the American Library Association (ALA). As the current chair of MAGIRT I have an overall view of what this group of nearly 300 professionals has been actively pursuing and what we are working on for the next year. So, let me take a few moments of your time to highlight activities recently completed, currently underway (especially as it applies to the upcoming ALA Annual Conference in San Francisco), and what we're aiming for moving forward.

### **Recent Activities**

Our most prominent activity since Fall 2014 has been setting up and delivering a series of educational webinars to benefit not only map librarians but any librarian who works with geospatial data, maps, etc. on different levels. These have been well-received and we are currently setting up a final one for this spring before taking a break and then aiming to do one summer 2015 and another in the fall. Here's a list of what was delivered – concluding with the upcoming webinar (you're invited!!!!) on March 26, 2015:

January 15, 2015: "Creating Enterprise Cultural Resource GIS Data" was delivered by Deidre McCarthy, Chief of the National Park Service Cultural Resources GIS Facility in Washington, D.C., http:// www.nps.gov/hdp/crgis/.

**Summary**: Ms. McCarthy shared information about the United States National Park Service's Cultural Resource GIS Facility (CRGIS) "CRGIS has created publicly available nation-wide National Register of Historic Places GIS data, available for the first time." She shared details on different types of data collecting, storage and dissemination activities, including 'pitfalls', challenges, and successes. February 19, 2015: "Using GeoBlacklightto Implement your own Geoportal" was delivered by Darren Hardy, a GIS Software Engineer at Stanford University and Jack Reed, a Geospatial Web Engineer at Stanford. **Summary**: The presenters' goal was to "... (1) demonstrate the GeoBlacklight technology, (2) define and describe geospatial data holdings, (3) discuss how you can implement your own Geoportal using GeoBlacklight, and (4) field questions you may have." They also compared GeoBlacklight capabilities to similar types of portals and stated it "goes beyond traditional Geoportals to provide three types of search (text, faceted, and spatial) across a federated repository of shared geospatial metadata, and a rich data model designed for preservation and repository management." Stanford started the development of GeoBlacklight in 2013.

March 5, 2015: "Best Practices for Environmental Data Management" was delivered by Yaxing Wei, a Geospatial Information Scientist at the ORNL Distributed Active Archive Center (DAAC) in the Environmental Sciences Division and Robert B. Cook, the Chief Scientist for the ORNL Distributed Active Archive Center. Summary:This webinar "...introduce[d] fundamental best practices on how to choose the best format for your data, how to better structure data within files, how to define variables and units, how to develop data documentation so that others can find, understand, and use your data easily" and "...showcase[d] advanced best practices on how to properly specify spatial and temporal characteristics of your data in standard ways so your data are ready and easy to be visualized in both 2-D and 3-D viewers (e.g. Google Earth)." All of this is being performed by the presenters and their colleagues at the ORNL Distributed Active Archive Center, Oak Ridge National Laboratory, Oak Ridge, Tennessee.

[Forthcoming] March 26, 2015, 3 p.m. EST: "Libraries

Geospatial Support for the Digital Humanities" by Nicole Kong, GIS Specialist and Assistant Professor at Purdue University Libraries. Abstract: GIS technology and geography research methods are bringing new opportunities for humanities research. As a centralized place for information discovery and access, libraries play an important role in supporting the geospatial needs of digital humanities scholars. In order to develop best practices to support digital humanities' geospatial needs, we have conducted interviews with researchers in different departments from within the College of Liberal Arts. These interviews focused on the nature of their geospatial data, frequently used tools, and expected learning skills, which helped us to identify the GIS technology and geography research methods that are most important in their fields. Based on our findings, we are taking action in three major aspects to improve the library's geospatial support for the digital humanities, including teaching, research support, and outreach. For the teaching perspective, we are designing teaching modules and have applied different tools for undergraduate and graduate students in the College of Liberal Arts. We have found that the hands-on sessions in the libraries have attracted great interest from most of the student groups. For the research support, we have built collaborations with scholars who are in different research stages. We will share the different needs emerging from the different stages of research in the webinar, as well as the challenges we found with current technologies as applied to the humanities. For outreach we have organized a humanities theme into campus-wide GIS Day activities, which has successfully reached various humanities researchers considering incorporating geospatial research into their study.

All of our webinars, with descriptions and links to register to join (and post-webinar, links to the webinar itself) are found on the MAGIRT Libguide, http://magirt.ala.libguides.com/resources/ trainingsandpresentations. We also announce each upcoming webinar on the upper right side of the MAGIRT homepage as a "button" that will click you through to the Libguide page, http://www.ala.org/ magirt/ where you can find the link to register. New this year, we are charging a nominal fee (\$20) for individuals who are not members of MAGIRT in some instances as a means to possibly raise enough funds to at least pay for the cost of delivering the webinar. Of course, in these cases if one wishes to attend for free simply join MAGIRT for the nominal fee of...\$20!

MAGIRT plans on continuing to deliver meaningful and helpful webinars into the future at a rate of perhaps one per quarter (or four times a year). Much depends on successfully recruiting presenters of course, so if you have an idea for a webinar you would like to see tackled **or** would be interested in delivering one, please don't hesitate to contact me.

#### **Current/Near Future Activities**

In all honesty everyone is focused right now on two things; successfully delivering our last webinar and finalizing many things related to the ALA Annual Conference, which will be held June 25-30, 2015. I mentioned the forthcoming webinar above so will not repeat it, here's what we will be delivering in San Francisco:

MAGIRT Social Events: while nothing has been finalized at this writing, we will be aiming to tour a local map collection or similar (potentially visiting Susan Powell and her collection at the University of California-Berkeley), arranging a "dutch treat" dinner and conducting our annual MAGIRT Honors Award ceremony at a reception, dinner, or similar. We might also arrange a visit to a local history museum or at the Presidio (former United States Army military base and now a National Park Service site; http://en.wikipedia.org/wiki/Presidio\_of\_San\_ Francisco). All are welcome to join us in these festivities.

Saturday morning of the conference, a Program sponsored by the MAGIRT GIS Interest Group will be delivered: "Open Context and its Role in Research Data and Publication" by Eric Kansa, co-founder of Open Context http://opencontext. org/ and two co-presenters, Ms. Anne Austin and Mr. Karl Grossner of Stanford University.

Saturday afternoon of the conference a three-hour Program jointly sponsored by MAGIRT and GODORT (Government Documents Round Table) will be delivered: "Data Visualization in the Library: Collections, Tools and Scalable Services" by Justin Joque, Visualization Librarian at the University of Michigan and Angela Zoss, Data Visualization Coordinator at Duke University Libraries.

These two formal programs can only be attended by those attending the ALA Annual Conference.

Of course, MAGIRT will hold a full slate of committee meetings, discussion groups, and a closing Executive Board meeting over the course of three very full conference days as well.

