Canadensys

Mobilizing biodiversity data across Canada

Peter Desmet & Anne Bruneau

A network

Of people and collections

Academic

11 universities, 5 botanical gardens & 2 musea

Headquarters
Université de Montréal
Biodiversity Centre

35+ researchers

Mainly systematists

30 collections

Plants, insects and fungi

8 entomological collections

13 mil. specimens

2 out of 3 are insects

Goal

Mobilize 3 million specimen records (20%) by 2013

Why?

Specimen data are incredibly useful

Primary data

What, when, where and who of a species

We need data

to answer questions

Canada's natural history collections represent a vast source of biodiversity information. Allowing increased access to that information for all its users in academia, government, and non-governmental and private sectors will greatly enhance our knowledge generating capacity in many, if not all, areas of life and environmental sciences. A broad variety of life science fields are highly dependent on access to quality biodiversity information, ranging from taxonomy, botany, zoology, etc., to large scale ecology projects and environmental research (e.g., invasive species, climate change, habitat loss), forestry and agricultural research, and research on food, bioproduct, bioprocess and drug discovery and development. Access to these data will also increase our ability to: manage our natural resources sustainably; mitigate and adapt to environmental changes; ensure that essential ecological services are maintained and species-at-risk protected; and support a range of important regional, national and international science initiatives (Council of Canadian Academies, 2010). Finally, access to quality biodiversity information is essential for clear, science-based policies and regulations and to streamline environmental assessments and permit permissions. This is necessary to minimize uncertainty, to provide innovative, evidence-based solutions for natural resource industries while ensuring an appropriate balance between socio-economic costs and environmental protection.

How?

Collect
Prepare
Digitize
Standardize
Publish
Aggregate
Download
Use

Collect

Prepare

Digitize

Standardize

Publish

Aggregate

Download

Use

Digitize

In each individual collection (2 years)

Share experience & best practices

bit.ly/Canadensys-forum

Time consuming!
Imaging + citizen science?
Get metadata first?
Georeferencing?

