Importing a Coverage

This is the first of two companion tutorials for "Migrating Coverages to Geodatabases," an article that appeared in the July–September 2001 issue of ArcUser *magazine. This tutorial describes how to create an personal geodatabase and import an existing polygon coverage into it using menu choices in ArcCatalog.*

This tutorial focuses on the personal geodatabase. Creating a new ArcSDE geodatabase requires a different process. Your database administrator must create the necessary RDBMS databases or instances to accommodate your ArcSDE instances. Once your administrator has created the geodatabase, you can interact with it in the same way you would interact with a personal geodatabase.

What You Will Need

To successfully complete this tutorial you will need ArcGIS 8.1 (ArcInfo, ArcEditor, or ArcView) and the sample data for this tutorial downloaded from the *ArcUser Online* Web site (www.esri.com/arcuser).

Create a Personal Geodatabase

First we will create the container (GDB) that will hold all the feature datasets, feature classes, and tables then populate the new geodatabase with the data from the polycov coverage.

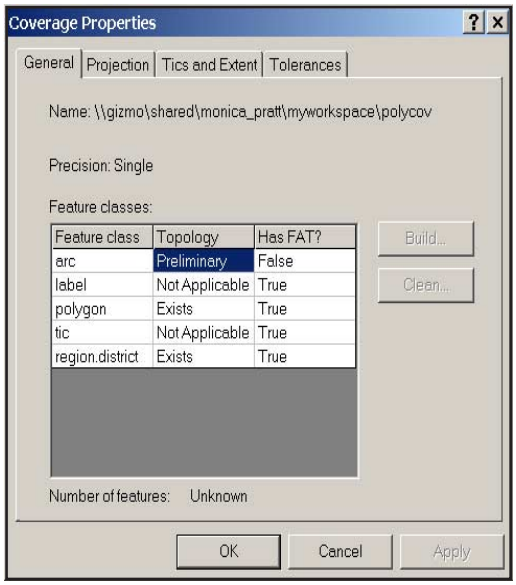
1. After downloading the sample dataset, double click on the file to extract it. Place the MyWorkspace folder on your computer or copy it to a location on your network.
2. Start ArcCatalog and establish a connection to the MyWorkspace folder.
3. Right-click on the MyWorkspace folder and choose New > Personal Geodatabase from the context menu.
4. The default name for this new geodatabase is New Personal Geodatabase. Right-click on the default name and change it to MyGDB.

MyGDB is an empty personal geodatabase. Next we will add some spatial and attribute data from polycov, one of the three coverages contained in the MyWorkspace folder.

Examining the PolyCov Coverage

Before loading the polycov coverage into the MyGDB geodatabase, examine it. Click on the polycov coverage in ArcCatalog to preview it.

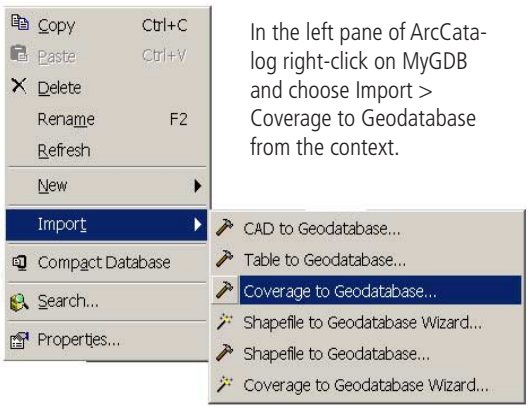
1. Click on the Preview tab to see the geography described by this coverage.
2. Click on the Contents tab and inspect the layers that make up the polycov coverage. Right-click on each layer in this coverage and select Properties from the context menu to bring up the Coverage Feature Class Properties dialog box. Click on the Item tab to view the fields that make up the attribute tables.
3. Right-click on the polycov coverage in the MyWorkspace and choose Properties.
4. In the Coverage Properties dialog box, click on the General tab. Notice that the polycov coverage has five feature classes—arc, label, polygon, tic, and region.district feature classes. We need to decide which of these classes to import into the GDB. If these feature classes are topologically related, we also need to decide whether to maintain the feature classes in a feature dataset.
5. Click on the Projection tab. This dialog shows that the polycov coverage has a known coordinate system, Albers Equal Area.
6. Click the General tab again. Click OK to close the Coverage Properties dialog box.



In the Coverage Properties dialog box, click on the General tab. Notice that the polycov coverage has five feature classes—arc, label, polygon, tic, and region.district feature classes.