# Moving Forward, What MAGIRT is Planning from July 2015 and Beyond

Come July we will have a new set of officers in place, beginning with my moving from Chair to Past Chair. We have two officer positions up for election in April – Vice-Chair/Chair-elect and Treasurer – and we do have a slate for these (thank goodness!). Current Vice-Chair, Elizabeth (Beth) Cox of Southern Illinois University will become the new Chair of MAGIRT, and current Secretary, Tami Morse of the University of Wyoming will stay on to complete the second year of her term. Once ALA elections are completed we will announce our new Vice-Chair and Treasurer, so stay tuned! There will be a few changes at the committee chair level as well. But once all the dust has settled here is a couple of things MAGIRT is moving forward on:

- A possible new, online-only, [4th?] edition of the longstanding *Guide to U.S. Map Resources.* [I question the edition number because if we move from a print product to an online-only product does it then become the first edition of that online product?] A small steering committee is working with Carol McAuliffe, Head of the Map & Imagery Library at the George A. Smathers' Libraries at the University of Florida, who made the idea a reality with a formal proposal delivered at our August 2014 Executive Board meeting. The goal is to take the content of the third edition, update it for accuracy and add new information, and then put a database of information up on a website that will have a map interface and interactive features for the user. Stay tuned! - We have garnered a subscription for ArcGIS Online and members of our GeoTech Committee will use this for a couple of projects; to improve and expand upon the "ALA Membership Map" (http://magirt.ala.libguides.com/resources/ ALAmap) and to use as a tool for possibly garnering grant funding for other MAGIRT projects.

- Our Membership and Marketing and Online Presence Oversight committees are hard at work on several things, notably a complete review of our Libguide platform and content (with an eye on possibly moving to something else such as WordPress) to make this a more user-friendly site, update content, and to de-duplicate content between it and our MAGIRT homepage. They are currently working on revising our MAGIRT membership brochure as well, with the assistance of ALA's Membership Department, and we hope to have something new to use as early as the upcoming Annual Conference, but most certainly no later than the 2016 Midwinter Meeting next January in Boston.

- Finally, we are in the beginning stages of moving MAGIRT business-related documents from ALA Archives to the new ALA Institutional Repository (ALAIR).

Let me conclude with a reminder that our MAGIRT website is chock full of information about us, who our leaders are, our publications (active and past), and even a list of Honors Award recipients over the years (and more); found at http://www.ala.org/ magirt/. I invite you to also go through all of the content in our Libguide as this resource is everexpanding and ever-changing. We welcome input at any time and we also welcome our Canadian colleagues to join us in our work and play, so feel free to reach out to me with questions or needs.

### Mr. Paige G. Andrew

Chair, Map and Geospatial Information Round Table (through June 2015)

Maps Cataloging Librarian, Pennsylvania State University (pga2@psu.edu)

Co-editor/co-founder, Journal of Map & Geography Libraries

### MAGIRT (MAP AND GEOSPATIAL INFORMATION ROUND TABLE) PROGRAMS TO BE DELIVERED AT THE 2015 AMERICAN LIBRARY ASSOCIATION ANNUAL CONFERENCE

MAGIRT is pleased to announce that we will be delivering two formal programs, both on exciting and cutting-edge topics with presenters who are leaders in these areas, at the 2015 American Library Association Annual Conference. This conference will be held in San Francisco, California on June 25-30, with core activities falling on the two weekend days. If you plan on attending the annual conference we hope you can join us for one or both of these programs. Unfortunately, due to the overwhelming cost of equipment rental there is no plan to record these programs for later viewing, though if ALA does record them I will be sure to share these out through this *Bulletin* and other means. Both programs will be held on Saturday, June 27, 2015, and as of this writing ALA has not made room assignments, so those will be announced at later dates.

*Open Context and its Role in Research Data and Publication* 10:30-11:30 a.m. Sponsored by the MAGIRT GIS Discussion Group

Data Sharing as Publication: The research community increasingly expects access to high-quality data, including the review, documentation, and publication of research data contributed by scholars. One venue that addresses these and other large-scale issues, Open Context, will be presented and discussed by its developer, Eric Kansa, PhD (UC-Berkeley) and two scholars who have used it to publish and organize archaeological field data in geospatial realms, Anne Austin, PhD (Stanford) and Karl Grossner, PhD (Stanford).

Data Visualization in the Library: Collections, Tools, and Scalable Services 1:00-4:00 p.m. (Part 1 from 1:00-2:30 p.m.; Part II from 3:00-4:00 p.m.) Co-sponsored by MAGIRT and GODORT (Government Documents Round Table)

Data visualization, the use of graphical techniques to better communicate complex geographic and statistical information, is used to interpret the results of data analysis more clearly and to a wider audience. These techniques are being used by a wide range of disciplines. What are the implications of these tools and techniques for library users? Part one of the Program describes the landscape of data visualization, library services and patron expectations; part two an overview of available tools, criteria for tools and datasets, and an open discussion about libraries services. Join Justin Joque (Univ. of Michigan) and Angela Zoss (Duke University) to learn much more.

Paige Andrew Chair, Map and Geospatial Information Round Table and Maps Cataloging Librarian, Pennsylvania State University Libraries



## **CARTO 2015** https://carto2015.library.carleton.ca/

49th Annual Conference of the Association of Canadian Map Libraries and Archives (ACMLA)

Discovering and using Cartographic Resources: A user-centred focus

Conference organized by the University of Ottawa and Carleton University

16 - 19 June, 2015 Ottawa, Ontario

In a constantly changing information landscape, the users we serve, and their needs, are evolving at a rapid pace. Innovations in technologies and services have allowed us to reach more users than ever before.

Conference themes include:

- Providing access to geospatial and cartographic materials to users with accessibility needs;
- Innovative approaches to providing users with access to geospatial and cartographic materials;
- Digitization projects and partnerships that facilitate access to geospatial and cartographic collections;
- Collaborations outside the GIS/mapping community that facilitate access to geospatial and cartographic collections;
- Access to datasets, government information, etc.
- Open data/open government initiatives;
- The GIS/mapping community as a user-centred group; and
- Evolving user needs.

Registration will open in April.



## **CARTO 2015** https://carto2015.library.carleton.ca/

49e colloque annuel de l'Association des cartothèques et archives cartographiques du Canada (ACACC)

Découvrir et utiliser les ressources cartographiques : l'approche axée sur l'utilisateur

Colloque organisé par l'Université d'Ottawa et Carleton University

Du 16 au 19 juin 2015 Ottawa, Ontario

Dans un monde de l'information en constante évolution, les utilisateurs que nous servons et leurs besoins évoluent à un rythme rapide. Des innovations technologiques et des nouveaux mode de services nous ont permis d'atteindre plus d'utilisateurs que jamais auparavant.