bit.ly/mt-inventory-blog

Collecting

quantitative metadata

by counting all specimens in a herbarium

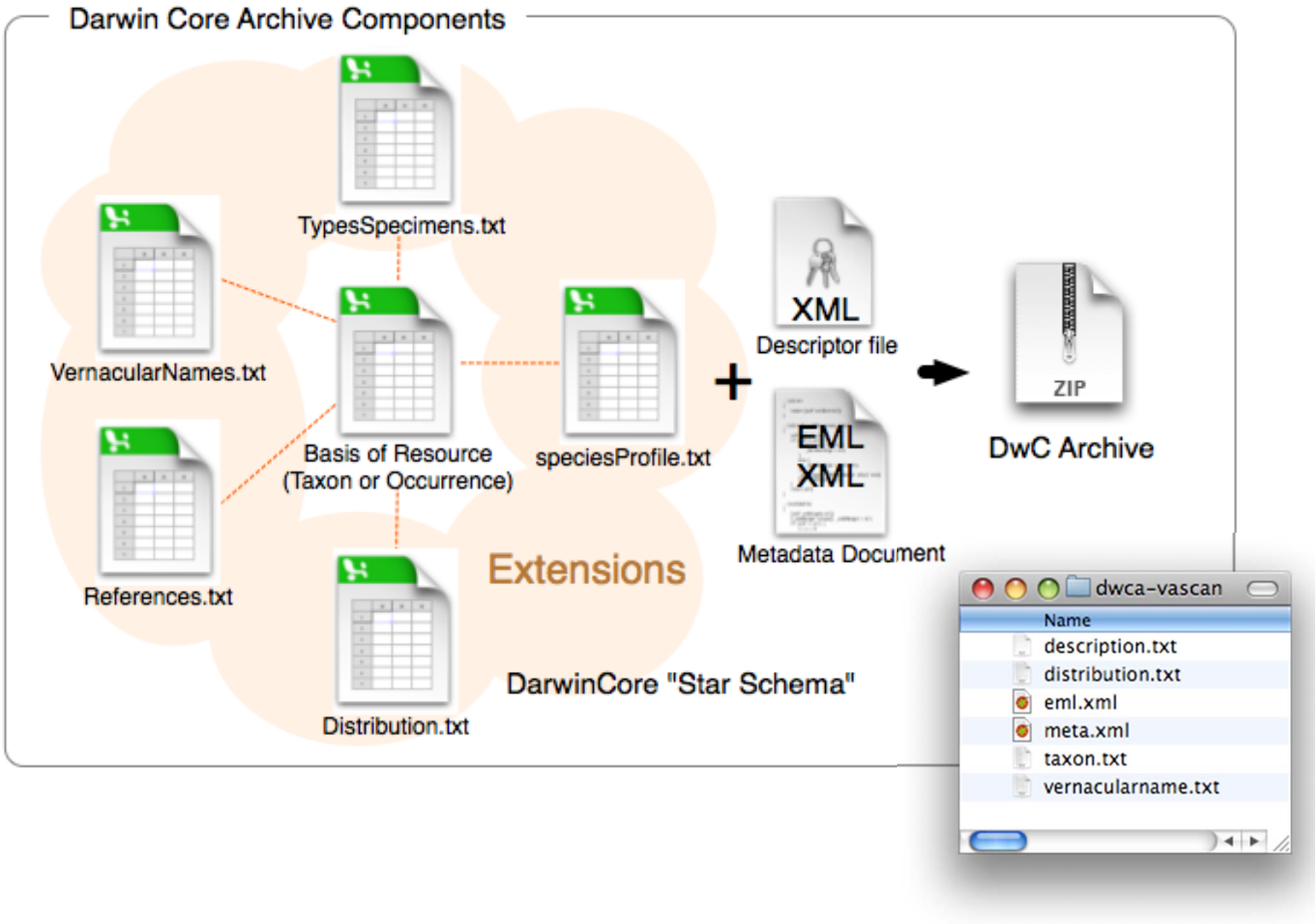
Peter Desmet

Standardize

Different database systems

Darwin Core Archives

bit.ly/DarwinCore


Darwin Core Archive Components
TypesSpecimens.txt
VernacularNames.txt
Basis of Resource
(Taxon or Occurrence)
speciesProfile.txt
References.txt
Distribution.txt
Extensions
DarwinCore "Star Schema"
XML
Descriptor file
EML
XML
Metadata Document
ZIP
DwC Archive
dwca-vascan
Name
description.txt
distribution.txt
eml.xml
meta.xml
taxon.txt
vernacularname.txt

Publish

Make available online

GBIF Integrated Publishing Toolkit (IPT)

data.canadensys.net/ipt

Ouellet-Robert entomological collection (QMOR)

The Ouellet-Robert entomological collection (QMOR) is one of the larger Canadian university entomological collections and the second largest in Quebec. It comprises 1.5 million specimens, covering more than 20,000 species. Aquatic insects from many regions of the world are particularly well-represented. This dataset includes all 38,295 digitized specimens from the collection (192,000+ individuals), representing the orders Odonata, Trichoptera and Ephemeroptera.

Download dataset

Download metadata as EML

Download metadata as RTF

feedback

Summary

Keywords	QMOR; Ouellet-Robert entomological collection; Collection entomologique Ouellet-Robert; Université de Montréal; Canadensys; Canada; collection; specimens; entomology
Resource Language	eng
Last Publication	Version 2 from Oct 14, 2011
Darwin Core Archive	download, 38,295 records
EML	download
RTF	download
GBIF Registration	ada5d0b1-07de-4dc0-83d4-e312f0fb81cb
Organisation	Université de Montréal Biodiversity Centre
Endorsing Node	Canada

External Links

Resource Homepage	http://www.biodiversite.umontreal.ca/collection-entomologique-ouellet-robert?lang=en

Ouellet-Robert entomological collection (QMOR)

This is the overview page for the *Ouellet-Robert entomological collection (QMOR)* resource. Please start by filling in at least the mandatory metadata. Then you can upload and map source data to generate and publish a Darwin Core archive. Published resources can be registered with the GBIF Network. Registered resources can be removed, but they cannot be reverted to a private state.

Metadata

Edit

The Ouellet-Robert entomological collection (QMOR) is one of the larger Canadian university entomolo...

Keywords	QMOR; Ouellet-Robert entomological collection; Collection entomologique Ouellet-Robert; Un...
Taxonomic Coverages	Odonata, Trichoptera, Ephemeroptera
Geographic Coverage	Global coverage (except Antartica). Over 90% of the specimens are collected in Canada, of ...

Source Data

Choose File No file chosen

Clear Connect to DB

Your data sources for generating a Darwin Core Archive. You can upload delimited text files (csv, tab, and files using any other delimiter) either directly or compressed (zip or gzip). To (re)upload a file, please select the local file then click "Add".

Alternatively, you can configure *SQL views* to databases in your local network. To create a new SQL source, please click "Connect to DB" without any file chosen.

qmor-identifications [file]	6.4 MB, 38,937 rows, 20 columns. 14/10/11	Edit
qmor-occurrences [file]	19.2 MB, 38,295 rows, 67 columns. 14/10/11	Edit

Darwin Core Mappings

Darwin Core Occurrence Add

Your mapping between the source data and Darwin Core terms.

Darwin Core Occurrence	66 terms mapped to qmor-occurrences	Edit
Darwin Core Identification History	18 terms mapped to qmor-identifications	Edit

feedback

Basic Metadata: *Ouellet-Robert entomological collection (QMOR)*

You must fill in at least these basic metadata before you can make this resource public.

For each contact you must supply at least a last name, a position, or an organisation. Title and Description are required.

Title

Ouellet-Robert entomological collection (QMOR)

Description

The Ouellet-Robert entomological collection (QMOR) is one of the larger Canadian university entomological collections and the second largest in Quebec. It comprises 1.5 million specimens, covering more than 20,000 species. Aquatic insects from many regions of the world are particularly well-represented. This dataset includes all 38,295 digitized specimens from the collection (192,000+ individuals), representing the orders Odonata, Trichoptera and Ephemeroptera.

