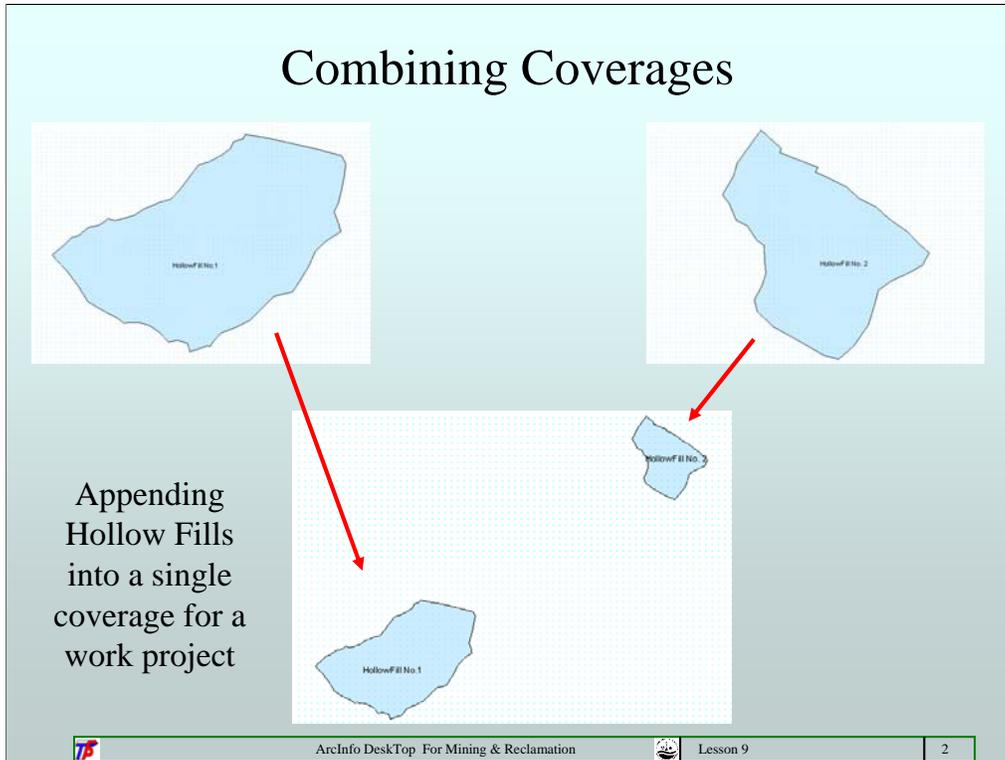


LESSON 9

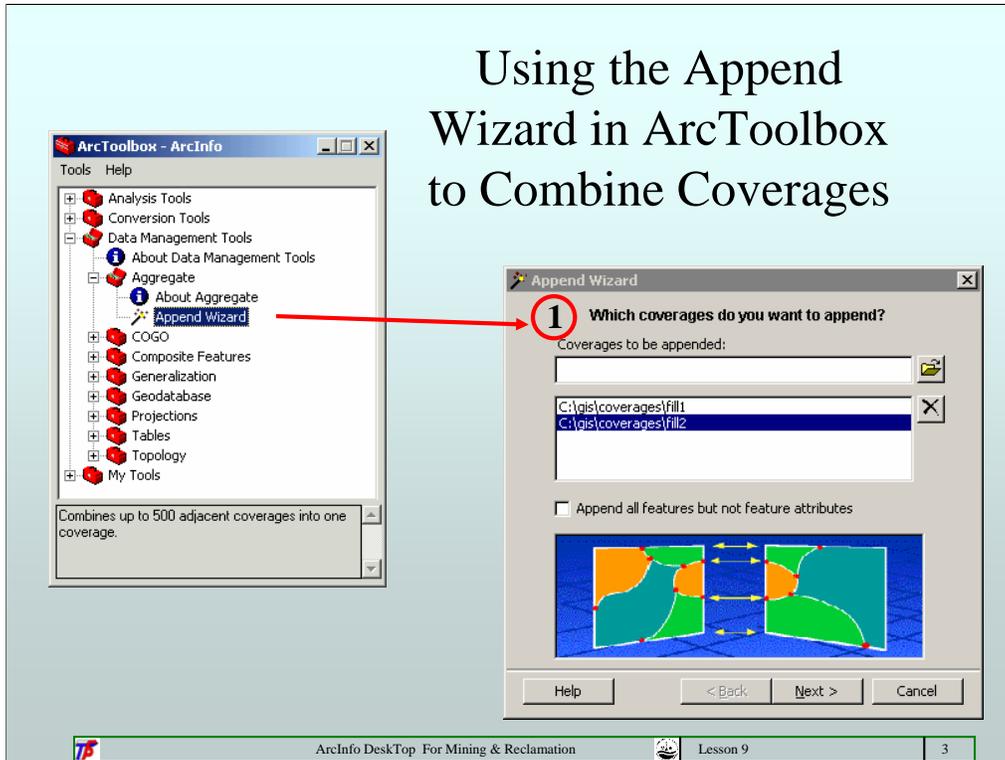
Data Management





Sometimes, it may be necessary to combine coverages for a work project. The data may not exist together because of the way it was originally created or the way it is stored on your GIS server. You may need to append the separate coverages together into a single coverage in order to do overlays or geospatial analysis. In ArcToolbox, the Append Wizard can be found under the Aggregate tool set. The Append operation combines entire data sets.

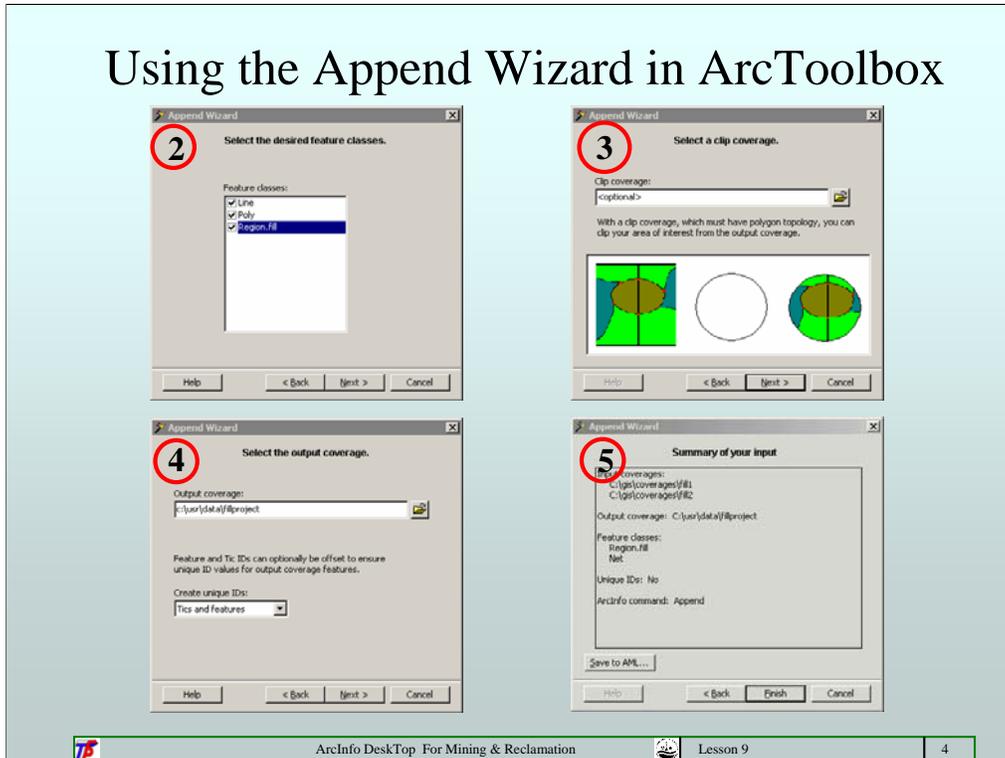
Using the Append Wizard in ArcToolbox to Combine Coverages



The Append Wizard can combine up to 500 coverages into a single coverage. However, feature attribute tables must contain matching items and definitions.

Note: If the items do not match but you want to combine the data sets, it may be more appropriate to use Union.

Using the Append Wizard in ArcToolbox



Make the appropriate choices, depending on the nature of the data set, and click Next to perform the Append.

Generalization

Dissolving Spatial Data by Its Attributes

Simplifying Polygons

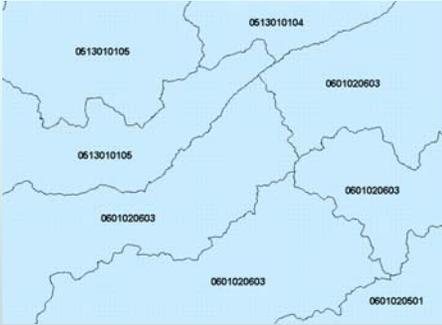
Simplifying Lines



Sometimes, it is desirable to reduce the amount of detail in a coverage because it is not necessary. It may be that the level of analysis to be performed on a data set does not require the detail already present, or perhaps reducing detail preserves the essential information and saves storage space on the GIS server. Because most all operations in ArcInfo proceed linearly, data sets of large physical size take longer to initially display, refresh, edit, and analyze. Three tools are discussed here which helps eliminate unnecessary detail from data sets.

