

USING DOMAINS AND RELATIONSHIPS

FOR FIELD DATA COLLECTION

DEPARTMENT OF THE INTERIOR
U.S. Fish and Wildlife Service



**NATIONAL
CONSERVATION
TRAINING
CENTER**



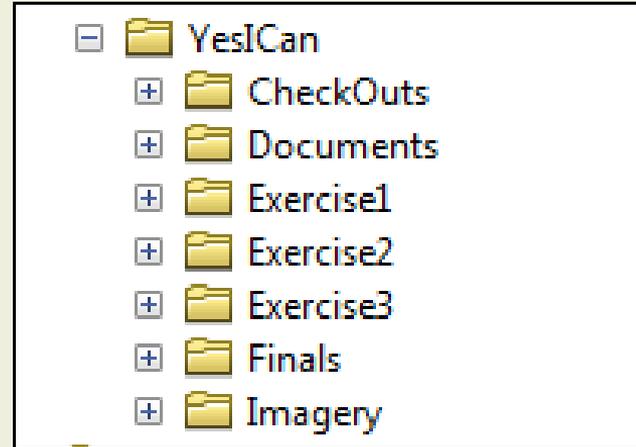
U.S. Fish & Wildlife Service
National Conservation Training Center
Shepherdstown, West Virginia

Goal

- Learn how to create and use domains and relationships to improve field data collection in ArcPad
- Subtypes will be demonstrated if we have time - but have digital exercise.

Materials

- Three Exercises
- Data → D:\YesICan



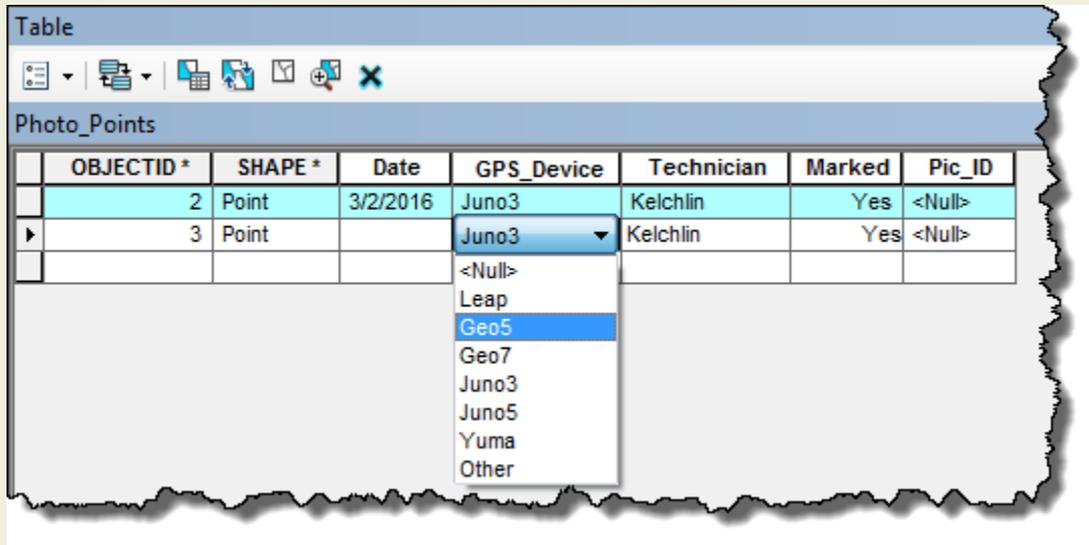
Domains

- Range (Min, Max #) and Coded Domains
- They live in the Geodatabase - The "CAN"
- Are assigned to Fields - Feature Class or Table



Domains

- Coded Domain = Drop-down Pick Lists



The screenshot shows a software interface for a table named "Photo_Points". The table has the following columns: OBJECTID*, SHAPE*, Date, GPS_Device, Technician, Marked, and Pic_ID. The data is as follows:

