



Quarterly Newsletter
April 2008

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Coordinator's Update

By Raphael Sussman

Welcome to the spring edition of our newsletter. As always, we appreciate newsletter feedback and encourage contributions and suggestions, about LIO or any of our communications. Content for consideration in an upcoming issue should be sent to favelle.maschke@ontario.ca.

The Ontario Geospatial Data Exchange membership is steadily increasing at a rate we have not seen since the Data Exchange first started. The rate of increase is primarily in municipalities, who are discovering the benefits of data sharing with hundreds of organizations under a single agreement.

This edition of the newsletter provides an explanation of the various road databases stored in the Land Information Ontario Warehouse. We encourage you to continue using the Ontario Road Network in either its Segmented or Linear Reference System versions and, if your organization has not already done

so, join our Ontario Road Network maintenance program to define the boundaries of the 2011 Census. There is also a short article describing how the ORN was successfully incorporated into the School Seeker application.

This issue's feature article describes LIO's contribution to the outstanding Atlas of the Breeding Birds of Ontario. This internationally recognized project involved most of Ontario's volunteer birder organizations as well as various governments and academic institutions.

Over the next couple of months LIO will be participating in a number of events such as URISA Ontario Chapter's Be Spatial Educational Seminar, GeoTech Event 2008, ESRI Users Conference, and the Ontario Government's Information Management Workshop. We encourage you to join us at these venues and to drop by the LIO booth to chat with us.

Raphael Sussman

Did you know...

The Ontario Road Network (ORN) has been downloaded by thousands of individuals and organizations since it was made available through sites like ESRI's Geography Network and incorporated into the cross-Canada roads database offered by GeoBase. The ORN continues to be one of the most popular data sets available to LIO Data Exchange members and has been embedded in many applications and websites.



Ontario Parcel Report

By Carla Jordan-Cooke

The Ontario Parcel is a standardized, Ontario-wide geospatial database of assessment and ownership parcels of land. There are 4,171,564 Assessment Parcels, as defined by the Municipal Property Assessment Corporation (MPAC), stored in the LIO warehouse. Over 90 percent of these parcels have an associated civic address. The remaining 10 percent is primarily in remote or rural areas where civic addressing does not exist.

The Ontario Parcel is employed by LIO as a change detection tool to identify new roads in the Ontario Road Network. This information can help determine where to send out field crews for data collection in areas where we have not successfully reached an agreement with municipalities. We also use Ontario Parcel addressing to validate the ORN addresses. This cross examination improves the accuracy of both datasets. Discrepancies are then flagged and resolved through a maintenance process.

The civic addressing associated with our parcel geometry is scheduled for a major update using new information coming from the Municipal Property Assessment Corporation (MPAC). Changes to the civic addressing will be made to our LIO warehouse over the next few weeks. For more information on the Ontario Parcel, please contact: carla.jordan-cooke@ontario.ca

Did you know... Ontario Parcel membership is growing!
Last year there was a 20% increase in signed MNR Licence Agreements. Since inception, sixty agencies, ministries and Conservation Authorities have joined the Ontario Parcel through MNR.

Technology Report

By Bruce Wurtele

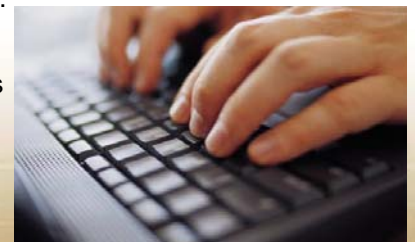
Imagery data loading is close to completion and a full refresh of the Imagery Web Map Service database is scheduled within the next few weeks. Users of the Imagery Web Map Service will notice an improvement regarding the naming of layers to more user friendly labels. By using the service, GIS users can view detailed imagery products for most of Ontario without having to download the data to their computer. At this time, the Imagery Web Map Service is restricted to users within the Ontario Public Service (OPS).

A new version of the Land Information Data Subscription service was released mid-April. This upgrade (LIDS 2.3.2) has resolved the 'Changes Only' issue reported earlier in this technical bulletin. For more information on this upgrade, view the Release Notes and User Manual.

