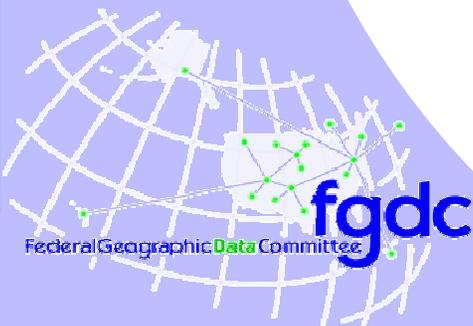


# Introduction to Metadata

## *Value of Metadata*

An overview of the value of metadata to geospatial data distribution, data management and project management.





**After completing this module the student can:**

- ▶ explain the geospatial data distribution role of metadata
- ▶ explain the geospatial data management role of metadata
- ▶ explain the geospatial project role of metadata
- ▶ make the business case for metadata implementation

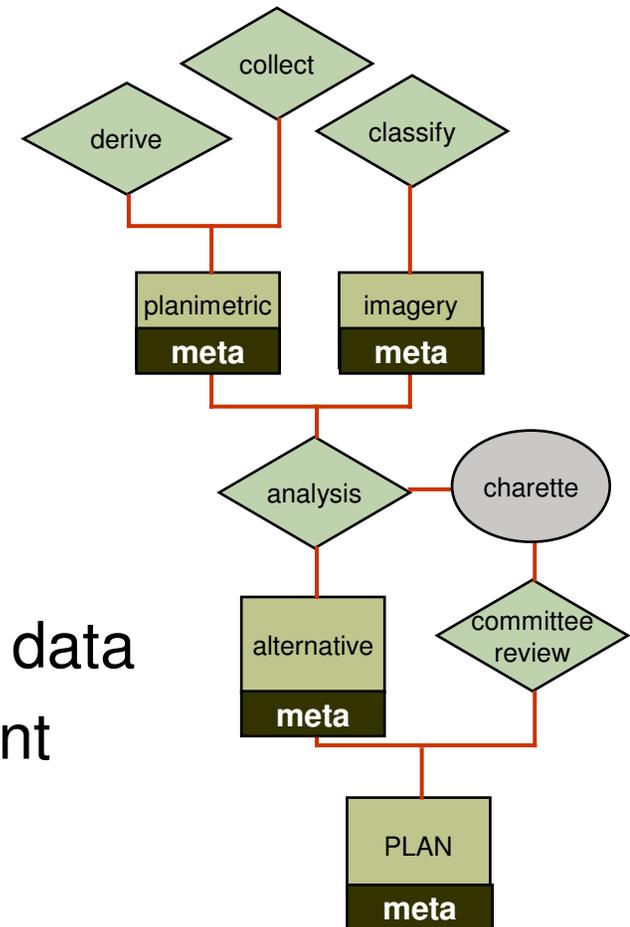


## Metadata can support:

- ▶ data distribution
- ▶ data management
