



Working together towards a common objective will enable EC's Information Assets to be visible, useable, and shareable

ata
metadata



Metadata *is KEY to* Knowledge Sharing

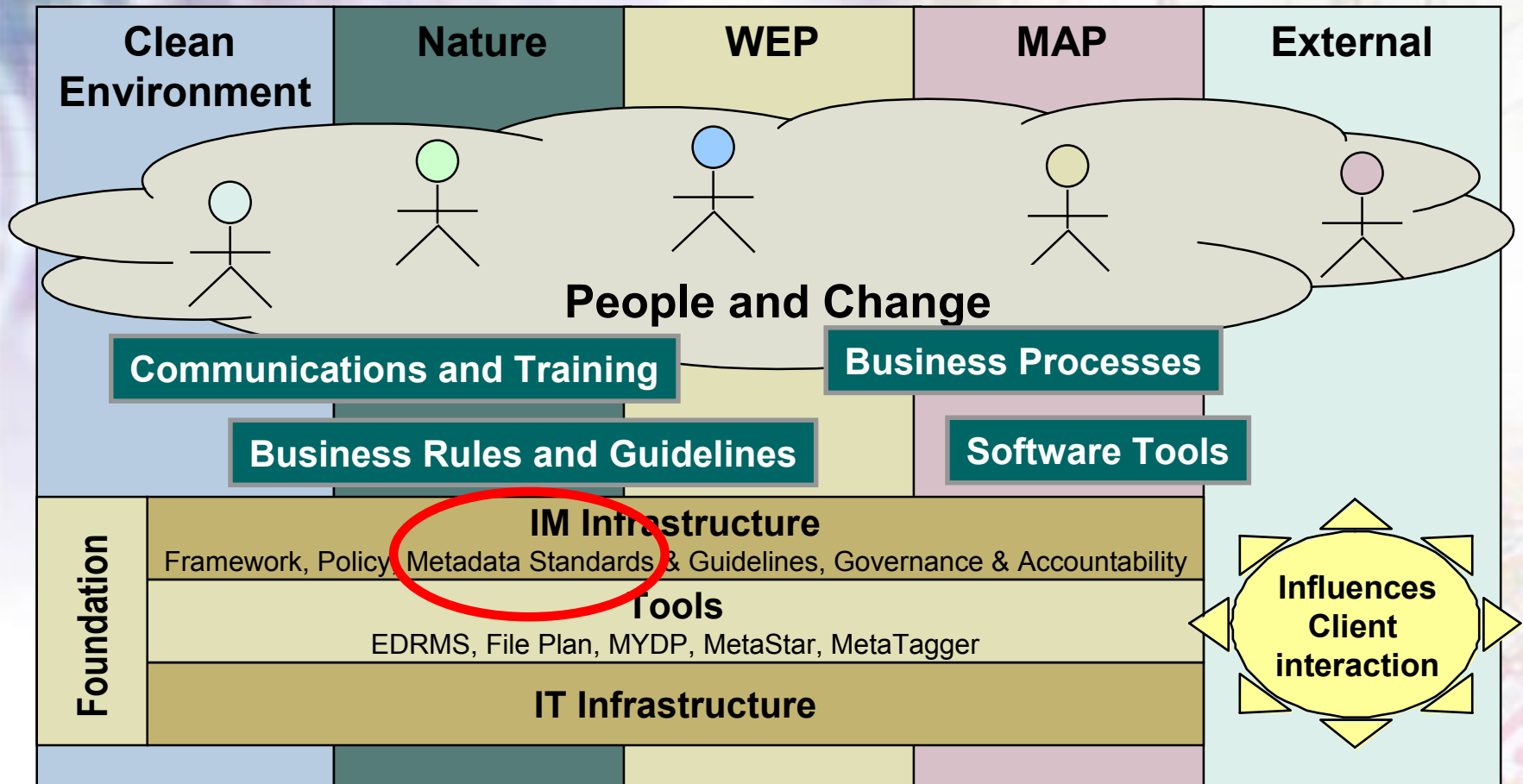


Information as a Strategic Business Asset

Information is a **STRATEGIC ASSET**
and must be managed with the same effort and
commitment as other Departmental resources