Metadata Language

English

Resource Language

English

Subtype

specimen resource

Resource Contact

First Name

Louise

Last Name

Cloutier

Position

Coordonnatrice des collections

Organisation

Université de Montréal

Address

City

- Basic Metadata
- Geographic Coverage
- Taxonomic Coverages
- Temporal Coverages
- Other Keywords
- Associated Parties
- Project Data
- Sampling Methods
- Citations
- Collection Data
- External links
- Additional Metadata

feedback

Darwin Core Occurrence

The category of information pertaining to evidence of an occurrence in nature, in a collection, or in a dataset (specimen, observation, etc.).

Link: http://rs.tdwg.org/dwc/terms/index.htm#Occurrence

back to resource overview page

Mapping Source qmor-occurrences

For each property you can assign a dynamic value taken from the specified column of your data source qmor-occurrences or provide a fixed, static value that is used for all records.

Hide Unmapped Fields

occurrenceID

occurrenceID

The column in your source that holds a unique key for every record/row, also known as the "core id". If you want to map other sources, this identifier is required and will be used to link your source rows together.

Source Sample : 1 | 2 | 3 | 4 | 5

Filter

You can define a filter to exclude records from the generated archive. Specify the criterion that matches the records to be included.

Save Delete Cancel

Record Level Occurrence Event Location GeologicalContext Identification Taxon

Record Level

feedback

Download

Per dataset

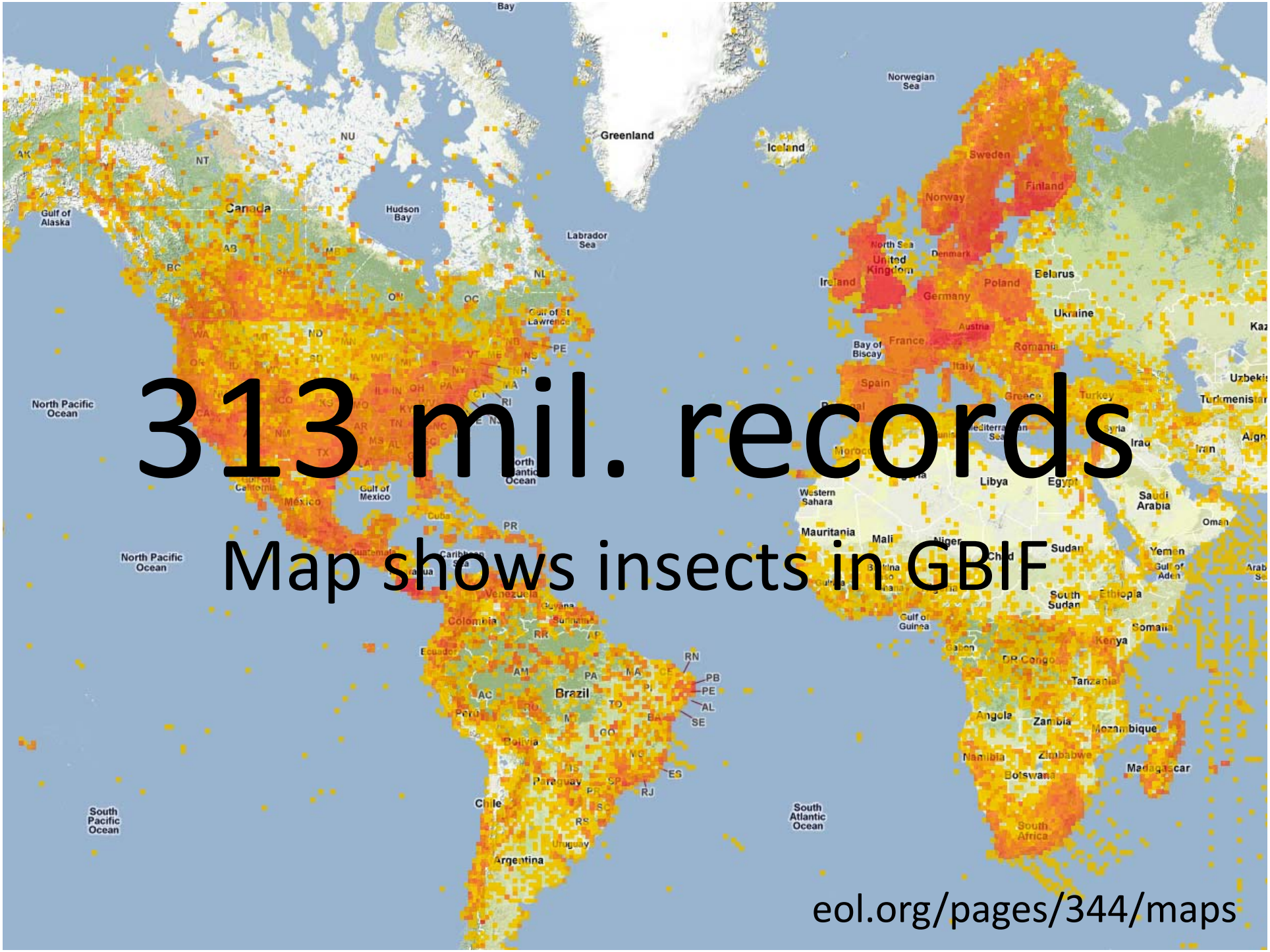
Not very flexible

Aggregate

Can be done by anyone

Global Biodiversity Information Facility

www.gbif.org


313 mil. records
Map shows insects in GBIF
eol.org/pages/344/maps

Registration from IPT

Edit

Keywords	QMOR; Ouellet-Robert entomological collection; Collection entomologique Ouellet-Robert; Un...
Taxonomic Coverages	Odonata, Trichoptera, Ephemeroptera
Geographic Coverage	Global coverage (except Antartica). Over 90% of the specimens are collected in Canada, of ...