- ▶ project management

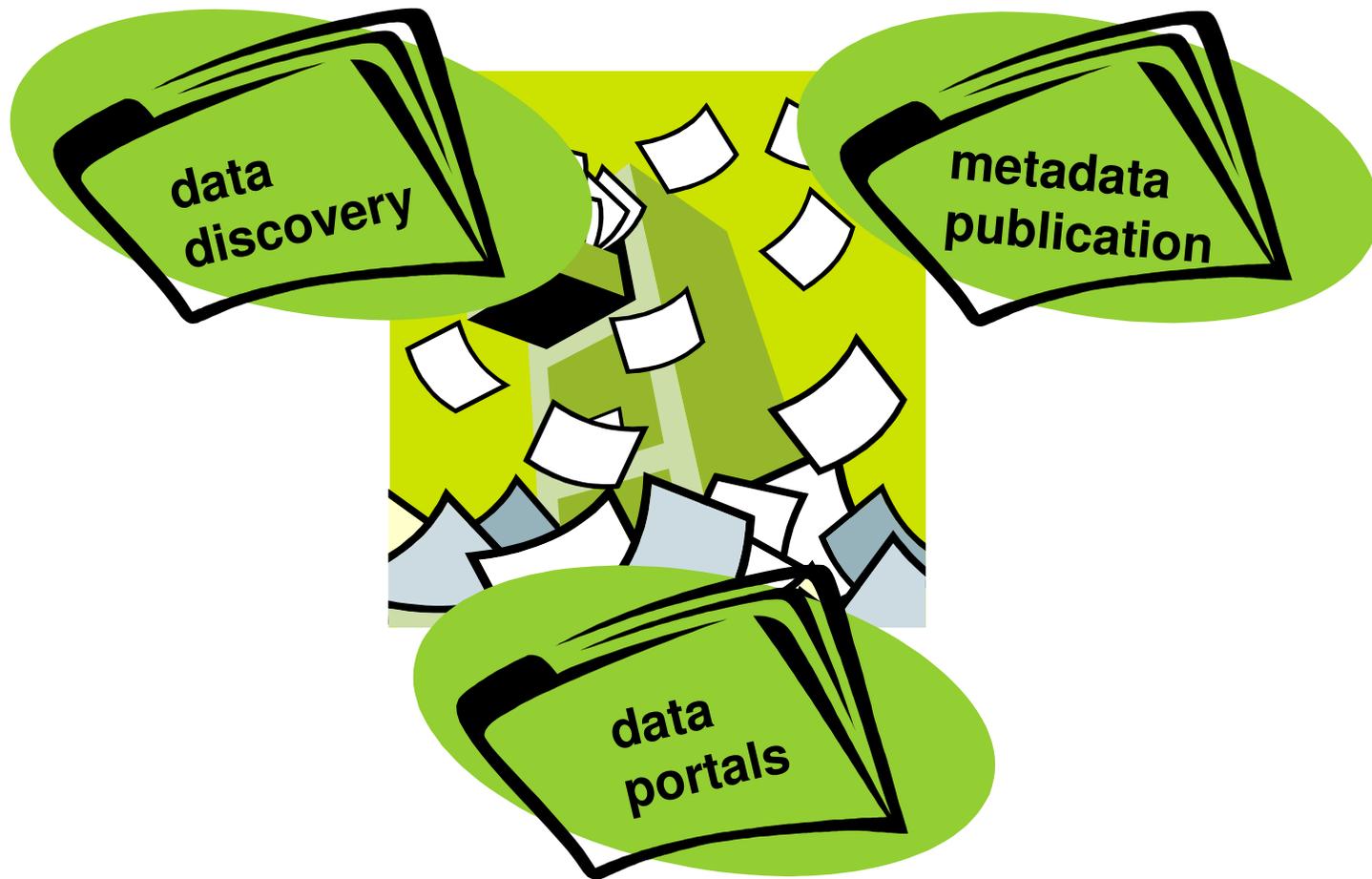
## If it is:

- ▶ considered a component of the data
- ▶ created during data development
- ▶ populated with rich content





# Data Distribution via Metadata





The descriptive content of the metadata file can be used to identify, assess and access available data resources.

## **IDENTIFY**

- keywords
- geographic location
- time period
- attributes

## **ASSESS**

- use constraints
- access constraints
- data quality
- availability/pricing

## **ACCESS**

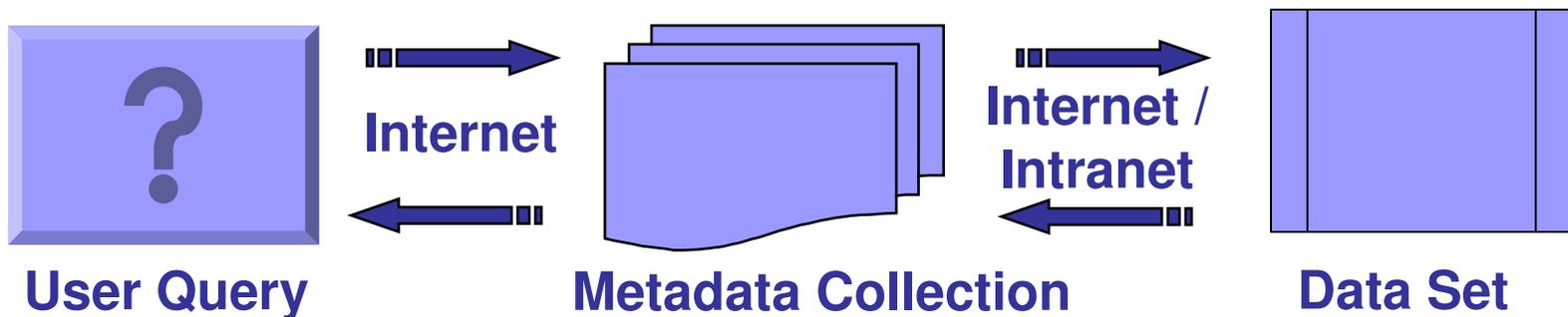
- online access
- order process
- contacts