A new login page for the Land Information Data Subscription Service will be launched shortly to align with the new MNR & Land Information Ontario website. A number of other minor application changes will also be released at that time (please see the release notes published at launch time for full details). The strategic LIO application portfolio review (mentioned in the last newsletter) is continuing.

Activities are focussed on development and evaluation of architectural options for components of the application portfolio. If you have ideas for improvements and haven't had an opportunity to provide your comments through the project consultation, please contact Andrea Bonner at andrea.bonner@ontario.ca.

For more information on these or any other activities, please contact bruce.wurtele@ontario.ca



Welcome New Data Exchange Members!

- Corporation of the Township of Laurentian Valley
- Dokis First Nation
- Federation of Ontario Cottager's Association
- Long Point Basin Land Trust
- Minnesota Department of Transportation
- Municipality of Oliver Paipoonge
- Municipality of North Grenville
- Northumberland County
- Ontario Ministry of Economic Development & Trade
- Parks Canada Ontario Agency
- Regional Municipality of Peel
- Regional Municipality of Halton
- South West LHIN
- The Couchiching Conservancy
- The Nature Conservancy – Canada Program
- Town of Renfrew
- Thunder Bay Field Naturalists
- Toronto Zoo (Board Management)

Visit this link for a complete

Ontario Geospatial Data Exchange membership listing



Ontario Trail Network

By Carol-Anne Albertson

Land Information
Ontario is facilitating the collection of trail information across Ontario in support of the Ministry of Health

Promotion's Ontario Trails Strategy. This information is being consolidated into a spatial database called the Ontario Trail Network (OTN).

Over the winter months, we have been contacting local trail groups, Conservation Authorities, Ontario Parks, National Parks, Health Units and Municipalities across the province to promote the Ontario Trail Network. This outreach will determine additional data to be included in the Ontario Trail Network data model. The current data model includes both mandatory (name, length, trail association) and optional (surface, grade and slope) attributes describing trails across the province.

The Ontario Trail Network data will be accessible to members of the Ontario Geospatial Data Exchange as well as to the public through the Ministry of Natural Resources Base Data Unrestricted Use Licence.

In collaboration with the Ontario Trails Council and Trans Canada Trail Ontario, LIO will be organizing regional trail sessions across the province. If your organization would like to register for a regional trails session or wish to provide trails data to the OTN, please contact Carol Anne Albertson at (705) 755-2175 or email: carolanne.albertson@ontario.ca

To participate in the Ontario Trails Network project, you will need to sign the Ontario Trail Network Agreement. Learn more...

➔ [View the Ontario Trail Network Agreement](#)

Related Links:

- [Ontario Trail Network Fact Sheet](#)
- [Ontario Trail Network Agreement Summary](#)
- [Ontario Trail Network website](#)
- [Ontario Geospatial Data Exchange Agreement](#)



Why does the LIO Warehouse have three road centreline databases, and what is the difference?

By Tom Malone

The Land Information Ontario Warehouse features three road centreline databases (Road Segment, Ontario Road Network (ORN), MNR Road Segment), and each road centreline database has its own story, and was designed for a specific purpose.

Road Segment

The Road Segment centreline dataset has its roots going back to the Ontario Basic Mapping (OBM) program which ran from 1974 to 1996. Under this program, traditional photogrammetric mapping processes were used by the Ontario Ministry of Natural Resources to create paper maps, and later digital maps, capturing municipal roads, highways, resource roads, rural access lanes, long driveways, and trails.

In the late 1990's, these OBM transportation features were migrated into the Ministry of Natural Resources (MNR) Natural Resource and Values Information System (NRVIS) and a series of road attributes were added to the database design to meet MNR's resource management needs. In effect, the cartographic maps were converted into a rudimentary geospatial database that could be used to create new maps and perform spatial analysis.

