

**Consuming GONet Names Server
(GNS) Data and OGC Services in
ArcGIS**

Draft
7/24/2012

Table of Contents

Consuming GEOnet Names Server (GNS) Data and OGC Services in ArcGIS	2
GNS Data and GIS Applications	2
Methods of acquiring geonames data	3
Downloading pre-generated country files	3
Generating your own output	4
Open Geospatial Consortium (OGC) Services	9
Web Map Service (WMS)	9
Web Feature Service (WFS)	9
Web Feature Service - Gazetteer Profile (WFS-G)	9
Importing Names data into ArcGIS (tested with 9.x)	10
Loading Names Data into ArcMap - Microsoft Office Access, Unicode UTF-8 Text File	11
Preparing the file using Access	11
Creating a feature class in ArcCatalog	17
Displaying the data in ArcMap	25
Loading Names Data into ArcMap - Microsoft Office Excel, Unicode UTF-8 Text File	28
Preparing the file using Excel	28
Creating a feature class in ArcCatalog	31
Displaying the data in ArcMap	39
Loading Names Data into ArcMap - GNS Generated Shapefile	42
Creating a feature class in ArcCatalog	43
Displaying the data in ArcMap	50
Loading Names Data into ArcMap - GNS WMS service	53
Making the connection and displaying the data in ArcMap	53
Loading Names Data into ArcMap - GNS WFS service	58
Making the connection in ArcCatalog	58
Displaying the data in ArcMap	66

Consuming GEOnet Names Server (GNS) Data and OGC Services in ArcGIS

Note: GeoNames' GNS geographic names data is stored and encoded in Unicode UTF-8. All search and output functions portray and generate the geographic names data using the same Unicode UTF-8 encoding.

Geographic names data is NOT static, so please reach back to GNS for updates.

You can subscribe to GNS' RSS to be notified of updates to the data of interest to you.

GNS data is updated on the first working day of each week (\pm).

All examples are given using WWW access. Please adjust based on your situation.

GNS Data and GIS Applications

GNS data, whether generated through the text based search and output page, downloaded as country files, or mapped as an OGC web service, can be brought into a variety of GIS applications.

If you download GNS country data (<http://earth-info.nga.mil/gns/html/namefiles.htm>), how do you deal with it in your application to maintain its Unicode UTF-8 encoding and be able to see all those diacritics and special characters? The first offered suggestion is to consult your application's help files regarding dealing with Unicode encoded data.

You may also view ESRI's article on how to **Read and write shapefile and dBase file encoded in various code pages** at: <http://support.esri.com/index.cfm?fa=knowledgebase.techarticles.articleShow&d=21106> on how to enable Unicode support in ArcGIS 9.x.

Most commercial and [Open Source GIS](http://www.qgis.org/) applications can deal with the GNS downloadable country files. One of the most commonly used, and widely accepted, open source GIS packages, QuantumGIS (<http://www.qgis.org/> - licensed under the GNU General Public License and runs on Linux, Unix, Mac OSX, Windows and Android and supports numerous vector, raster, and database formats and functionalities), provides native support for Unicode encoded imported files and can open, edit, and save Unicode encoded shapefiles.

Methods of acquiring geonames data

Downloading pre-generated country files

You can download pre-generated country files from <http://earth-info.nga.mil/gns/html/namefiles.htm>. The country files are compressed tab-delimited Unicode UTF-8 encoded, and contain all features and their names over your country of interest. The exception to this is GNS does not contain any coverage data for the United States of America or its Dependent areas nor does it cover Antarctica. To obtain U.S. or Antarctica coverage data, please access the [United States Geological Survey](#) (USGS) [Geographic Names Information System](#) (GNIS) database of names.

Description of the contents of those files is available off the same page by clicking on the URL named **Description of Names Files for Countries and Territories Format** (http://earth-info.nga.mil/gns/html/gis_countryfiles.html). Those files are updated during the same update cycle of the GNS database, around the first working day of the week, which is normally Monday.

