

Environmental Data Management Workshop

**Presented to the
San Francisco Bay Area Conservation Community**

**Aug. 20, 2008
9:00 am – 5:00 pm**

GIS Teaching Lab, 3059 Stevenson Hall, SSU

Environmental Data Management Workshop

Presenters:

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Information Management Program
and
Pat Stiefer, Digital Librarian**

Sonoma Ecology Center

**Sponsored by the San Francisco Bay Area Conservation Commons,
with funding from the Federal Geospatial Data Committee**

Part 2 – Organizational Data Management

1:30 – 4:30

Managing Your Data Library

- Tips on streamlining data management workflow
- Starting a data management program in your organization

Streamline Your Workflow

- Use Templates -- save time and standardize content
- Use Enclosures -- keep detailed supplementary documentation with your GIS layer.
- Automate some steps with Geoprocessing models
- Check out examples of well - constructed metadata

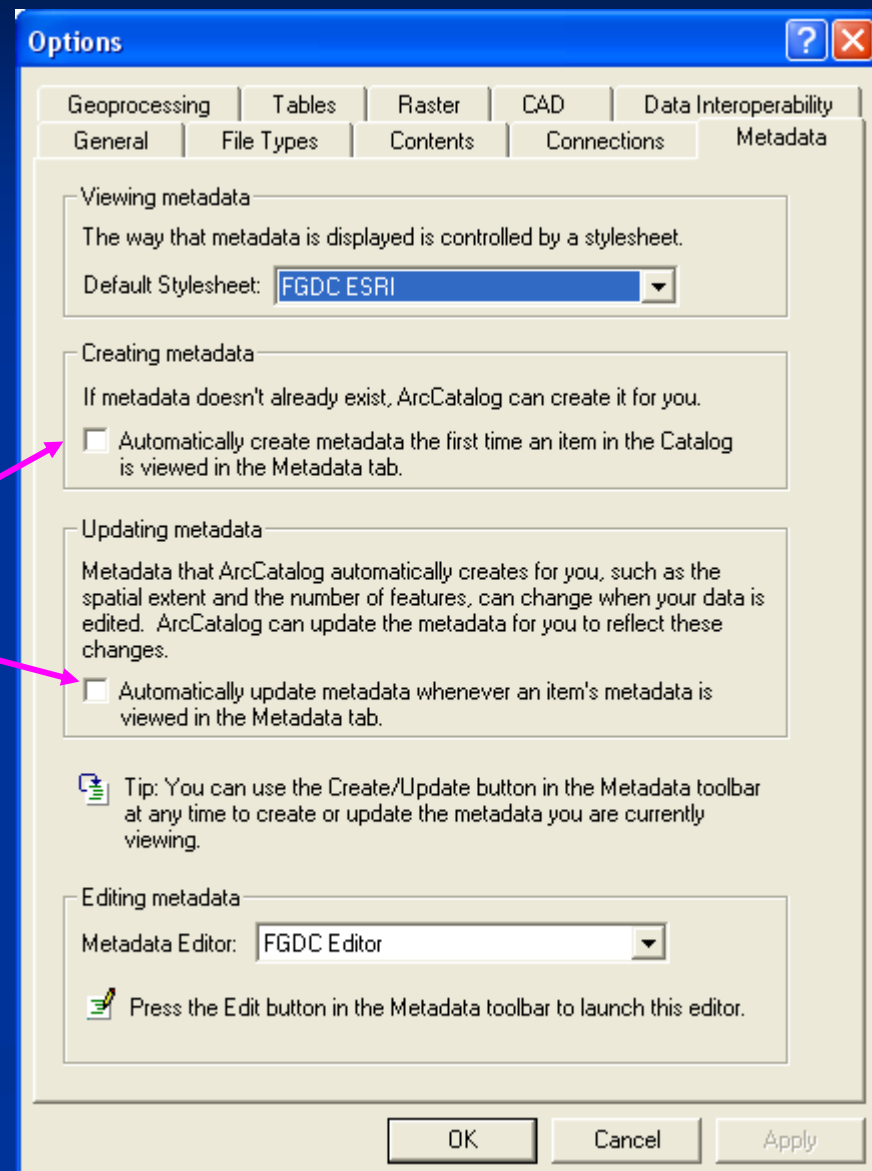
Metadata Templates

- Expedite repeated input of same data elements
- Contain documentation and exclude properties
- Turn off automatic updates when making templates

Setting Up a Template - 1

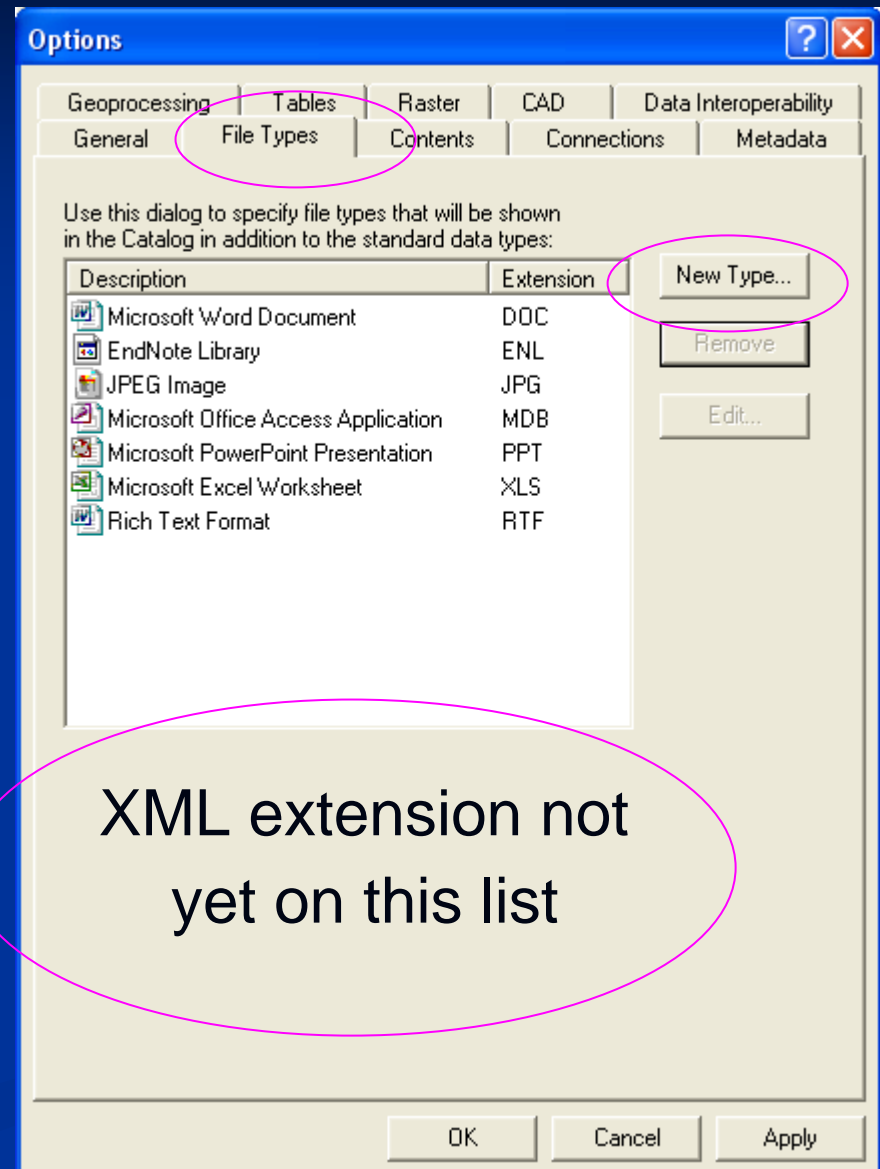
■ Tools|Options|Metadata:

