Duplicate Detection and Linking with Spark (Discussion)

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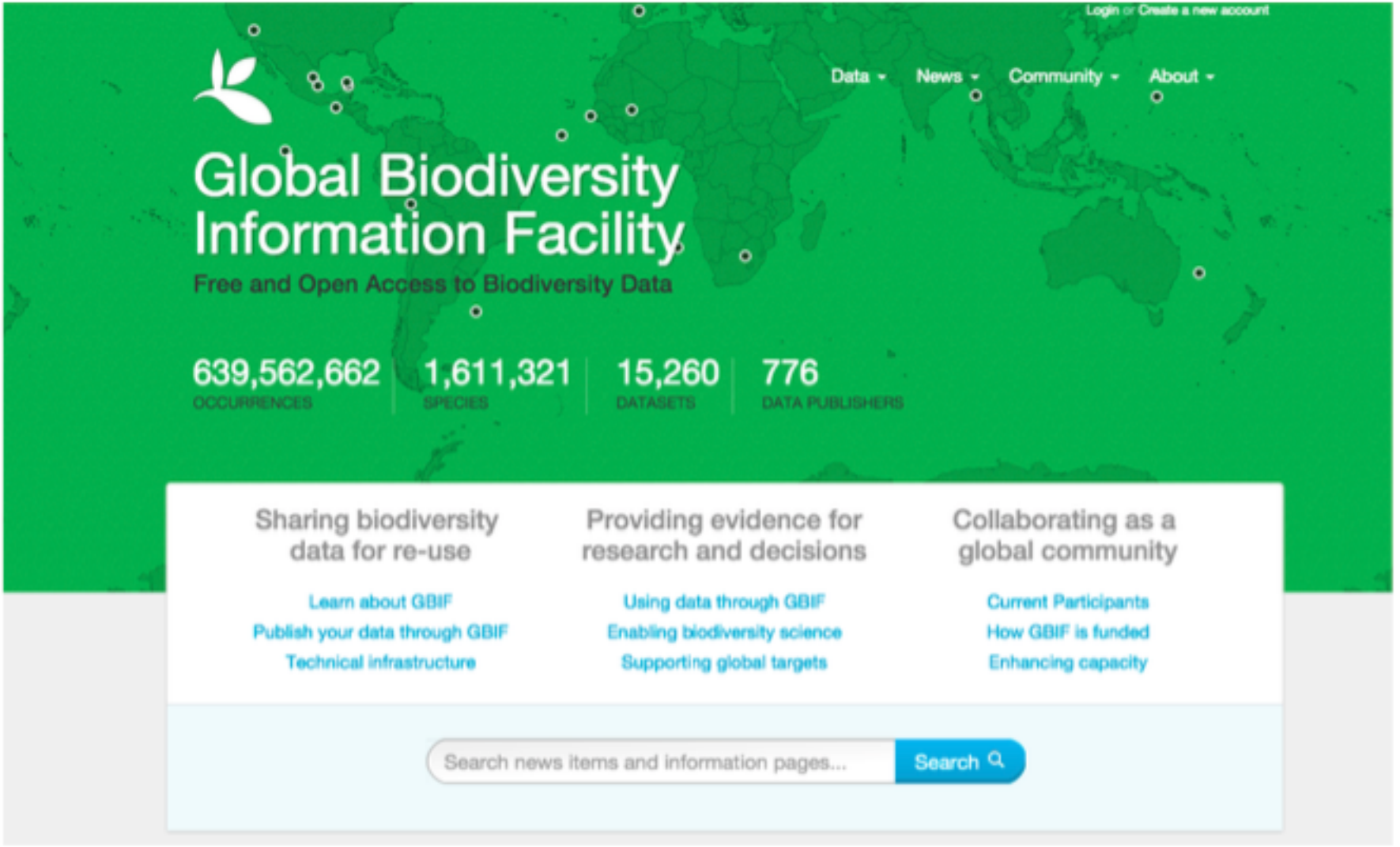

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~600 Million "occurrence records"

