



Music in space and time: Using data visualization to understand a local music collection

Mountain Plains - MLA Meeting
University of Northern California
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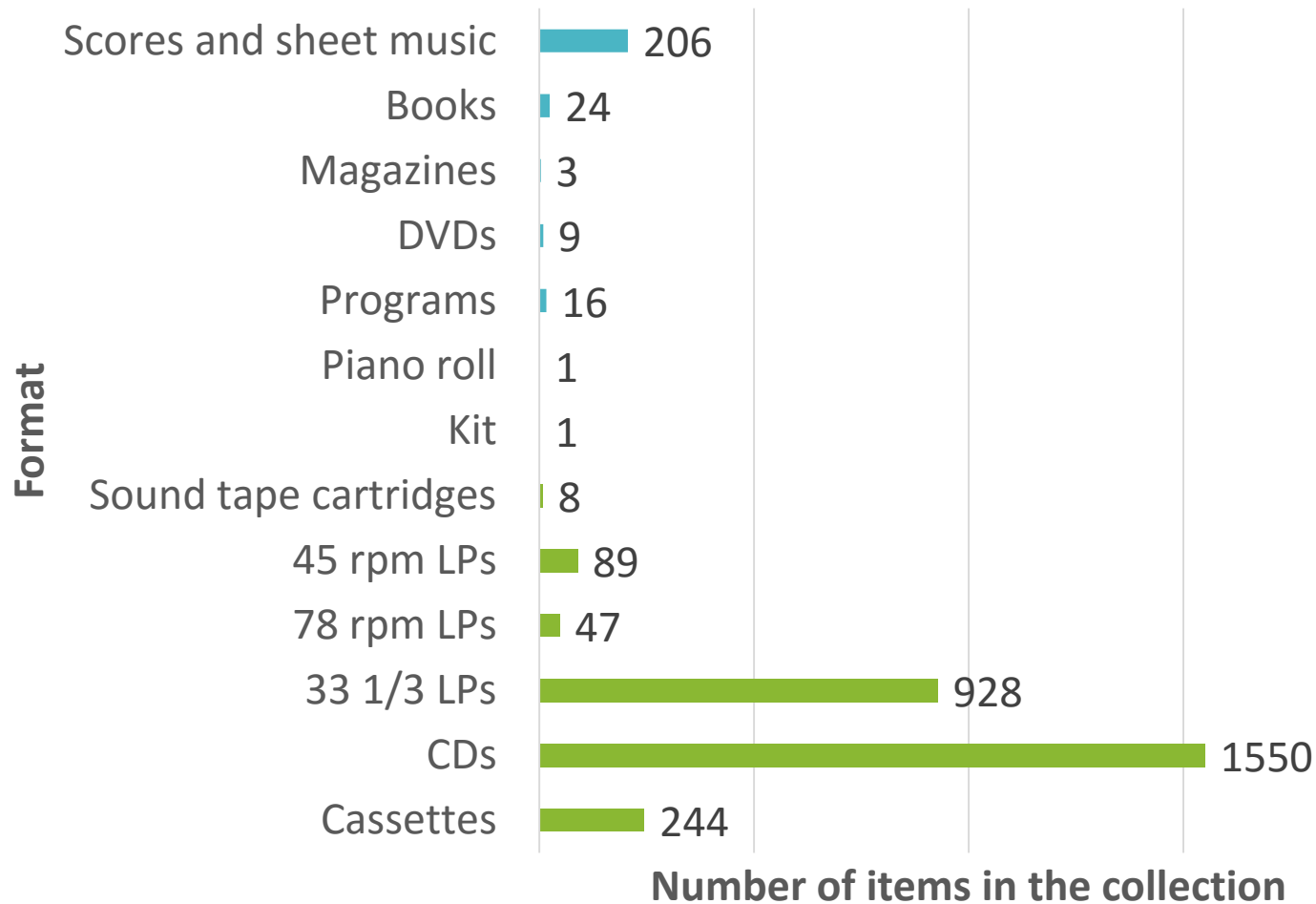
OUTLINE