- select FGDC ESRI stylesheet, FGDC Editor
- turn off automatic creation and updates for metadata



Setting Up a Template - 2

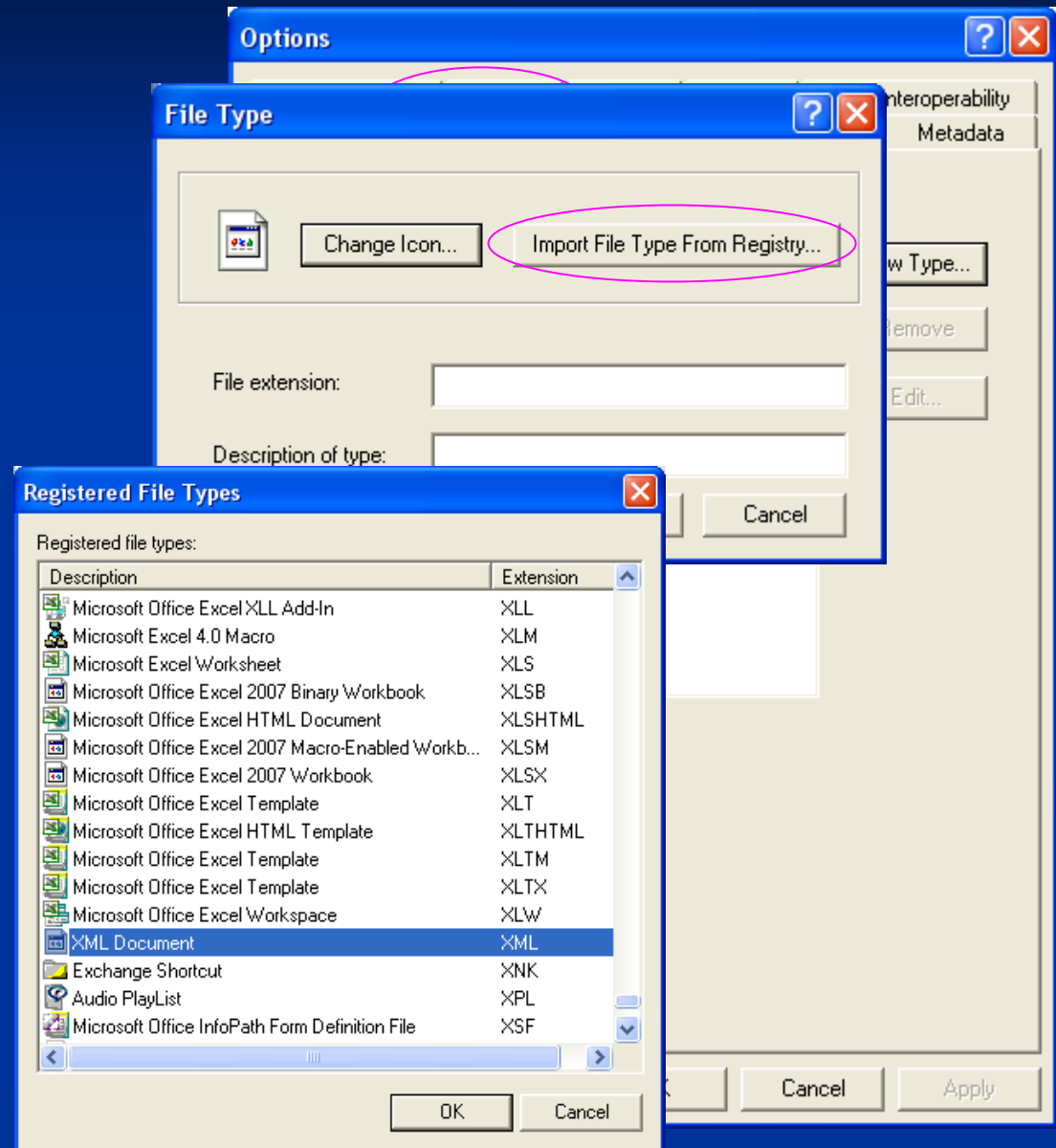
- Making sure ArcCatalog is set to show XML files:
 - Tools|Options|FileTypes
 - Look for XML in list
 - Click “New Type” to add XML



Setting Up a Template - 3

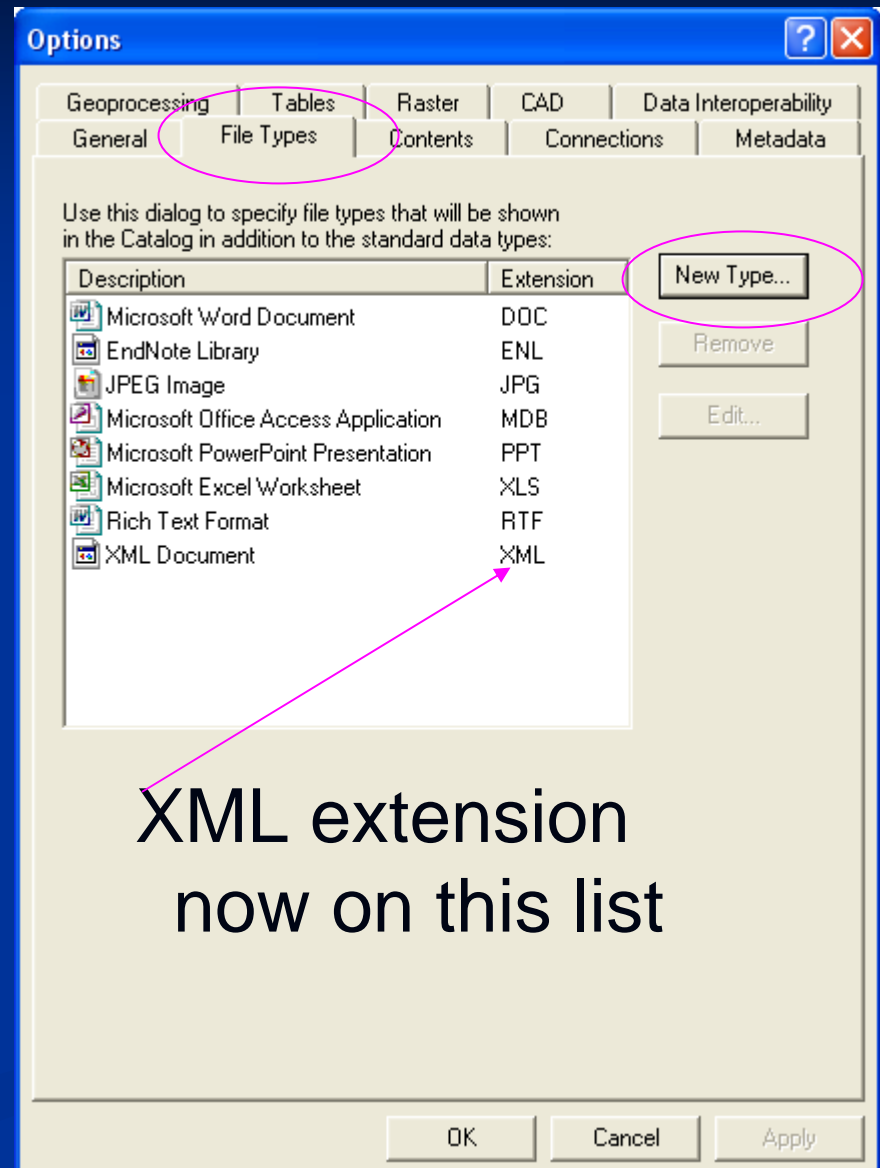
- Click “Import FileType From Registry”