Importing a Polygon Coverage Using the Import Tool

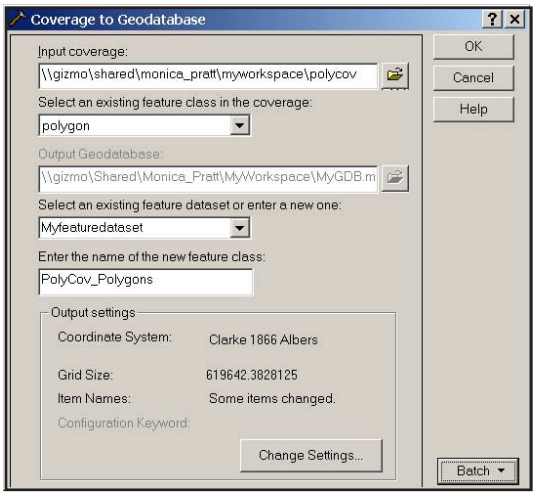
1. In the left pane of ArcCatalog right-click on MyGDB and choose Import > Coverage to Geodatabase from the context.
2. In the Coverage to Geodatabase dialog box, click on the folder button next to Input Coverage box and locate the polycov coverage and select it. Alternatively, resize ArcCatalog and the dialog box and drag the



In the left pane of ArcCatalog right-click on MyGDB and choose Import > Coverage to Geodatabase from the context.

polycov polygon coverage to the Input Coverage box.

3. In the text box below "Select an existing feature class in the coverage," choose polygon from the drop-down box to set it as the default feature class.
4. Because polycov has feature classes that have topological associations, we will create a new feature dataset that will maintain these associations. Still in the Coverage Feature Class Properties dialog box, type MyFeaturedataset in the text box below "Select an existing feature dataset or enter a new one:" Change the default name for the new Feature class to PolyCov_Polygon. Do not click OK.



Because polycov has feature classes that have topological associations, we will create a new feature dataset that will maintain these associations. Still in the Coverage Feature Class Properties dialog box, type MyFeaturedataset in the text box below

Feature datasets

Feature datasets define the scope of a particular spatial reference. Feature classes that participate in topological relationships with one another, such as geometric networks, must have the same spatial reference. Feature datasets are a way to group feature classes with the same spatial reference so that they can participate in topological relationships with each other.

For most users, feature datasets also have an organizational aspect similar to a folder in a file system. However, feature datasets have a cost associated with their use. Updates to a feature class in a feature dataset can potentially ripple to other feature classes within the feature dataset that participate in topological relationships. All the simple feature classes in a feature dataset are assumed to participate in the topological association. Editing features within a feature dataset with the shared editing tools in ArcMap will affect all feature classes within that dataset. *Use feature datasets to group classes that have topological relationships with each other. Don't overload feature datasets with lots of feature classes. Having standalone feature classes at the database level is perfectly acceptable.*

Inspecting Output Settings

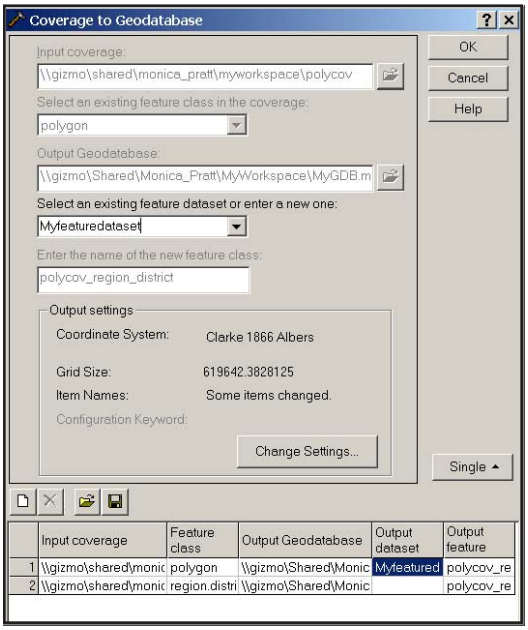
We can change the Output Settings options such as the coordinate system, Item to Field mapping for a new feature class, and the grid size for the coverage. Coverage features can also be queried to filter specific features to import.

1. Click on the Change Settings button in the Coverage to Geodatabase dialog box to bring up the Output Settings dialog box.
2. Click on each tab in this dialog box. If linear measurement values will be used, the "Enable M values" box on the Geometry tab should be checked.
3. Accept the default output settings. Click Cancel to return to the Coverage to Geodatabase dialog box.