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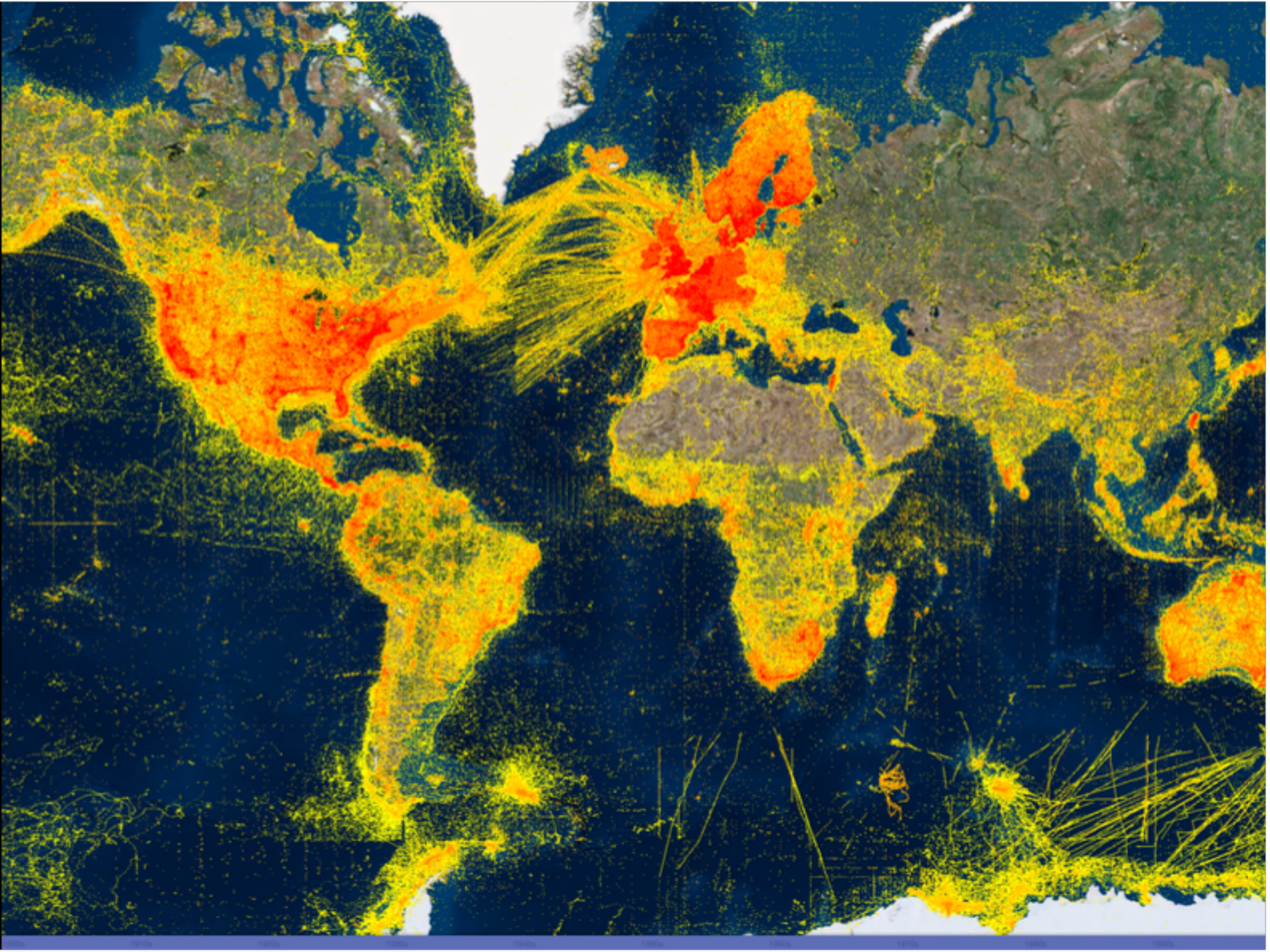

Occurrence Records

What Where When Who (a lot of birds)

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Cleaned up occurrences

ID	Species	Latitude	Longitude	Date	Collector
1065606016	Passer domesticus	43.64529	-79.3807	2015-01-26	ashleytruong
1065606044	Passer domesticus	43.63946	-79.4371	2015-02-05	alexandragrayson
1065613620	Sciurus carolinensis	43.64465	-79.46762	2015-01-28	Leonardo Navarro

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Raw and dirty occurrences

ID	Species	Latitude	Longitude	Date	Collector
1065606016	"Passer domesticus "	43.6452900 0000003	-79.380799 9996	Jan 26	Toronto
1065606044	Passer Domestiucs	43,63946	79,4371	10/11/12	alexandragrayson
1065613620	N/A	43.6	-79.4	2015-01-28	Leonardo Navarro

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Duplicate occurrences?

ID	Species	Latitude	Longitude	Date	Collector
1065606016	Passer domesticus	43.64529	-79.3807	2015-01-26 11:45am	ashleytruong
1065606044	Passer domesticus	43.64529	-79.3807	2015-01-26 11:50am	null
1065613620	Passer domesticus	43.645	-79.38	2015-01-26	ashleytruong

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Ideal: links with confidence

ID	123456	7890123	1065606044
1065606016	0.7	0.85	0.98
1065606044	0.6	0.75	
1065613620	0.8	0.91	0.75

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Spark to the rescue?

- Straight SQL won't solve this
- Iteration over sets
- Clustering within each species?
- Minimize an error function of lat/lng, date, collector?

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Thanks!

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