- Select XML from list,
- Click “OK”



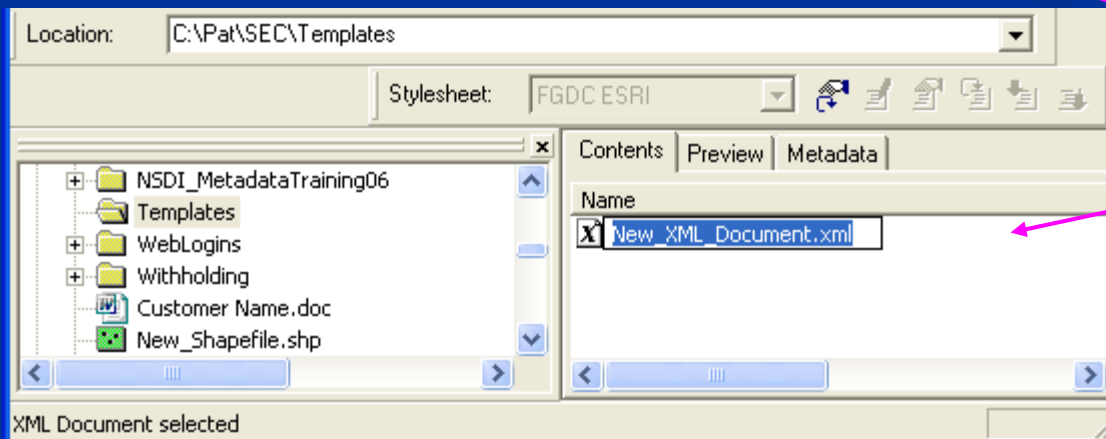
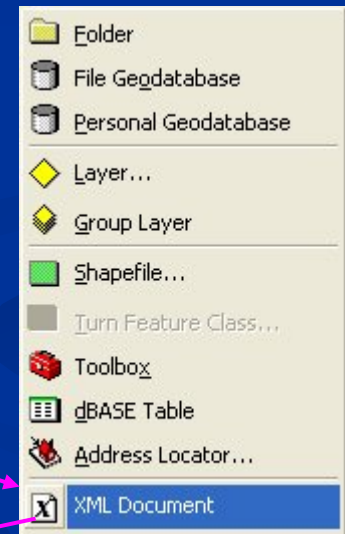
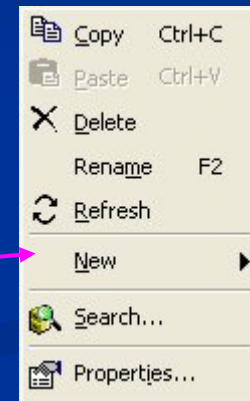
Setting Up a Template - 4

- Independent XML files will now be displayed in Catalog Tree



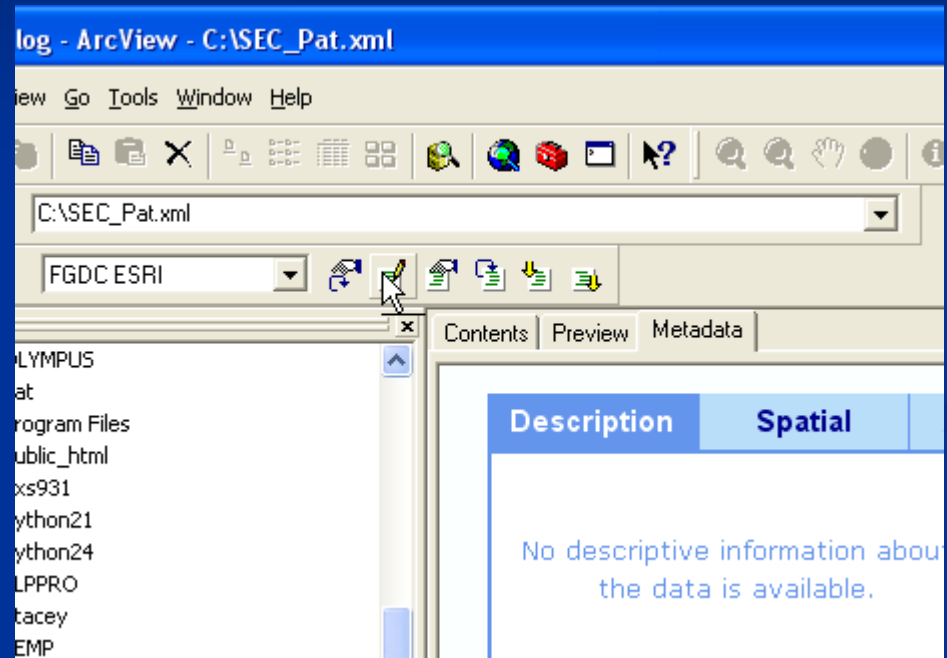
Making a Template - 1

- Make new XML file in a “template” folder
- Right-click on a folder in Catalog Tree, or in right pane of ArcCatalog
- Click on “New”
- Click on “XML Document”



Making a Template - 2

- Open new XML with FGDC editor and Stylesheet
- Edit data that will often be repeated (all contacts info, distribution info, access/use constraints, etc.)
- Make different versions as needed

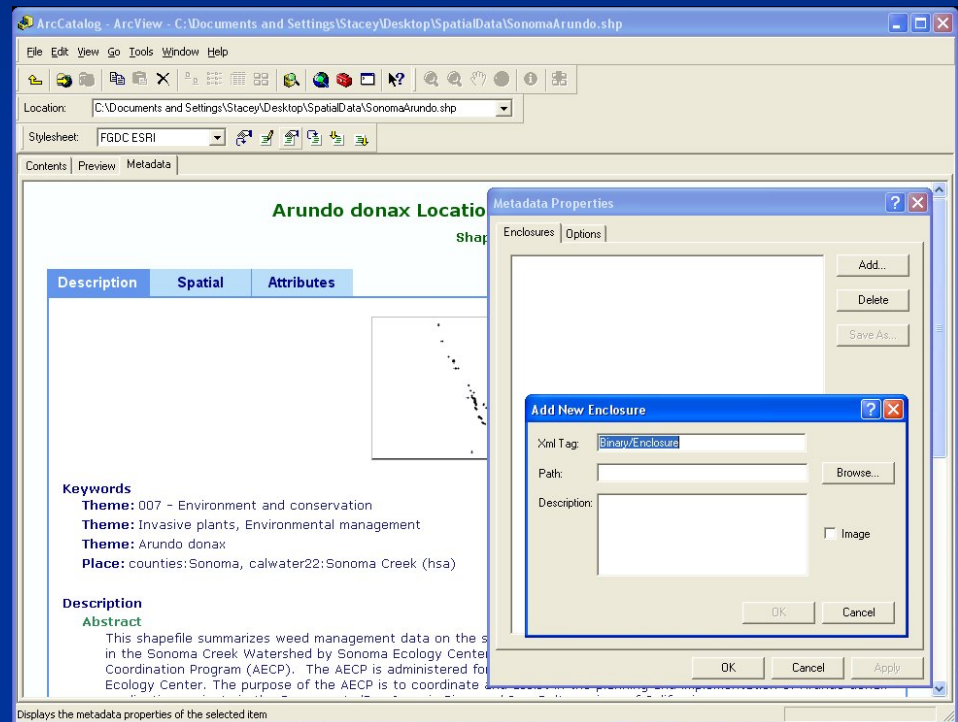


Using the Template

- Turn automatic metadata create/update back on (Tools|Options|Metadata)
- Before making metadata on your next data file, first import your template metadata
- **WARNING:** importing any metadata will overwrite any existing documentation, so import template only as a first step!!!
- Complete rest of documentation as needed.