# Distribution: Metadata Publication

A metadata collection can be published to the Internet via:

- ▶ web accessible folder (waf)
- ▶ website catalog
- ▶ Z39.50 metadata clearinghouse
- ▶ metadata service
- ▶ geospatial data portal





# Distribution: Geospatial Data Portals

## Federal and National Portals:

- ▶ Geospatial One-Stop (GOS)  
Federal e-gov geospatial data portal  
[www.geodata.gov](http://www.geodata.gov)
- ▶ Geography Network  
ESRI sponsored national geospatial data portal  
[www.geographynetwork.com](http://www.geographynetwork.com)





# Distribution: Geospatial Data Portals

## State Portals:

- ▶ Arkansas GeoStor  
<http://www.geostor.arkansas.gov>
- ▶ Delaware DataMIL  
<http://datamil.delaware.gov/>
- ▶ NC OneMap  
<http://www.nconemap.gov>
- ▶ IndianaMap  
<http://www.in.gov/igic/projects/indianamap>





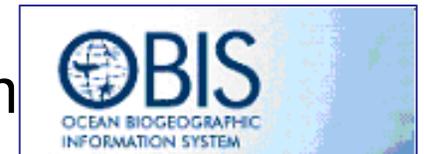
# Distribution: Geospatial Data Portals

## Thematic Portals:

- ▶ National Biological Information Infrastructure  
various USGS portals to national biological data  
<http://www.nbii.gov/portal/server.pt>



- ▶ Ocean Biogeographic Information System  
Census of Marine Life portal to marine plant  
and animal life data  
<http://www.iobis.org>