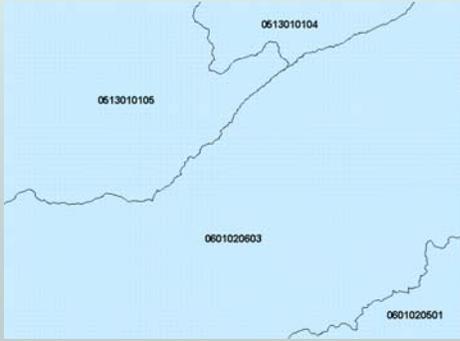
Dissolving Features by Their Attributes

Input HUC 12 Boundaries Labeled
with HUC 10 Numbers



Using a HUC 12 boundary coverage
to make a HUC 10 coverage

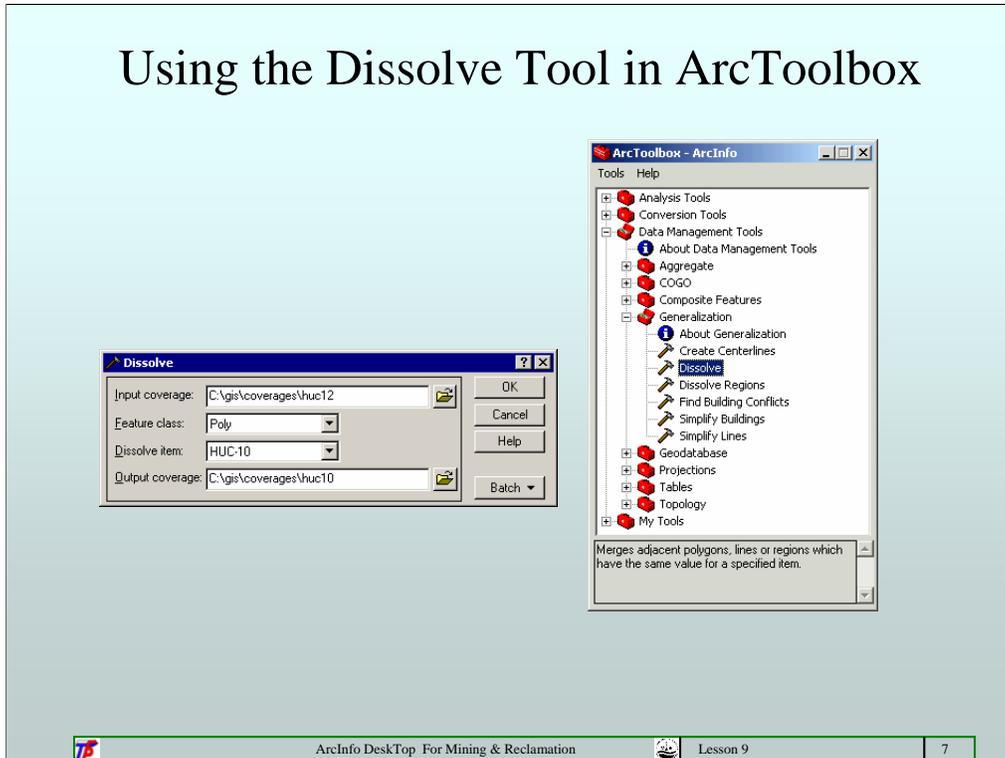
Output HUC 10 Boundaries Labeled
with HUC 10 Numbers



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Dissolve is used to simplify data by combining adjacent features within a feature class which have the same attribute value. However, because of the way the Dissolve is performed, the output data set will contain only a single user-added attribute value, the item used to perform the dissolve operation. Usually, it is not desirable to perform a Dissolve on a permanent spatial data base because of the loss of attribute data. Normally, the Dissolve is used on a temporary data set used in a work project. Dissolve will work on either arc or polygon feature classes.

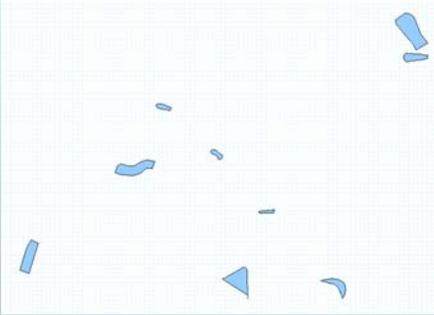
Using the Dissolve Tool in ArcToolbox



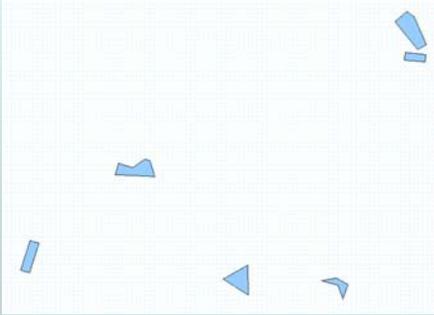
The dissolve item of the input coverage is used to select the feature classes which will appear in the output coverage. All feature classes having the same value within the dissolve item are combined. The dissolve item can be a character data type. After pressing OK, the topologically correct output coverage is produced without further menus.

Simplifying Polygons

Sediment Basins
Before Simplifying



Sediment Basins
After Simplifying*

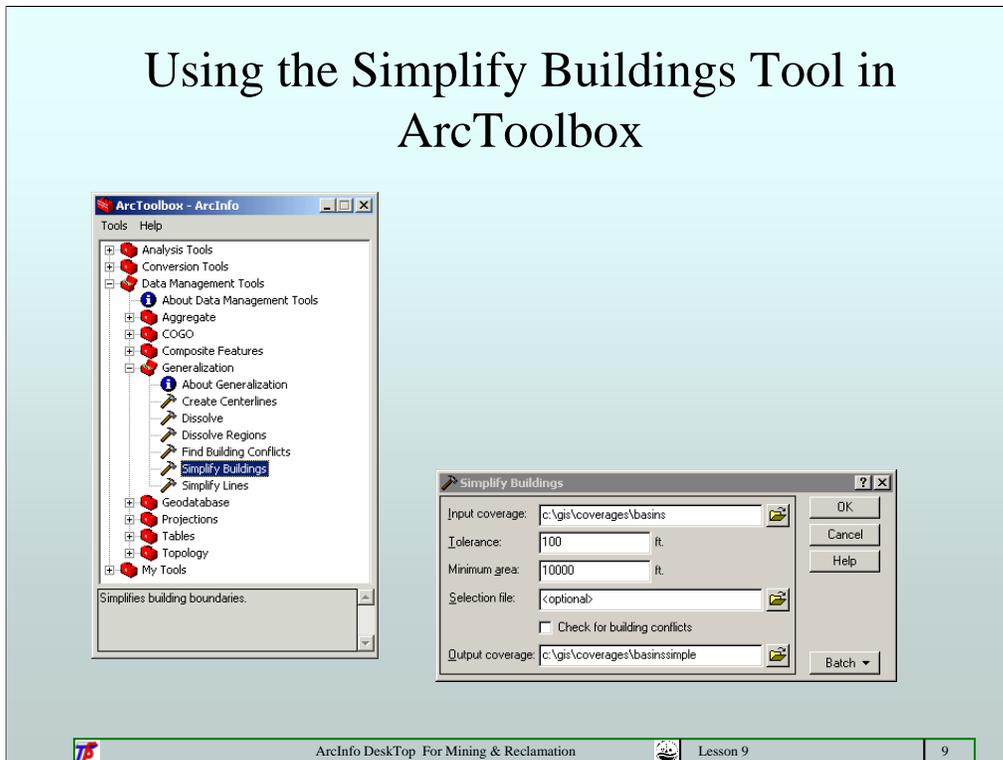


* Basins less than the minimum size have been deleted

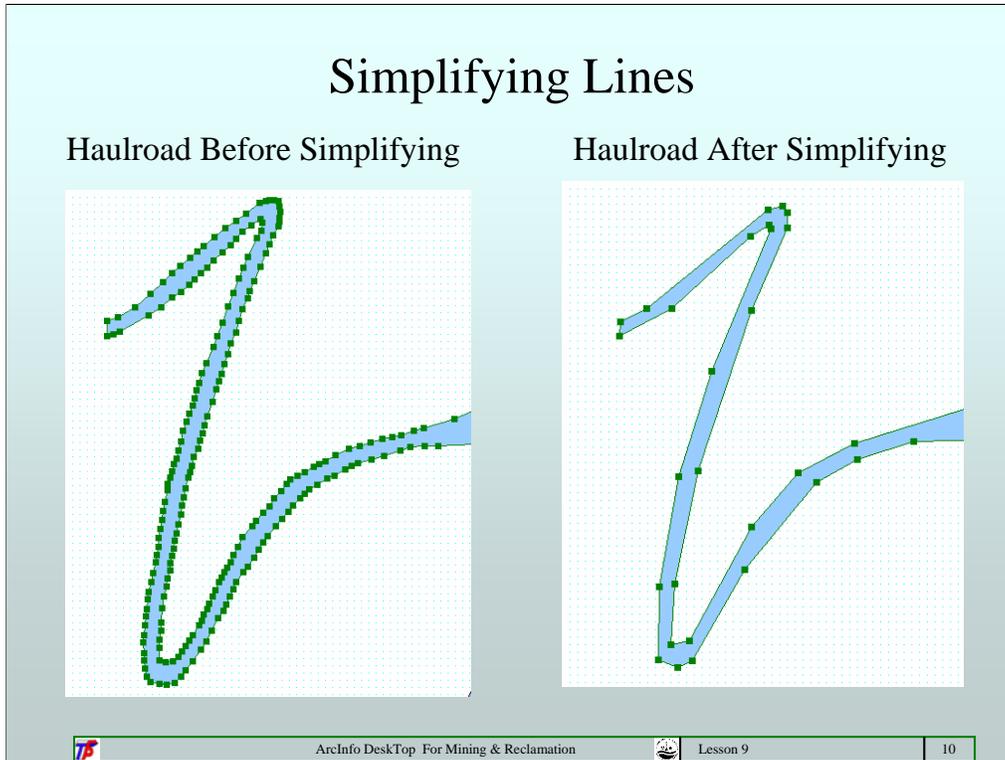
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Simplifying polygons removes some of the details from the boundaries but preserves the essential size and shape. Because this operation is commonly used to simplify building footprints, the name of the tool in ArcToolbox is Simplify Buildings. However, this tool is useful in surface mining applications to reduce unnecessary detail, decrease file size, and shorten the time required to perform an analysis if the data set is very large.