Source Data

Choose File | No file chosen

Clear | Connect to DB

Your data sources for generating a Darwin Core Archive. You can upload delimited text files (csv, tab, and files using any other delimiter) either directly or compressed (zip or gzip). To (re)upload a file, please select the local file then click "Add".

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qmor-identifications [file] 6.4 MB, 38,937 rows, 20 columns. 14/10/11 Edit

qmor-occurrences [file] 19.2 MB, 38,295 rows, 67 columns. 14/10/11 Edit

Darwin Core Mappings

Darwin Core Occurrence | Add

Darwin Core Occurrence 66 terms mapped to qmor-occurrences Edit

Darwin Core Identification History 18 terms mapped to qmor-identifications Edit

Visibility *Registered*

Update Registration

This public resource is registered with GBIF. To change this status you must delete the entire resource and contact the GBIF Help Desk.

Resource Key	ada5d0b1-07de-4dc0-83d4-e312f0fb81cb GBRDS
Organisation	Université de Montréal Biodiversity Centre
Organisation Contact	Peter Desmet, peter.desmet@umontreal.ca
Organisation Key	ff7bd5db-b724-4932-b496-10ea298851f9
Endorsing Node	Canada

Published Release

Publish

When publishing a new release, a new EML version and a Darwin Core Archive (DwC-A) will be created.
A DwC-A bundles all data sources with mappings and metadata in one zipped archive.

Last Publication Version 2 from 14/10/11 Publication Log

Registered

Download

Explore and search across datasets

data.gbif.org

Genus: *Bombus* Latreille, 1802

Bumble Bees

»Kingdom: Animalia »Phylum: Arthropoda »Class: Insecta »Order: Hymenoptera »Superfamily: Apoidea »Family: Apidae »Genus: *Bombus*

Actions for *Bombus*

Explore: Occurrences (Over 1,000 records) Names and classification

List: Countries with occurrences Datasets with occurrences

Download: Darwin Core records One-degree cell density overlay for Google Earth Placemarks for Google Earth (limit 10,000)

Names and classification

According to Catalogue of Life: 2011 Annual Checklist: Species 2000 & ITIS Catalogue of Life Hierarchy, Edition 1 (2007)

Name	*Bombus*
Classification	»Kingdom: Animalia »Phylum: Arthropoda »Class: Insecta »Order: Hymenoptera »Superfamily: Apoidea »Family: Apidae »Genus: *Bombus*
Status	Accepted name
Record URL	2422381
Globally unique identifier	urn:lsid:catalogueoflife.org:taxon:d98377c4-29c1-102b-9a4a-00304854f820:col20101221
Globally unique identifier	urn:lsid:catalogueoflife.org:taxon:d98377c4-29c1-102b-9a4a-00304854f820:col20101221
Feedback	Feedback to Catalogue of Life: 2011 Annual Checklist on the classification of *Bombus* Please note that this feedback reaches the publisher of the nomenclatural (name-related) information. If your feedback concerns specimens or observations, please use the feedback link from the Occurrences page instead.

Type specimens

Catalogue Number	Type Status	Typified Name	Data Publisher	Dataset
HYME.0131.4	syntype		NLBIF	Zoological Museum Amsterdam, University of Amsterdam (NL) – Hymenoptera_Bombidae_Types

Collect

Prepare

Digitize

Standardize

Publish

Aggregate

Download

Use

Complete workflow

Standardize, publish, register, available

Since 2011, thanks to IPT!

Wildlife Sightings
Citizen science observations
www.junponline.com
Beaver Bank
Kinsac
Fletchers Lake
Lockview
Fall River
Lewis Lake
Pockwock Lake
Pockwock
Fall River West
Waverley
Upper Hammonds Plains
Lucasville
Sackville
Hammonds Plains
Yankeetown
Uplands Park
Blamey
North Preston
Lake Echo
East Preston
Montague Gold Mines
Preston
Porters Lake
Petain
Desert
Halifax
Dartmouth
Masons Point
Whynachts Point
Sheldrake Lake
Boutiliers Point
Tantallon
Black Point
Rainbow Haven
Three Fathom Harbour
Lloyd
Terminal Beach
French Village
Seabright
Provincial Park
McNabs Island
Cow Bay
Goodwood
Glen Margaret
Hacketts Cove
Hatchet Lake
Harrietsfield
Shad Bay
Brookside
Bayside
Whites Lake
Bear Cove
Portuguese Cove
Southwest Cove
Indian Harbour
Williamswood
McGraths Cove
Middle Village
Terrence Bay Provincial Wilderness Area
Peggys Cove
West Dover
East Dover
Terence Bay River
Sambro Head
Ketch Harbour
Prospect
West Pennant
Sambro
Bald Rock
Terence Bay Lower
Sandy Cove
POWERED BY CartoDB
Map data ©2011 Google - Terms of Use

Checklists

Data about taxa (vs specimens)

Now also supported by

DwC-A, GBIF & IPT

VASCAN

Database of Vascular Plants of Canada

data.canadensys.net/vascan

Name search

Search

Welcome to the **Database of Canadian Vascular Plants (VASCAN)**. Search for any **scientific** or **vernacular** name. A search on "arte" will return "**Arte**misia", but not "Two-parted sedge". Use "Achnella" to search for hybrids like "×Achnella". Want to search by **distribution** instead? Use the checklist builder.