Voici quelques-uns des thèmes qui pourront être abordés dans le cadre du colloque :

- Fournir l'accès aux ressources géospatiales et cartographiques pour les besoins d'accessibilités
- Accès innovateurs aux ressources géospatiales et cartographiques;
- la vectorisation de cartes anciennes et collaboration entre partenaires qui facilitent l'accès aux collections géospatiales et cartographiques;
- Collaborations entre partenaires à l'extérieur de la communauté de SIG / cartographie qui facilitent l'accès aux collections géospatiales et cartographiques;
- Accès à des ensembles de données, à l'information gouvernementales, etc.
- Données ouvertes / initiatives de transparence gouvernementales;
- La communauté de SIG/cartographie comme un groupe axé sur l'utilisateur; et
- L'évolution des besoins des utilisateurs.

Le formulaire d'inscription sera disponible en avril.



# **CARTO 2015 CONFERENCE EVENTS**

### Icebreaker, June 16th 2015

The Icebreaker will be held in Library and Archives Canada's newly-renovated reading room with catering by Les Traiteurs Bytown Catering.

### Banquet, June 18th 2015

We're pleased to invite you to the annual banquet, to be held at the Cordon Bleu Ottawa's Signatures Restaurant, overlooking the Rideau River and Strathcona Park.

### Field Trip, June 19th 2015

The field trip will take place at the Library and Archives Canada Preservation Centre, where you'll be treated to a behind-the-scenes look at their cartographic collections.

### **Registration Information (Open Soon)**

Early Registration (until May 15th 2015) Members - full conference (includes banquet & ice breaker) - \$200.00 Non-Members - full conference (includes banquet & ice breaker) - \$250.00 Single day - \$100.00 Half day (Friday) - \$50.00

### Late Registration (after May 15th 2015)

Members - full conference (includes banquet & ice breaker) - \$240.00 Non-members - full Conference (includes banquet & ice breaker) - \$290.00 Single day - \$125.00 Half day - \$75.00

### Other

Students - full conference (does not include banquet) - \$25.00 Retirees - full conference (does not include banquet) - \$50.00 Banquet single ticket - \$50.00 Icebreaker single ticket - \$25.00 Field Trip - \$10.00

### Local Arrangement Committee members:

Sarah Simpkin (chair) – uOttawa, Rebecca Bartlett - Carleton University, Carys Carrington - Carleton University, Siobhan Hanratty - University of New Brunswick, Pierre Leblanc – uOttawa, Joël Rivard - Carleton University



### Application for Travel Assistance to the Conference and Annual General Meeting

To assist ACMLA/ACACC members in attending Carto2015 in Ottawa, ON, the Executive has set aside a small portion of Association funds to be allocated for travel funding. Assistance will be granted according to the criteria established < http://www.acmla-acacc.ca/docs/ACMLA\_travel\_funding.pdf> by the ACMLA / ACACC. For example, members new to the Association and student members participating in the Conference will receive first consideration; members presenting a paper will receive second consideration. We ask all applicants to first try and find funding at their own institution.

To apply for travel assistance, please complete and submit this form by Friday, May 1st 2015 to:

Danial Duda Map Room Queen Elizabeth II Library Memorial University of Newfoundland St. John's, Newfoundland CANADA A1B 3Y1

fax: 709-864-2153 e-mail: dduda@mun.ca

All applications received by May 1st will be considered and successful applicants will be notified no later than May 8th of the amount of funds allocated. Late applications may be considered and supplemental allocations may be made, if funds are available.

Cheques will be issued after the conference. A travel reimbursement form < http://www.acmlaacacc.ca/docs/forms/ACMLA\_travel\_expense\_claim.pdf> with original receipts should be sent to the ACMLA Treasurer <http://www.acmla-acacc.ca/executive.php#treasurer>, no later than forty-five (45) days after the end of the AGM (August 4th 2015).

Name:	Telephone:	e-mail:
Address:		
City:	Prov /State: _	Postal/Zip Code:
Are you an ACMLA / ACACC member (Y/N)?		Are you a student (Y/N)? What program / school?
How you are participating in the presenter, attendee, workshop, mo	this conference? derator, etc.)	
Travelling from:		Mode of travel: (plane, train, car, etc.)
Cost estimate:	_ (Note: If travelling by car, the	rate is \$.30/km and the TOTAL must be less than cost for public modes.)
Date of application (mm/dd/	уууу):	

### Historical Topographic Maps of Ontario to be digitized by Ontario Council of University Libraries

In late 2014, funding was made available through Ontario Council of University Libraries (OCUL) to digitize historical topographic maps of Ontario (at 1:63,360 published between 1905 and 1953, and 1:25,000 published between 1956 and 1967 scales) located in the collections of member institutions. The project aims to add approximately 800 maps to the consortium's collective holdings over three fiscal years. The funds will permit the Geo Community (Ontario map and GIS libraries) to hire staff at a number of OCUL libraries to conduct digitization and georeferencing of historical topographic maps, as well as to develop best practices for including these and other digitized map collections in Scholars GeoPortal. The project will allow more OCUL institutions to become involved in digitization activities. Those institutions with existing scanning equipment will take on the scanning tasks, but other institutions will have the opportunity to participate in tasks such as metadata creation and georeferencing. This project will enhance the province's digital collections, provide learning opportunities for member institutions, and establish best practices for future projects to digitize Canada's historic topographic maps, both within and outside Ontario.

The historical Ontario topographic series are heavily used by researchers to do comparisons with current maps on changes over time (then and now) of such issues as; urban sprawl, transportation patterns, diminishing woodlots and shoreline erosion. The earliest topographic maps are not readily available at all OCUL Geo Community institutions and this poses a hindrance for research. This project will allow the maps to be delivered through the GeoPortal to all OCUL institutions.

While many of these historic topographic maps are in the public domain, the federal government has no current digitization plans for older series and only the most recent versions are available online through the Government of Canada. The digitization of these maps removes access barriers, improves resource discovery, and provides a long-term preservation solution to the challenges of maintaining often incomplete sets of these map series.

Cheryl Woods Chair, Geo Community Western University

### **Association of Canadian Map Libraries**

### and Archives



Eleventh Annual

# **ACMLA Student Paper Award**

The Association of Canadian Map Libraries and Archives (ACMLA) announces its annual student paper contest. Essays may deal with access to and information about geospatial data, cartography, cartographic materials, map information, map data, GIS data and geo-referenced information.



#### Eligibility

A student from Canada or studying in Canada currently enrolled in a post-secondary institution (college or university) is eligible to apply to enter the contest. All papers shall be prepared during the 2014-2015 school year

#### Essay

The essay shall be original and unpublished, and of no more than 3,000 words. Judging of the papers will give primary consideration to the essay's originality and its contribution to new knowledge and insights. Other considerations will be the author's demonstration of the relevance of the subject, the quality of presentation and documentation, and the literary merits of the essay.