Using the Simplify Buildings Tool in ArcToolbox

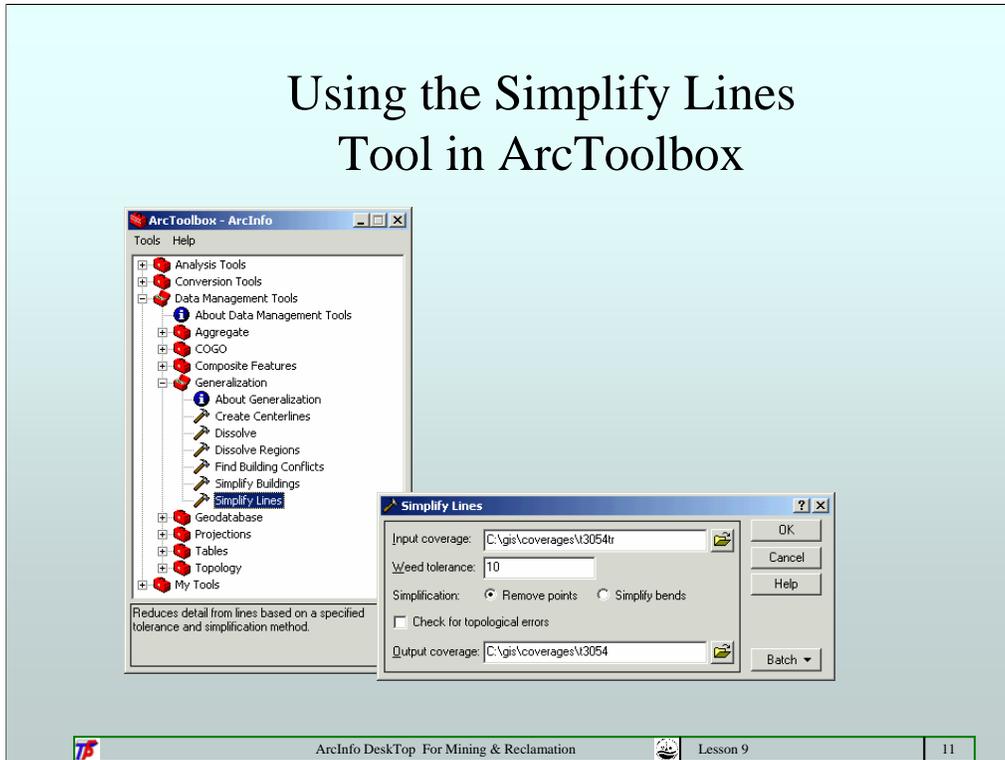


The Simplify Buildings tool works best for coverages where the polygons to be simplified are NOT contained within or share a common border with another polygon which also is to be simplified, such as a landuse coverage. During processing the Simplify Building tool will issue a warning about the lack of a spatial index on the coverage if one is not present. However, the tool will work without a spatial index. The output coverage has to be built to restore topology. After building the coverage, both polygon and region feature classes will be produced. The region subclass will be called "bldgsim".

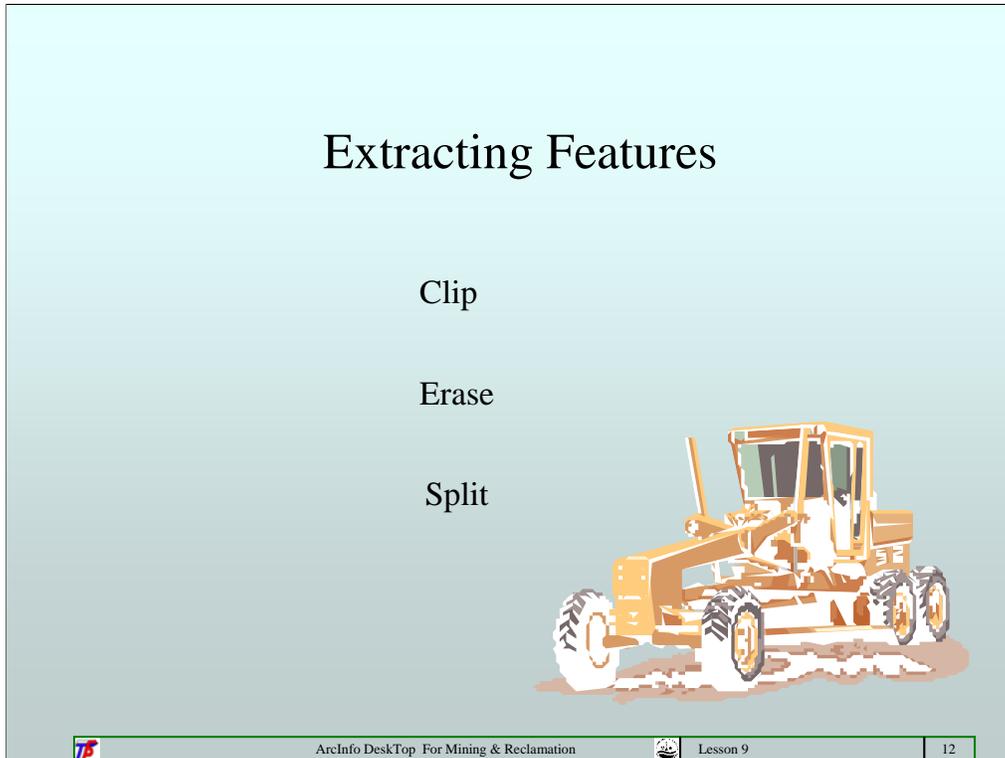


In this example, a haulroad approximately 2700 feet in length digitized as a single arc on both sides of the haul road with 226 vertices has been simplified using a weed tolerance of 10 feet to produce an arc for the haul road with only 31 vertices. No essential detail of haul road size or shape has been lost, but the final coverage will draw faster, and analysis will be faster because there are less than 15 percent of the original coordinates to be calculated.

Using the Simplify Lines Tool in ArcToolbox

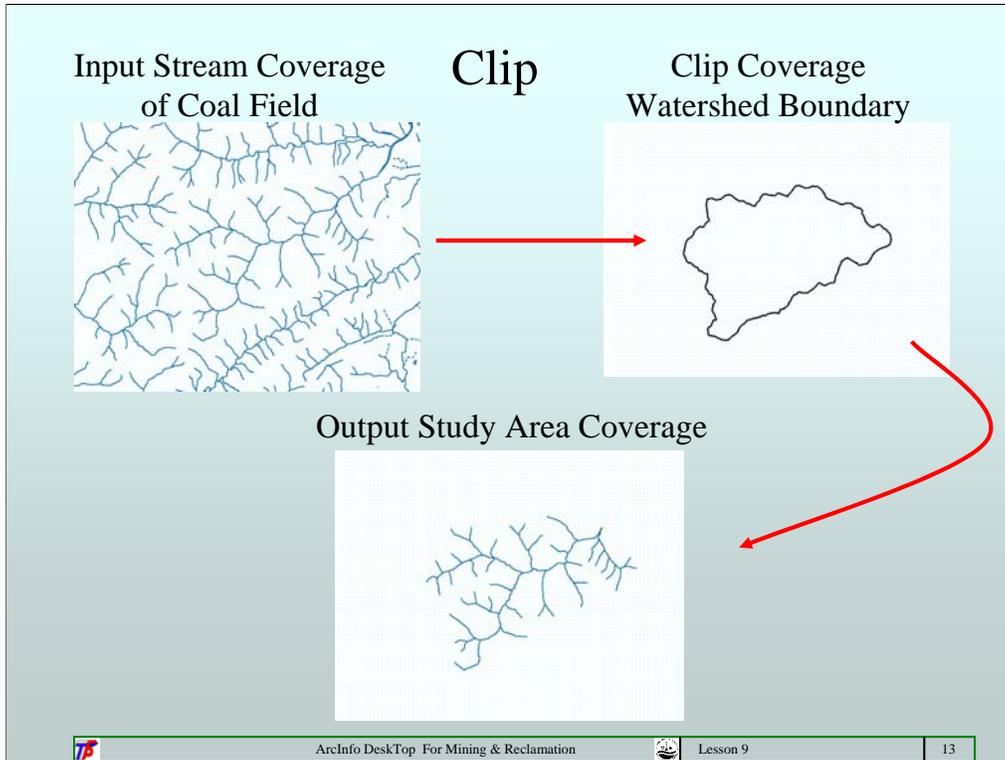


Use caution in selecting the Weed tolerance and check the results in the output coverage. Two methods of generalization are available in the tool. The Remove Points option removes extraneous vertices in arcs. The Remove Curve option uses shape recognition techniques to remove “insignificant” curves. The output coverage has to be built to restore topology.



Desktop ArcInfo can perform boundary operations on geo-spatial data sets. Here, three methods are illustrated. These include Clip, Erase, and Split. During these types of operations, the input coverage feature classes can be points, arcs, or polygons. However, all of these operations are performed by use of a boundary coverage which acts as a “cookie-cutter.” The output coverage data set has the same type of feature classes as the input coverage, and all items in the input coverage attribute table are found in the attribute table of the output coverage. Topology is built for the output coverage.

Note: These operations are grouped under the name “Extract” in ArcToolbox which also includes the Extract Wizard. The Extract wizard uses a query of the attribute values to extract feature classes from a coverage for an output data set.