Name search
Checklist builder
About
Download

feedback

Sugar maple is a vernacular name for:

Acer saccharum

ACC *Acer saccharum* Marshall is an **accepted species** name sensu FNA Ed. Comm., in prep. f.

Vernacular names

ACC	érable à sucre	Darbyshire et al., 2000
SYN	érable franc	Marie-Victorin, 1995
SYN	érable franche	Marie-Victorin, 1995
ACC	sugar maple	Farrar, 1996
SYN	hard maple	Farrar, 1996
SYN	rock maple	Farrar, 1996

Synonyms

SYN	*Acer nigrum* subsp. *saccharophorum* (K. Koch) R.T. Clausen	FNA Ed. Comm., in prep. f
SYN	*Acer saccharophorum* K. Koch	FNA Ed. Comm., in prep. f
SYN	*Acer saccharum* Marshall subsp. *saccharum*	
SYN	*Acer saccharum* Marshall var. *saccharum*	

Distribution

Map view | List view

NAT NATIVE INT INTRODUCED EPH EPHEMERAL EXC EXCLUDED EXT EXTIRPATED
? DOUBTFUL – ABSENT

Download map as a PNG or SVG file

Checklist builder

Choose your selection criteria | Choose your display criteria

Plants from the following group:

– Select group –

Plants with the habit: Tree

Plants that occur in any of the following regions:

- Canada
- Pacific: British Columbia
- Prairies: Alberta, Saskatchewan, Manitoba
- Central: Ontario, Quebec
- Atlantic: New Brunswick, Prince Edward Island, Nova Scotia, Newfoundland, Labrador, Saint Pierre and Miquelon
- Arctic: Yukon, Northwest Territories, Nunavut, Greenland

With the following distribution status(es):

NAT NATIVE | INT INTRODUCED | EPH EPHEMERAL | EXC EXCLUDED | EXT EXTIRPATED | ? DOUBTFUL

Create your checklist

Results: 161

Rank	Scientific name		BC	AB	SK	MB	ON	QC	NB	PE	NS	NL–N	NL–L	SM	YT	NT	NU	GL
Species	*Abies balsamea*	Tree	–	NAT	NAT	NAT	NAT	NAT	NAT	NAT	NAT	NAT	NAT	NAT	–	–	?	–
Species	*Acer ×freemanii*	Tree	–	–	–	–	NAT	?	–	–	–	–	–	–	–	–	–	–
Species	*Acer campestre*	Tree	–	–	–	–	INT	–	–	–	–	–	–	–	–	–	–	–
Species	*Acer negundo*	Tree	INT	NAT	NAT	NAT	NAT	INT	INT	INT	INT	–	–	–	INT	INT	–	–
Species	*Acer nigrum*	Tree	–	–	–	–	NAT	NAT	–	–	–	–	–	–	–	–	–	–

Database of Vascular Plants of Canada (VASCAN)

VASCAN is the Database of Vascular Plants of Canada (http://data.canadensys.net/vascan). It is a comprehensive list of all vascular plants reported in Canada, Greenland (Denmark) and Saint Pierre and Miquelon (France). VASCAN is literature-based, though recent additions are sometimes specimen-based. For every core taxon (species, subspecies or variety) we provide the accepted scientific name (Latin), the accepted French and English vernacular name, and their synonyms/alternatives in Canada. We indicate the distribution status (native, introduced, etc.) of the plant for each province or territory, and the habit (tree, shrub, herb or vine) of the plant in Canada. For reported hybrids (nothotaxa or hybrid formulas), we also provide the hybrid parents (not included in the dataset for technical reasons), except for introduced hybrids. All taxa are linked to a classification. We refer to a source for all name, classification and distribution information.

Download dataset

Download metadata as EML

Download metadata as RTF

feedback

Summary

Keywords	VASCAN; Université de Montréal; Canadensys; Canada; Greenland; Saint Pierre and Miquelon; checklist; taxonomy; synonymy; hybrids; vernacular names; English; French; distribution; provinces; habit
Resource Language	eng
Last Publication	Version 9 from Sep 26, 2011
Darwin Core Archive	download, 23,662 records
EML	download
RTF	download
GBIF Registration	3f8a1297-3259-4700-91fc-acc4170b27ce
Organisation	Université de Montréal Biodiversity Centre
Endorsing Node	Canada

How can we help?