Metadata... provides a means for knowing what we know

Components of Information Management



What Metadata can *do for* Environment Canada

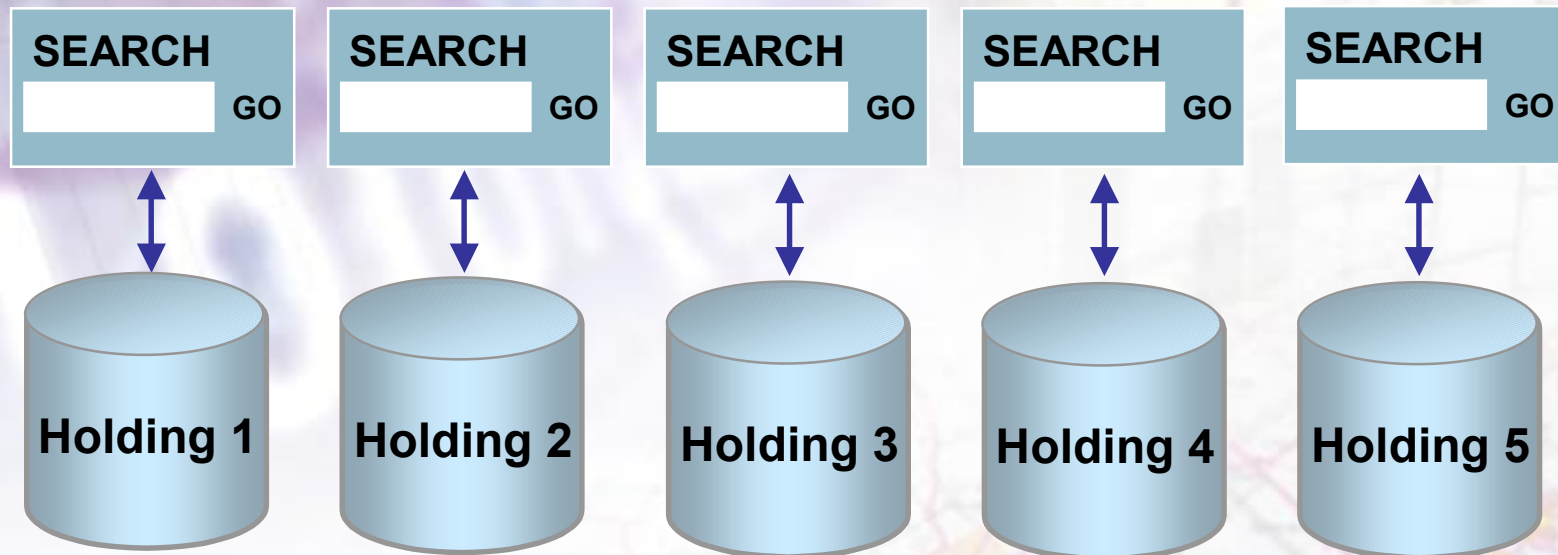
- Allows for interoperability (crosswalk) among distributed data sets
- Facilitates horizontal integration of business processes
- Provides the tools to enable content management for multiple re-use of information
- Enables consistent discovery, access and exchange by, **Citizens, Partners and EC Staff**