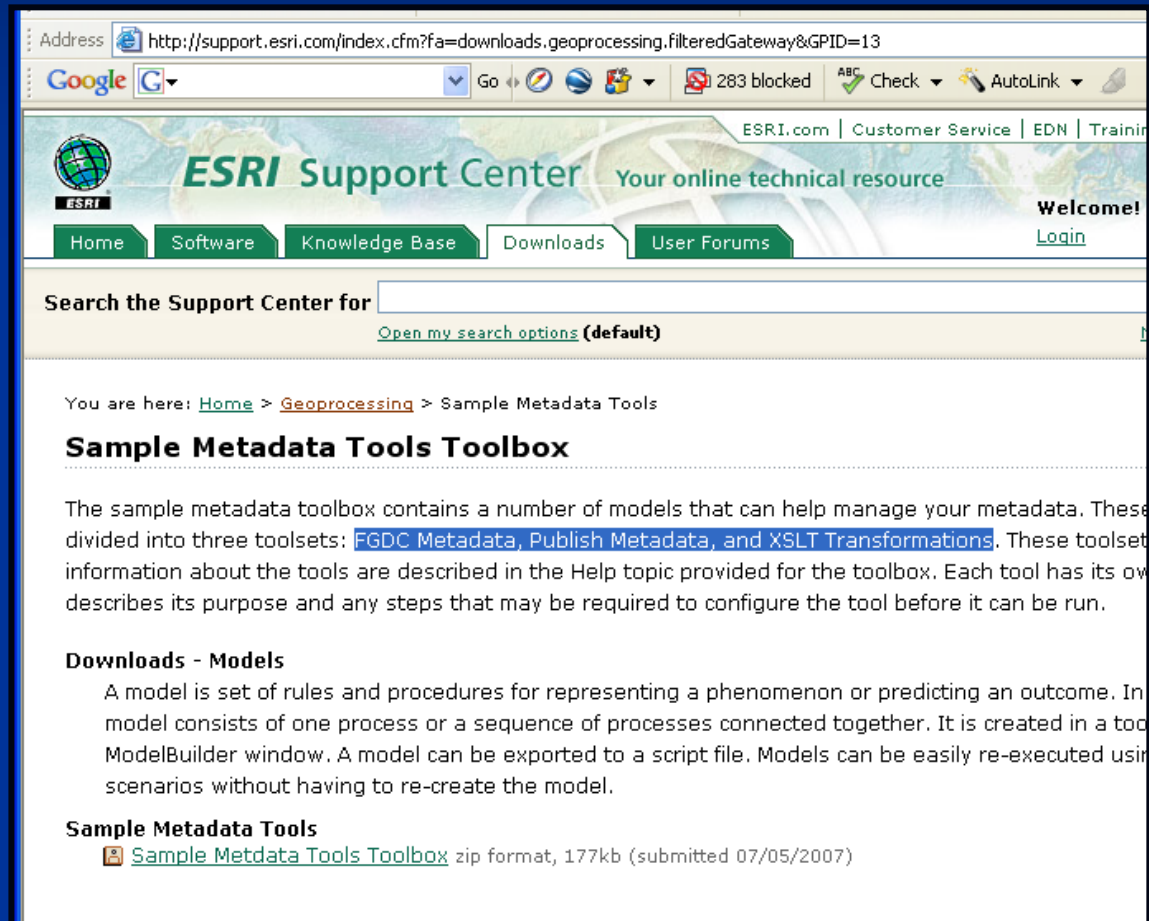
Using Enclosures

- External files with additional metadata (spreadsheet, email, data dictionary, etc.)
- Binary copy is made of an enclosed file, becomes part of xml
- Use Metadata Properties button to
 - add Enclosure files
 - open enclosed file with double-click
 - Save a copy of Enclosure outside of ArcCatalog



Geoprocessing models

- Automate some metadata operations
- Example: export multiple files using a model in the Sample Metadata Toolbox, available from the Geoprocessing support website at <http://support.esri.com/geoprocessing>



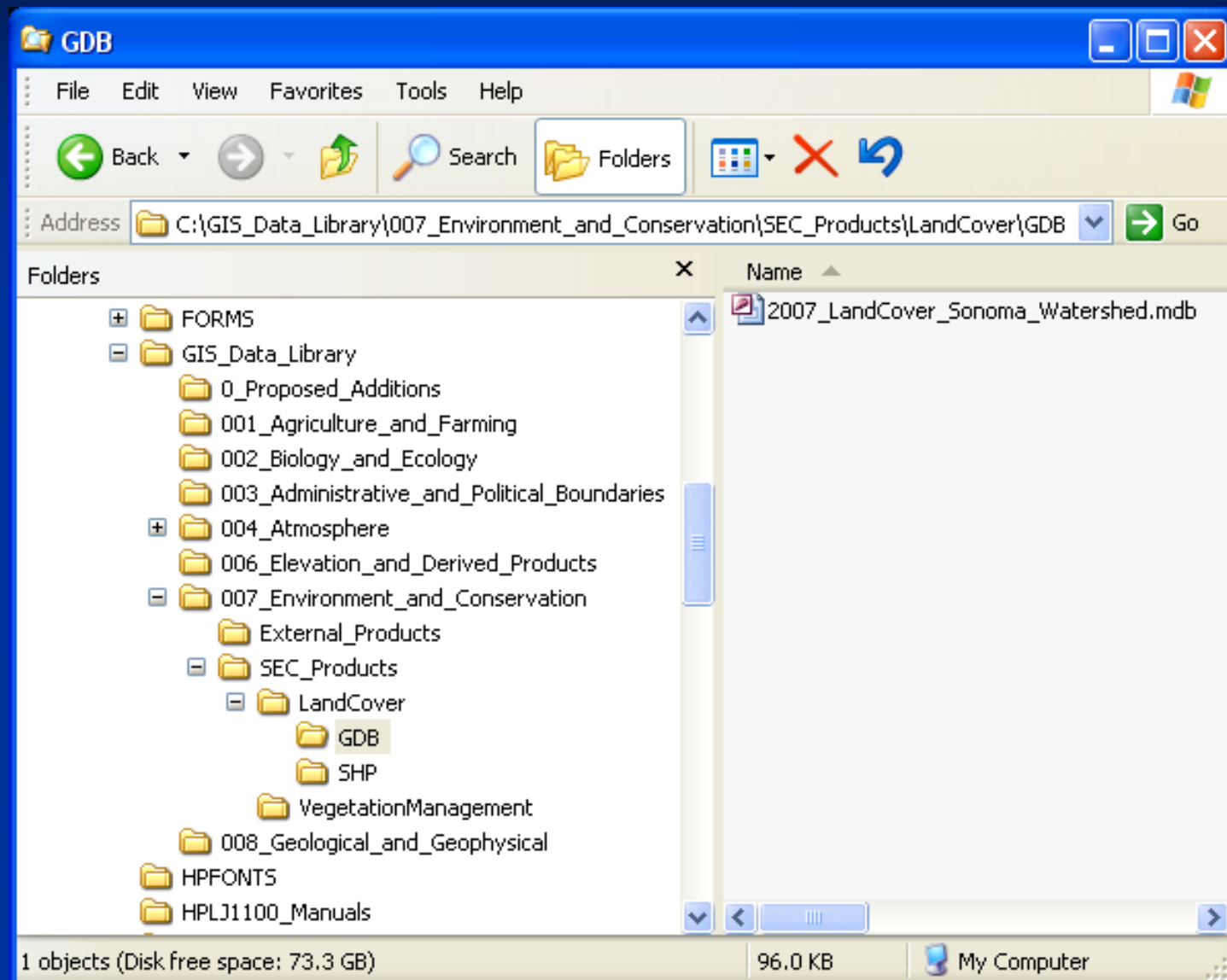
Metadata Examples

- Check out examples of well-documented metadata
 - ArcGIS Data and Maps CD/DVD on ArcGIS installation media kits
 - USGS and other federal agencies provide good examples of FGDC-compliant metadata on Geospatial One-Stop (GOS) -- <http://www.geodata.gov>
 - FGDC Metadata Resources – <http://homepages.together.net/~bspatial/duck/samples.htm>