Data maintenance was performed using different technologies or local data sharing arrangements. Maintenance was done on an ad hoc basis and did not accurately reflect the current location, status or condition of roads across the province. New roads, such as Highway 407, were rarely added immediately after they were built. Consequently, the Road Segment centreline database will be archived in 2008.

Ontario Road Network

The Ontario Road Network (ORN) is produced and maintained by Land Information Ontario to international standards, to meet the needs of many road centerline data users in Ontario.

Data maintenance of the ORN relies on the contributions of road authorities (such as municipalities for local and regional roads, the MNR for resource roads, and the Ministry of Transportation (MTO) for Ontario's highways). Road authorities decide where to build or

decommission roads; assign names or numbers to roads and set policies. Road authorities do not just contribute to the ORN, they also use the ORN to maintain their own data sets, which often contain much more detailed information to meet their specialized and internal needs. This allows organizations to collect specific data and reduces duplication in effort and cost.

Information from road authorities is accepted in digital form, converted to a standard format, and then integrated into the ORN. Where no road authority exists, Land Information Ontario contracts the collection of road information in that area and uploads the data into the ORN.

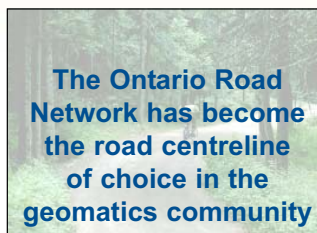
The ORN is a current, accurate and dependable data set available at no cost, with no use restrictions. Because of this, the ORN has become the road centerline of choice for the public and private sector geomatics community. Users know that the ORN is collected and maintained closest to source. More importantly, data sets built using the same base, (namely the ORN) fit together easily and work together.

New MNR Road Segment

The new MNR Road Segment data set contains all of the same ORN road geometry, but only seven of the 25 attributes, found in the ORN. In addition, the new MNR Road Segment features attributes that are unique to the management of resource access roads, and not of interest to most ORN users. Like all of the other roads authorities, MNR contributes its roads data to the ORN, (in this case Ontario's resource roads) with only the attributes of general interest.

Unlike other road authorities such as municipalities and MTO, for convenience the MNR has elected to store the new MNR Road Segment in the LIO Warehouse. MNR extracts data from the ORN and integrates it into their new "MNR Road Segment", which focuses on Resource Roads.

Although this data class is available for download from the LIO Warehouse, most data users will find that the ORN will effectively meet their needs.



Ontario Road Network

By Carol-Anne Albertson

The Ontario Road Network is available through the LIO Warehouse as either a Linear Reference System (LRS) or a segmented data set. The segmented version of the Ontario Road Network is derived from the original LRS data set and is suitable for routing and context mapping. The segmented data set currently provides attributes such as street names, alternate street names, address ranges, road class and direction of traffic flow.

We are always in the process of refining or updating Ontario Road Network data. Regular maintenance to municipal data includes new and improved geometry, new and revised street names and/or address ranges. This year we will be integrating geometry data from the Ministry of Transportation to update provincial highways in the Ontario Road Network. Based on this data, we have incorporated the 407 ETR gantry points into the Ontario Road Network LRS.

Recently, we met with our ministry partners about the adoption of a new road model called the ORN v2. The adoption of the ORN v2 will simplify and streamline the current Ontario Road Network LRS data model while keeping the current functionality of the current Ontario Road Network. This enhancement features the integration of our partner's business requirements. It is expected that we will be migrating data over to the ORN v2 in the fall of 2008.

For more information regarding the Ontario Road Network, contact carolanne.albertson@ontario.ca

Recent ORN Updates:

- City of Kawartha Lakes
- City of London
- City of Greater Sudbury & Sudbury Region
- County of Lanark
- County of Lennox & Addington
- Haldimand County
- Prince Edward County
- Renfrew County
- United Counties of Prescott & Russell



Ontario Road Network streamlines School Seeker

Developed by Interlock Systems, the School Seeker is a web based tool that uses the Ontario Road Network (ORN) to let prospective students know what school they will be attending. This application has been incorporated into several school board websites and allows users to easily find answers to school attendance questions via the web.