Multiple sources one view, and one source, many views

Searching *used to be* Ad-hoc

Without Metadata

The user must search each holding individually

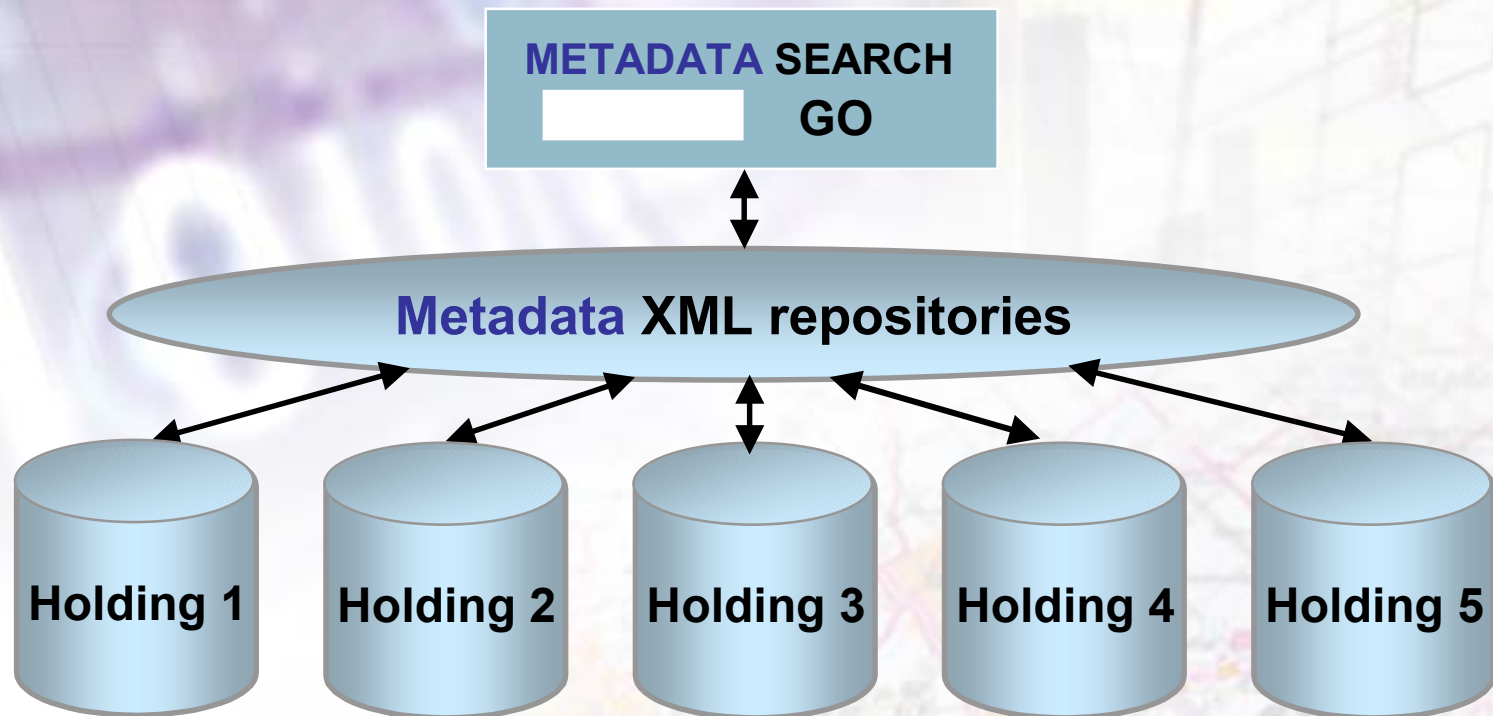




Searching is now Integrated

With **Metadata**

One search yields all



International Standards *Ensures World View*

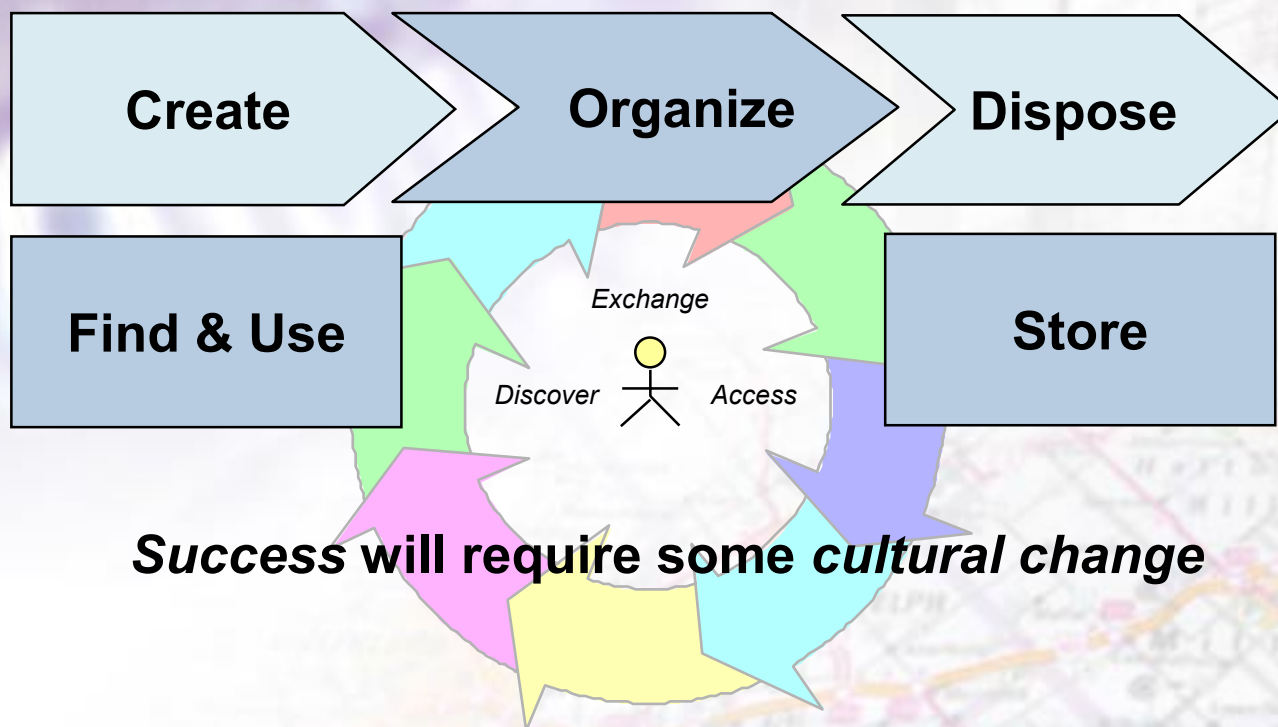
- Conform to international standards while providing for the science-based nature of Environment Canada
- Key standards:
 - Federal:
 - Dublin Core (TBS mandate)
 - International:
 - FGDC CSDGM (Content Standard for Digital Geospatial Metadata); ISO TC 211