Data hosting

Only registered IPT in Canada

Full attribution via registration

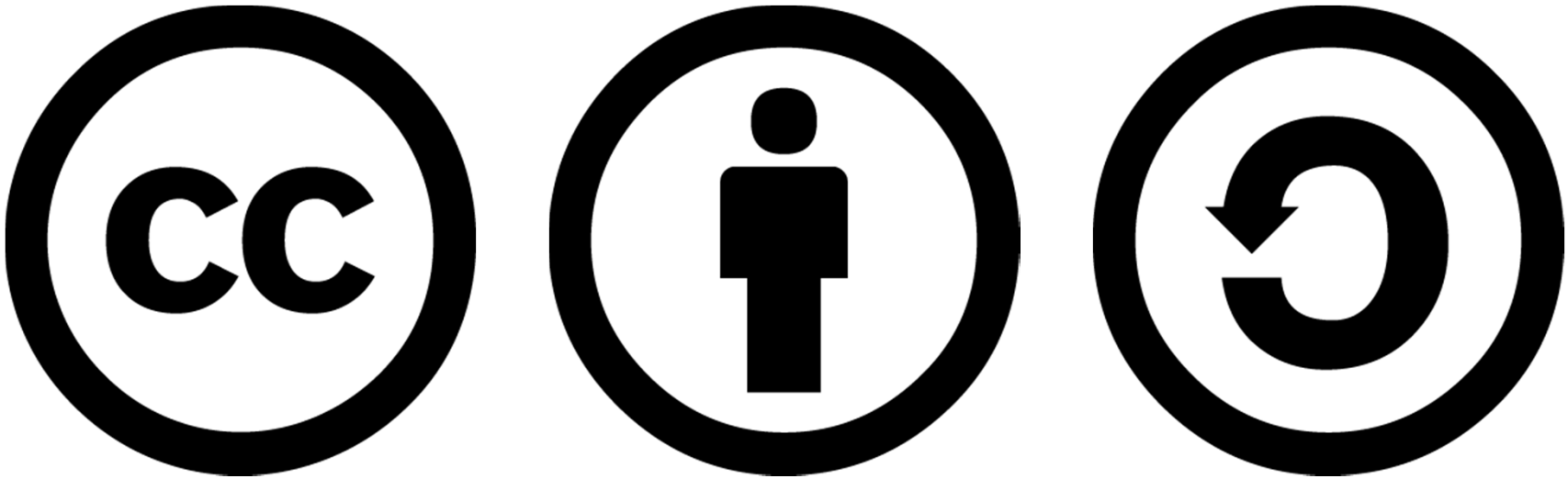
data.canadensys.net/ipt

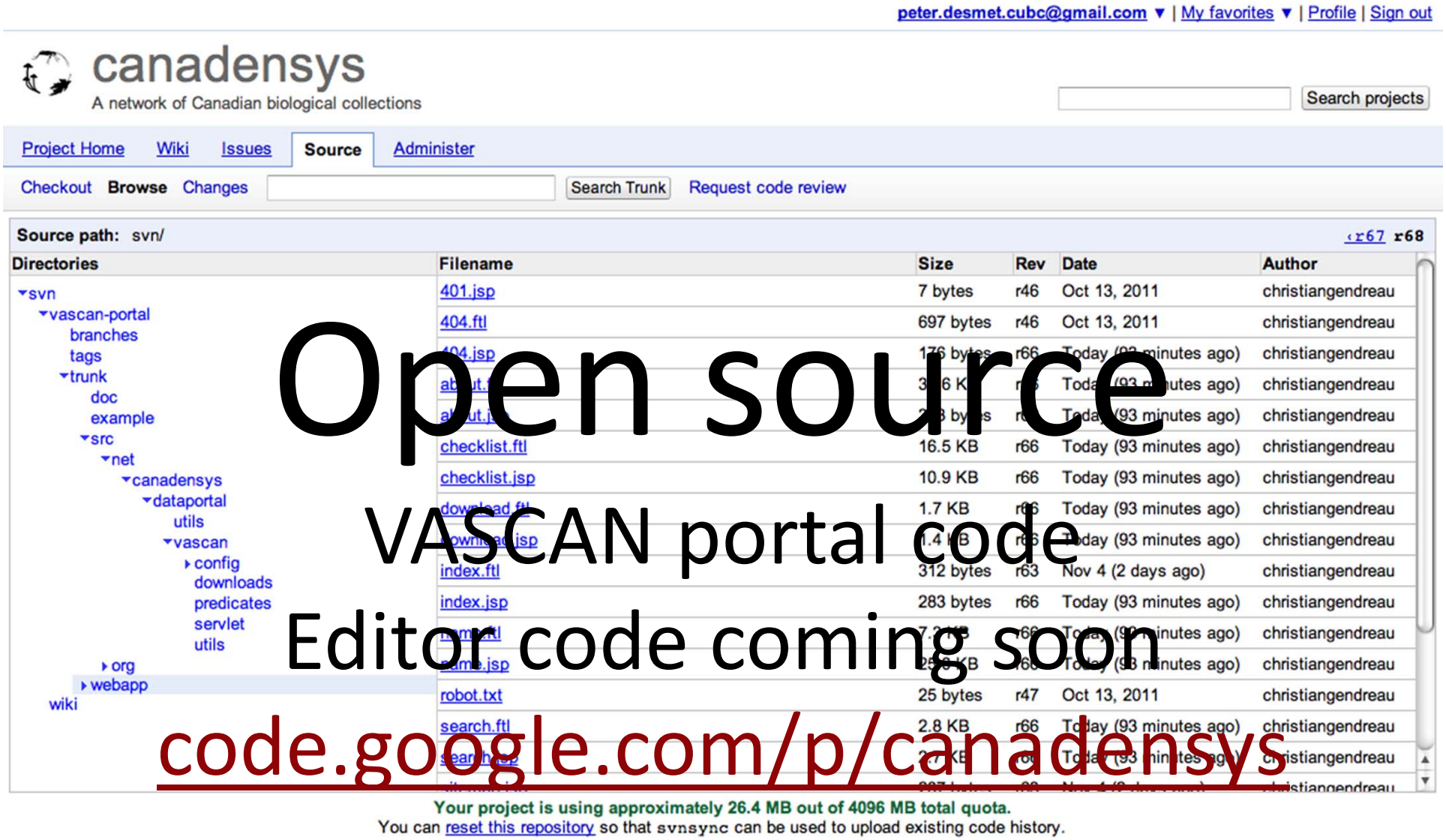
Data

Available for use

More datasets coming soon

data.canadensys.net





Open source

VASCAN portal code

Editor code coming soon

code.google.com/p/canadensys

What we want

More data

It’s out there!

NSERC proposal submitted to support more of it

Record-level Terms

dcterms:type | dcterms:modified | dcterms:language | dcterms:rights | dcterms:rightsHolder | dcterms:accessRights | dcterms:bibliographicCitation | dcterms:references

institutionID | collectionID | datasetID | institutionCode | collectionCode | datasetName | ownerInstitutionCode | basisOfRecord | informationWithheld | dataGeneralizations | dynamicProperties

Occurrence

occurrenceID | catalogNumber | occurrenceRemarks | recordNumber | recordedBy | individualID | individualCount | sex | lifeStage | reproductiveCondition | behavior | establishmentMeans | occurrenceStatus | preparations | disposition | otherCatalogNumbers | previousIdentifications | associatedMedia | associatedReferences | associatedOccurrences | associatedSequences | associatedTaxa

Event

eventID | samplingProtocol | samplingEffort | eventDate | eventTime | startDayOfYear | endDayOfYear | year | month | day | verbatimEventDate | habitat | fieldNumber | fieldNotes | eventRemarks

dcterms:Location

locationID | higherGeographyID | higherGeography | continent | waterBody | islandGroup | island | country | countryCode | stateProvince | county | municipality | locality | verbatimLocality | verbatimElevation | minimumElevationInMeters | maximumElevationInMeters | verbatimDepth | minimumDepthInMeters | maximumDepthInMeters | minimumDistanceAboveSurfaceInMeters | maximumDistanceAboveSurfaceInMeters | locationAccordingTo | locationRemarks | verbatimCoordinates | verbatimLatitude | verbatimLongitude | verbatimCoordinateSystem | verbatimSRS | decimalLatitude | decimalLongitude | geodeticDatum | coordinateUncertaintyInMeters | coordinatePrecision | pointRadiusSpatialFit | verbatimWKT | footprintSRS | footprintSpatialFit | georeferencedBy | georeferencedDate | georeferenceProtocol | georeferenceSources | georeferenceVerificationStatus | georeferenceRemarks

GeologicalContext

geologicalContextID | earliestEonOrLowestEonothem | latestEonOrHighestEonothem | earliestEraOrLowestErathem | latestEraOrHighestErathem | earliestPeriodOrLowestSystem | latestPeriodOrHighestSystem | earliestEpochOrLowestSeries | latestEpochOrHighestSeries | earliestAgeOrLowestStage | latestAgeOrHighestStage | lowestBiostratigraphicZone | highestBiostratigraphicZone | lithostratigraphicTerms | group | formation | member | bed

Identification

identificationID | identifiedBy | dateIdentified | identificationReferences | identificationVerificationStatus | identificationRemarks | identificationQualifier | typeStatus

Taxon

taxonID | scientificNameID | acceptedNameUsageID | parentNameUsageID | originalNameUsageID | nameAccordingToID | namePublishedInID | taxonConceptID | scientificName | acceptedNameUsage | parentNameUsage | originalNameUsage | nameAccordingTo | namePublishedIn | namePublishedInYear | higherClassification | kingdom | phylum | class | order | family | genus | subgenus | specificEpithet | infraspecificEpithet | taxonRank | verbatimTaxonRank | scientificNameAuthorship | vernacularName | nomenclaturalCode | taxonomicStatus | nomenclaturalStatus | taxonRemarks

Auxiliary Terms

ResourceRelationship

resourceRelationshipID | resourceID | relatedResourceID | relationshipOfResource | relationshipAccordingTo | relationshipEstablishedDate | relationshipRemarks