School Seeker sorts information based on a residential address, and student grade level. From this data, it determines a school boundary or boundaries in which the geocoded address falls. This "closest to source" tool quickly finds the school the student will attend according to his or her home address. It is also able to calculate the home-to-school distance for use in determining bussing eligibility. Incomplete or incorrectly spelled addresses are handled by presenting a list of possible matches to the user for clarification.

The School Seeker application hinges on the availability, accuracy and cost of road data. The Ontario Road Network is a critical component of the system as it provides a basis for display, geocoding and distance calculation. The Ontario Road Network provides uniform, accurate data that can be implemented seamlessly. In addition, other datasets from the Land Information Ontario Warehouse such as water and building data have also enhanced the product.

As an indication of the success, over 20,000 addresses have been matched at one school board since August 2007 to the end of March 2008. This represents 2,500 matches per month. Prior to School Seeker's implementation, this workload would have been handled over the phone by individual schools and the board's planning department. By providing this service, it creates efficiency and allows staff to concentrate on other tasks.

Other benefits include a reduction in duplication and cost. In the past, some school boards had dated; non-standard and/or costly proprietary maps. Other school boards had no digital data at all. The School Seeker solves this problem by offering an easily integrated, reliable product.

The School Seeker application is just an example of many successful products utilizing the Ontario Road Network.

Take a School Seeker tour:

Hamilton-Wentworth District School Board:
<http://ap.hwdsb.on.ca/website>

Upper Canada District School Board:
<http://tracs.ucdsb.on.ca/seeker>



Digital Imagery

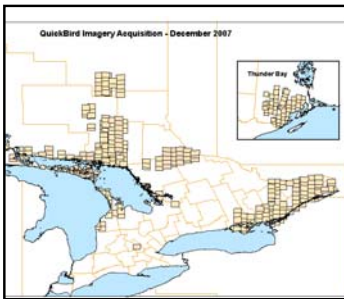
By Mike Robertson

Partnerships continue as more organizations are realizing the benefits and value of imagery products for a wide variety of business needs. In particular, high resolution imagery is generating great interest from the private sector. As we approach spring, Land Information Ontario (LIO) is preparing for imagery acquisitions during the busy leaf-off season. A number of projects have been initiated and we will be actively acquiring imagery throughout the province.

The Imagery Strategy is being finalized and has been a culmination of interviews, research and reporting. This strategy is intended to map out plans and processes for the government to make decisions on imagery acquisition, management, access, distribution and policies. The Imagery Strategy will also highlight funding partnerships.

QuickBird Acquisition

Land Information Ontario has reached an agreement with Digital Globe to re-capture images that feature too much cloud cover. This work is scheduled for the summer of 2008. To date, the QuickBird acquisition project has acquired over 100,000 sq km of data over the past few years. Most of that data is now available to the public sector.



Currently, we are processing QuickBird data that has been sent to us over the winter. Products that have been acquired in the north will be used

for First Nations concerns (health, safety and emergency management activities) while products in the south are geared towards Source Water Protection activities. It is hoped that imagery data will provide users with high quality information to develop land use decisions and assist in water quality and monitoring.

Digital Orthophotography Projects: Simcoe/Muskoka Orthophoto Project

The acquisition of 30 cm resolution imagery and an updated digital elevation product is scheduled for this coming spring. We anticipate that these imagery products will be available in the fall of 2008.

Forest Resource Inventory

The Forest Resource Inventory data that was collected in 2007 is scheduled for delivery by mid-summer. These imagery products are undergoing a quality review prior to distribution. This is a time consuming process, involving a review of raw data consisting of multi band imagery in stereo pairs. This data is used for delineating forest stands and generating digital surface models. Upon acceptance of the stereo pairs, processing then creates the Orthophotography tiles that will be distributed to select GIS users around the province.

MNR is working on an access policy for Forest Resource Inventory data. More information on this policy will be available in the future.