Metadata *is key to* Life Cycle

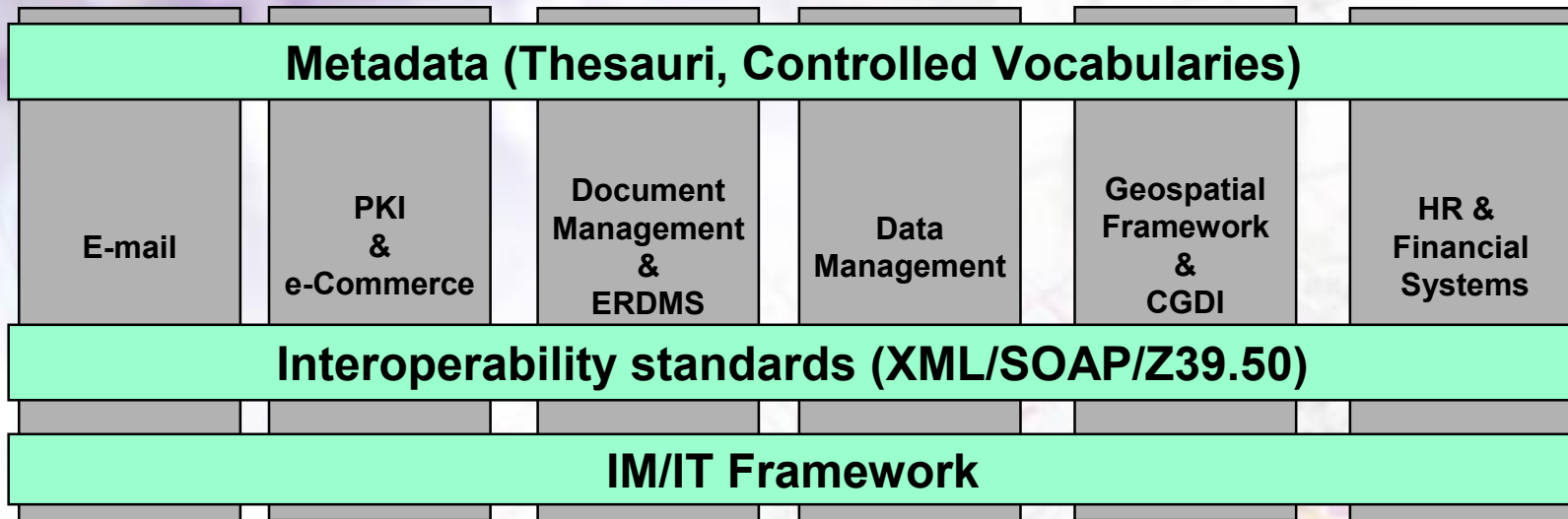
We apply **Metadata** to manage information

The information life cycle



Content Management Enhances Horizontality

Increasing Content Management

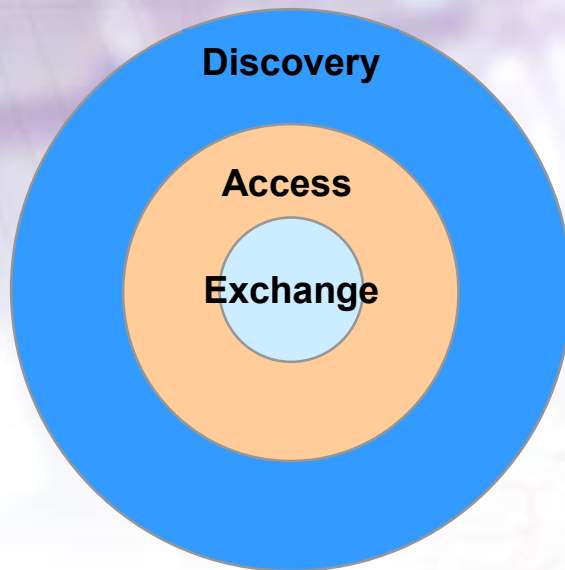


The background features a collage of elements: the words 'data' and 'metadata' in a blue, pixelated font at the top; a vertical strip of binary code '10101010' on the left; and a faint map of a city area at the bottom right. A small logo of blue squares is in the top right corner.