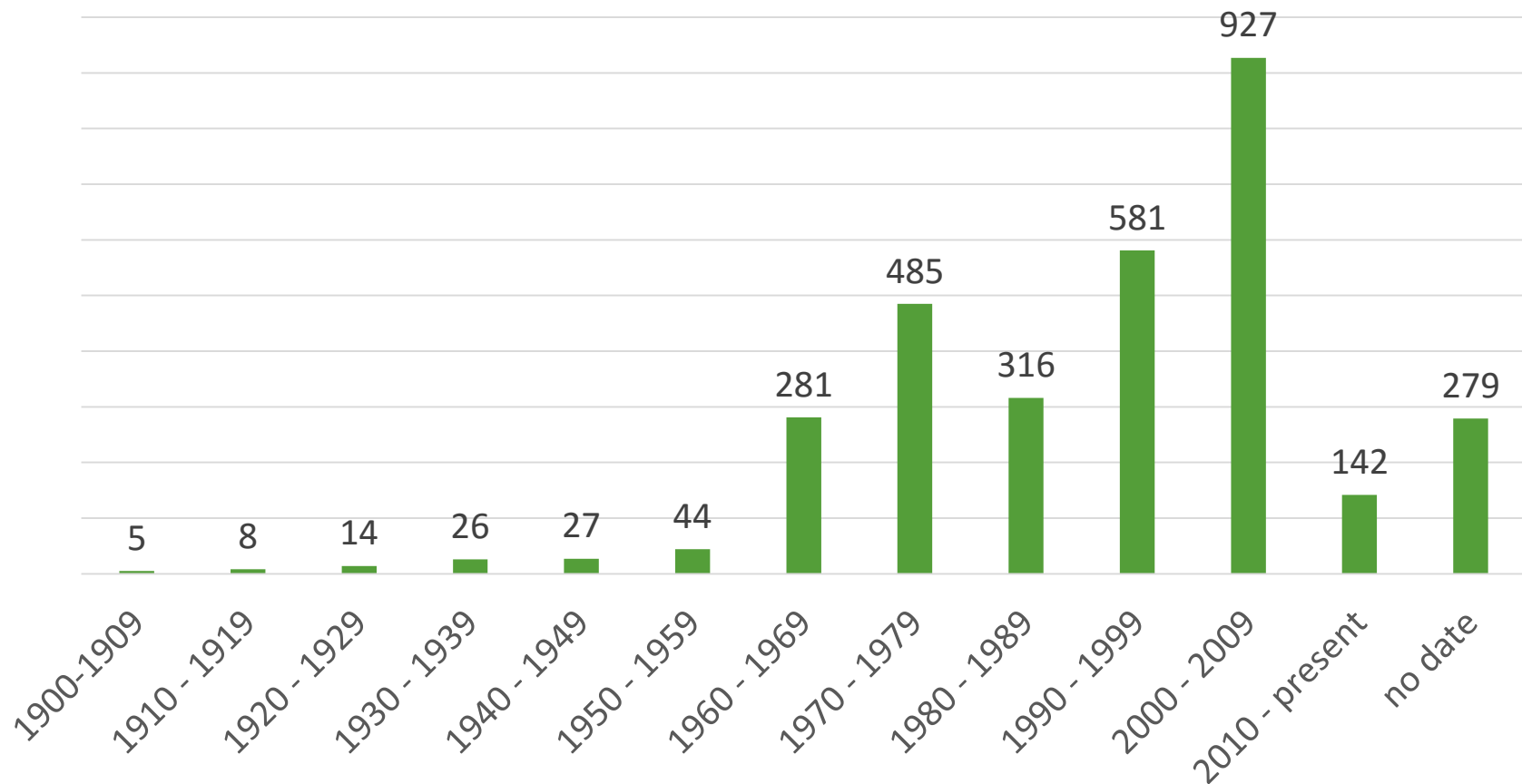
- Introduction
- The Saskatchewan Music Collection
- Why make a map?
- Workflow
- Proof of concept examples
- Future directions
- Discussion

THE SASKATCHEWAN MUSIC COLLECTION

- Collection strengths:
 - Sound recordings
 - Sheet music
 - Aboriginal music, popular music, & music from local ensembles







■ Number of items in the collection

SMC HISTORY


1997 -
Physical
collection
established
in the
Education &
Music
Library

2010 -
Digitization
project
started

2015 -
Online
access in
Saskatchewa
n History
Online
(Islandora)

2015 -
Collection
website
launched

2016 –
geospatial
visualization



“Metadata representations cannot be grouped, merged, decomposed, or transformed in any other way, and once a collection is catalogued, it is treated as a monolith that is not to be subject to any changes. Additionally, static metadata representations do not allow users to gain awareness of transitional processes in spaces.”