Organizing Your Resources

- Make separate areas for Projects Data and Library Data in your file storage system
 - Data Library: in-house or external products, final versions of completed work that are suitable for re-use; “reference” data
 - Project folders: in-process data

Data Organization: GIS Data Library

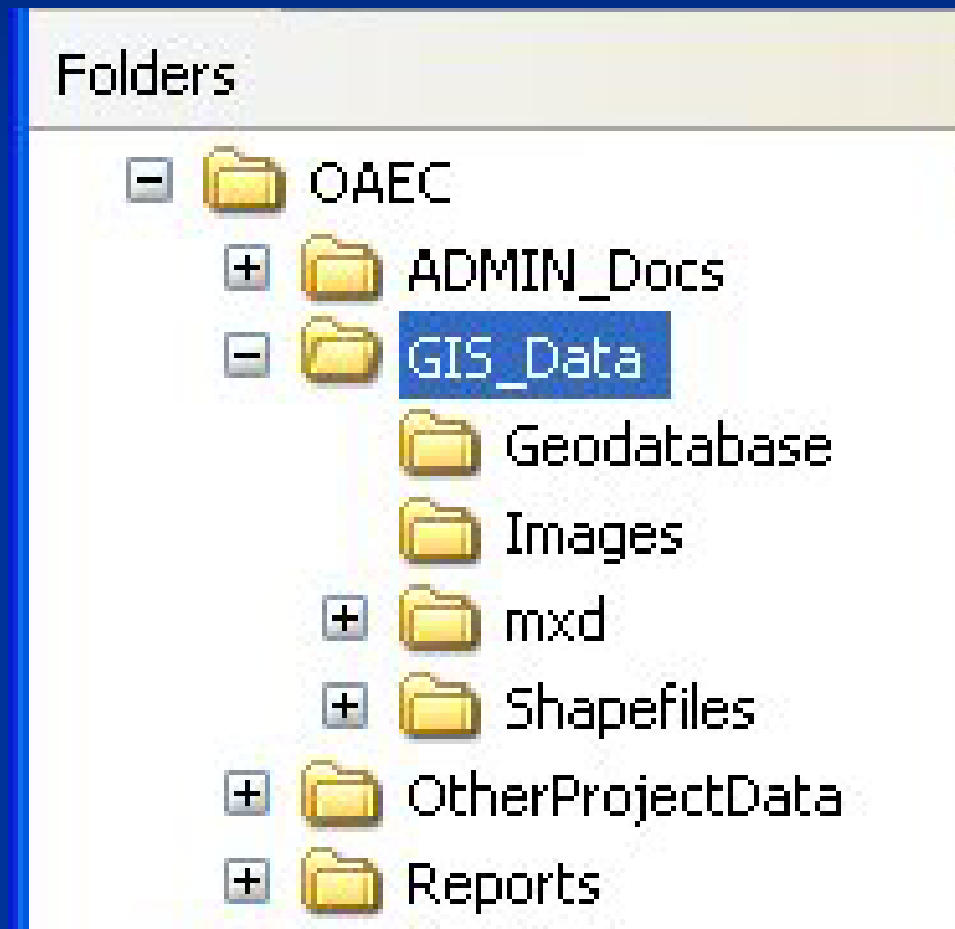


Organizing Your Project

Resources

- Make a folder template for all Project data, and use for every project
- MyProject Name
 - Administrative
 - GISData
 - GDB
 - MXD
 - Outputs
 - Rasters
 - SHP
 - OtherProjectData
 - Reports
- Copy data from Library into Project area and completed Project data into Library area

Organizing Project Workspace



Contract, budget
info

Project reports

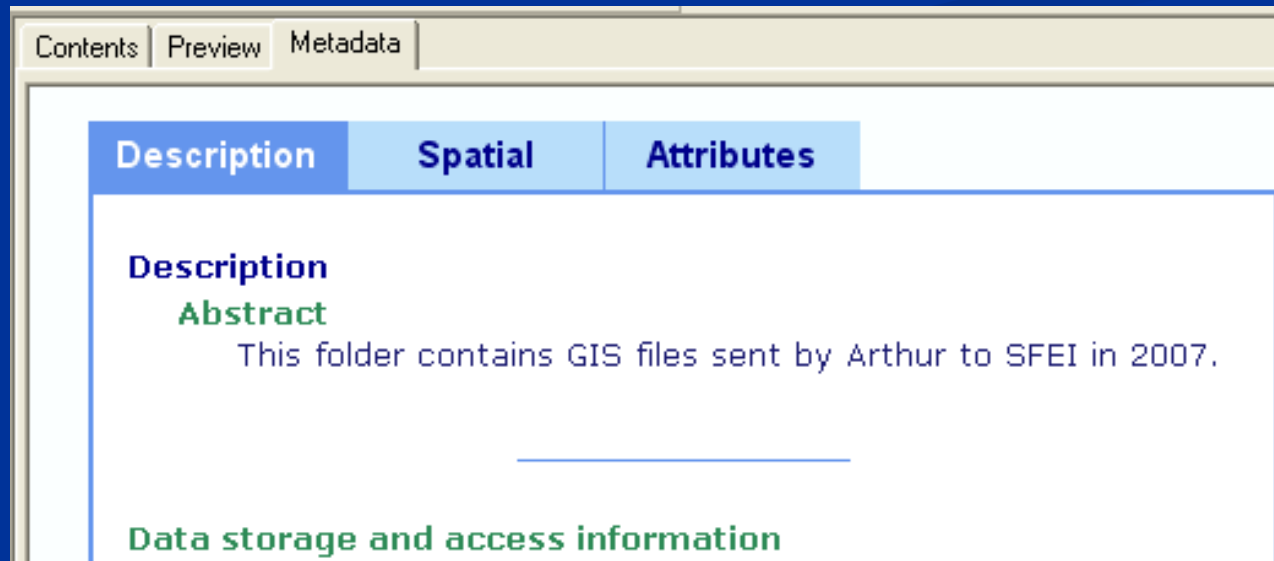
Project name

GIS datasets

Non GIS
datasets

Organizing Your Resources

- Make limited metadata for top-level Project and Library folders
- Ideally, Project Folder metadata written by PM



Organizing Your Resources

- Make limited metadata for top-level Project and Library folders
- This is metadata for a GIS Data Library Folder

The screenshot shows a web-based metadata interface. At the top, there are three tabs: 'Contents', 'Preview', and 'Metadata'. The 'Metadata' tab is selected. Below the tabs, the title 'Inland water resources' is displayed in green. Underneath the title is a table with three columns: 'Description', 'Spatial', and 'Attributes'. The 'Description' column is active, showing the following content:

Keywords
Theme: Inland water resources, inlandWaters, 012

Description
Abstract
Refers to inland water features, drainage systems, and their characteristics. For example, resources describing rivers and glaciers, salt lakes, water use plans, dams, currents, floods, water quality, and hydrographic charts.