Country Files (GNS)

Complete Files of Geographic Names for Geopolitical Areas from GNS (ISO/IEC 10646 [Unicode UTF-8] Compliant as of 18 July 2002)

Database most recent update - June 18, 2012

Database next estimated update - June 25, 2012

We provide complete files of geographic names information covering countries or geopolitical areas. The files are not in customary gazetteer format, but are in a special format amenable to input into geographic information systems, databases, and spreadsheets, giving end users powerful capabilities for data analysis, manipulation, and display. They are offered with both names formats provided within each of the files: Reading Order format (Mount Everest) that works well with mapping applications, and Reverse Generics format (Everest, Mount) that works well with gazetteer listings. Follow the links below to learn more and to begin downloading files.

[Download Names Files for Countries and Territories \(FTP\)](#)
[Description of Names Files for Countries and Territories Format](#)
[Click here to Download a single compressed zip file that contains the entire country files dataset \(Approximately 359MB compressed/1.65GB uncompressed\)](#)
[Subscribe to GeoNames RSS Feeds](#) **RSS**

Note:
 The GEOnet Names Server (GNS) does not contain any data for the United States of America or its Dependent areas. To obtain U.S. data, please access the [United States Geological Survey](#) (USGS) [Geographic Names Information System](#) (GNIS) database of names.

Foreign geographic names data is freely available. A suitable citation note is: "Toponymic information is based on the Geographic Names Database, containing official standard names approved by the United States Board on Geographic Names and maintained by the National Geospatial-Intelligence Agency. More information is available at the Maps and Geodata link at www.nga.mil. The National Geospatial-Intelligence Agency name, initials, and seal are protected by 10 United States Code Section 425."

NGA/[Office of GEOINT Sciences](#) provides a free coordinate conversion tool (GEOTRANS).

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
Country Name				Country Code				Most Recent Modification Date (Number of Modified Records on day of last modification)				Number of Records													
AFGHANISTAN				AF				2012-06-15 (28)				330313													
AKROTIRI				AX				2011-02-17 (3)				444													
ALBANIA				AL				2012-06-11 (2)				31001													

Generating your own output

GNS provides an output capability in any of the following formats:

CSV	Comma Separated Values.
HTML	Hyper Text Markup Language.
KML (KMZ)	Google's Compressed Keyhole Markup Language.
Shapefile	ESRI's shapefile.
Tab Delimited	Tab delimited Unicode UTF-8 encoded text.
XML	Extensible Markup Language.

- Access the GNS site (<http://earth-info.nga.mil/gns/html/index.html>).

NATIONAL GEOSPATIAL-INTELLIGENCE AGENCY

WWW

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- [What's New?](#) [RSS](#)
- [What's Coming?](#)

GNS Survey

GNS Search

- [OGC Viewer Page](#)
- [Text Based Page](#)

GNS Services

- [GNS Offered Services](#)

Research & Reference

- [Download Country Files](#)
- [Foreign Names Bulletins](#)
- [Geopolitical Codes \(Formerly FIPS PUB 10-4\)](#)
- [General Policy](#)
- [Miscellaneous Papers](#)
- [Country Policy](#)
- [Romanization Systems](#)

Undersea Features

- [ACUF Information](#)
- [Additional Resources](#)
- [Undersea Features](#)

Related Geographic and

NGA

► NGA GEOnet Names Server (GNS)

The geographic names in this database are provided for the guidance of and use by the Federal Government and for the information of the general public. **The names, variants and associated data may not reflect the views of the United States Government on the sovereignty over geographic features.**

Database most recent update - June 11, 2012

Database next estimated update - June 18, 2012

[GNS SURVEY](#) - Your feedback is valued (Note: The survey is now anonymous)

Putting a Name to a Place

The Geographic Names Server is the official repository of standard spellings of all foreign place names, sanctioned by the United States Board on Geographic Names. The database also contains variant spellings (cross-references), which are useful for finding purposes. We are starting to hold the native script spellings of these names. All the geographic features in the database contain information about location, administrative division, and quality. The database can be used for a variety of purposes, including establishing official spellings of foreign place names, cartography, GIS, GEOINT, and finding places.