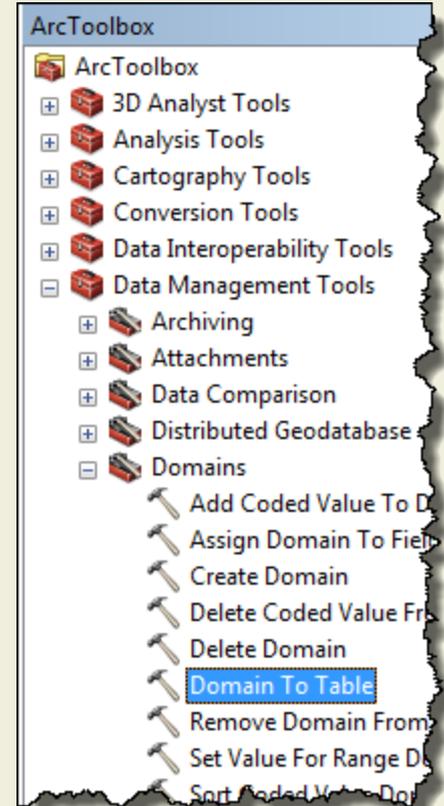
OBJECTID*	SHAPE*	Date	GPS_Device	Technician	Marked	Pic_ID
2	Point	3/2/2016	Juno3	Kelchlin	Yes	<Null>
3	Point		Juno3	Kelchlin	Yes	<Null>
			<Null>			
			Leap			
			Geo5			
			Geo7			
			Juno3			
			Juno5			
			Yuma			
			Other			

The "GPS_Device" column for the second row (OBJECTID 3) has a dropdown menu open, showing the following options: Juno3 (selected), <Null>, Leap, Geo5, Geo7, Juno3, Juno5, Yuma, and Other.

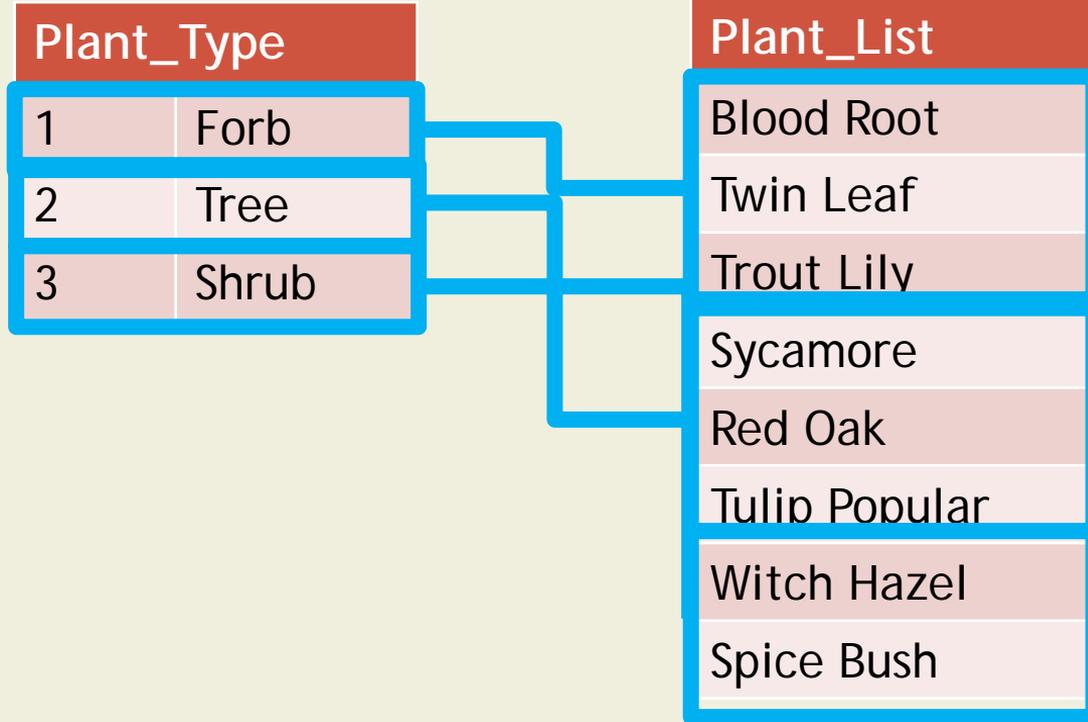
Domains

How to get into the Can?