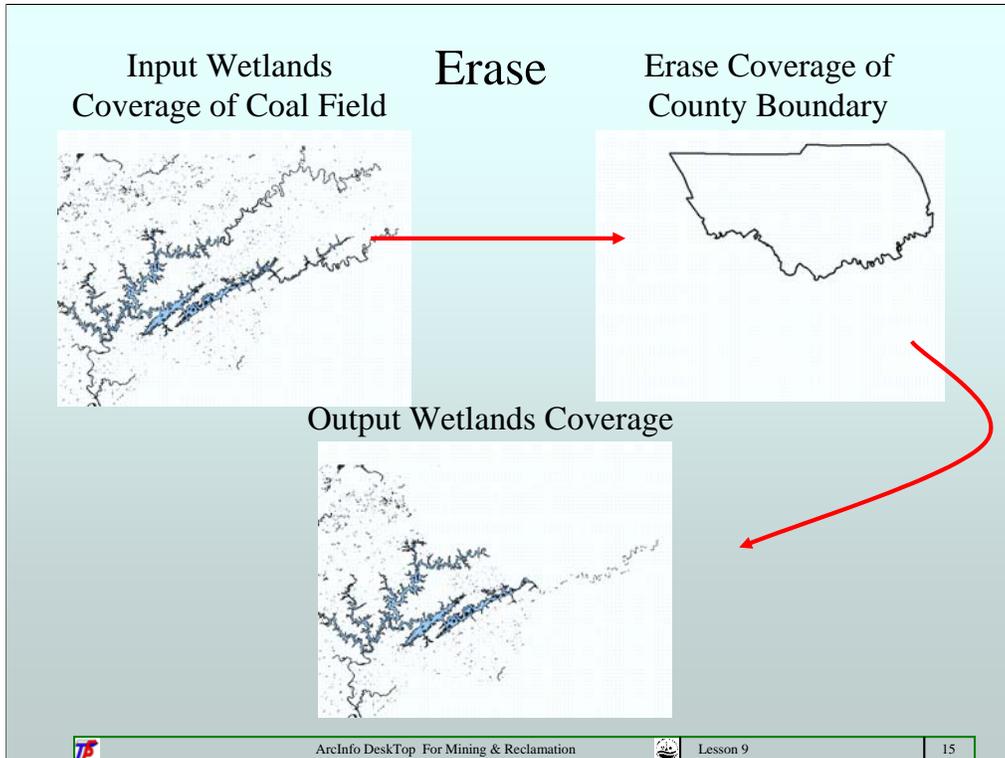


The boundary coverage used to perform the Clip operation on the input coverage is known as the “clip coverage” and must be a polygon coverage. Only the feature classes of the input coverage contained within the clipping area of the clip coverage will be contained in the output coverage.

Using the Clip Tool in ArcToolbox



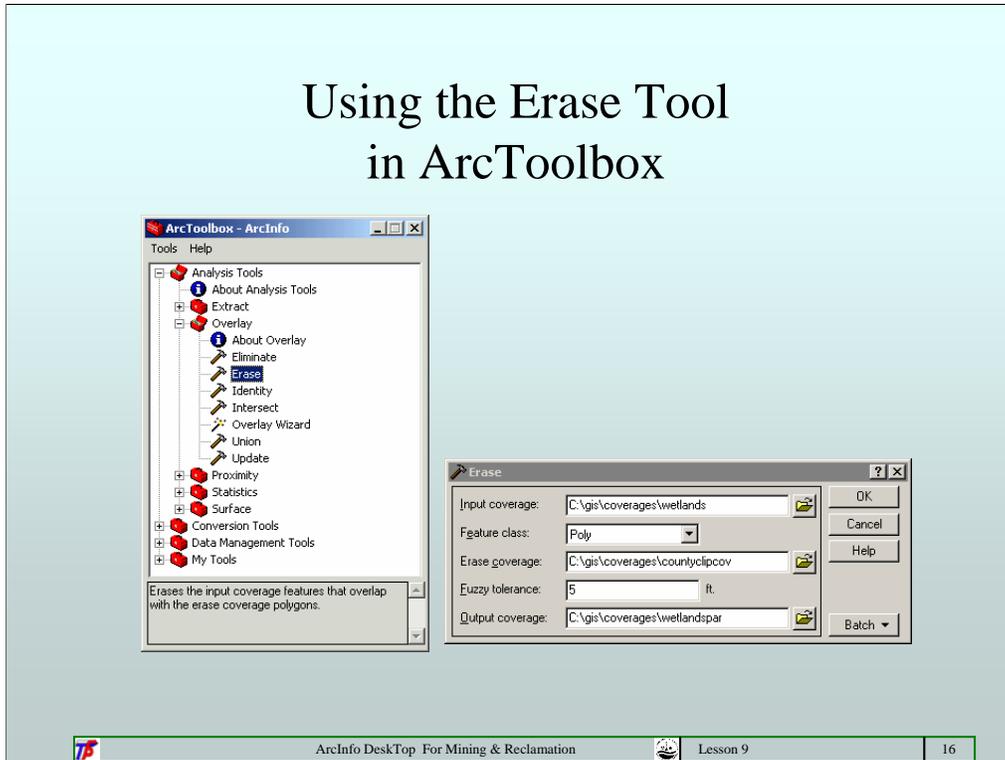
Use caution in selecting the Fuzzy tolerance and check the results in the output coverage. Topology is built for the output coverage.



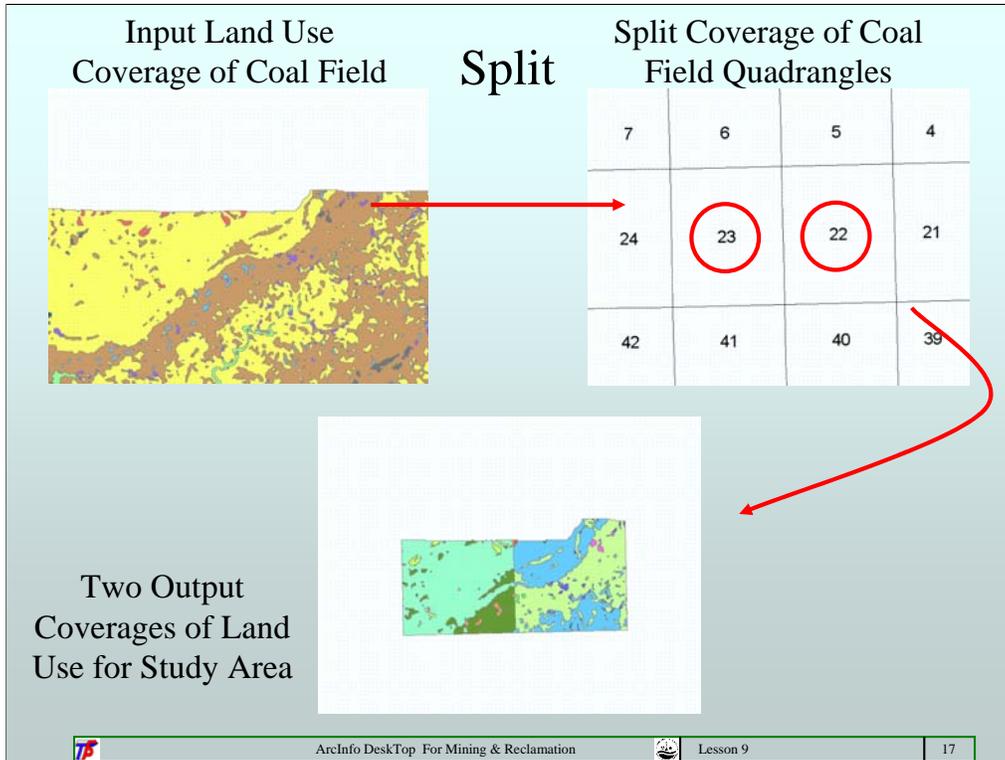
During an Erase operation, the polygons of the erase coverage define the erasing area. All input feature classes are removed from the erasing area in the output coverage. The output coverage only contains the feature classes that were NOT in the erasing area. An Erase operation is the converse of a Clip operation.

In this example, a wetlands coverage for a county in the coal field has been revised by the U. S. Fish and Wildlife Service. The state coal mining regulatory agency must now update its coal field coverage of wetlands to have the latest information. The Erase operation is performed on the wetlands coverage of the entire coal field using the county boundary to remove the outdated features. The revised wetlands coverage for the county will be added back to the wetlands coverage of the entire coal field.

Using the Erase Tool in ArcToolbox

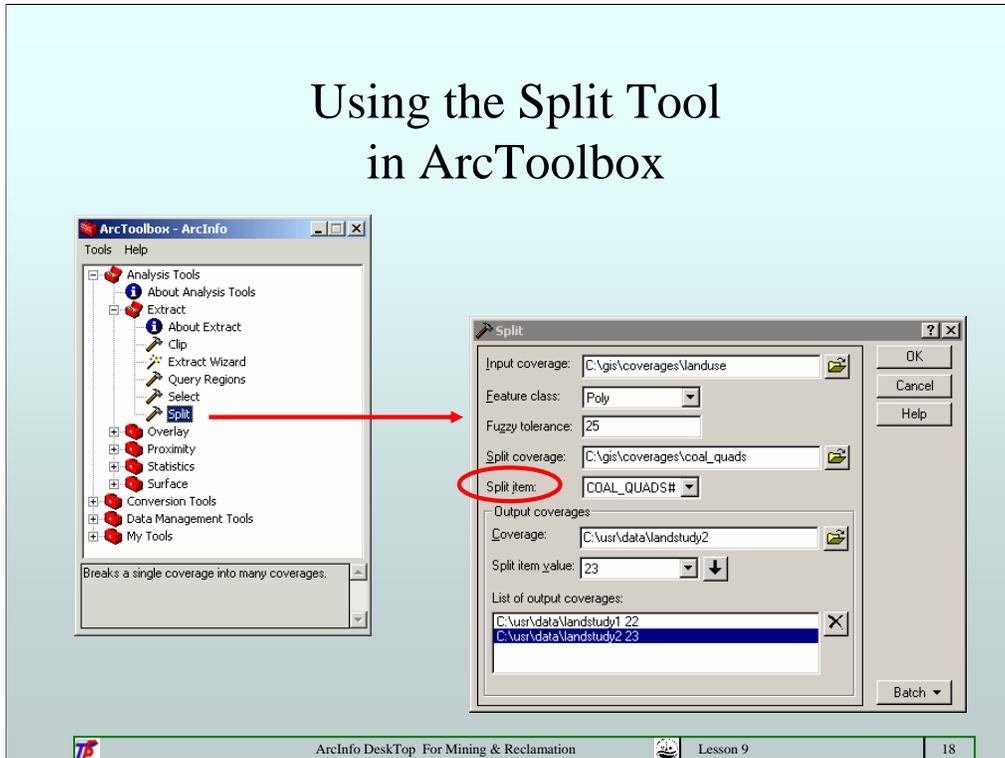


Topology is automatically built for the output coverage.