#### Award

\$250.00 and free membership in the Association for one year. The award includes an invitation to present the paper at the ACMLA annual conference, normally held at the end of May/early June. If the winner chooses to attend the conference, the Association will waive registration fees and provide a travel stipend of \$250.00.

# Deadline: 15 April 2015

Eva Dodsworth, ACMLA Awards Committee, Geospatial Centre, University of Waterloo Library, Waterloo, ON N2L 3G1

edodsworth@uwaterloo.ca

## Submit a paper to the Contest!

### ACMLA AWARDS

The ACMLA Awards Committee is responsible for three awards given by the Association. We invite nominations for these awards and encourage members to participate in the selection of the awards for outstanding accomplishments in our field.

### **ACMLA Honours Award**

The Awards Committee invites nominations for the ACMLA Honours Award. According to the guidelines for the award, the nominee should be a person who has made an outstanding contribution in the field of map/GIS librarianship. The contribution may either be for a specific activity or for general services and contributions such as continued membership in the Association with active participation either as an executive officer, committee chairperson, or committee member. Normally, membership in ACMLA is a prerequisite, however that does not preclude considering outstanding non-members.

- Deadline : April 15th, 2015

### **ACMLA Cathy Moulder Paper Award**

To be nominated for the Paper Award, which carries a \$200 monetary prize, a feature article by one or more authors consisting of at least three pages in length must have appeared in issues 146-148 of the ACMLA Bulletin.

- Deadline : April 15th, 2015

### **ACMLA Student Paper Award**

The Student Paper Award will consist of a prize of \$250 and free membership in the Association for one year. The award includes an invitation to present the winning paper at the Annual Conference. The Association will waive registration fees and provide a travel stipent of \$250. The award will normally be given on an annual basis to a student from Canada or studying in Canada currently enrolled in a post-secondary institution (college or university). The essay shall be original and unpublished and of no more than 3000 words. Priimary consideration for the award will be given to the essay's originality and its contribution to new knowledge and inight. Other considerations include the author's demonstration of the relevance of the subject, the quality of the presentation and documentation, and the literary merits of the essay.

### - Deadline: April 15th, 2015

For more information on ACMLA Awards, contact:

Eva Dodsworth Chair, ACMLA Awards Committee edodsworth@uwaterloo.ca

### REVIEWS

Compiled by Sarah Simpkin

### **RDA and Cartographic Resources**

Reviewed by Leanne Olson

Andrew, Paige G., Moore, Susan M., and Larsgaard, Mary. RDA and Cartographic Resources. Chicago: ALA Editions, 2015. 152p. \$62.00 US. ISBN 978-0-8389-1131-0.

*RDA and Cartographic Resources* focuses specifically on cataloguing for cartographic materials – sheet maps, atlases, globes, remotesensing images, online resources, facsimiles, and more, under the new cataloguing standard Resource Description and Access. The authors explain that RDA is "the latest accepted international standard for cataloging resources in the library profession" and has restructured and updated the previous Anglo-American Cataloguing Rules, Second Edition (AACR2).

The book consists of five chapters and seven appendices. Chapter one briefly discusses the evolution of map cataloguing standards. Chapter two is a helpful overview of how RDA and FRBR (Functional Requirements for Bibliographic Records) entities apply to cartographic resources. Chapter three leads the reader through a comparison of map cataloguing in AACR2 and RDA, noting what remains the same and what has changed. Chapter four is an in-depth exploration of RDA guidelines and MARC feels for cartographic resources cataloguing. Chapter five is a closing discussion of the authors' predictions for the future of map cataloguing. The book covers the latest revision of RDA (2013) and the authors offer the caveat that RDA will continue to evolve. The appendices provide at-a-glance information about the FRBR model, MARC to

RDA mapping, and examples of full records for a variety of types of cartographic resources.

The authors, all known experts in the field of map cataloguing, assume some familiarity with the RDA standard and the FRBR conceptual model, as well as with the MARC encoding standard. However, the book is intentionally written at a level that can be understood by those who are not expert cataloguers or who do not regularly work with cartographic resources. The language is clear and terminology is defined throughout. RDA can be incredibly overwhelming and the authors take a friendly, reassuring tone, helping the reader through the new standard.

Chapter Four, "Navigating RDA to Describe Cartographic Resource Elements" is the meat of the text at over one third of the book. It compares relevant MARC fields to RDA guidelines and where additional clarification is needed, to LC-PCC best practices. Within the chapter, the content is laid out by MARC Field (245 Field: Title and Other Title Statements, 250 Field: Edition Statements, etc.). Each section begins with a summary of the field and background information. It lists which fields are considered core (mandatory) and which are core-if (can be local decisions), and describes which elements belong in which MARC subfields (for example, statement of responsibility in 245\$c), which is particularly helpful if you "think in MARC", as we cataloguers say. The authors quote from the RDA guidelines and provide many examples of potential variations throughout each section. Complex fields (such as the 255 field for mathematical data - scale, projection, and coordinates) discussed for more than ten pages. Headings are clear and each MARC field is also linked to the corresponding numerical RDA guidelines. Images are used where necessary (for example, in explaining how to measure maps) for added clarity. A reference list at the end of the chapter points the reader to more information.

I appreciate how well the authors have considered different audiences. As my university's "expert" in map cataloguing, I'm tasked with mentoring our cataloguing staff, training them, and answering questions. I read the book cover-tocover as a part of learning RDA and preparing a training plan for staff or students. But it can also be used as a quick reference book while cataloguing. My cataloguers vary from those who are new to the field and who originally learned cataloguing in an RDA environment, to those who have been thinking in AACR2 and MARC for decades. Both types of staff members have used the book differently - some went straight to the RDA rules, and others found the chapter on comparing standards to be very useful in updating their knowledge to RDA.

The examples throughout *RDA and Cartographic Resources* have been invaluable to my cataloguers. It's very easy to open up this book if you're having trouble finding the "right" RDA guideline, and to see how experts in the field would describe a particular map element. After I led a quick training session updating them on the new RDA rules for cartographic resources, my cataloguers were able to hit the ground running with this book, and the pages of our local copy are already dog-eared.

My only criticism is that I would have preferred an overview in a more detailed Table of Contents, breaking down the individual chapters further, but since the book is small and makes excellent use of headings within chapters, it can be easily skimmed to get a sense of its structure. Cataloguers will likely make much use of the index, which is detailed and includes references to MARC fields.

I highly recommend this book for any library or cataloguing department with a map collection that wishes to follow international metadata and cataloguing standards.

Leanne Olson Metadata Management Librarian Western University London, Ontario

### Esri Map Book Volume 29

Reviewed by Sue McKee

Esri Map Book Volume 29. Redlands, California: Esri Press, 2014. 136p. \$24.99 US. ISBN 978-1-58948-357-6.