Buchel, O., & Sedig, K. (2014). Making sense of document collections with map-based visualisations: the role of interaction with representations. *Information Research*, 19(3), 29-55.

CHALLENGE

**How can we create
a more intuitive way
to browse the
collection?**



“Richer interactions can be found in the space-time-topic-centered visualizations, which help users understand transitions associated with space, time and topics in collections. The merit of this type of interface is that it shows interrelationships among three ontological properties of documents: geographic space, time and topics and a change in any of these properties is reflected in the other properties.”

Andrienko, G. & Andrienko, N. (2007). Coordinated multiple views: a critical view. In Proceedings of the Fifth International Conference on Coordinated and Multiple Views in Exploratory Visualization, 2007. CMV '07, (pp. 72-74). Washington, DC: IEEE Computer Society.

WHY MAKE A MAP?

- Put the Saskatchewan Music Collection in spatial context
 - Where was music related to Saskatchewan published over time?
- Other questions we could ask:
 - Where were the artists born? Where did they die?
 - Who influenced who? Are there spatial patterns?
 - Are there stories that we can tell by looking at where artists lived and played/composed?
- Examples:
 - BC Newspapers from UBC Open Data:
<https://open.library.ubc.ca/collections/bcnewspapers>

Saskatchewan History Online - First World War Linked Open Data Prototype:
<http://rdf.usask.ca:8082/SaskLOD/>

WORKFLOW

- Consultation

- Kristin's Confessions!

- What data was interesting and unique in representing this collection, based on the MARC data from the catalogue?

- Artist/album title (245)
 - Locations in the Publication fields (260)
 - Subject Headings (650)
 - Publication date (260)
 - Format (300)

WORKFLOW

- Obtain MARC records

A10																				
	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	
1	100	110	130	210	222	240	245	246	250	254	257	260	264	265	300	306	310	321	336	
2	aVan Buren, Burrell						aFarewell dear old Erin h[music] / cwords by Shela						aSaskatoon, Sask. : bFulton Pt a1 score (5 p.) ; c31 cm							
3	aWood, J. G.						aAin't yo' glad it's spring / cwords & music by J.G. v						aBraucepeth, Sask. : bJ.G. Wo a5 p. of music ; c30 cm							
4							aStrictly Canadian h[sound recording]						aScarborough : bQuality Reco a1 sound disc : banalog, 33 1/3 rpm, stereo. ; c12 in							
5	aQueen City Kids (Musical Group)						aDown again h[sound recording] ; bKids world / c						aDon Mills, Ont. : bCBS Recor a1 sound disc : b33 1/3 rpm ; c7 in							
6	aQueen City Kids (Musical Group)						aDance h[sound recording] ; bBlack box / cQueen						aDon Mills, Ont. : bCBS Recor a1 sound disc : b33 1/3 rpm ; c7 in							
7	aGroenen, Wilma						aEat the sky h[sound recording] / cWilma						a[Saskatoon?] : bGWIZ Music, a1 compact disc : bdigital ; c12 cm + e1 booklet ([12]							
8	aHorachek, Carrie Catherine						aVenus envy h[sound recording] / cCarrie Catharin						a[Saskatoon, Sask.] : bOut Lo a1 sound disc : bdigital ; c4 3/4 in + e1 booklet (1 fol							
9	aSuchoboki, Dawn Alexis						aSuch-a-bouquet h[sound recording] / cDawn Alex						a[Regina, Sask.] : bDawn Alex a1 sound disc : bdigital ; c4 3/4 in. + e1 booklet ([9] p							
10	aMenard, Andrea, d1971-						aSimple steps h[sound recording] / cAndrea Mena						a[S.I.] : bVelvet & Hawk Produ a1 sound disc : bdigital, audio ; c4 3/4 in + e1 bookle							
11	aKing, Bob, d1946 December 31-						aHow the West was fun h[sound recording] / cBob						a[Pense, Sask.] : bArmchair Er a1 sound disc : bdigital ; c4 3/4 in + e1 booklet (1 fol							
12	aJohner, Brad						aSummertown Road h[sound recording] / cBrad Jo						a[Saskatoon] : b306 Records ; a1 compact disc : bdigital ; c4 3/4 in. + e1 booklet (1							
13	aKaldor, Connie						aOut of the blue h[sound recording] / cConnie Kal						aToronto : bCoyote Entertaini a1 sound disc : bdigital ; c4 3/4 in. + e1 booklet (1 fo							
14	aStraker, Jeff						aSongs from Highway 15 h[sound recording] / cJef						a[Punnichy, Sask.] : bProgeny a1 sound disc : bdigital ; c4 3/4 in + e1 booklet ([3] p							
15	aWiebe, Valerie						aFallow ground h[sound recording] / cValerie Wiel						a[Langham, SK] : bValerie Wie a1 sound disc : bdigital ; c4 3/4 in + e1 booklet ([10]							
16	aSolstice (Musical group)						aCool yule h[sound recording] / cSolstice						aSaskatoon : bSolstice, cc200 a1 sound disc : bdigital ; c4 3/4 in. + e1 booklet (1 fo							
17							aNessess aNess essentials 2005 aNess essentials :						aSaskatoon, Sask. : bNess Cre a2 sound discs : bdigital ; c4 3/4 in + e1 booklet ([38							
18	aBoycott Scott (Musical Group)						aBoycott Scott h[sound recording] / bBoycott Scott						a[Saskatoon, Sask.] : bRight Ti a1 sound disc : bdigital ; c4 3/4 in. + e1 booklet ([6] p							
19	aHynd, Lianne						aSomewhere in between h[sound recording] / cLe						aSaskatoon, Sask. : bRockin' R a1 sound disc : bdigital ; c4 3/4 in + e1 booklet (1 fol							
20	aDubÃ©, Monique, d1967-						aSongs for daughters h[sound recording] / cMonic						a[Saskatoon] : bMonique Duk a1 compact disc : bdigital ; c12 cm + e1 booklet (1 fo							
21	aGerrand, Pam						aComing hOMe h[sound recording] : bmantra for						a[Stratford, Ont.] : bIndieGo F a1 sound disc : bdigital, stereo ; c4 3/4 in. + e1 bookl							
22	aFreed, Don						aDon Fre aThe valley of green and blue						a[s.l.] : bGabriel Dumont Insti a1 sound disc : bdigital, stereo ; c4 3/4 in. + e1 bookl							