[GNS Search - Open Geospatial Consortium \(OGC\) Viewer Page](#)

Provides access to an OGC compliant Web Map Services (WMS) interface and high level graphical search. This page works best using Internet Explorer 7 or higher, although it will function properly with most modern browsers.

[GNS Search - Text Based Page](#)

Provides access to a text based query interface and mechanisms for initiating queries and generating outputs. This page works best using Internet Explorer 7 or higher, although it will function properly with most modern browsers.

[GNS Offered Services](#)

[-]
Survey

- Select GNS Search - Text Based Page (<http://geonames.nga.mil/ggmagaz/>).
- Switch from Search to Output.

- Select country of interest (if selecting multiple countries, using the Ctrl key, make sure to uncheck Show ADM1 Names).
- Provide an Output File Name, and then validate it.

- If you're interested in all name types, leave the Custom Search category intact. Otherwise, select the name types of interest to you. To make multiple selections, depress the Ctrl key while left mouse button clicking on your choices. The Approved Names button will provide you with only the Conventional and Approved feature names.

☐ Custom Search Criteria

Name Type Search: Reset

Conventional

Approved

Unverified

Provisional

Variant

Approved Names

Unselect All

Match Any of the Selected Name Types
 Exactly Match the Combination of Selected Name Types

Select Name Display:
 Unicode (UTF-8)
 Unicode (UTF-16)
 No Diacritics

Sort Order:
 Feature
 Name
 Coordinate
 Feature Designation

Search Database

- Expand the Feature Designations category if you need to work with certain feature types. If you don't select any, you get all. If you make a selection, only that selection will be returned.

☐ Feature Designations

Populated Places Reset

PPL, populated place

PPLA, seat of a first-order administrative division

PPLA2, seat of a second-order administrative division

PPLA3, seat of a third-order administrative division

PPLA4, seat of a fourth-order administrative division

Select All

Search Database

Administrative Regions Reset

ADM1, first-order administrative division

ADM1H, historical first-order administrative division

ADM2, second-order administrative division

ADM2H, historical second-order administrative division

ADM3, third-order administrative division

Select All

Search Database

- Expand and fill the Spatial Search category if you need to output a certain area of known coordinates.

☰ Spatial Search

MBR Search Radial Search
 Reset

View Coordinates in: Degs Mins Secs Decimal Degs

Northeast Corner

Latitude: N S ° ' "

Longitude: E W ° ' "

NE

SW

MBR Area of Interest

Southwest Corner

Latitude: N S ° ' "

Longitude: E W ° ' "

- Expand the File Format category to select the desired format.

☰ Output File Format

Choose Format: Reset

<input checked="" type="radio"/> Tab Delimited	<input type="radio"/> HTML Preview
<input type="radio"/> CSV	<input type="radio"/> Shapefile
<input type="radio"/> XML	<input type="radio"/> KML

Search Database

- Expand the Output Fields category if you need specific fields from what's offered (**Dimension, Population, and Elevation fields are legacy ones and will return no data even if selected**).