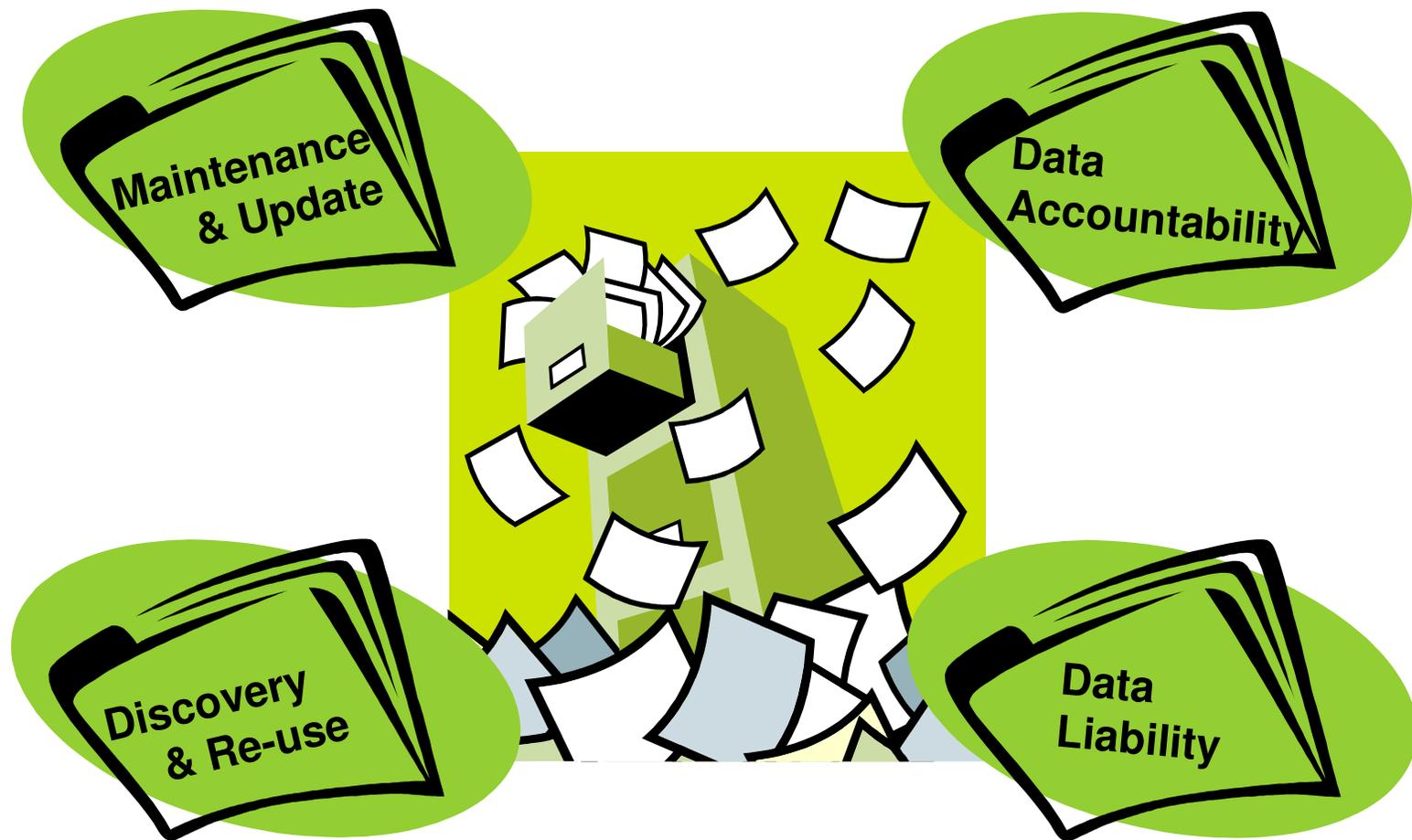


- ▶ Geospatial Data Gateway:  
Natural Resource Data  
USDA portal to national natural resource data  
<http://datagateway.nrcs.usda.gov/>





# Data Management via Metadata





# Management: Maintenance and Update

## Data Maintenance:

- ▶ Are the data current?
  - older than ten years?
  - prior to the hurricane?
- ▶ Are the data valid?
  - prior to most current source data
  - prior to most current methodologies



## Data Update:

- ▶ Contact information
- ▶ Distribution policies, availability, pricing, URLs
- ▶ New derivations of the data set



## Management: Data Discovery & Reuse

Metadata marketing in the past...

**If you create metadata,  
other people can discover your data**

New and improved message...

**If you create metadata,  
you can find your *own* data**



# Management: Data Discovery & Reuse

## Find your data by:

- ▶ themes / attributes
- ▶ geographic location
- ▶ temporal character
- ▶ analytical methods used
- ▶ sources and contributors
- ▶ data quality



*Monument to the Discoverers in Lisbon, Portugal*

*Discoverable data is usable data*



## Management: Data Accountability

Metadata is an exercise in data accountability. It requires you to assess:

- ▶ What do you know about the data set?
- ▶ What don't you know about the data set?
- ▶ What should you know about the data set?



*Are you willing to associate yourself with the metadata record ?*



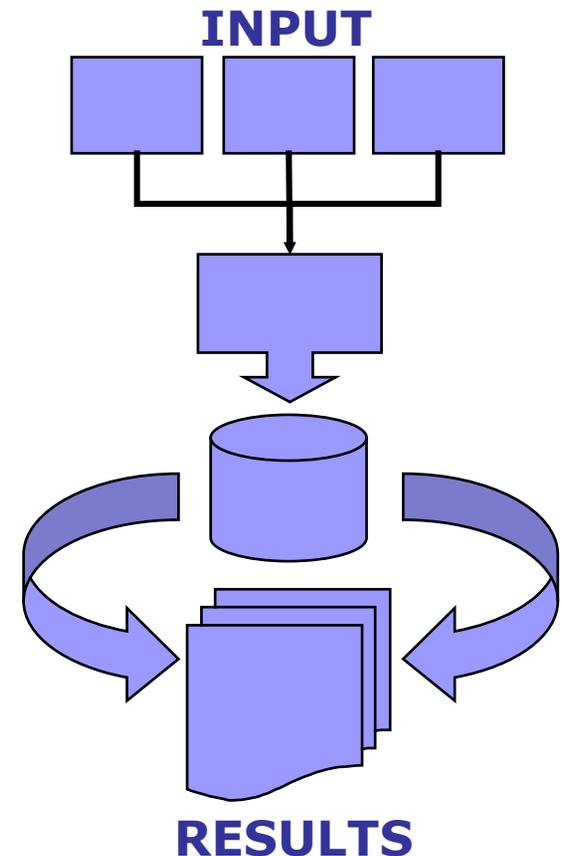
# Management: Data Accountability

## Repeatable process:

- ▶ methods
- ▶ variables
- ▶ analytical parameters

## Defensible process:

- ▶ public participation
- ▶ decision-making
- ▶ increasingly GIS-savvy public requires consumer information





## Return on Investment

### Catalog assessment:

- ▶ # times data occurs, in-house, as source
- ▶ # times data occurs, external, as source
- ▶ significance of source contribution methods



### To facilitate assessment

- ▶ use standardized tilting schemes
- ▶ indicate preferred data set citation w/in Use Constraint Statement