The Split operation is like a multiple clip operation.

Using the Split Tool in ArcToolbox



Split uses unique identifying numeric values from the split item of the split coverage to produce separate output coverages. In ArcInfo Desktop 8.1, the split item **MUST** have a numeric value (but the split item does not have to be a numeric data type) in the polygon attribute table of the split coverage. The output coverages are topologically correct.

Joining Attribute and Spatial Data

INFO Table of Permit Information

OID	COMP_NO	SITE_NO	MOD_NO	IU_NO	MHSA	NPDES	STATUS	DIST_AC	MINE_NAME
> 1575	0003	0555	00	1183040			E	0	
2016	0003	0555	02	1183040	4001037	TN0052388	A	68	
505	0537	0507	00	2181257	4000665	TN0051675	E	27	9
1577	0537	0507	01	2181257	4000665	TN0051675	A	34.9	
473	0615	0475	00	2182210	4000766	TN0050911	E	166	38-42
1578	0615	0475	01	2182210	4000766	TN0050911	IN	166	
157	0649	0158	00	2182306		TN0044237	AB	20	1
352	0419	0353	00	2183035	4002052	TN0048631	IN	1	AREA 11
539	0171	0544	00	2183051	4002648	TN0052221	E	5	DEEP MINE NO. 3
1699	0444	0544	00	2183051			E	5	
540	0430	0545	00	2183052	4001662	TN0052230	AB1	15	14
548	0700	0553	00	2183064	4001104	TN0052361	AB1	51	42-44
427	0647	0429	00	2183070			E	6	1

Permit Boundary Region Coverage Attribute Table

FID	Shape	AREA	PERIMETER	PERMIT#	PERMIT-ID	FEATURE	PERMIT
> 715	Polygon	335704	18977.25	715	1	permitbnd	1183040
716	Polygon	257954	24301.66	716	1	permitbnd	2181257
766	Polygon	694184	68397.32	766	2	permitbnd	2182210
767	Polygon	255296	9027.045	767	1	permitbnd	2182306
768	Polygon	215153	13328.97	768	1	permitbnd	2183035
717	Polygon	324098	12698.93	717	1	permitbnd	2183051
718	Polygon	339645	25474.37	718	1	permitbnd	2183052
719	Polygon	189327	32992.14	719	1	permitbnd	2183064
720	Polygon	239169	2459.213	720	1	permitbnd	2183070

Link by Key Fields



It may be simpler to edit, manage, and maintain large amounts of attribute data in a separate database than to store it in the attribute table of the data set. The related attribute data may change faster than the spatial data. In addition, it can be viewed, queried, and maintained by non GIS personnel using other software applications if it is contained outside a spatial data set. Also, it takes longer to perform spatial operations on data sets with large amounts of attribute data attached in the attribute tables.

To establish a relationship between the two tables, a key is used. This key contains values which the two tables share.

Two Methods Can Be Used To Link Attribute and Spatial Data:

Relationship Classes (linked data appears in a separate table)

Data Joins (all data appears in one table)



Note: In ArcGIS 8.1, these two methods are used to specify the viewing option rather than the storage method of the linked data.



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Coverages can be linked to tables through Relationship Classes (only in ArcInfo or ArcEditor, not ArcView) using ArcCatalog, or Data Joins using ArcMap. The linked data can be used to graphically query the features in the map view.

Relationship classes contain the relationship criteria by which two tables are linked together. The data within the tables are not physically merged together in a single table but are maintained separately. The related data is viewed in ArcMap as a separate table.

Data joins allow a copy of the linked data to appear as if it were physically joined to the attribute data of the spatial data set. The joined data is viewed in ArcMap as part of the feature attribute table. In ArcGIS 8.1, unlike an ArcInfo Workstation join, the joined data is not physically stored with the feature attribute table. If a permanent joining of data is desired, the data set must be exported entirely to a new data set.

Currently, ESRI recommends to join two tables when the data in the tables has a one-to-one or a many-to-one relationship (going from the spatial data to the attribute data) and to relate two tables when the data in the tables has a one-to-many or many-to-many relationship.

Some Relationship Class Properties

Name of the Relationship Class

Type of Relationship – Simple or Composite

Cardinality (1-1, 1-M, M-1, M-N)

Origin & Destination Feature Classes and Tables

Primary and Foreign Keys

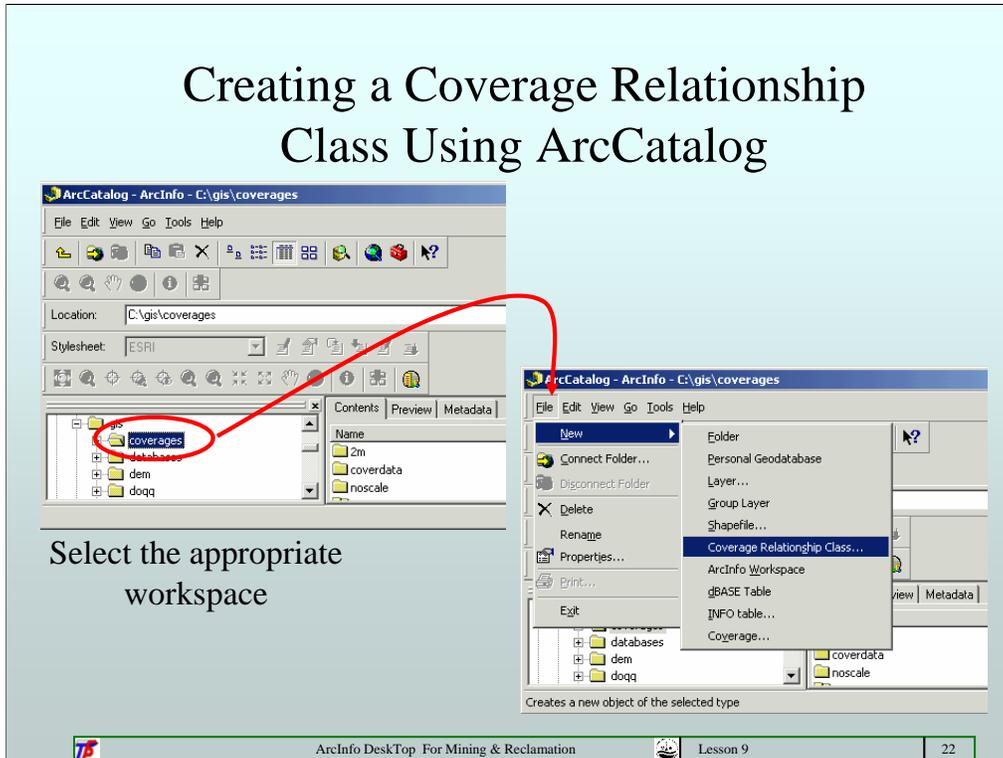


To establish a meaningful Relationship Class between data sets, careful consideration of the manner in which the data is to be used and a good understanding of the nature of the data are essential.

Two types of relationship classes exist: simple and composite. In simple relationships, each data set exists independently of the actions performed on the other data set. In composite relationships, a change in one data set affects the related data, too. Simple relationships can have all four types of cardinality. Composite relationships always have 1 – M cardinality.

As an example, a relationship class could be established between a point coverage of stream sampling locations and a separate table of the water quality analyses observed over many years at each sample site. If the type of relationship was simple, deleting a sampling location in the point coverage would not affect the associated water quality records, allowing them to be preserved for historical purposes. But if the type of relationship was composite, deleting the sampling location also deletes the associated water quality records in the related table.

Creating a Coverage Relationship Class Using ArcCatalog

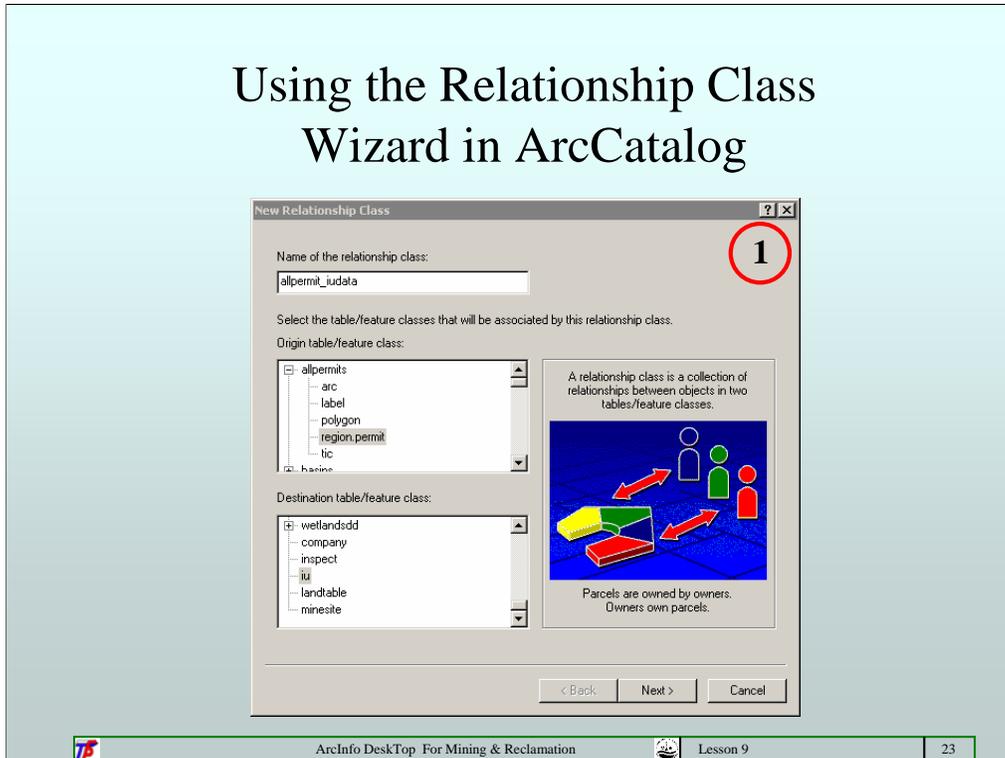


Select the appropriate workspace

In the ArcCatalog tree, click on the workspace which contains both the coverage and the tabular data. In ArcInfo Desktop 8.1, the coverage MUST be located within this workspace, and the database to be related to the coverage MUST be an INFO table contained within this same workspace. The relationship class will be created as a record in an INFO file located within this workspace at the completion of this process. Click on File, New, and Coverage Relationship Class to start the wizard.