Purpose
This folder in the GIS Data Library contains datasets created by SEC or by other entities. BOTH the ISO Category Code and one of the Category Names ("Inland water resources" or "inlandWaters") should be used in the Keywords tab as the first 2 theme keywords for any dataset filed under this folder. The thesaurus name for all keywords is "ISO 19115 Topic Category".

Supplementary Information
The NSDI FGDC Geographic One-Stop website, geodata.gov, has translated the ISO 19115-prescribed Topic Category names into more descriptive phrases. The theme folders in the SEC GIS Data Library have been named with the descriptive phrase.

However, in order for future FGDC-to-ISO translation software to work, the most recent instruction from FGDC advises using the topic category names as listed in the ISO 19115 documents. We are going to use both the descriptive phrase and the ISO numeric category code as keywords in the GIS Data Library.

Training in Your Organization

- Will be part of starting a metadata program
- Keep in mind
 - Data management not “usual” way of thinking for everyone
 - Organizing data for use by a group of people requires a different approach to how an individual alone may work

Training in Your Organization

Resources

- FGDC training program curriculum & materials:
<http://www.fgdc.gov/training/training-materials>
- Many topics, materials, lesson plans, etc. at this site
 - “Core Curriculum”, Introduction to NSDI, Standards, Clearinghouse, etc.
 - Using GOS portal (geodata.gov)
 - Introduction to Geospatial Web Services
- Our presentation and resources materials on SF Commons website, <http://sfcommons.net>

Starting a Data Management Program in Your Organization

Business Case for Information Management

Many benefits, including:

- Replaces human memory
- Allows information to be used again
- Your organization's Curriculum vitae
- Reduces questions about how to access and use the data
- It's mission-critical!

Information Management

PROBLEM:

It's not always done!

- “No funding”
 - “No time”

Information Management: Making it Happen

Make it part of your org's workflow

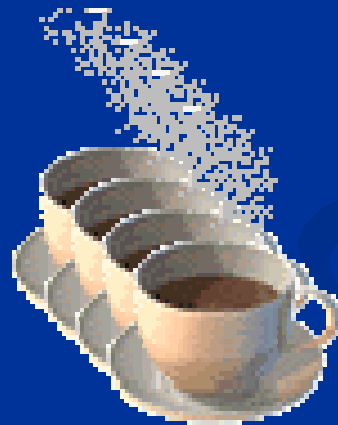
1. Incorporate into project budgets
2. Adopt a method, train
3. Assign it as part of every project

Catching Up: Cataloging Legacy Resources

- Can be the most difficult aspect to fund
- Designate a librarian
- Prioritize
- Locate sources of information about the work products – project managers, project reports, “organizational memory”, etc.

Break

2:45 – 3:00



Telling Metadata Stories

Sharing Your Metadata and Data

- Publishing your metadata catalog
- Data communities
- Sharing your data online

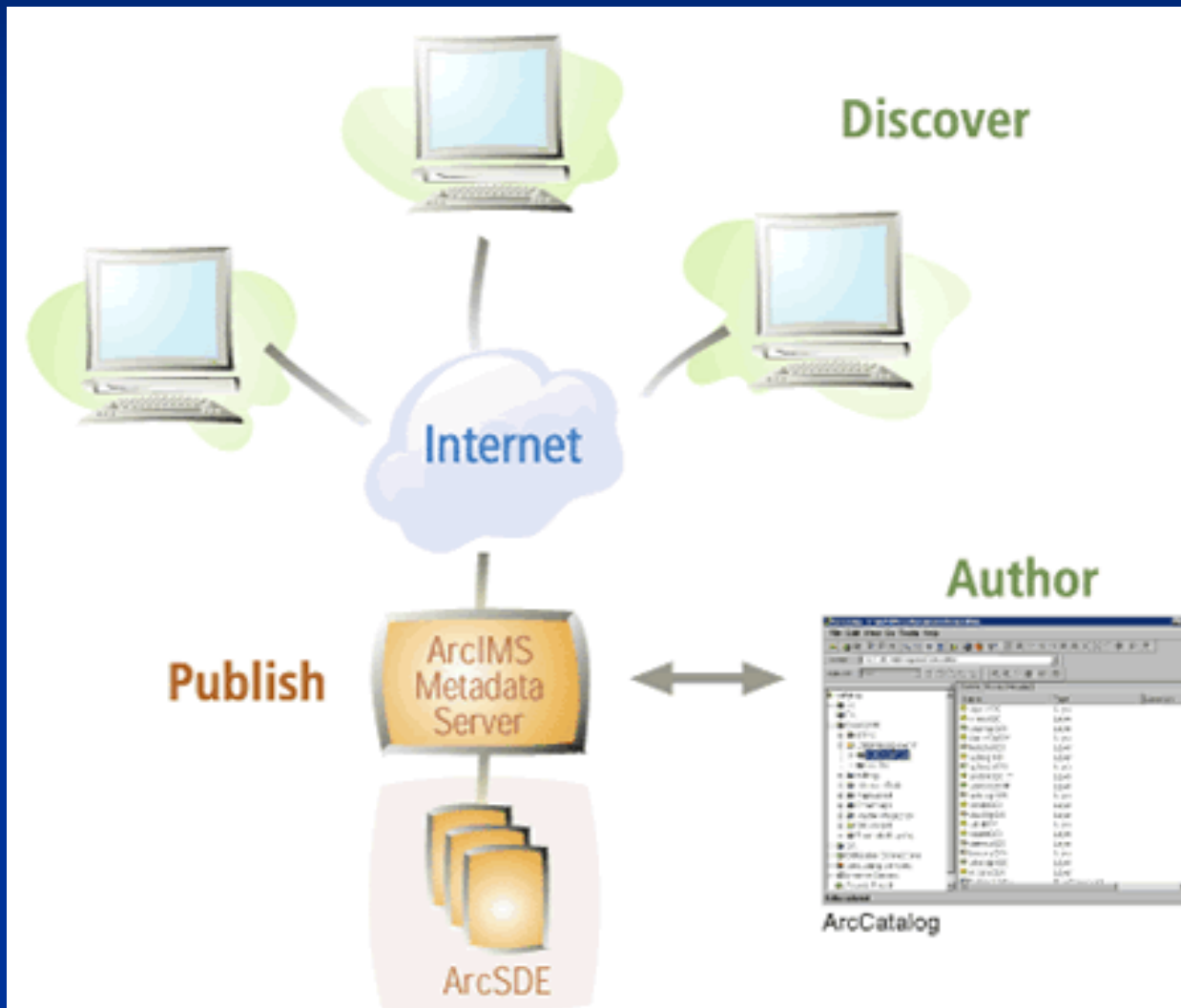
Publishing Your Metadata Catalog

- Publish your own: ArcIMS Metadata Services
- Participate in portals or clearinghouses
 - GOS – Geospatial One-Stop (geodata.gov)
 - IUCN, Knowledge Network for Biocomplexity, etc.
 - CEIC