Using Batch Mode

You can run multiple jobs of a tool at once using a tool's batch mode capability. When batch mode is activated, the tool expands to show a table displaying the parameters of each job. The batch table can be accessed by manually by clicking on the tool itself or automatically either dragging and dropping multiple records onto a tool from ArcCatalog or by selecting multiple input datasets from a browser. We add the region feature class in this coverage using the Bath mode.

1. In the Coverage to Geodatabase dialog box, press the Batch button on the lower right hand side of the box.
2. The Coverage to Geodatabase dialog box expands to show the polycov coverage previously selected.
3. Click on the Add Row button to add a row to the batch list. This button is located in the lower left hand corner of the dialog box, farthest to the left of the four buttons.



You can run multiple jobs of a tool at once using a tool's batch mode capability. When batch mode is activated, the tool expands to show a table displaying the parameters of each job.

4. Drag the polycov coverage into the Input coverage box.
5. Select region.district as the existing feature class from the drop-down box below "Select an existing feature class in the coverage."
6. Specify PolyCov_region_disricts as the output feature class.
7. Click OK.

The PolyCov_Polygons and PolyCov_region_district feature classes have been added to MyGDB. Refresh the ArcCatalog view to see the new feature dataset and its feature classes.

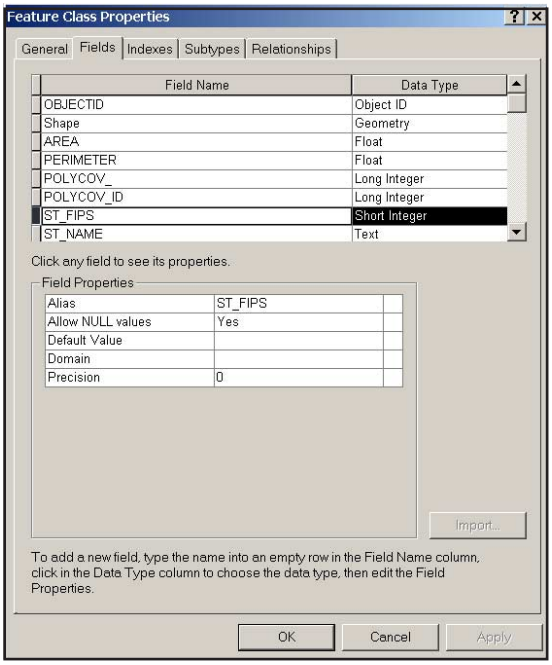
Removing Unnecessary Fields

The feature classes for MyGDB are almost exactly the same as those of the original coverage with two exceptions. Two fields were renamed—PolyCov# became PolyCov_ and PolyCov-ID became PolyCov_ID—and a column called OBJECTID was added. The OBJECTID column is analogous to the Cover# column. ArcGIS creates this field so that at least one column will have a unique value. This field also helps ArcGIS track this table in the geodatabase.

Some fields that were imported, like COV# NO, AREA, and PERIMETER, no longer have any relevance. You can delete them after importing the coverage or during the importing process. Since you have already imported this coverage, we will delete these fields now.

1. Click on Myfeaturedataset under MyGDB to view the PolyCov_Polygons and PolyCov_region_district feature classes.
2. Right-click on the PolyCov_Polygons feature class and choose Properties from the context menu. In the Feature Class Properties dialog box, click on the Fields tab.
3. From the Fields tab, click on the bar to the left of the Area field to select the entire row.
4. Now press the Delete key on your keyboard.

ArcGIS will not allow you to delete fields is has deemed important but in this case ArcGIS will let you delete the ST_FIPS. You cannot delete standard coverage fields after importing them but you can delete these fields during the import process.



From the Fields tab, click on the bar to the left of the Area field to select the entire row. Now press the Delete key on your keyboard.

Changing a Feature Class Name

Change the name of the feature class by applying an alias. Click on the General tab in the Feature Class Properties dialog box and type **USA States** in the Alias text box. Click OK. The alias is not applied in ArcCatalog but will be used by ArcMap in the Table of Contents to reference this feature class. To permanently change a feature class name instead of applying an alias, right-click on the feature class in ArcCatalog and rename it.

Summary

In this tutorial, you used ArcCatalog to create a new personal database, examine existing coverages, and import them using the Import tool. The second tutorial will show you how to use the Import Wizard with coverages. For more information on designing a geodatabase, see *Modeling Our World*. For additional information on importing data into a geodatabase, see *Building a Geodatase*. Both are part of the ArcGIS documentation.