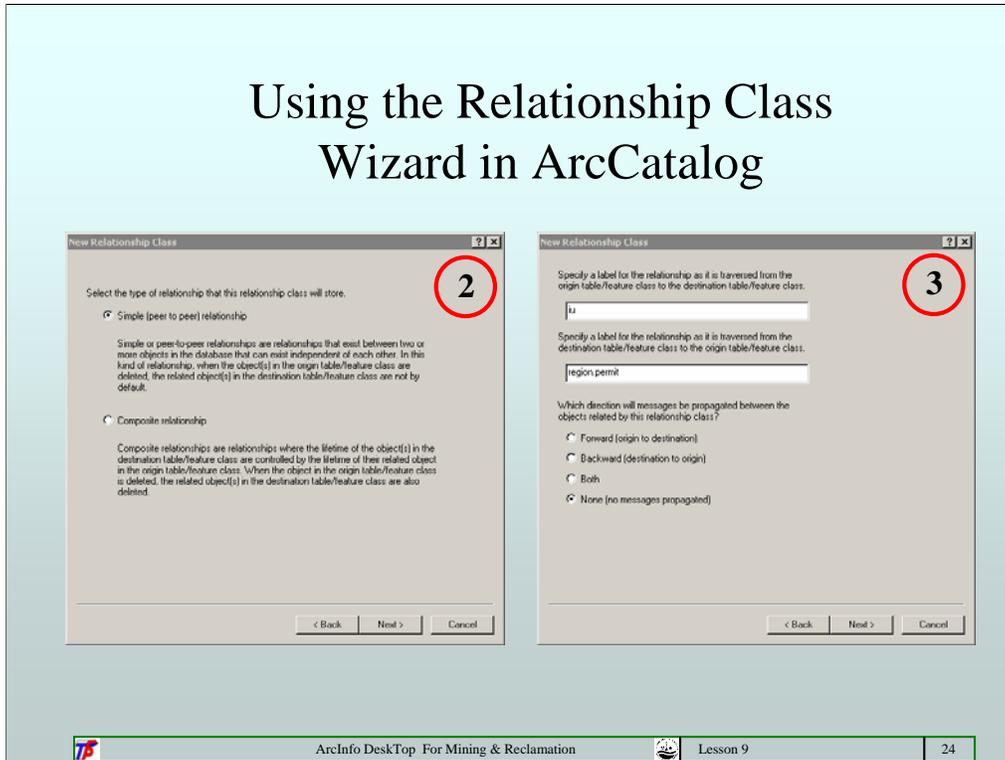
Note: In ArcInfo Desktop 8.1, the Coverage Relationship Class wizard will not recognize a dBase table.

Using the Relationship Class Wizard in ArcCatalog



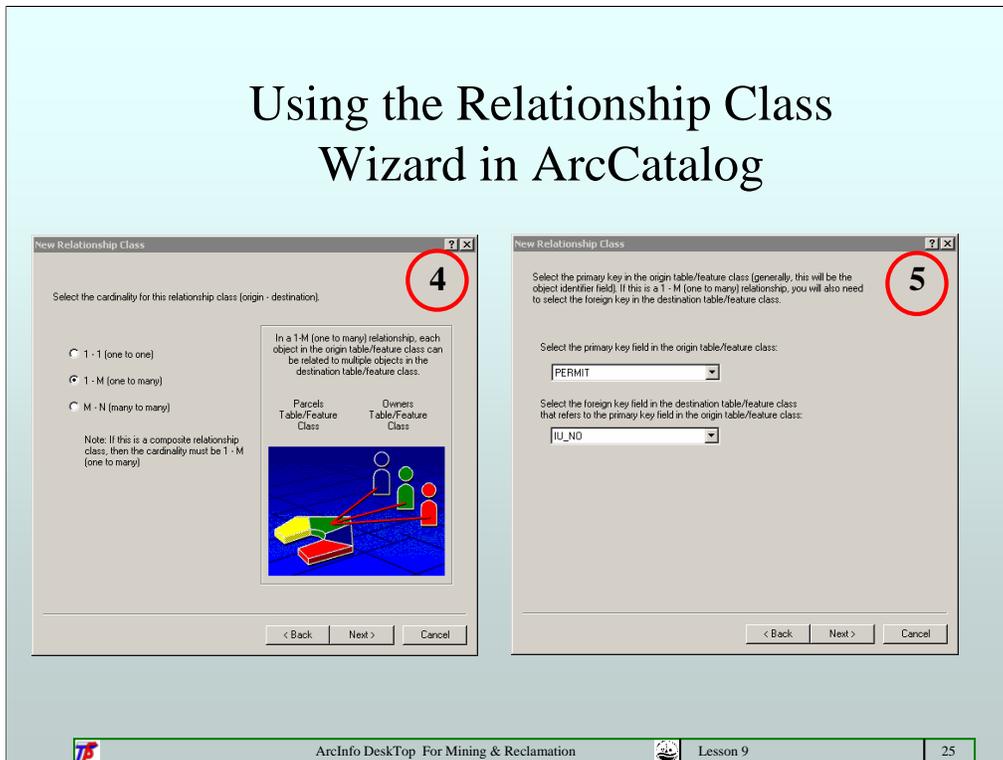
In this example, the relationship class allpermit_iudata is being created to identify the relationships between the origin feature class (the permit region subclass of the allpermits coverage) and the destination table called IU (an INFO file containing relevant tabular data about the Inspectable Units). In most instances, the feature class attribute table will be the origin and the related descriptive data will be the destination table.

Using the Relationship Class Wizard in ArcCatalog



For simple relationships, the message direction must be none.

Using the Relationship Class Wizard in ArcCatalog



Because there is only one record within the origin feature class which will match more than one record in the destination table, the cardinality for the relationship class is a one-to-many relationship. If there are many features in the coverage which match a single record in the external table, the cardinality is a many-to-one relationship. In practice, this is handled the same as a one-to-one relationship.

Select the primary and foreign keys to be used to establish the relationship between the origin feature class and the destination table. The two keys must be defined in the same way (share the same data type) and contain common values.

Using the Relationship Class Wizard in ArcCatalog

This is a summary of the relationship class:

- Name: alpermt_udata
- Origin object class: region.permit
- Destination object class: u
- Type: Simple
- Forward Path Label: u
- Backward Path Label: region.permit
- Message propagator: None
- Cardinality: One to Many
- Has attributes: No
- Origin Primary Key: PERMIT
- Origin Foreign Key: IU_NO

< Back Finish Cancel

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Review the summary. Click back to go back and make changes, if necessary.

Viewing Coverage Relationship Class Properties

The screenshot displays the ArcInfo Desktop interface. On the left, the 'Contents' window shows a list of data layers, with 'allpermit_iudata' highlighted and circled in red. Below this, a terminal window shows the following INFO command output:

```
ENTER COMMAND >SEL GDB_RELCLASSES
1 RECORD(S) SELECTED

ENTER COMMAND >LIST
1
ID = 0
NAME = allpermit_iudata
ORIGINCLASSID = allpermits:region_permit
DESTCLASSID = iu
FORWARDLABEL = iu
BACKWARDLABEL = region_permit
CARDINALITY = 2
NOTIFICATION = 1
ISCOMPOSITE = 0
ISATTRIBUTED = 0
ORIGINPRIMARYKEY = PERMIT
DESTPRIMARYKEY = IU_NO
ORIGINFOREIGNKEY = IU_NO
DESTFOREIGNKEY = REGION.PERMIT_ROWID
DATASETID =
ENTER COMMAND >
```

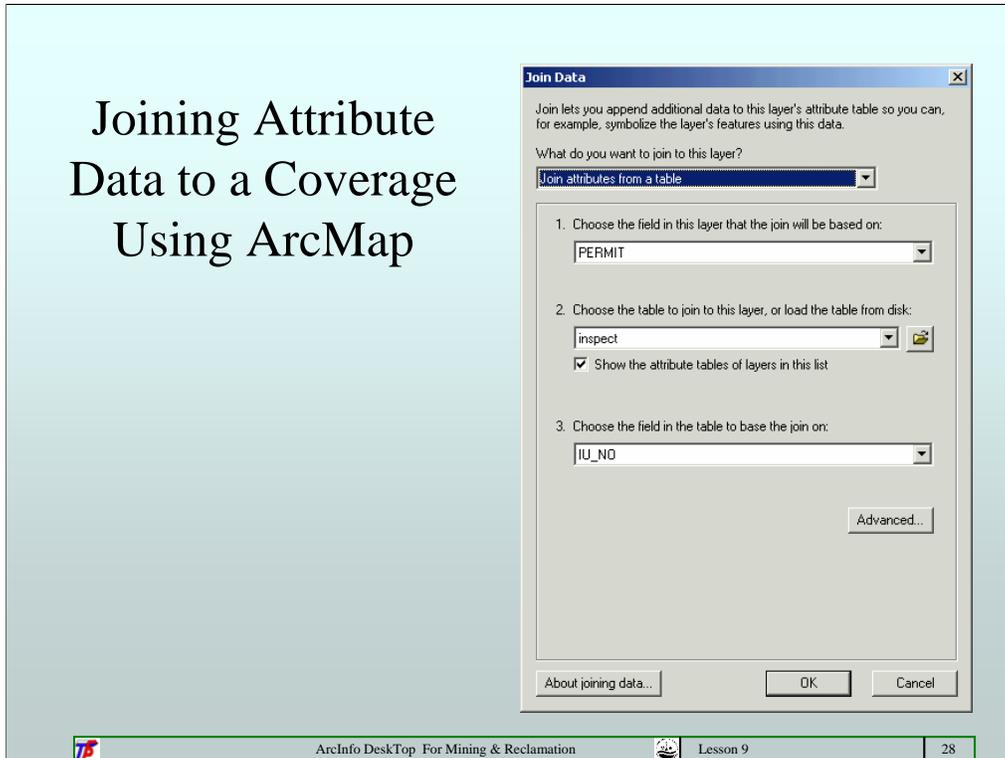
On the right, the 'Relationship Class Properties' dialog box is open, showing the following details:

- Name: allpermit_iudata
- Type: Simple
- Cardinality: 1 - M
- Notification: None (no messages propagated)
- Origin Table/Feature Class: region_permit
- Destination Table/Feature Class: iu
- Labels: Forward: iu, Backward: region_permit

The status bar at the bottom indicates 'Lesson 9' and page number '27'.