ArcIMS/ArcGIS Server Metadata Services

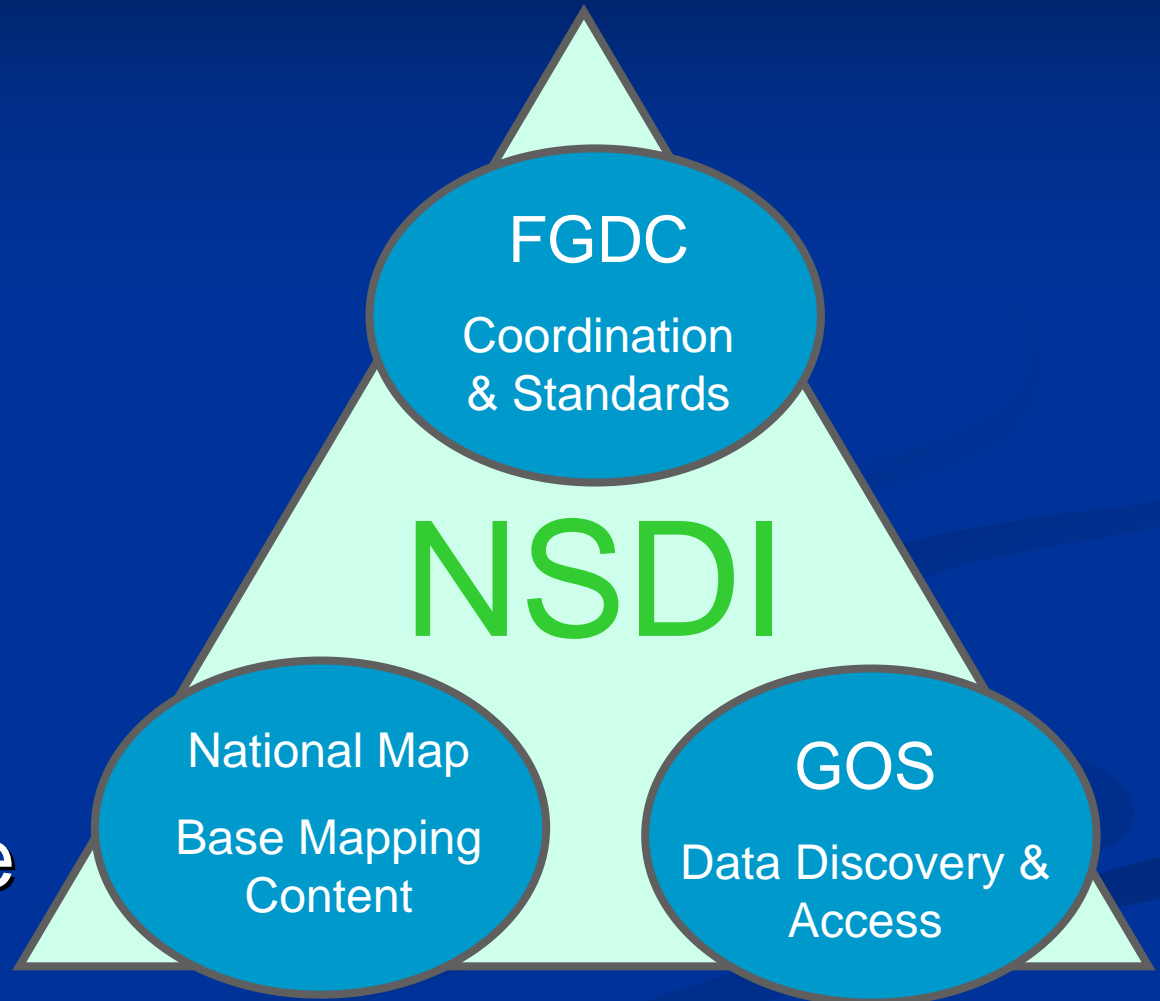
- Users create online metadata repositories at any level--Intranet, Extranet, or Internet.
 - ArcIMS for framework and architecture
 - ArcCatalog for creating, authoring, and publishing metadata
 - ArcSDE as the interface to the relational database that stores published documents.

ArcIMS/ArcGIS Server Metadata Services



NSDI and GOS


- The three components of the National Spatial Data Infrastructure




GOS – Geospatial One-Stop

- GIS portal for a community of geographic data providers – discover and contribute
- Register your metadata repository for Harvest
 - Z39.50 server
 - Open Archive Initiative for Harvesting Protocol data provider
 - ArcIMS Web Server
 - Web-accessible folder
- Online Metadata Editor (form) and Metadata Upload utilities

GOS



U.S. MAPS & DATA



Your One Stop for Federal,
State & Local Geographic Data

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Communities [Help](#) [-](#) [□](#)

Special Interest

- [Earth Information Exchange](#)
- [Fire Mapping](#)
- [Geographic Names](#)
- [Historical Collections](#)
- [Homeland Security](#)
- [Hurricanes](#)
- [Indian Ocean Disaster](#)
- [Lewis and Clark](#)
- [Local Governments](#)
- [Recreation and tourism](#)
- [The National Atlas](#)
- [The National Map](#)

Data Categories

- [Administrative Boundaries](#)
- [Agriculture](#)
- [Atmosphere](#)
- [Biology](#)
- [Business](#)
- [Cadastral](#)
- [Demographic](#)
- [Elevation](#)
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Search geodata.gov [Help](#) [-](#) [□](#)

What: (e.g. River) **Where:** (e.g. Harrison, NY)


☐ [Show Advanced Search Options](#)


Current Featured Topic [Help](#) [-](#) [□](#)


Fire Mapping


[Western Wildfires](#) [Key Resources](#) [Discussion](#) [Index](#) [Library](#)

[Fire Incident Information](#) [GeoMAC Wildfire Information](#) [USFS Active Fires Map](#) [NOAA Fire Det](#)










2008 Western Wildfires



The map shown on the left fuses several of the services shown above to wildfire information in the Western US.

For more information please visit the [InciWeb Incident Information we](#).

[Send comments and suggestions to the community steward](#)

Quick Start [-](#) [□](#)

Welcome to geodata.gov

Your One Stop for Finding and Using Geographic Data

geodata.gov will help you:

- [Find Data or Map Services](#)
- [Make a Map](#)
- [Browse Community Information](#)
- [Cooperate on Data Acquisitions](#)
- [Publish your Data and Map Services](#)