Digital Raster Acquisition Project for the East

One of LIO's newest projects is the Digital Raster Acquisition Project for the East (DRAPE).

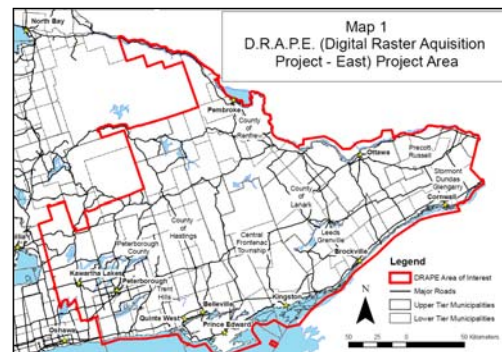
Request for Proposals are now closed, and the contract was awarded to Groupe Alta.

The DRAPE project will acquire 20 cm true colour digital Orthophotography for a broad area in eastern Ontario. Digital elevation data will also be collected, improving the accuracy of hydrology and elevation features across the landscape. Costs and associated funding requirements will be determined in the future.

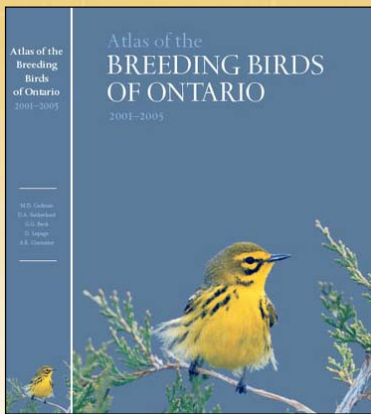
We are looking for more participants for this project, and encourage your involvement. For more information on DRAPE, view this presentation link:



Imagery Projects in Eastern Ontario



For more information on imagery projects, please contact Mike Robertson at mike.robertson@ontario.ca for more details.



LIO maps improve the Ontario Breeding Bird Atlas

Two recent events celebrated the publication of the Atlas of the Breeding Birds of Ontario this winter. Book launches were held at the Canadian Museum of Nature in

Ottawa and the Royal Ontario Museum in Toronto. Five atlas partners (Bird Studies Canada, Environment Canada, Ontario Field Ornithologists, Ontario Ministry of Natural Resources and Ontario Nature) highlighted the critical role of volunteer scientists in the project and characterized it as the most successful conservation partnership in the history of the province. After five years of collecting, compiling and cataloguing birding data from across the province, the 728 page Atlas is now published and available to the public.

The Atlas is considered the most authoritative and up-to-date resource on birds and bird distribution in Ontario. With over 400 colour photographs, the Atlas provides detailed information on the distribution and population status of Ontario birds. Using data from the LIO Warehouse, it includes more than 900 maps illustrating the breeding range for all Ontario species,

and range changes since the first atlas 20 years ago. Innovative new maps and population estimates for many species reveal how numbers vary across the province's vast and diverse landscape.

Maps, maps and more maps...

To prepare for the pilot season in 2000, Ministry of Natural Resources (MNR) staff produced 2,500 survey square maps by assembling over 18 gigabytes of data and plotted almost two kilometres of paper. In addition, electronic copies were created for the Ontario Breeding Bird Atlas website. In the first field season, more than 9,000 maps were downloaded. The website also included data summaries and options to request copies of the raw data.

"The Atlas took advantage of modern GIS technology to provide an accurate assessment of birds in Ontario. Systems were used to seek out duplicate entries and anomalies in habitat descriptions. By receiving data in a standard digital form, it allowed for a faster preliminary analysis and verification, resulting in accurate, dependable data"

The tools available through the Land Information Ontario website supported data collection for the Ontario Breeding Bird Atlas by generating topographic maps containing all the features birders needed in the field to collect data.

From these maps, project participants submitted an astonishing 1.2 million individual breeding bird records, making the Atlas database a foundation not only for the book itself, but for innumerable bird research projects and environmental management applications for many years to come.