The relationship class has been created and can be seen listed in the Catalog Tree of ArcCatalog and under the Contents tab. In ArcInfo 8.1, the relationship class is stored as a record in the INFO file GDB_RELCLASSES (Geodatabase Relationship Classes) created within the INFO directory of the workspace in which both the coverage data set and the INFO table are located. Information contained within the relationship class can be viewed in INFO. To determine what relationship classes have been established for a feature class or INFO table, open its Properties dialog box in ArcCatalog and click on the Relationships tab.

Joining Attribute Data to a Coverage Using ArcMap



In ArcInfo Desktop 8.1, attribute data from an external table can be physically joined to the spatial data in a coverage. In the ArcMap Table of Contents, right click on the coverage feature class to be used as the source spatial data and click Joins and Relates > Join. Determine whether to join by attributes or spatially. Select the field in the coverage which will serve as the primary key. Then select the INFO or dBASE table from which the attribute data will be taken and the foreign key of the data table which contains the values to be matched. Click OK. The feature attribute table of the coverage can be viewed in ArcMap with data from both sources.

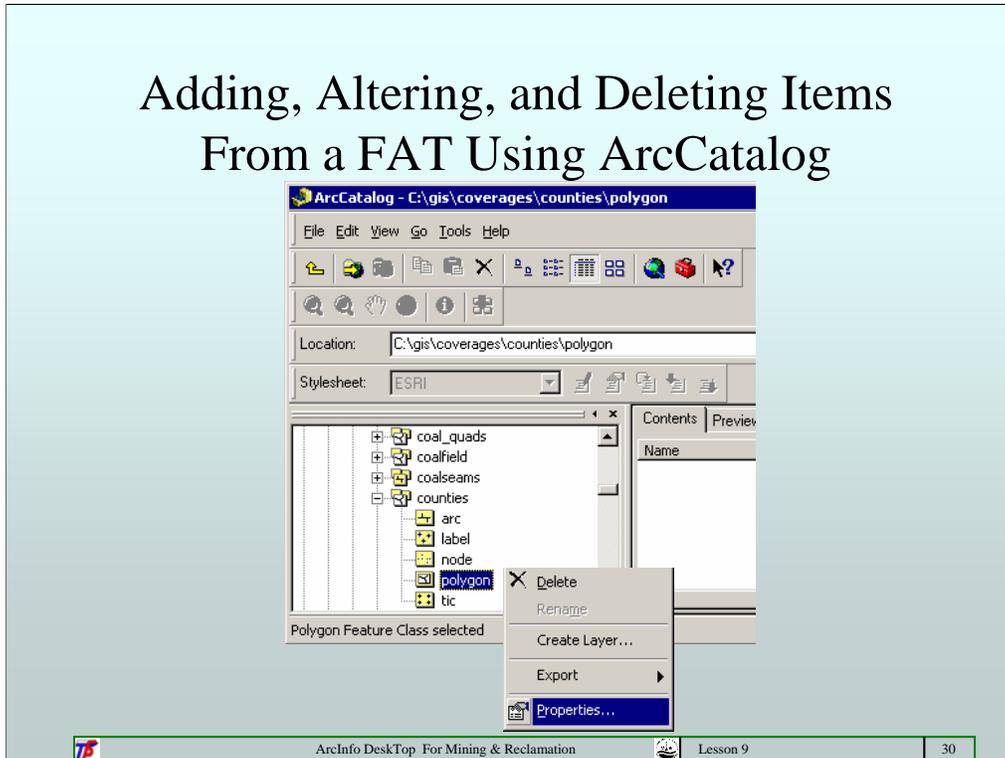
Editing Tabular Data in a Feature Attribute Table (FAT)

Adding, Altering, and Deleting Items From
a FAT Using ArcCatalog

Adding Records, Values, and Calculations
to a FAT Using ArcMap



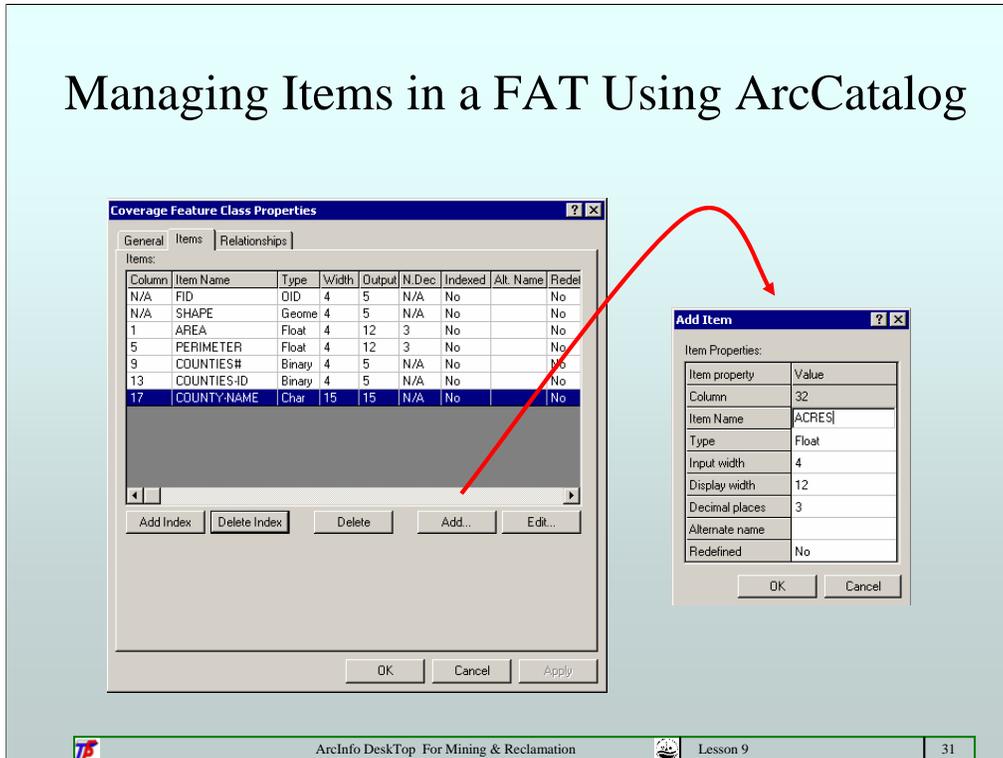
Adding, Altering, and Deleting Items From a FAT Using ArcCatalog



Changes affecting items of a feature attribute table are made by right-clicking on the table in ArcCatalog, selecting Properties, and the Items tab of the Coverage Feature Class Properties dialog box.

Note: ArcCatalog supports adding, altering, and deleting items of both dBASE and INFO tables.

Managing Items in a FAT Using ArcCatalog



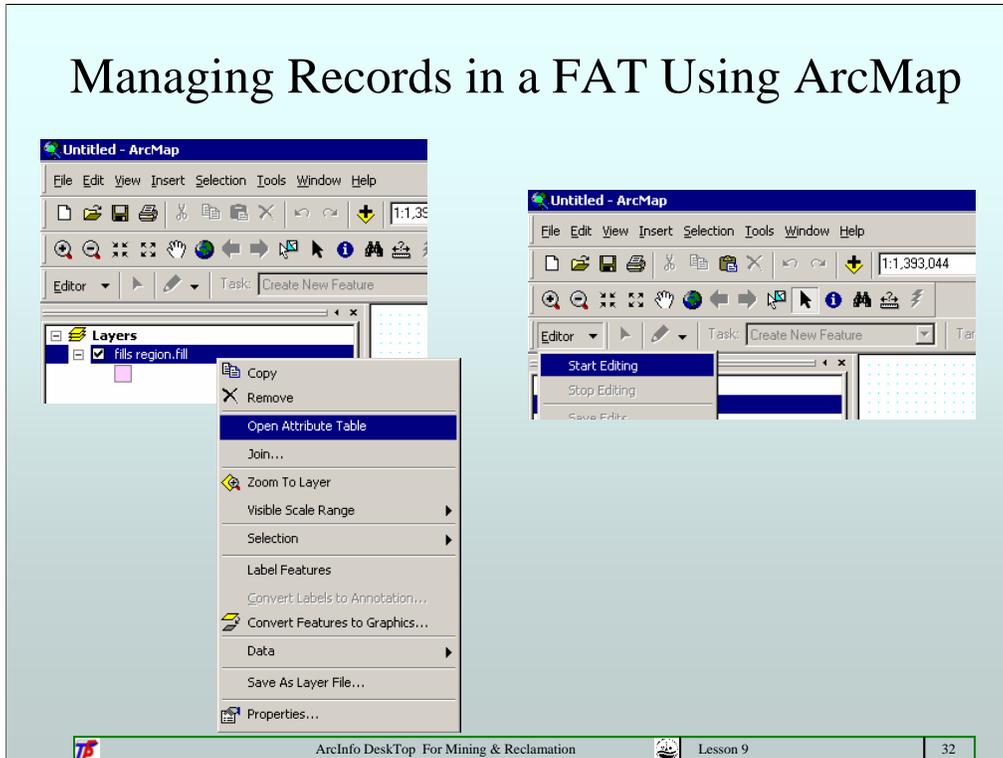
ArcCatalog can be used to add, alter, and delete items from a feature attribute table.