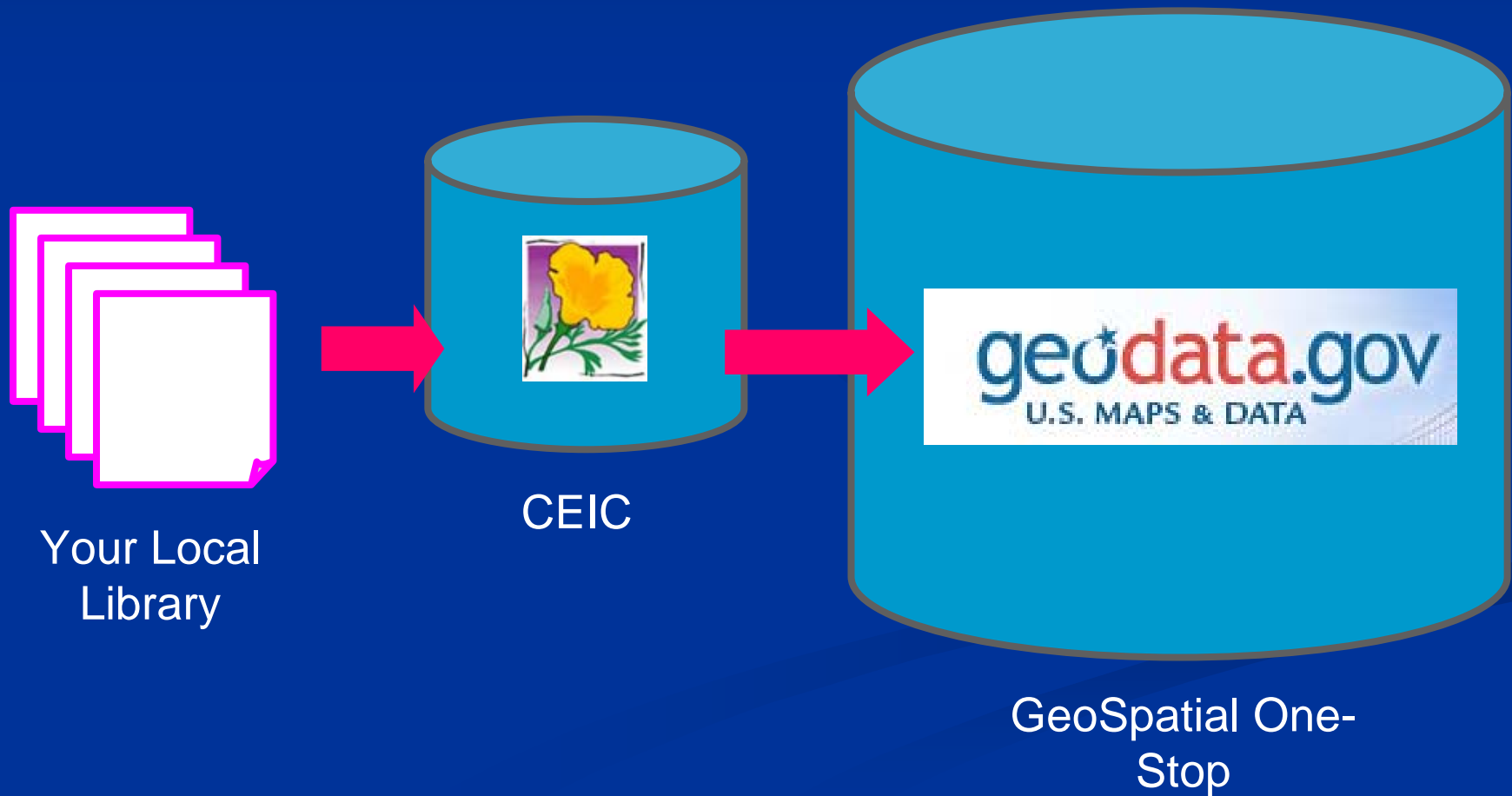
Save searches, maps, and your favorite geography to re-use later. A simple [registration process](#) opens up these personalization options.

We invite you to explore ... or check out our [Quick Start Guide](#) to learn more about using the main features of geodata.gov.

CEIC

- CEIC is a node in the National Spatial Data Infrastructure
- How to share your metadata via CEIC
 1. Make a catalog at <http://ceres.ca.gov>
 2. Create metadata using form or upload xml
 3. Supply Web-enabled folder for harvest

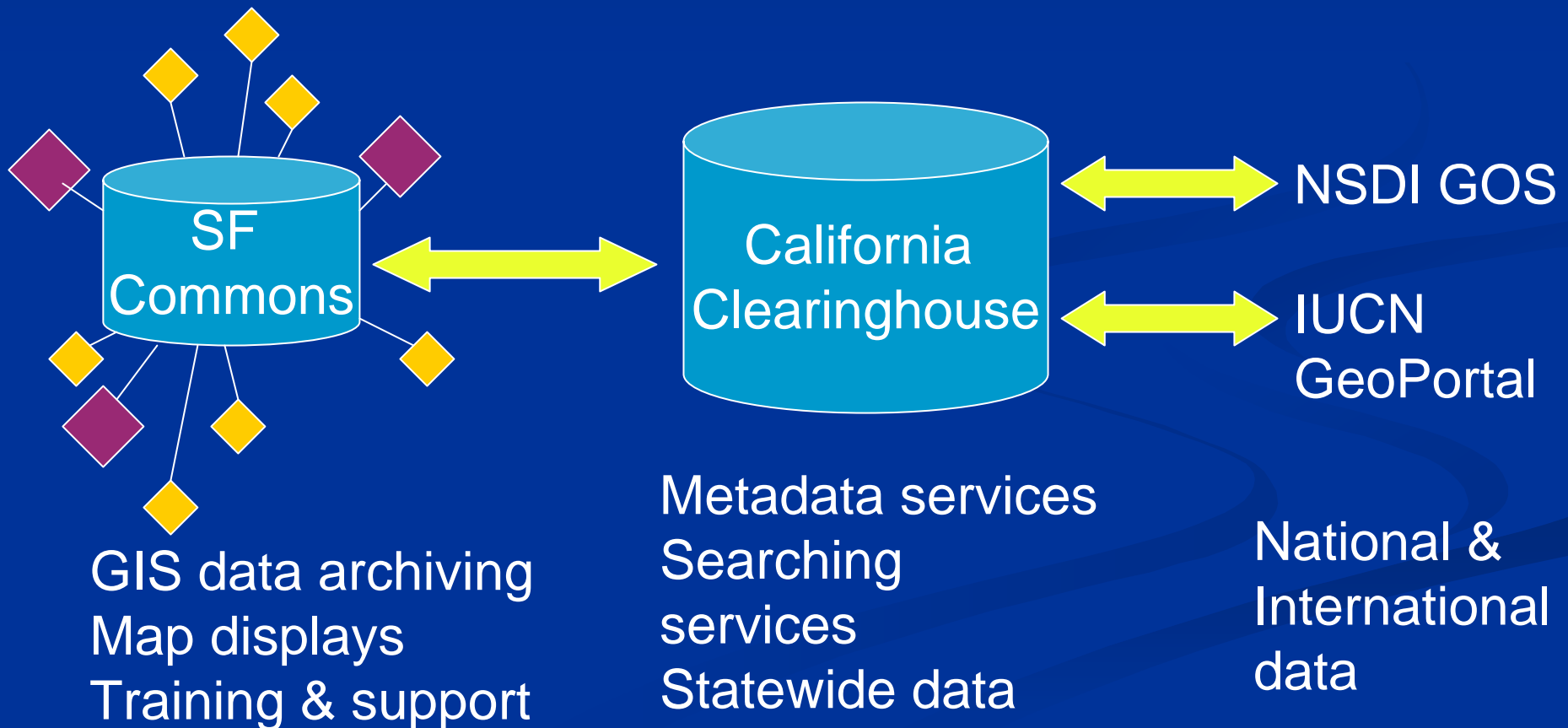
One Record Does It All



Data Communities

- Regional - the SF Conservation Commons
- State - CEIC
- National - NSDI
- International - IUCN

Data Communities



Sharing Your Data

- Online link in FGDC metadata record can point to data in an archive:
 - Your own website
 - SF Conservation Commons website
 - CEIC in future

Sharing Your Data

- Remember to zip it!

Strategies for Transitions

- North American Profile of ISO will include attribute data as a “feature catalog”— ISO does not.
- Don't panic ! – ISO 19115 review began 5 years ago, FGDC thought review/adoption would be over long ago, may happen within coming year (2009)
- FGDC Metadata Working Group Transition Strategy:
 - Continue to create FGDC metadata
 - Add ISO 19115 Topic Category terms to your FGDC metadata

Transitions in US Standard

- ISO Metadata Standard 19115 is an international content standard.
 - ISO 19115 is one of two editors currently in ArcCatalog
- FGDC standard ver. 2 has been the community standard for the U.S. National Spatial Data Infrastructure since 1998
- FGDC/NSDI committed to transitioning to North American Profile of ISO 19115, a profile that modifies 19115 to better meet CSDGM/NSDI community needs.

Wrap-up

- Q&A
- Resources collection to be posted on SF Commons with Presentation (<http://sfcommons.net>)
- Survey

Pizza!!! NOW!!!

At Deanne's house, 1230 Cloister Court