- Best to put Lists in Excel and use the Table to Domain Tool



SubTypes → Split Domains



SubTypes

Forbs

Weed_Surveys								
	OBJECTID *	SHAPE *	Survey_Date	Observer	Plant_Type	Plant_List	Percent_Cover	Comments
▶	1	Point	<Null>	<Null>	Forbs	<Null>	<Null>	<Null>
						<Null>		
						Blood Root		
						Twin Leaf		
						Trout Lily		

Shrubs

Weed_Surveys								
	OBJECTID *	SHAPE *	Survey_Date	Observer	Plant_Type	Plant_List	Percent_Cover	Comments
▶	1	Point	<Null>	<Null>	Shrubs	<Null>	<Null>	<Null>
						<Null>		
						Witch Hazel		
						Spice Bush		

Trees

Weed_Surveys								
	OBJECTID *	SHAPE *	Survey_Date	Observer	Plant_Type	Plant_List	Percent_Cover	Comments
▶	1	Point	<Null>	<Null>	Trees	<Null>	<Null>	<Null>
						<Null>		
						Sycamore		
						Red Oak		
						Tulip Popular		

Relationships

- Links spatial (Feature Class) to non-spatial objects (Table) in a Geodatabase
- Perfect for collecting data in monitoring projects - 1 to Many situations (1:M)
- Examples - Point Count Surveys, Weed Surveys

Relationships Change Everything!

From This - A Typical Flat Table

- What's wrong with this?

Sample_ID	Species 1	% Cover	Species 2	% Cover	Species 3	% Cover
1	PUTR	10	ARTR	40	BAGR	50
2	ARTR	15	BRTE	80	BAGR	5
3	PUTR	20	ARTR	60	BRTE	20

Relationships Change Everything!

To This - An Awesome Relational Database!

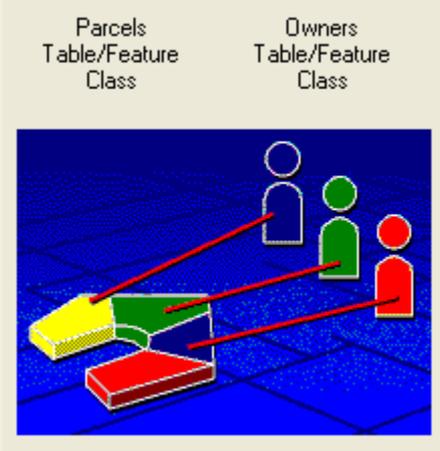


Shape	Sample_ID
Point	1
Point	2
Point	3

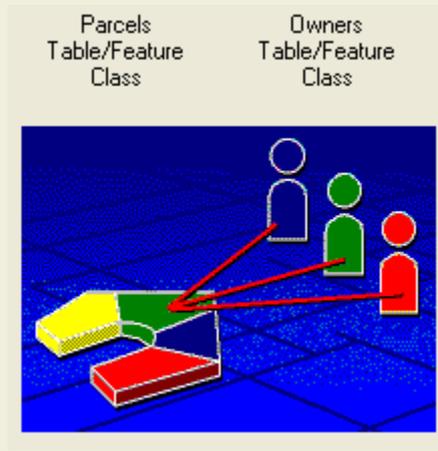
Sample_ID	Species	% Cover
1	PUTR	10
1	ARTR	40
1	BAGR	50
2	ARTR	15
2	BRTE	80
2	BAGR	5

Relationship Types

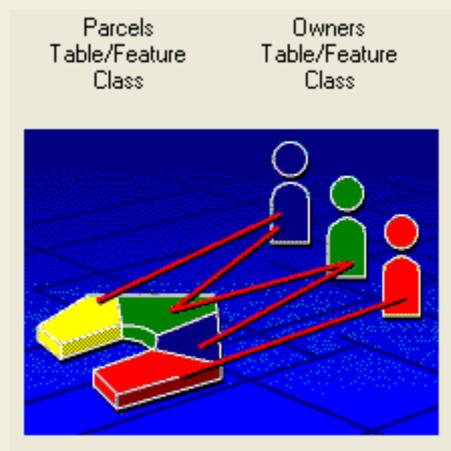
One to One



One to Many



Many to Many



Terminology

Origin

Shape	Sample_ID
Point	1
Point	2
Point	3

Primary Key

Destination

Sample_ID	Species	% Cover
1	PUTR	10
1	ARTR	40
1	BAGR	50
2	ARTR	15
2	BRTE	80
2	BAGR	5

Foreign Key