To add an item to a table, click on the Items tab and select an item in the list. Click on Add to add a new item after the one selected. On the Add Item dialog box, enter the Name of the item to be created and its define its properties with appropriate values. Clicking in some of the value boxes will reveal a choice for selection using dropdown arrows. Click OK and Apply and the item will be added to the table.

To delete an item, select the item in the table and click Delete, Apply, and OK to save the changes.

To alter the definition of an item, including its name, select it in the list and click Edit. The Edit Item dialog box will appear to allow changes to be made to the item. Make the appropriate changes, click OK, Apply, and OK.

Managing Records in a FAT Using ArcMap



ArcMap can be used to change values and make calculations of records of user-defined items in a coverage feature attribute table.

To edit a feature attribute table click on the Editor Toolbar button, click the Editor button, and click Start Editing. Right click on the feature attribute table in the ArcMap Table of Contents and select Open Attribute Table.

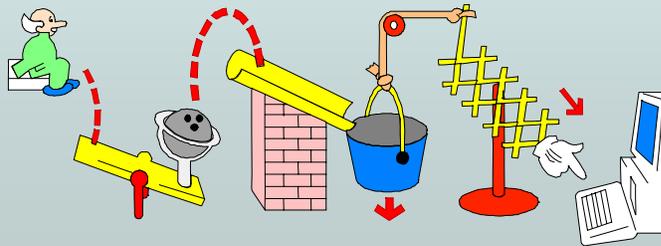
Changes may not be made to items maintained by ArcInfo (such as area, perimeter, and <cover>#). To delete a record in the table, either graphically select the feature or select it from the table view and hit the delete key. To add records to a FAT, add the feature graphically in the map view. Then add values to the new record in the feature attribute table.

Note: In ArcInfo Desktop 8.1, ArcMap supports editing of dBASE and INFO files.

Changing Record Values of a FAT

FID	Shape*	AREA	PERIMETER	FILL#	FILL-ID	FEATURE	PERMIT	NAME	FILL_ACRE
1	Polygon	144210.1875	1421.795654	1	1	fill	3007	Waste Disp. Area	3
2	Polygon	33441.25	687.724487	2	2	fill	81-043	hollow fill no. 2	1
3	Polygon	811701.3125	3925.356445	3	3	fill	3045	Hollowfill	19
4	Polygon	3522017.75	11871.374023	4	4	fill	2449	Spruce Lick Slurry Impoundment	81
5	Polygon	95999.21875	1281.193115	5	5	fill	82-190	2	2
6	Polygon	96527.851563	1180.536011	6	6	fill	82-190	1	2
7	Polygon	602214.75	4069.876465	7	7	fill	82-158	hollow fill	14
8	Polygon	659956.8125	4038.244385	8	8	fill	2462	Refuse Area 1	15
9	Polygon	3001226.75	8234.857422	9	9	fill	2992	Refuse Fill 02	69
10	Polygon	246944.17187	1987.441284	10	10	fill	2697	hollow fill	6

Record: 4 Show: All Selected Records (1 out of 103 Selected.) Options



To change a cell value, click the appropriate cell. Type the value and press enter. Click Save Edits on the Editor button to save your changes.

Selecting Records in a FAT by Query

The screenshot displays the 'Select by Attributes' dialog box in ArcInfo Desktop. The dialog box is titled 'Select by Attributes' and contains a text area for entering a WHERE clause. The current clause is 'SELECT * FROM fills.region.fill WHERE: "FILL_ACRES" > 51'. Below the text area are buttons for 'Clear' and 'Verify'. To the right of the dialog box is a table titled 'Attributes of fills region.fill'. The table has the following columns: FID, Shape, AREA, PERIMETER, FILL#, FILL-ID, FEATURE, PERMIT, NAME, FILL_ACRE. The table contains 10 records. Record 4 is selected, indicated by a blue highlight. The status bar at the bottom of the table shows 'Record: 4' and 'Records: (6 out of 103 Selected)'. The ArcInfo Desktop title bar at the bottom reads 'ArcInfo DeskTop For Mining & Reclamation Lesson 9 34'.

FID	Shape	AREA	PERIMETER	FILL#	FILL-ID	FEATURE	PERMIT	NAME	FILL_ACRE
1	Polygon	144210.1875	1421.795654	1	1	fill	3007	Waste Disp. Area	3
2	Polygon	33441.25	687.724487	2	2	fill	81-043	hollow fill no. 2	1
3	Polygon	811701.3125	3925.356445	3	3	fill	3045	Hollowfill	19
4	Polygon	3522017.75	11871.374023	4	4	fill	2449	Spruce Lick Slurry Impoundment	81
5	Polygon	95999.21875	1281.193115	5	5	fill	82-190	2	2
6	Polygon	96527.851563	1180.536011	6	6	fill	82-190	1	2
7	Polygon	602214.75	4069.876465	7	7	fill	82-158	hollow fill	14
8	Polygon	659956.8125	4038.244385	8	8	fill	2462	Refuse Area 1	15
9	Polygon	3001226.75	8234.857422	9	9	fill	2992	Refuse Fill 02	69
10	Polygon	246944.17187	1987.441284	10	10	fill	2697	hollow fill	6

To select a single record, click on the selection bar to the left of the FID. To select multiple records, hold down the control key and either click the individual selection bars or drag the cursor across a range of selection bars.

A query can also be used to select many records for calculations. To use a query, click on Options at the bottom of the table, and choose Select by Attribute. In the Select by Attribute dialog box, build the query and click OK.

Selecting Records by Query and Calculating Values in a FAT

The screenshots show the 'Attributes of fills.region.fill' table. The top screenshot shows all 12 records. The bottom screenshot shows 6 records selected, indicated by yellow highlighting and the 'Selected' button in the 'Show' dropdown.

FID	Shape	AREA	PERIMETER	FILL#	FILL-ID	FEATURE	PERMIT	NAME	FILL_ACRES	FSHEDACRES	DISTURB_PCN
1	Polygon	144210	1421.796	1	1 fill	3007		Waste Disp. Area	3	31	0
2	Polygon	33441	687.7245	2	2 fill	81-043		hollow fill no. 2	1	9	0
3	Polygon	811701	3925.356	3	3 fill	3045		Hollowfill	19	51	0
4	Polygon	352201	11871.37	4	4 fill	2449		Spruce Lick Slurry Impoundment	81	244	0
5	Polygon	95999	1281.193	5	5 fill	82-190	2		2	21	0
6	Polygon	96527	1180.536	6	6 fill	82-190	1		2	11	0
7	Polygon	602214	4063.876	7	7 fill	82-158		hollow fill	14	74	0
8	Polygon	659956	4038.244	8	8 fill	2462		Refuse Area 1	15	56	0
9	Polygon	300122	8234.857	9	9 fill	2992		Refuse Fill 02	69	186	0
10	Polygon	246944	1987.441	10	10 fill	2697		hollow fill	6	14	0
11	Polygon	118437	4836.354	11	11 fill	81-029		Area 3 Hollow Fill	27	87	0
12	Polygon	84345	1173.429	12	12 fill	2865		Hollow Fill	2	31	0

To make simple calculations of an item, click on the field heading of the item. Click the selection bar of the record for which you want to make calculations. After records are selected, again right click on the field heading of the item and select Calculate Values. If Calculate Values is grayed out, go to the Editor button and select Start Editing. Use the Field Calculator to build a calculation statement by clicking on the appropriate choices of operands.

A query can be used to calculate values of only selected records. First, click the field heading of the item to be calculated. Click Options, Select By Attribute, build the query, and click OK. Right click again on the field heading of the item to be calculated and select Calculate Values.

Selecting Records by Query and Calculating Values in a FAT

The Field Calculator dialog box shows the following formula: $[FILL_ACRES] / [FSHEDACRES] * 100$

FID	Shape	AREA	PERIMETER	FILL#	FILL-ID	FEATURE	PERMIT	NAME	FILL_ACRES	FSHEDACRES	DISTURB_PCEN
1	Polygon	144210	1421.796	1	1	fill	3007	Waste Disp. Area	3	31	0
2	Polygon	33441	687.7245	2	2	fill	81-043	hollow fill no. 2	1	9	0
3	Polygon	811701	3925.356	3	3	fill	3045	Hollowfill	19	51	0
4	Polygon	352201	11871.37	4	4	fill	2449	Spruce Lick Slurry Impoundment	81	244	33.19672
5	Polygon	95989	1281.193	5	5	fill	82-190	1	2	21	0
6	Polygon	96527	1180.536	6	6	fill	82-190	1	2	11	0
7	Polygon	602214	4069.876	7	7	fill	82-158	hollow fill	14	74	0
8	Polygon	659956	4038.244	8	8	fill	2462	Refuse Area 1	15	56	0
9	Polygon	300122	8234.857	9	9	fill	2592	Refuse Fill 02	69	186	37.09678
10	Polygon	246944	1987.441	10	10	fill	2637	hollow fill	6	14	0
11	Polygon	118437	4836.354	11	11	fill	81-029	Area 9 Hollow Fill	27	87	0
12	Polygon	84345	1173.429	12	12	fill	2865	Hollow Fill	2	31	0

To make simple calculations of an item, click on the field heading of the item. Click the selection bar of the record for which you want to make calculations. After records are selected, again right click on the field heading of the item and select Calculate Values. If Calculate Values is grayed out, go to the Editor button and select Start Editing. Use the Field Calculator to build a calculation statement by clicking on the appropriate choices of operands and click OK. Save your edits.

A query can be used to calculate values of only selected records. First, click the field heading of the item to be calculated. Click Options, Select By Attribute, build the query, and click OK. Right click again on the field heading of the item to be calculated and select Calculate Values. Build the calculation statement using the appropriate choices of operands, and click OK. Save.

Exercise 9

Data Management



ArcInfo DeskTop For Mining & Reclamation



Lesson 9

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Break Time