WORKFLOW

- Data clean-up (OpenRefine)

127.0.0.1:3333/project?project=2310523512230

SMC_300_Description

3131 rows

Extensions: undefined

Facet / Filter Undo / Redo 104

Refresh Reset All Remove All

Format 11 choices Sort by: name count Cluster

	bib num	Cat_URL	300	300 2	300 3	Format	300 4	300 5	300 6	300 7
1.	1674641		ja1 sound disc (ca. 65:00) :[banalog, stereo., 33 1/3 rpm ;c12 in	1 sound disc (ca. 65:00) :	banalog, stereo., 33 1/3 rpm ;	Vinyl	c12 in			
2.	2059194		ja1 sound disc :[banalog, 33 1/3 r/min ;c12 in	1 sound disc	banalog, 33 1/3 r/min ;	Vinyl	c12 in			
3.	2059374		ja1 sound disc :[b33 1/3 rpm, stereo. ;c12 in	1 sound disc	b33 1/3 rpm, stereo. ;	Vinyl	c12 in			
4.	2059375		ja1 sound disc (40 min.) :[b33 1/3 rpm, stereo. ;c12 in	1 sound disc (40 min.) :	b33 1/3 rpm, stereo. ;	Vinyl	c12 in			
5.	2059379		ja1 sound disc :[b33 1/3 rpm, stereo. ;c12 in +e1 insert sheet	1 sound disc	b33 1/3 rpm, stereo. ;	Vinyl	c12 in +	e1 insert sheet		
6.	2059377		ja1 sound disc :[b33 1/3 rpm ;c12 in.	1 sound disc	b33 1/3 rpm ;	Vinyl	c12 in.			
7.	2059378		ja1 audio disc :[b33 1/3 rpm, stereo. ;c12 in.	1 audio disc	b33 1/3 rpm, stereo. ;	Vinyl	c12 in.			
8.	2063895		ja321 p. ;c25 cm	321 p. ;	c25 cm	Book				
9.	2064315		ja1 sound disc :[bdigital, stereo ;c4 3/4 in. +e1 booklet (1 folded p. ; 12 cm.)	1 sound disc	bdigital, stereo ;	Digital Disc	c4 3/4 in. +	e1 booklet (1 folded p. ; 12 cm.)		
10.	2064316		ja1 sound disc :[bdigital, stereo ;c4 3/4 in. +e1 booklet (1 folded p. ; 12 cm)	1 sound disc	bdigital, stereo ;	Digital Disc	c4 3/4 in. +	e1 booklet (1 folded p. ; 12 cm)		
11.	2066701		ja1 sound disc :[b33 1/3 rpm, stereo. ;c12 in	1 sound disc	b33 1/3 rpm, stereo. ;	Vinyl	c12 in			
12.	2066710		ja1 sound disc :[banalog, 33 1/3 r/min ;c12 in	1 sound disc	banalog, 33 1/3 r/min ;	Vinyl	c12 in			
13.	1717534		ja2 sound discs :[banalog, 33 1/3 rpm, stereo. ;c12 in.	2 sound discs :	banalog, 33 1/3 rpm, stereo. ;	Vinyl	c12 in.			
14.	2068214		ja2 sound discs :[bdigital ;c4 3/4 in. +e1 booklet ([10] p. ; 12 cm.)	2 sound discs :	bdigital ;	Digital Disc	c4 3/4 in. +	e1 booklet ([10] p. ; 12 cm.)		