Darwin Core Archives

The format war is over

Collaboration

CBIF, NatureServe Canada, Canadensys

With other organizations

Between data holders and users

National coordination

www.canadensys.net/ottawa-2011

2-way communication

Links back to the data holder

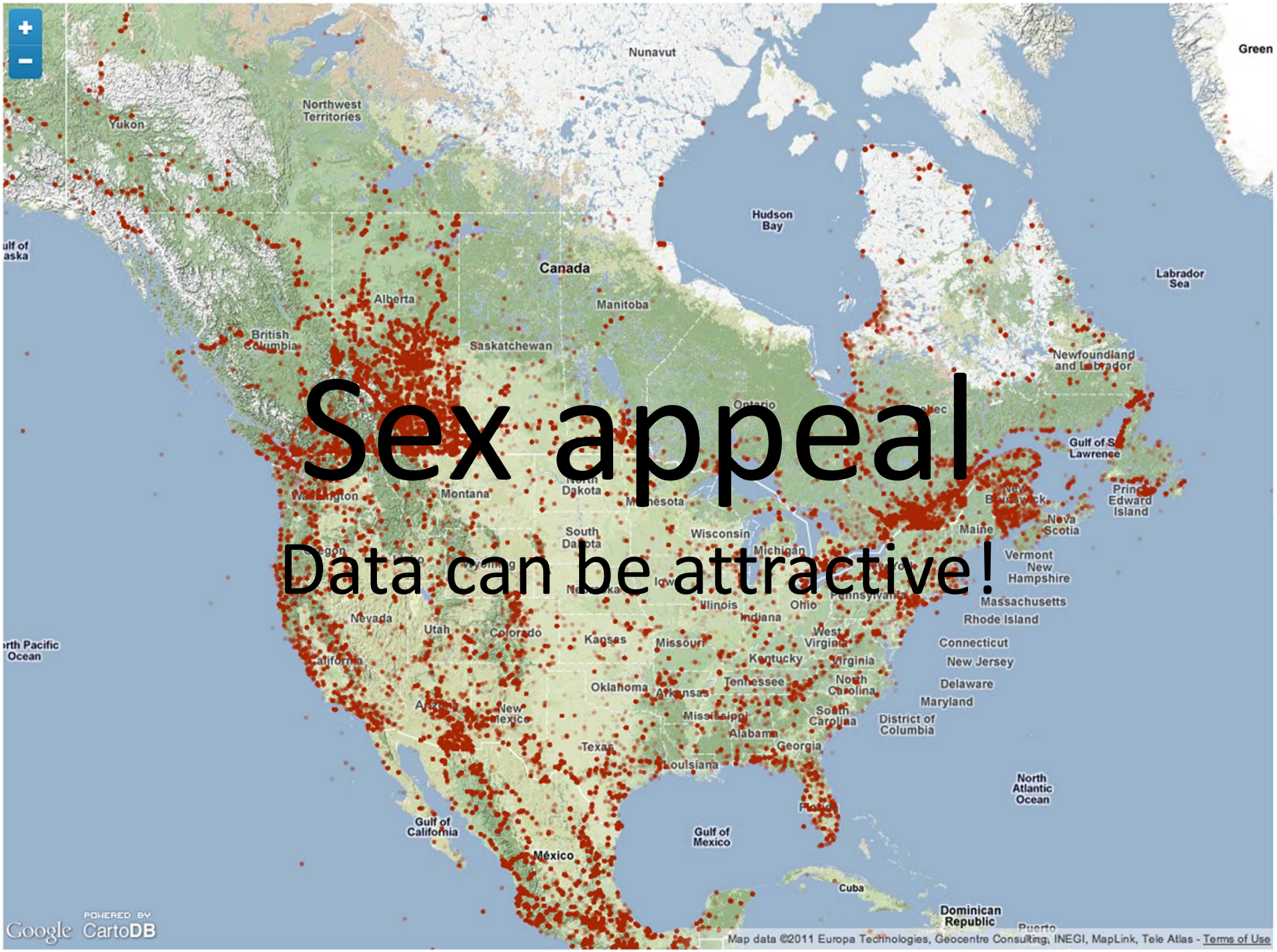
Better citations

Persistent identifiers

Training

Darwin Core can be overwhelming

bit.ly/AppleCore for insects


Sex appeal
Data can be attractive!
Nunavut
Northwest Territories
Yukon
Hudson Bay
Canada
Alberta
Manitoba
Saskatchewan
British Columbia
Labrador Sea
Newfoundland and Labrador
Gulf of St. Lawrence
Prince Edward Island
Nova Scotia
Maine
Vermont
New Hampshire
Massachusetts
Rhode Island
Connecticut
New Jersey
Delaware
Maryland
District of Columbia
Montana
North Dakota
Minnesota
South Dakota
Wisconsin
Michigan
Ohio
Illinois
Indiana
West Virginia
Kentucky
Virginia
North Carolina
South Carolina
Tennessee
Missouri
Kansas
Nevada
Utah
Colorado
California
Oklahoma
Arkansas
Mississippi
Alabama
Georgia
Louisiana
Texas
New Mexico
Arizona
North Atlantic Ocean
Gulf of California
Gulf of Mexico
México
Cuba
Dominican Republic
Google
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Thanks!

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