## Metadata is a declaration of:

### Purpose

- ▶ the originator's intended application of the data

### Use Constraints

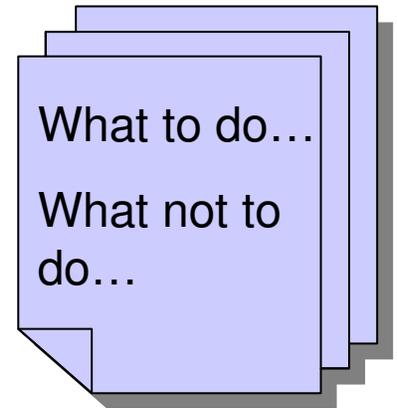
- ▶ inappropriate applications of the data

### Completeness

- ▶ features or geographies excluded from the data

### Distribution Liability

- ▶ explicit liability of the data producer and assumed liability of the consumer





# Project Management via Metadata





# Project Management: Project Planning

## Project design document

- ▶ descriptions & intent
- ▶ geographic and temporal extent
- ▶ source data
- ▶ attributes requirements



## Benefits:

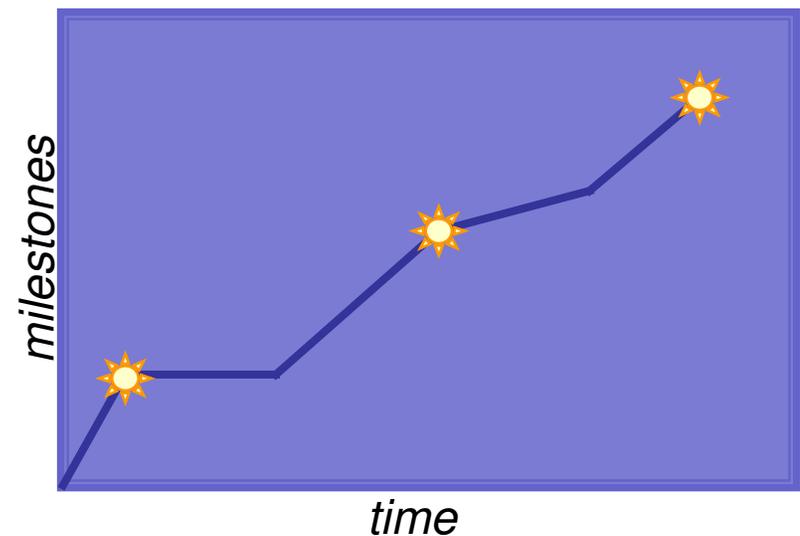
- ▶ expectations are clearly outlined
- ▶ metadata is integrated into the process
- ▶ provide medium to record progress



# Project Management: Project Monitoring

## Monitor

- ▶ data development status
- ▶ QA/QC assessments
- ▶ needed changes



*Requires that the metadata be actively maintained and reviewed*



# Project Management: Project Coordination

## Common reference for:

template

- ▶ descriptions & parameters
- ▶ keywords, vocabularies, thesauri
- ▶ contact information
- ▶ attributes
- ▶ distribution information



If reviewed regularly by all participants, improved opportunity for coordinating:

- ▶ source data
- ▶ analytical methods
- ▶ new information



As a key component of the data, metadata should be part of any data deliverable

For best quality metadata, provide:

- ▶ classification and/or validation schema
- ▶ metadata content template
- ▶ metadata specification manual



*Provide a sample metadata record if possible*

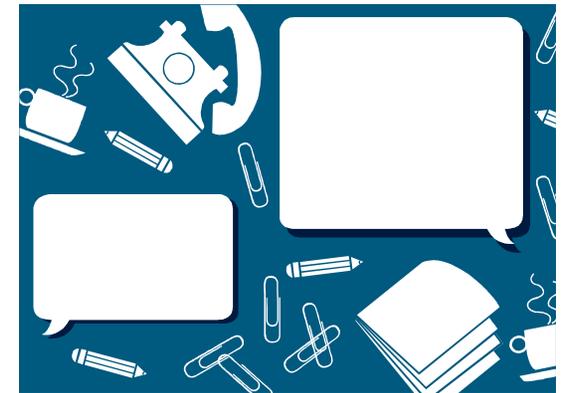


Metadata is simply information about data

Information that you need  
to effectively:

- ▶ locate
- ▶ manage
- ▶ utilize

internal and external data resources.



*Creation of robust metadata is in your OWN best  
interest!*