Metadata Standards Keeping it simple

Three Levels of Metadata

*A flexible strategy
that matches effort to need*



**Using internationally
recognized standards**

Discovery

Most EC information assets will be described at this simplest level. This could be for a collection or single record.

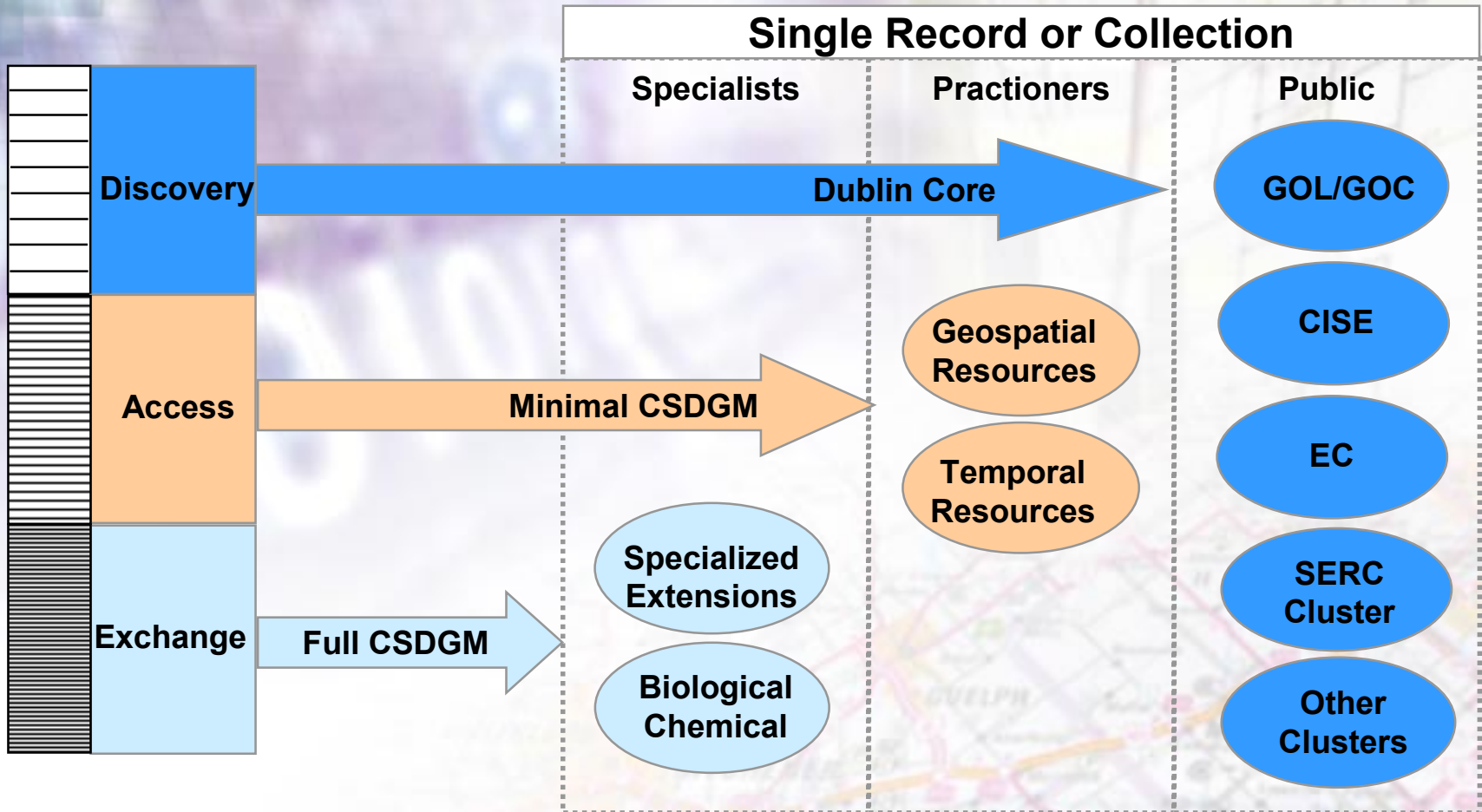
Access

This level will be used to provide detailed access to scientific information holdings.