The Atlas of the Breeding Birds of Ontario is a perfect blend of old and new. The world of GIS has brought the science of ornithology and geography together - mapping habitat and bird species with the help of the Land Information Ontario (LIO) data warehouse. For the first time, the Atlas provides a fixed reference point of bird populations, which enables research teams to track long-term trends.



Atlas Launch at the ROM - Feb. 10, 2008

MNR Minister Donna Cansfield (centre) and daughter Jennie examining the Atlas, flanked by Mark Stabb (left) of The Nature Conservancy of Canada, and Gregor Beck (right), Atlas Management Board Chair, at the Royal Ontario Museum. Photo courtesy of Jean Iron.

LIO maps improve the Ontario Breeding Bird Atlas ... continued

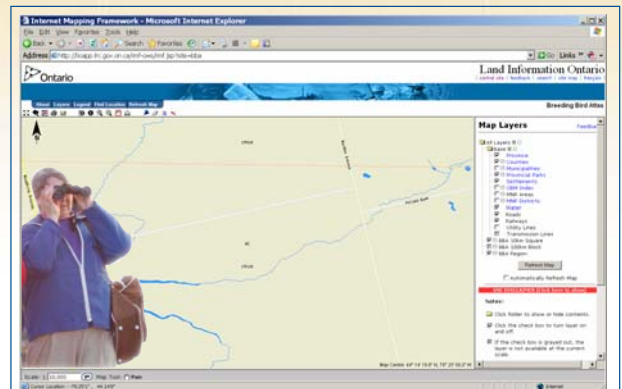
Two noted members of the Ontario Field Ornithologists (OFO) state: "Every so often a book is published that no resource manager, planner and birder should be without. The new Atlas of the Breeding Birds of Ontario 2001 – 2005 is the authoritative reference for Ontario. The detailed distribution and relative abundance (density) maps in contrasting colours allow for rapid assessment of each bird's breeding range and status. Every species account was written by an authority and peer-reviewed by four experts and three editors. Few books have undergone this level of scrutiny, making Ontario's new Atlas the most comprehensive and leading reference on the breeding birds for any jurisdiction in North America." *Ron Pittaway and Jean Iron, Ontario Field Ornithologists.*

The Atlas is a valuable conservation and research tool, and profits from the book's sale will go toward bird conservation projects in Ontario. An online

database, continually updated and serving as a companion to the Atlas, can be accessed at www.birdsontario.org. To order a copy of the book, [select this link](#) or call 1-866-900-7100.



Download a map from:
<http://lioapp.lrc.gov.on.ca/imf-ows/imf.jsp?site=bba>



Volunteer scientists played a critical role in the Ontario Breeding Bird Atlas project.

The Technical Terminal – *your source for technical updates*

Technical Bulletins:

- LIDS UNIX Release Notes
- LIDS 2.3 Upgrade
- Assessment Parcel Data Class Revision
- Forest Processing Facility

Data Management Models:

- OPS Regional Boundary
- Forest Management Unit Model Modifications
- Fisheries Management Zone
- Cultural Heritage Site
- Mineral Deposit
- ELC Community Area
- Municipal Boundary
- Geographic Name Extent
- Wooded Area

View Data in the Warehouse

Technical Tip:

Users should review metadata records and technical documents to gain a better understanding of data to meet specific needs.

Land Information Ontario will be participating in the following conferences:

May 6, 2008

URISA – Ontario Chapter Conference

June 2-5, 2008

Geotec Conference – Ottawa, ON

June 2008

Association of Francophone Municipalities
Conference (AFMC), Cornwall, ON

August 24 – 27, 2008

Ontario Municipalities AMO Conference, Ottawa, ON

October 8, 2008

ESRI Conference – Toronto, ON

October 21-22, 2008

ESRI Conference – Ottawa, ON

November 17-19, 2008

National Emergency Number Association Conference

If you are attending, please drop by
our booth and say hello!

LIDS/SNIF/OLID Training - April 25, 2008

300 Water Street, Peterborough, ON
Robinson Place - Ballroom A
10:00 a.m. - 3:00 p.m.
Contact lio@ontario.ca to register.