This annual GIS mapping compilation from Esri Press is in its twenty-ninth year. The maps and map applications showcased in the book are a selection of the best examples submitted to Esri during the year. All maps are prepared using Esri's ArcGIS software. Each entry includes a description of the map and data sources used, and how it was produced. The maps are international in scope and include such categories as business, defense, environmental management, government, health, natural resources, planning, telecommunications, tourism, transportation and utilities.

Some notable entries in this reviewer's opinion include the 2013 Global Flight Network, by BioDiaspora (now BlueDot) of Toronto (page 12), and the 2013 Railroad Map of Vermont, by the Vermont Agency of Transportation (page 112). The flight network map is a dramatic global network image created using flight data and airline routes. It provides an illustration of how interconnected the world is, and how diseases can spread globally in short periods of time. The Vermont railroad map was created in the style of the 1902 Railroad Commissioners Report map. A high-resolution scan from Middlebury College's digital map collection was used as a base, and overlaid with current information. The map reflects changes in rail lines as well as cartographic techniques over time.

There are more Canadian entries in this volume than usual, including two geology maps from the Alberta Energy Regulator - Alberta Geological Survey (page 8 and 78), and a new Grey-Bruce Map from the County of Bruce, Ontario (page 109).

This volume has the same format, high quality colour and detail as in previous editions. The Pew Charitable Trusts' new Arctic Ocean Wall Map (page 75) is used to great effect on the volume's cover. Esri Map Book Volume 29 is highly recommended for academic libraries with GIS or Geography collections.

Sue McKee Geospatial Librarian Spatial and Numeric Data Services University of Calgary Calgary, Alberta

# Mapping the Nation: Supporting Decisions that Govern a People

Reviewed by Catherine McGoveran

Mapping the Nation: Supporting Decisions that Govern a People. Redlands, CA: Esri Press, 2014. 144p. \$19.95 US. ISBN 978-1-58948-347-7.

Mapping the Nation is a visual showcase of the varied ways in which Geographic Information Systems (GIS) have been used in the United States federal government. Drawing on numerous case studies from eleven different federal departments, Esri is able to clearly demonstrate the widespread use of their product and how GIS can be used to support decision making, collaboration, education, and information sharing.

The content is organized by department and includes several different case studies for each. In all cases, a short project description, QR code, and URL accompany one or several screenshots or maps. In some cases, project benefits are included to highlight specific achievements, such as financial or human resource cost savings.

Being relatively jargon-free and void of most technical language, this title is appropriate for beginner audiences. The writing style is clear and succinct, and with only a short paragraph of text to describe each project, the emphasis is clearly on the accompanying visuals. Authored and published by Esri, the content focuses on case studies that make use of Esri products and is thus not reflective of the variety of other GIS tools being used to support government decision-making and communication.

The publication does a good job of highlighting the many different types of analysis that can be performed using Esri's GIS software and online applications. Though the descriptions are short, links are included to give the reader an opportunity to explore the project in more detail. In some cases, the links direct readers to the specific maps or applications being featured, but in other cases simply direct the user to the homepage for the service or department. Adding some contextual information to indicate the types of additional information available at the provided links would be value added for the reader; interactive or static maps, online applications, downloadable data or geospatial content, project information, or departmental information. The screenshots and maps provided throughout the book are visually diverse, again showcasing a multitude of applications for GIS, but the resolution quality and clarity of the images varies. While this publication may prove a valuable resource for students looking to get project ideas, the inconsistent inclusion of visual aids, such as legends, may limit the reader's ability to effectively interpret the maps. Novice GIS users may be intrigued by the different uses of GIS, but may not understand what the each map is trying to depict.

As a visually-focused showcase publication, this book would be suitable for university and college level library collections.

Catherine McGoveran Government Information Librarian University of Ottawa Ottawa, Ontario

# GIS Cartography: A Guide to Effective Map Design

Reviewed by Virginia Pow

Peterson, Gretchen N. GIS Cartography: A Guide to Effective Map Design, Second Edition. Boca Raton, FL: CRC Press, Taylor & Francis, 2014. 299 p. \$94.78 ISBN-10: 1482220679.

Gretchen Peterson, with over 15 years of experience in GIS, and working as a GIS professional, has come out with her second edition of *GIS Cartography: A Guide to Effective Map Design* (CRC Press). Peterson has again created a wonderfully concise and very readable book looking at the principles and guidelines needed to create effective and efficient maps through excellent map design. The new addition includes study questions and resources at the ends of each chapter. The addition of this feature allows the book to lend itself well to being a solid text for an introductory cartography course. This is a well thought out addition and the questions are relevant and helpful to readers. The resources at the end of the chapters are also helpful when looking for further information.

Peterson has done an excellent job of providing junior cartographers and individuals new to the field with a firm grasp on how to design effective maps that communicate information in a successful manner. Peterson communicates the information by covering a number of topics, including map design fundamentals, colour usage, fonts, new theories in design, and layout. The images included in the book are applicable to the topics and are used to highlight her points. Peterson has created a work that is a great refresher for any seasoned GIS professional and an excellent foundational tool for those growing their map design knowledge base. Any institution that offers cartography and GIS courses should include this book in its collection. It is a lovely addition.

Virginia Pow Map Librarian University of Alberta Libraries Edmonton, Alberta

### **Spatial Cloud Computing: a practical approach** *Reviewed by Vanessa Kitchin*

Yang, Chaowei and Huang, Qunying. Spatial Cloud Computing: a practical approach. Boca Raton: CRC Press, Taylor & Francis, 2014. 333p. Cambridge: Cambridge University Press, 2004. 316p. \$160.00 US. ISBN 978-1466593169.

The role of cloud computing in a librarian's daily life is vital. Providing storage to archive and manage data, the uses and scalability of that use vary depending on the librarian's subject speciality and area of expertise. Instruction librarians in map and data libraries specifically require a complex understanding of how geoscience data are housed and stored. A key component of excellent map and data service is deep knowledge of the context of data hosting, archiving and application and providing a range of services to a varied set of patrons. As such, there are various ways that *Spatial Cloud Computing: a practical approach* can benefit and offer utility to a library collection, especially one in higher education. Not only will students and patrons benefit from its comprehensive coverage of the subject but librarians will also be able to integrate its treatment of cloud computing concepts into their professional practice.

Written by Dr. Chaowei Yang, a professor in Geographic Information Science at George Mason University and Dr. Qunying Huang, an assistant professor in the Department of Geography at the University of Wisconsin-Madison, Spatial Cloud Computing: a practical approach considers cloud-based applications and various use cases. In addition, more high-level questions are considered such as geoscience challenges, relevant discovery needs, and ways that cloud computing can help advance social sciences. The intended audience is equally varied and moves from conceptual cloud users such as instruction librarians and professors (each chapter includes lectures slides as well as detailed examples, source code and data that can be used as assignments), to more practical cloud users such as application developers. Beyond this initial audience, the book also acts as a reference for geoscientists and researchers as well as a reference for IT professionals and decision makers. In terms of content coverage, it is laid out in five parts as follows: geoscience requirements for cloud computing; procedures and considerations when migrating geoscience applications onto cloud services; installation of different geoscience applications onto cloud services (using ArcGIS in the Cloud as an example); an overview of commercial cloud services; and finally, future research and developments for cloud computing. It is a

wonderfully comprehensive resource that is written in quite accessible yet academic language.