Exchange

Using the full geospatial and/or biological profile to enable the comprehensive disclosure and exchange of data.

Hierarchical Application of Metadata Standards



Metadata Standards

Dublin Core

- Lightweight (15 elements); web focus; industry support

FGDC CSDGM (Minimal)

- Middleweight (~30/300 elements); production rules

FGDC CSDGM – Biological Data Profile (NBII)

- Heavyweight (over 400 elements); data focus

Controlled Vocabularies: Metadata +

- **Controlled vocabularies glue metadata together**
 - **Searchers use the same language as data owners, enabling discovery**
 - **Data owners use the same language, enabling data exchange and alignment**
 - **Enables horizontal integration of business processes**
 - **Translation is transparent**
 - **Facilitates crosswalking of metadata standards**



Controlled Vocabularies: Thesaurus, Taxonomy

- **Thesaurus**

- GoC Controlled Subject Thesaurus (CST) – high-level, generic; applicable to all government information resources, not specialized (i.e. environmental) holdings
- Global Change Master Directory (GCMD) Science Keywords – maintained by NASA; used (and translated) by NRCan in their CSDGM tools; over 1200 specialized terms

- **Taxonomy**

- SERC and Green Lane - high level, generic; provides for site navigation, contextual browsing, search



Controlled Vocabularies: Other Examples

- Other important vocabularies, lists and standards:
 - GEDS & EnviroTel
 - ISO Country Codes
 - ISO Language Codes
 - W3C Date-Time Format
 - URI
 - DCMI Type Vocabulary
 - Decimal-Degrees

