Managing Data & Databases

Session 9
Open & Linked Data

Open Data

Gapminder

http://www.gapminder.org/world

Open Data Characteristics

- Access

- Redistribution

- Reuse

- Absence of technological restriction

- Attribution

- Integrity

- No discrimination against groups of users

- No discrimination against certain uses

- Distribution of license

- General license (not package-specific)

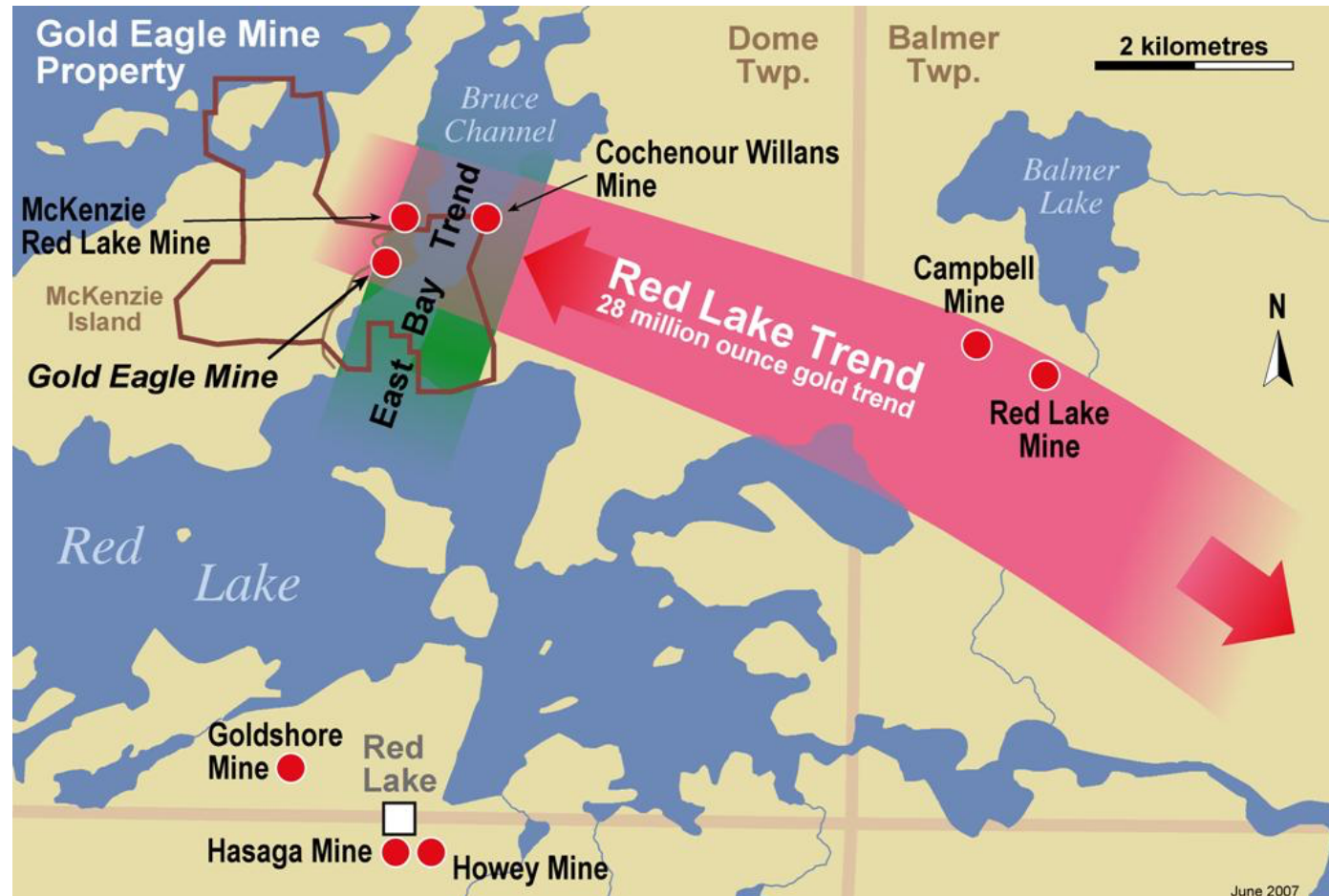- Non-restrictive license (no restriction on distribution)

Why open data?

- Corporations

- Government

A virtual rush for gold

- Rob McEwen

Linked Data

Linked Data and Semantic Web

- Resource Description Framework (RDF)

- RDF Schemas (RDFS)

- Web Ontology Language (OWL)

- Semantic Web

- SPARQL

- Examples

  - dbpedia

  - linkedmdb

```
<rdf:RDF ...>
    <owl:Ontology rdf:about=""/>
    <owl:Class rdf:about="#Tea"/>
</rdf:RDF>
```

SPARQL

```
PREFIX type: <http://dbpedia.org/class/yago/>
PREFIX owl: <http://www.w3.org/2002/07/owl#>
PREFIX xsd: <http://www.w3.org/2001/XMLSchema#>
PREFIX rdfs: <http://www.w3.org/2000/01/rdf-schema#>
PREFIX rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#>
PREFIX foaf: <http://xmlns.com/foaf/0.1/>
PREFIX dc: <http://purl.org/dc/elements/1.1/>
PREFIX : <http://dbpedia.org/resource/>
PREFIX dbpedia2: <http://dbpedia.org/property/>
PREFIX dbpedia: <http://dbpedia.org/>
PREFIX skos: <http://www.w3.org/2004/02/skos/core#>


SELECT ?country_name ?population
WHERE {
    ?country a type:LandlockedCountries ;
             rdfs:label ?country_name ;
             dbpedia2:populationEstimate ?population .
    FILTER (?population > 1000000 && langMatches(lang(?country_name), "en")) .
} ORDER BY DESC(?population)
```