As more disciplines such as Anthropology, Economics and History begin to integrate GIS applications into student assignments and assessment, it is evident that spatial thinking and its application, or more specifically, spatial literacy, will infuse university campuses more and more. The requirement for map and data librarians in higher education institutions to provide specialized instruction will only advance. Students and academics alike are becoming exposed to the technology, data, and services that facilitate GIS research and Spatial Cloud Computing: a practical approach is a sound reference source to aid teaching. It is an extremely clear, academically sound handbook that integrates comprehensive planning and multiple applications. Standing out is the way the authors introduce the notion of geoscience computation and the way it demonstrates practical applications of how to best leverage cloud services while introducing research directions from both technology and social dimensions.

Vanessa Kitchin Liaison/Instruction Librarian Hazel McCallion Academic Learning Centre University of Toronto Toronto, Ontario

### From the Reviews Editor:

Thanks to those who submitted book reviews and to all who have expressed interest in reviewing! I'll continue to request review copies from publishers - but please let me know if you have read a book of interest to the ACMLA and would like to submit a review, and if you have any suggestions for titles/sources. Here are the review guidelines:

### **ACMLA Bulletin Book Review Guidelines**

### **Review Format**

### 1. Bibliographic Citation

This should include: author, title, edition, place of publication, publisher, date, number of pages, price (if known) and ISBN. Example:

Bussey, Ben and Spudis, Paul D. The Clementine Atlas of the Moon. Cambridge: Cambridge University Press, 2004. 316p. \$80.00 US. ISBN 0-521-81528-2.

### 2. Content

The review should describe and critically evaluate the work. Typical review elements include: scope, purpose and content of the work; intended audience; writing style; background and authority of the author; how the work compares with other titles on the same subject; its usefulness as a research tool; any unique features; and its suitability for library collections.

The length of the review is at the reviewer's discretion, but should normally reflect the importance of the work. A typical review is about 500 words.

### 3. Your name, title, institutional affiliation, city and province/state

### **Editorial Policy**

Opinions expressed in reviews are those of the reviewer, not of the ACMLA. The Reviews Editor may make minor edits, without communicating with the reviewer. Should the Editor determine that a major revision is required, she will contact the reviewer for discussion.

Sarah Simpkin Reviews Editor

### **REGIONAL NEWS**

Compiled by Tom Anderson

### Alberta

### Edmonton David Jones david.jones@ualberta.ca

The Edmonton Map Society held its Winter meeting on February 11, 2015 and saw its largest turnout yet.

Andreas Korsos, cartographer and independent researcher (http://www.arcturusconsulting. net) spoke about his work with a 1826 manuscript edition of David Thompson's famous Map of the North-West Territory of the Province of Canada, stretching from the Fraser River on the west to Lake Superior on the east. After his fascinating presentation a lively discussion followed.

#### Presentation Summary:

Far from the careful reach of scholars and researchers in Canada and the United States, David Thompson's c.1826 manuscript map of Northwestern North America, measuring 2 x 3 metres, encompasses an area from 45 degrees to 60 degrees north latitude and 84 degrees to 126 degrees west longitude.

Because this unique manuscript map was never engraved and no copies ever produced, it was almost completely unknown. Located in an archive in the United Kingdom, this outstanding map remained elusive and inaccessible to most researchers and scholars in Canada and would remain so if it weren't for the evolution of high resolution imagery digital technology.

Andreas provided a brief presentation outlining the replication of David Thompson's 1826 Map and the evolution of digital imagery and the map's eventual donation and placement at the Elizabeth Dafoe Library, University of Manitoba. For further information or to be included in our mailings please contact: david.jones@ualberta.ca.

### University of Calgary Iris Morgan ilmorgan@ucalgary.ca

Sectional maps, mainly of the prairies have been scanned and are available via a Google Earth .kml file. These 1:3 mile maps were produced from the Dominion Land Survey (DLS) Township Plans and used during Canada's early settlement of western arable lands. This project came about thanks to the work of University of Alberta GIS Librarian, Larry Laliberté and his team. His group scanned the historic 1:3 mile sheets in their collection and created the shapefile of their coverage, sharing these files with the University of Calgary, Spatial and Numeric Data Services unit. The images were converted from tiffs to jpegs and joined in a GIS. A few amendments and some additional scanned maps were added before creating this Google Earth file, with additional comments found in the layer's description. The .kml file is available on our Historic Maps Libguide at: (http://libguides.ucalgary. ca/content.php?pid=355939&sid=5344838)

### Ontario

### University of Waterloo Eva Dodsworth edodsworth@uwaterloo.ca

The Winter term has proven to be just as busy as the Fall term, offering library instruction sessions across a number of disciplines and courses like Recreation, Biology, Development Practice, and Anthropology. It appears as though more and more courses are interested in learning about using ArcGIS for spatial analysis, as opposed to simple mapping which has been the trend up until now. Earlier this term we offered a workshop on GIS analysis as well. Fortunately we have hired a co-op student this term who has been doing an excellent job offering live demonstrations in the classrooms. This term we are also hiring for a GIS Specialist position. This position became vacant when Talsan Schulzke resigned for a position in the U.S. The Geospatial Centre has also been busy with project work. We have been cleaning up and joining historical Statistics Canada files; we have been scanning photomosaics; and currently we are working on creating a database for our GIS server so our layers could be searched and located.

### Western University Cheryl Woods cawoods@uwo.ca

Christine Homuth, GIS Technician, has given 3 workshops this term: Introduction to ArcGIS; Data Discovery; and Field Data Collection. Christine also spoke to Geography students about careers in GIS/Geography.

Brent LaRue, Library Assistant, has been changing the look of our website for better user functionality. He has updated our online aerial photo indexes to Google Fusion tables. And the London 1965 aerial photos have now been digitized and added. Western Libraries has decided to adopt LibGuides into its overall website, so that is another area we plan to develop.

The library has installed a new gate security system, so an upcoming project is to put RFID tags on all of our 2100 atlases. Although they do not circulate, the existing combitags or tattle-tape will not be detected. The Department of Statistical and Actuarial Sciences in cooperation with Western Libraries provides a Data Analytics Help Service which offers statistical consulting 15 hours a week in the Map and Data Centre area. In addition to their weekly service, this term they offered 3 R workshops.