Information is Managed to Deliver a Business Outcome



- Business logic
- Authority lists
- Life cycle management

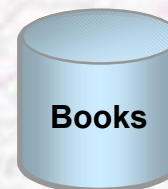


Apply Content Management for Business Processes

- Find
- Use
- Share



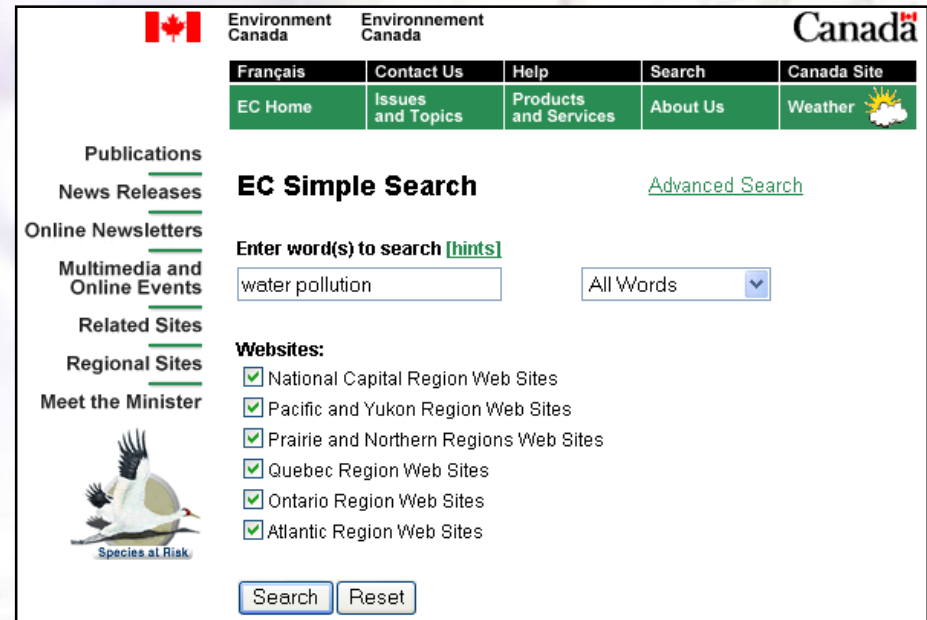
Apply Metadata for consistency



Existing situation: discrete holdings with inconsistent Metadata

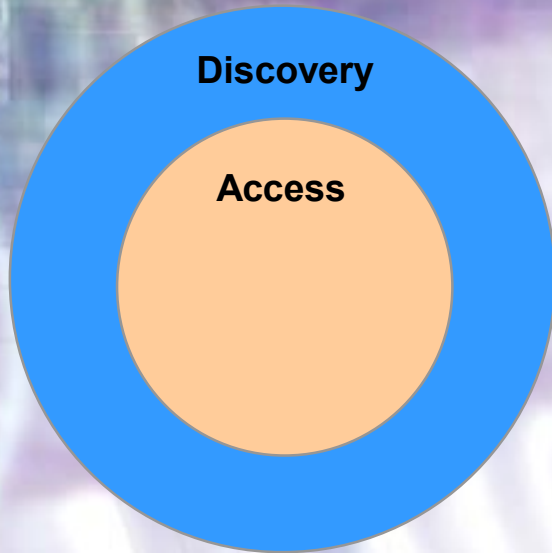
Metadata Discovery and Visualization

Discovery



The screenshot shows the Environment Canada website's search page. At the top, there are logos for Environment Canada in French and English, and the Canada wordmark. A navigation menu includes links for Français, Contact Us, Help, Search, and Canada Site. Below this is another row of links: EC Home, Issues and Topics, Products and Services, About Us, and Weather. The main content area features a search section titled "EC Simple Search" with a link to "Advanced Search". The search input field contains the text "water pollution" and a dropdown menu is set to "All Words". Below the search field is a "Websites:" section with a list of regional web sites, each with a checked checkbox: National Capital Region Web Sites, Pacific and Yukon Region Web Sites, Prairie and Northern Regions Web Sites, Quebec Region Web Sites, Ontario Region Web Sites, and Atlantic Region Web Sites. At the bottom of the search section are "Search" and "Reset" buttons. On the left side of the page, there is a vertical menu with links for Publications, News Releases, Online Newsletters, Multimedia and Online Events, Related Sites, Regional Sites, and Meet the Minister. At the bottom left of the page, there is an illustration of a bird with the text "Species at Risk" below it.

Metadata Discovery and Visualization



Environment Canada / Environnement Canada

Canada

| | | | | |
|------------|------------------|---------------------------|---------|-------------|
| Français | Contact Us | Help | Search | Canada Site |
| What's New | Your Environment | Information/ Publications | Weather | Home |
| About Us | | | | |

Geospatial Search™

Acts and Regulations

Media Room

Programs & Services

The Minister

Conferences & Events

Related Sites

Quick Links

Acid Rain

Define the Geographic Area

Specify a query region by selecting or entering values.

- Alberta
- British Columbia
- Manitoba
- New Brunswick
- Newfoundland
- Northwest Territories
- Nova Scotia
- Nunavut
- Ontario
- Prince Edward Island
- Quebec
- Saskatchewan
- Yukon Territory

North
83.267717

West
-139.66040

East
-51.333333

South
41.758242

Specify Time Period

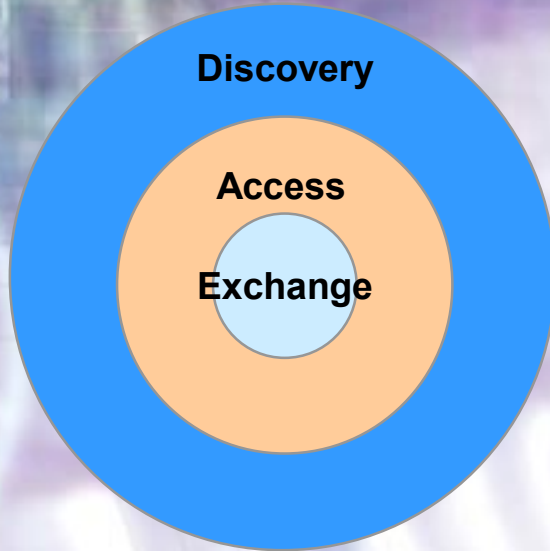
Specify a date or date range for desired spatial data by selecting **one** of the methods below.