PROOF OF CONCEPT - ARCMAP DESKTOP

SMC_Item_Subject - ArcMap

File Edit View Bookmarks Insert Selection Geoprocessing Customize Windows Help

1:12,500,000

Table Of Contents

Layers

- SMC_v2
- Format
 - 33 1/3 RPM
 - 45 RPM
 - 78 RPM
 - Book
 - Cassette Tape
 - Compact Disc
 - Kit
 - Magazine
 - Notated Music
 - Piano Roll
 - Program
 - Sound Tape Cartridge

Identify

Identify from: <Top-most layer>

SMC_v2

- Greensleeves for Iona, Fink, Robert
- Come let us sing.
- Chansons innocentes, Wedgewood, Richard
- Saskatchewan music [music]

Location: -106.705149 52.123524 Decimal Degrees

Field Value

Title Greensleeves for Iona

Remainder for piano and voice

Number

Responsi arranged with a new introduction code & illustrated by Bob ...

Inclusive_

Car_URL http://sundup.usask.ca/record=1162075

Format Notated Music

Full_Name Fink, Robert

Birth_Deat

Pub_Loc_1 Saskatoon, SK

Latitude 52.13228

Longitude -106.66892

Publisher_Na Greenwich-Meridian,

Pub_Date 1976

Decade 1970

Identified 501 features

Identify exce

Table - SMC_v2

Title	Remainder	Number
Vision and light		
To Thee we call		
Bless the Lord	All in the April evening	
My God and I	Lobosang	
Choir of Ukrainian Baptist Church		nVolume 2,
Choir of Ukrainian Baptist Church		
Rosthern Junior College Choirs	the best of 1996-1997	
In der stillen Naechten Stunden	Kettner wird zu schanden	

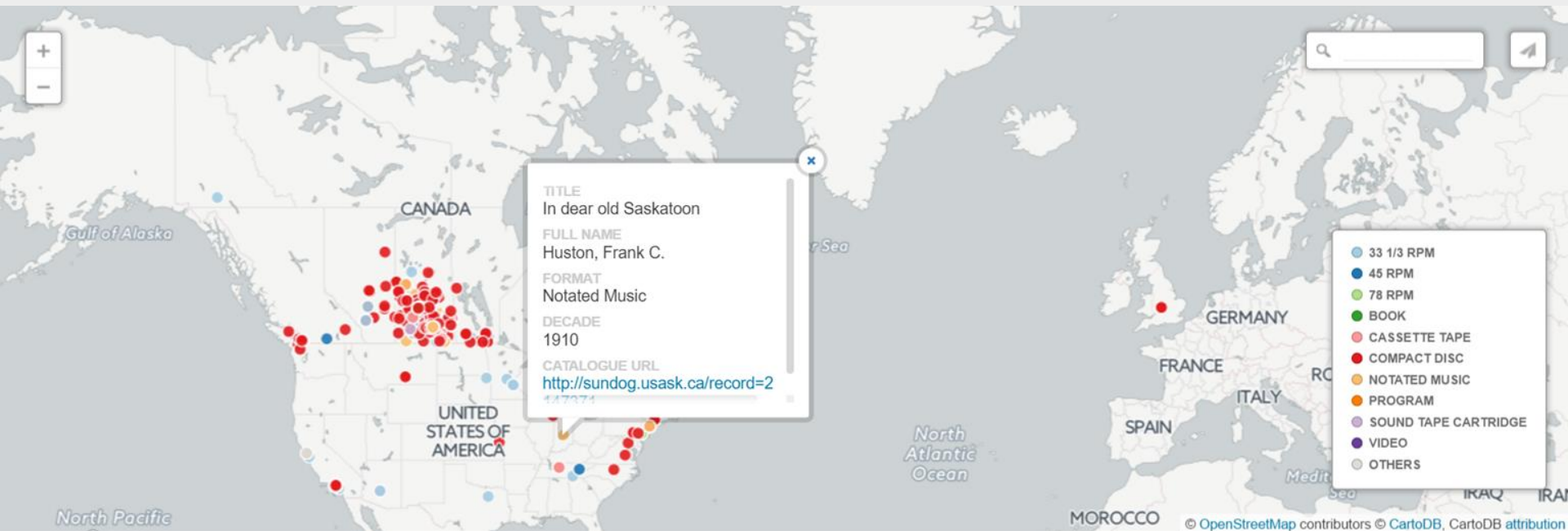
(10 out of 3131 Selected)