"Western Libraries (WL) strategic planning process, FLIP: Future Library in Progress, is officially underway. Over the next 3 months, WL will create a plan to articulate how we will advance the vision and strategic priorities outlined in Western University's Strategic Plan, Achieving Excellence on the World Stage. We will revisit Western Libraries' mission and values, develop a vision for the future and craft our strategic directions and goals. We will establish short and long-term priorities, define what success looks like in the future and determine how we will measure progress and performance. We will chart our future by engaging and involving library staff and our user communities, including students, researchers and faculty, as well as, campus and community partners. Led by our Strategic Planning Steering Committee, we will ensure there are ample opportunities to imagine, collaborate, reflect and learn so that we can identify opportunities and priorities for Western Libraries to advance student success, research excellence, community engagement and scholarly communication." Staff at all levels are invited and encouraged to participate.

## **NEW BOOKS AND ATLASES**

Compiled by Peter Genzinger

Archer, J. Clark et al. (eds.). 2014. Atlas of the 2012 elections. Lanham, MD: Rowman & Littlefield. 306 p. \$90.00 CDN. ISBN: 9781442225831.

Armstrong, Lori. 2015. Mapping and modeling weather and climate with GIS. Redlands, CA: ESRI Press. 319 p. \$49.99 CDN. ISBN: 9781589483767.

Barnes, Ian. 2014. Crossroads of war: a historical atlas of the middle east. Cambridge, MA: Harvard University Press. 224 p. \$44.16 CDN. ISBN: 9780674598492.

ESRI Press. 2015. Mapping the nation: building a more resilient future. Redlands, CA: ESRI Press. 144 p. \$19.99 CDN. ISBN: 9781589483910.

Hotte, Hans H. A. 2015. Atlas of southeast Europe: geopolitics and history. Volume one: 1521-1699. Boston: Brill. 153 p. \$407.50 CDN. ISBN: 9789004214675.

Lewis, David. 2015. Windsor and Eton: British historic town atlas IV. Oxford: Oxbow Books. \$55.00 GBP. ISBN: 9781782978282.

Parker, Joanne. 2015. Britannia obscura: mapping hidden Britain. London: Jonathan Cape. 192 p. \$28.99 CDN. ISBN: 9780224102025.

Peterson, A. Townsend. 2014. Mapping disease transmission risk: enriching models using biogeography and ecology. Baltimore: Johns Hopkins University Press. 210 p. \$100.86 CDN. ISBN: 9781421414737.

Ribeiro, Roberto M. 2014. Jesuit mapmaking in China: D'Anville's Nouvelle Atlas de la Chine (1737). Philadelphia: St. Joseph's University Press. 172. p. \$70.00 USD. ISBN: 9780916101817. Rubalcava, Rene. 2014. ArcGIS web development. Shelter Island, NY: Manning Publications. 232 p. \$41.99 CDN. ISBN: 9781617291616.

Sluglett, Peter and Andrew Currie. 2015. Atlas of Islamic history. London: Routledge. 112 p. \$56.71 CDN. ISBN: 9781138821309.

Summerhaves, Catherine. 2015. Google earth: outreach and activism. New York: Bloomsbury Academic. 208 p. \$153.40 CDN. ISBN: 9781441139795.

Swift, Michael and Michael Sharpe. 2014. Mapping the second world war: the key battles of the European theatre from above. London: Conway. 144 p. \$31.89 CDN. ISBN: 9781844862498.

Tedesco, Marco (ed.). 2015. Remote sensing of the cryosphere. Chichester: Wiley-Blackwell. 432 p. \$142.95 CDN. ISBN: 9781118368855.

Travis, Charles B. 2015. Abstract machine: humanities GIS. Redlands, CA: ESRI Press. 136 p. \$59.99 CDN. ISBN: 9781589483682.

Wang. Fahui. 2014. Quantitative methods and socio-economic applications in GIS. 2nd ed. Boca Raton: CRC Press. 333 p. \$151.33 CDN. ISBN: 9781466584723.

Wong, Carolyn. 2014. Evaluation of national institute of justice-funded geospatial software tools: technical and utility assessments to improve tool development, dissemination, and usage. Santa Monica, CA: Rand Corporation. 93 p. \$20.66 CDN. ISBN: 9780833085672.

Yim, Dongwoo and Rafael Luna (eds.). 2014. Pukhan tosi ilki = North Korean atlas. Seoul: Damdi Publishing. 648 p. \$69.00 USD. ISBN: 9788968010262.

### From the Editor:

This is Peter Genzinger's last *New Books and Atlases* column, and I would like to sincerely thank him for the work that he has done in the last several years. In every issue, Peter had pulled together content highlighting an array of interesting, current books that many of our readers have purchased for their collections. Peter, thank you so much for being a part of the *ACMLA Bulletin* staff!

This is Tom Anderson's last *Regional News* column, and I would like to thank him for his many years of dedicated contributions to the *ACMLA Bulletin. Regional News* is one of the most popular columns, but it is also the most difficult to compile as it solely relies on the participation of ACMLA members. Tom has always worked tirelessly encouraging and reminding members to contribute their interesting news stories. Tom, thank you so much for being a part of the *ACMLA Bulletin* staff!

Eva Dodsworth, Editor, ACMLA Bulletin

### Bulletin Position Vacancies

The ACMLA *Bulletin* is looking to fill the following vacant positions:

New Books and Atlases Editor

Regional News Editor

Please contact Eva Dodsworth with your expressions of interest.

### **NEW MAPS**

Compiled by Cheryl Woods

Submarine Cable Map 2015 Scale: NA Publisher: TeleGeography Year of Publication: 2015

Middle East Telecommunications Map Scale: NA Publisher: TeleGeography Year of Publication: 2014

1949 British Isles Map Scale: 1:1,775,000 Publisher: National Geographic Society Year of Publication: NA

North America Map Scale: 1:9,000,000 Publisher: Raven Maps & Images Year of Publication: NA

Nolli Map of Rome 1748 Scale: NA Publisher: Raven Maps & Images Year of Publication: NA

Nova Scotia Scale: NA Publisher: One Treasure Limited Year of Publication: NA

Map of the Caribbean Islands Scale: NA Publisher: One Treasure Limited Year of Publication: NA

The Kimberley 13th ed. Scale: 1:1,000,000 Publisher: Hema Maps Year of Publication: 2014 Provence Cote d'Azur Scale: 1:200,000 Publisher: Hallwag Kummerly & Frey Year of Publication: 2014 New Zealand Scale: 1:1,000,000 Publisher: Reise Know-How Year of Publication: 2015

Morocco Scale: 1:1,000,000 Publisher: Reise Know-How Year of Publication: 2015

South Africa Scale: 1:1,400,000 Publisher: Reise Know-How Year of Publication: 2015

USA, California Scale: 1:850,000 Publisher: Reise Know-How Year of Publication: 2015

Dominican Republic & Haiti Scale: 1:450,000 Publisher: Reise Know-How Year of Publication: 2015