Don't search based on time period

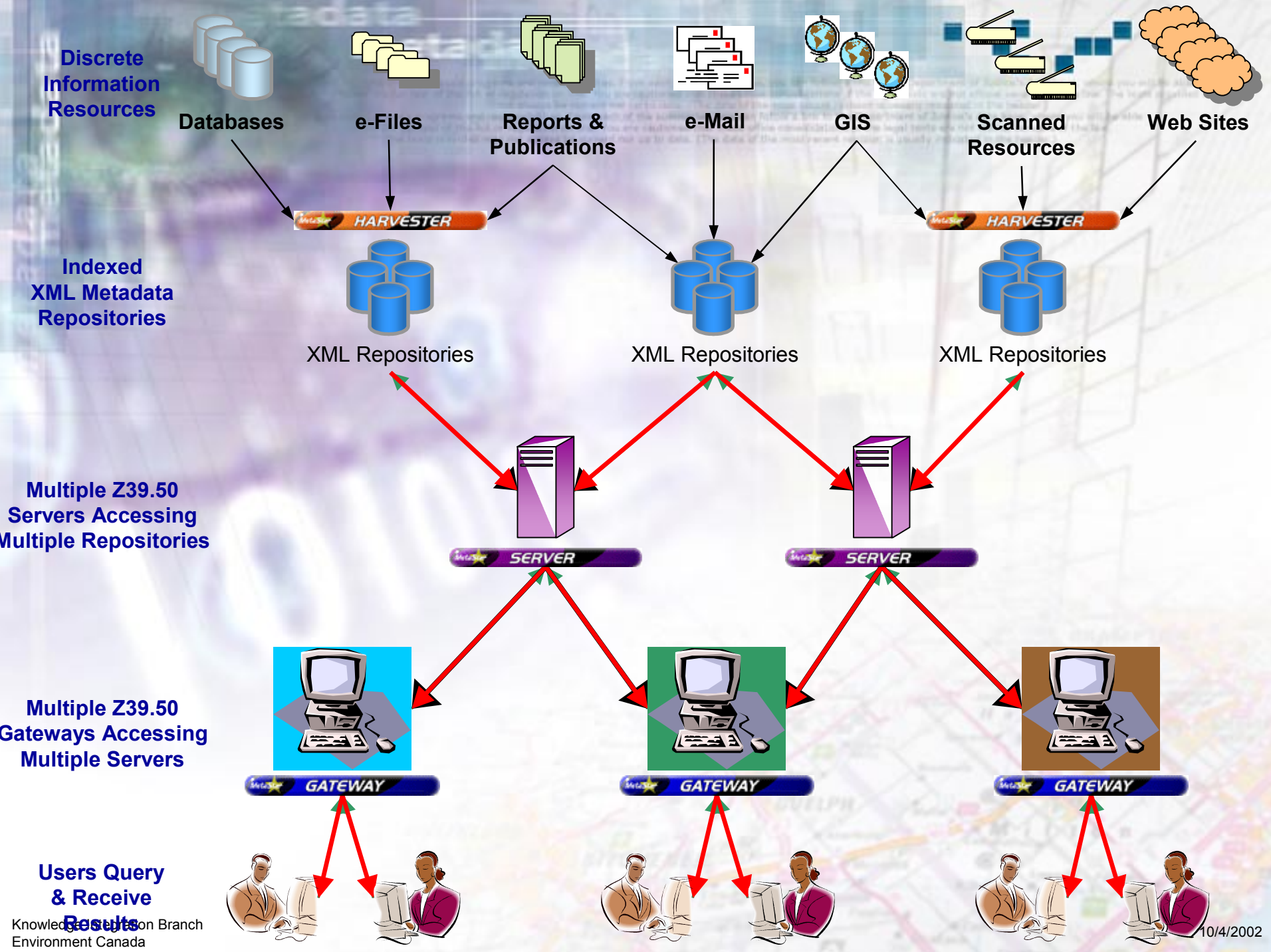
Get data whose date is before the date

Get data from through

Metadata Discovery and Visualization



The screenshot shows the Environment Canada GIS web application interface. At the top, there are navigation links for "Français", "Contact Us", "Help", "Search", and "Canada Site". Below these are "What's New", "Your Environment", "Information/Publications", "Weather", and "Home". The main interface features a map of Canada with numerous data points overlaid. A legend on the left side lists various data layers, including "Point Information", "CDC Data for PEI", "CDC Data for Newfo", "CDC Data for New B", "CDC Data for Labrec", "CDC Data for Nove", "ACAP Sites", "Ashkui Sites", "Climate Stations", "EA proposed projec", "EC Offices", "Envirotel Stations", "First Nations", "Hydrometric Stations", "Ground Truthing", "EP Stephenville Sar", "Harlequin Sightings", "Lightning Det. Net", "LRTAP", "Migratory Bird San.", "Net. Wildlife Areas", "NPRI", "Pockwock/Bowater", "Seabird Colony", "Severe Weather We", "Shoreline Classificat", "SLUCK (oil spill trajec", "Power Plant", "Dalhousie Harbour", "Vector (line) Information", "1:50000 Grid (downk", "Halifax Landset Bow", "Maritime County Line", "Hydrographic Chart Indi", "Polygonal (area) Inform", "Reserve Lands", and "Coastal Survey Bloc". The map shows a dense distribution of red and blue points across the landmass. At the bottom, there are navigation and status elements, including a scale of 1:3,664,369 and a resolution of 421 x 369 (m).





For More Information:

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