SMC_v2 LOC_SH SMC_All_Items

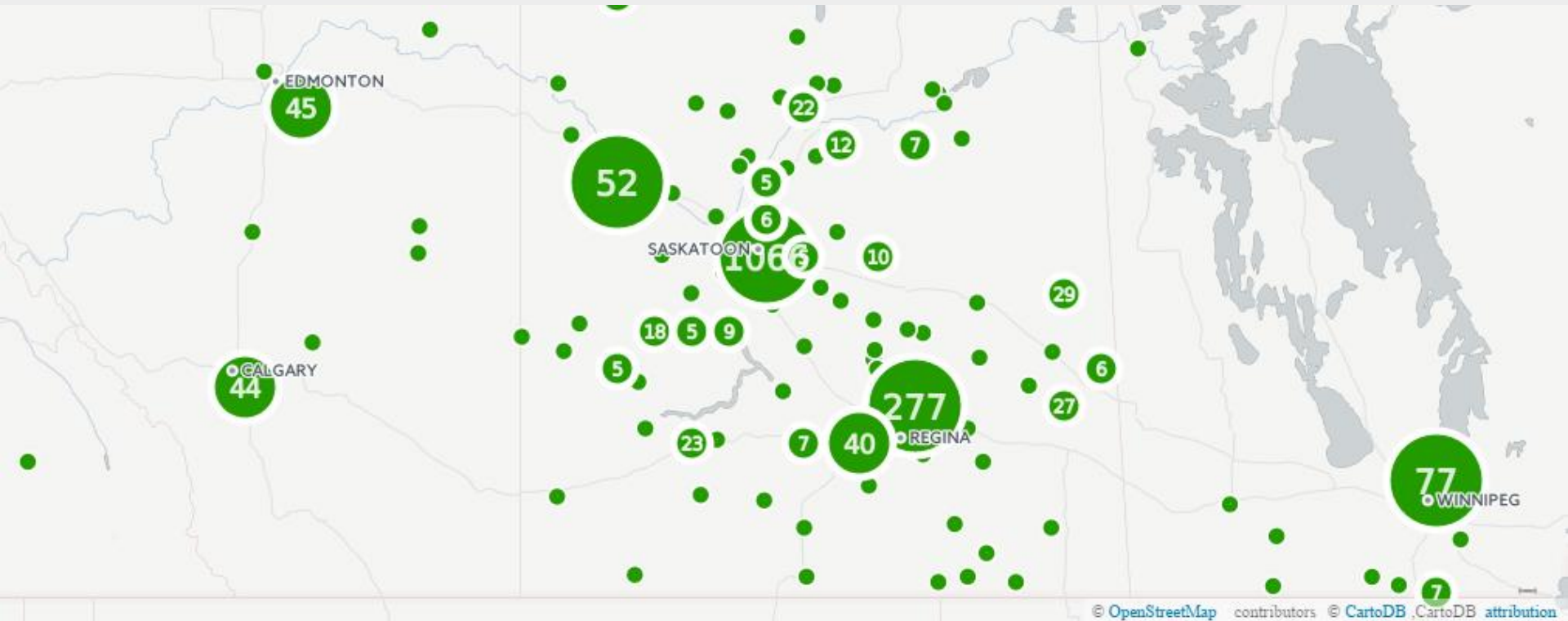
PROOF OF CONCEPT - CARTODB WEB MAP

- SMC - All Items: All items in the collection, symbolized by format, only the top item at each location is visible.
- SMC - All Items: Everything published at a location listed in a text box
- Total Items - Clustered by Location: The total number of items published at a location
- SMC - Format over time: Shows the variation in formats over time and the place of publication