Cuba StreetSmart Map Scale: NA Publisher: VanDam Year of Publication: 2015

St. Kitts & Nevis Scale: NA Publisher: SkyViews Year of Publication: 2015

Saint Lucia Scale: NA Publisher: SkyViews Year of Publication: 2015 Tobago Scale: NA Publisher: SkyViews Year of Publication: 2015

Dominica Scale: NA Publisher: SkyViews Year of Publication: 2015

Grenada Scale: NA Publisher: SkyViews Year of Publication: 2015

St. Vincent & The Grenadines Scale: NA Publisher: SkyViews Year of Publication: 2015

British Virgin Islands Scale: NA Publisher: SkyViews Year of Publication: 2015

Anguilla Scale: NA Publisher: SkyViews Year of Publication: 2015

Antigua Scale: NA Publisher: SkyViews Year of Publication: 2015

Bonaire Scale: NA Publisher: SkyViews Year of Publication: 2015

Revelstoke Area SE, BC Scale: 1:50,000 Publisher: GoTrekkers Year of Publication: 2015 Hector Lake Siffleur Area, AB Scale: 1:50,000 Publisher: GoTrekkers Year of Publication: 2015

Great Slave Lake North Arm, NWT Scale: 1:150,000 Publisher: GoTrekkers Year of Publication: 2015

Herschel Delta Coast, NWT Scale: 1:600,000 Publisher: GoTrekkers Year of Publication: 2015

Gros Morne National Park, NF Scale: 1:90,000 Publisher: GoTrekkers Year of Publication: 2014

Jasper Maligne Lake, AB Scale: 1:125,000 Publisher: GoTrekkers Year of Publication: 2014

Abraham Lake to Rocky Mountain House – North Saskatchewan River, AB Scale: 1:100,000 Publisher: GoTrekkers Year of Publication: 2015

Clearwater River (Whitemud Falls to Fort McMurray 1 & 2), SK Scale: 1:50,000 Publisher: GoTrekkers Year of Publication: 2015

Turkmenistan Scale: 1:1,300,000 Publisher: Gizi Map Year of Publication: 2014

Montenegro & North Albania Scale: 1:200,000 Publisher: Gizi Map Year of Publication: 2014

### **GEOSPATIAL DATA AND SOFTWARE REVIEWS**

Compiled by Andrew Nicholson

### Maptitude

*Reviewed by Daniel Brendle-Moczuk University of Victoria* 

When reviewing "GIS" software, two immediate questions come to mind. One, what is the definition of GIS software? In other words, what makes mapping software a GIS? Second, are there a criteria or matrix to rate and review GIS software against? The reason the first question is important is because there are a lot of mapping programs and software, desktop and web-based, in existence. Are they all GIS's? Are all mapping applications, programs, software GIS's? Can this even be defined?

This reviewer would argue that a software or tool that "simply" makes a map is not a GIS. There also needs to be a critical number of spatial analysis functions and/or tools built into the mapping tool to make it a GIS. Another question arises that perhaps cannot be clearly answered; how many spatial analysis functions does a GIS need to have in order to be deemed a GIS? Thus perhaps the use of a GIS features criteria grid can assist. A few different GIS software comparison grids exist and this reviewer likes: https://docs.google.com/spreadsheet/cc c?key=0Aho5SyzIJT5ydGFzUkk0SHpuYW xWS3dKVUtvT1JFLUE&usp=sharing#gid=0 Using the above guide, and in context of what many users want that this reviewer deals with, I will comment on Maptitude 2014 32bit.

**Operating System:** Windows (only) XP, Vista, 7 and 8. In response the question "Can I use Maptitude on an Apple Macintosh?" on Maptitude's FAQs, they state

"yes" but one must "use virtualization software such as VMWare Fusion or Parallels Desktop to run Windows, or boot up the machine natively in Windows using Apple's Boot Camp software." Overall, a bit of work to get Maptitude to run on a Mac

**License:** A minor issue; After downloading the 1.5Gb program and 1.Gb of data, it was a little unclear that to register the product one needs to "request activation key" which is different from licence#.

Import / Read / Export (write) vector and raster (image) files: On Maptitude's supported file formats page http://www.caliper.com/Maptitude/ DataAccess.htm, they make a distinction between import, open and export for the more than 50 file formats listed. Fewer export /write file formats are listed than import/open but the usual are possible. One exception is not being able to export a geotif. While using the software and opening files, it is quite troublesome not to have the option of "all file types" rather than having to look through the list to select a file format.

Import/Read/Export (write) database/tabular data: A number of formats listed on the page above. Four 3D file formats that can be opened are also listed. Note, of all the files formats listed, not all were tested by this reviewer.

**Clip/Subset data:** yes, possible with vector data but quite important, not with raster data.

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**Geocoding:** yes, possible although the accuracy of the geocoding was not tested by this reviewer. In Canada, where researchers often only have postal codes, and postal codes change, testing would have to be done repeatable over time.

**GeoReferencing:** yes; Maptitude calls this registering an image. However, the ArcMap function "fit to display" makes georeferencing much more straight-forward.

**Creating new geospatial data:** yes; but in comparison with FOSS (free and open source) QGIS, with which it is even easier than ArcMap to create a new vector file, Maptitude is confusing.

**Vector functionality:** Even after much searching and trying, it is unclear if functions such as polygon-(or area using the Maptitude term), -to-point is even possible.

**Vector spatial analysis / functionality:** A number of functions such as buffer and hotspot

**Raster spatial analysis / functionality**: Quite limited. As far as this reviewer could explore, raster functionality such as hillshade, least cost route, slope, etc is not possible.

**Projection:** Supports many projections and uses EPSG codes

**WMS:** Although connecting to a WMS is supposedly possible, this reviewer could not get it to function and a number of different services were tried. The problem might have been that Maptitude appears to only support 1.1.1 while many WMS's are now 1.3.

GPS: yes, can import and map

**Mapping functions:** Quite a lot of mapping functions and features such as charts, graphs and even 3D functionality

**Remote desktop access:** Not possible unless a special license is obtained

Price: Still \$695 U\$ which it was in 2012

**Overall:** Although the price has remained steady, this reviewer is not sure \$695 is a "good deal" considering FOSS (free) GIS's and mapping software exist elsewhere. Plainly put, QGIS, for example, has much more vector and raster functionality and tools and is free. Maptitude is more than a mapping tool, and it is a good mapping tool, (though somewhat confusing), and it includes quite a lot of geospatial data with some demographic data for the country of choice. This included data is useful but with more open-data resources available, Natural Earth, various municipal geospatial datasets, Census data, this reviewer would question needing to buy proprietary GIS or mapping software such as Maptitude which is not quite a fullfledged GIS with extensive spatial analysis tools. Penultimately, using Google Scholar and limiting to articles from 2013 onwards, the term QGIS had more than 2300 results while Maptitude had 36. Finally then, the reader and end-user can decide.