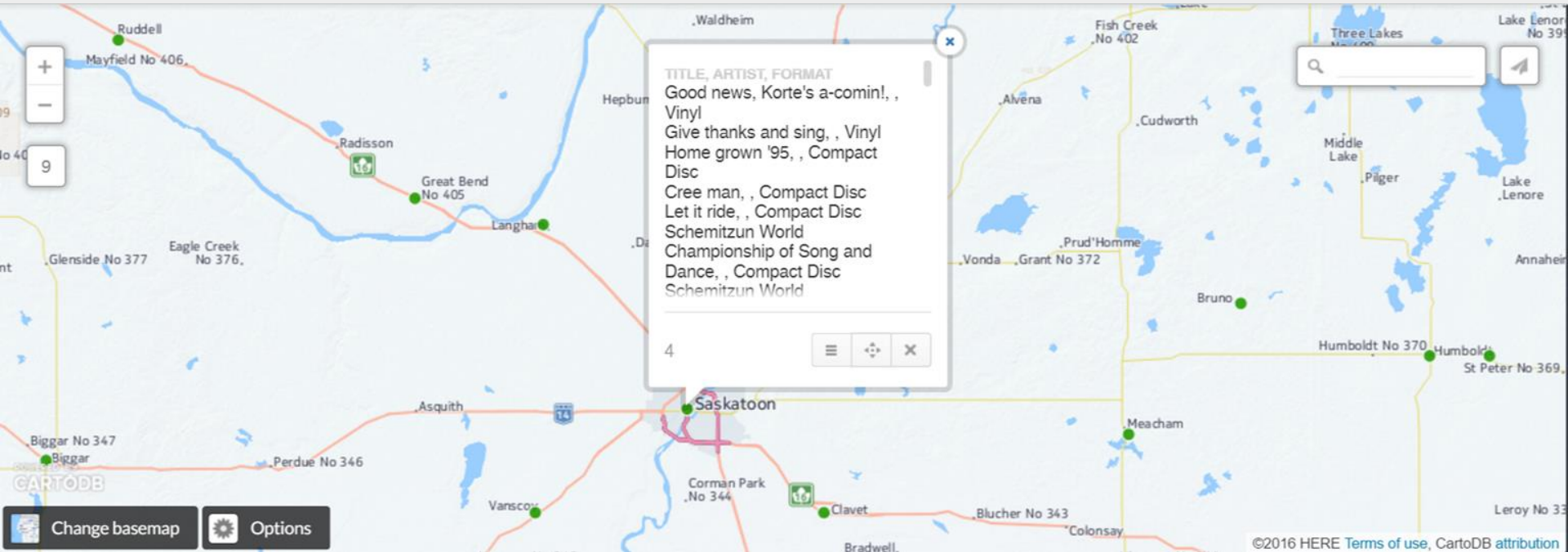
SMC - ALL ITEMS



SMC - CLUSTERS IN CARTODB



SMC - ALL ITEMS, LIST IN POPUP



FUTURE DIRECTIONS

- Further development of map functionality
- Adding additional data
- Making the visualization accessible on the website
- Archiving the data

RELATED RESOURCES

- Andrienko, G. & Andrienko, N. (2007). Coordinated multiple views: a critical view. In Proceedings of the Fifth International Conference on Coordinated and Multiple Views in Exploratory Visualization, 2007. CMV '07, (pp. 72-74). Washington, DC: IEEE Computer Society.
- Buchel, O., & Sedig, K. (2014). Making sense of document collections with map-based visualisations: the role of interaction with representations. *Information Research*, 19(3), 29-55.
- Saskatchewan Music Collection dataset:
https://kristinbogdan.cartodb.com/tables/smc_all_items/public
- Saskatchewan Music Collection Website: smc.usask.ca
- Proof of concept maps: <https://kristinbogdan.cartodb.com/maps>



QUESTIONS?

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