Output Fields

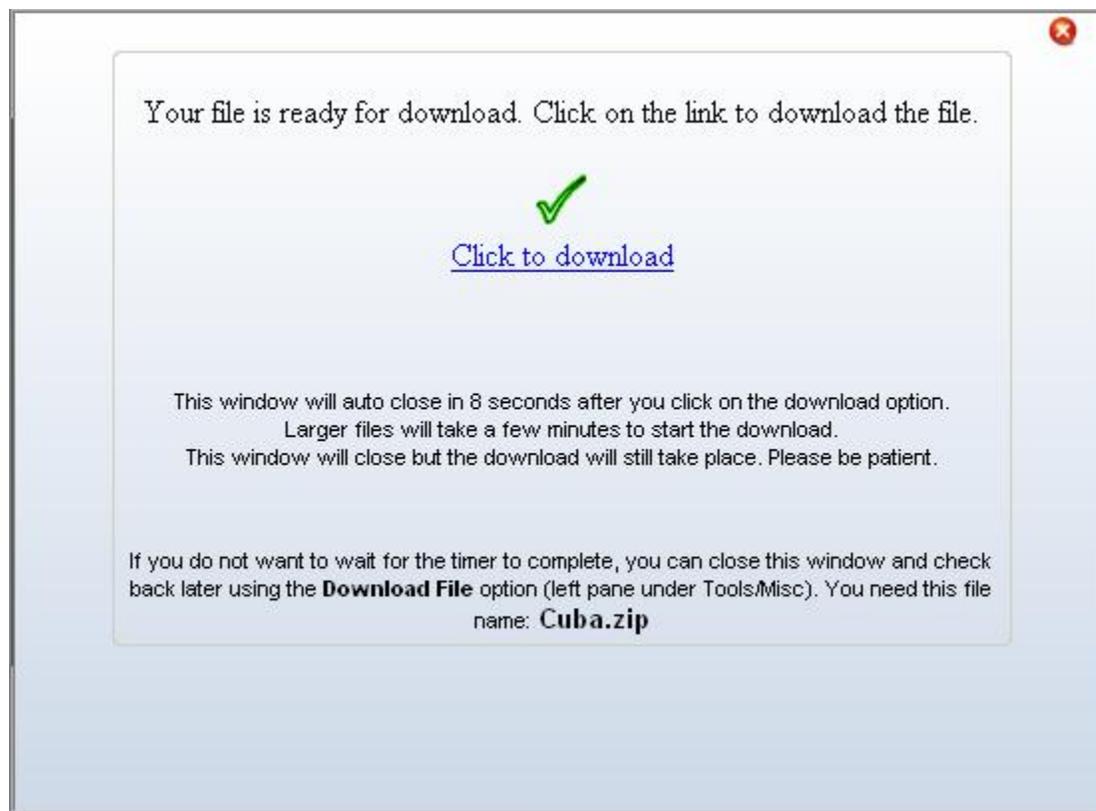
Include the following fields:

Uncheck All Reset

<input checked="" type="checkbox"/> Region Code	<input checked="" type="checkbox"/> Unique Name & Feature ID	<input checked="" type="checkbox"/> DD Latitude	<input checked="" type="checkbox"/> DD Longitude
<input checked="" type="checkbox"/> DMS Latitude	<input checked="" type="checkbox"/> DMS Longitude	<input checked="" type="checkbox"/> MGRS	<input checked="" type="checkbox"/> JOG Reference
<input checked="" type="checkbox"/> Feature Class	<input checked="" type="checkbox"/> Feature Desig Code	<input checked="" type="checkbox"/> PPL Class	<input checked="" type="checkbox"/> Feature Country Code
<input checked="" type="checkbox"/> FIPS ADM1 Code	<input type="checkbox"/> Dimension	<input type="checkbox"/> Population	<input type="checkbox"/> Elevation
<input checked="" type="checkbox"/> Name Country Code	<input checked="" type="checkbox"/> Language Code	<input type="checkbox"/> Transliteration Code	<input checked="" type="checkbox"/> Name Type
<input checked="" type="checkbox"/> Name Short Form	<input checked="" type="checkbox"/> Generic Name	<input checked="" type="checkbox"/> Sort Name	<input checked="" type="checkbox"/> Full Name
<input type="checkbox"/> Name Link	<input type="checkbox"/> Name Rank	<input type="checkbox"/> Modify Date	

Search Database

- Click on any of the buttons labeled Search Database.
- A dialogue box appears with a progress indicator.
- When the file is finished being generated on the server, you'll see a green check appear and a download link available.
- Click on the Click to download link to retrieve your file from the server.



Open Geospatial Consortium (OGC) Services

Web Map Service (WMS)

- WMS Version 1.1.0 *** (Get Capabilities Link):
<http://geonames.nga.mil/names/request.asp?REQUEST=getCapabilities>
- **You may want to try the following link to map it to your client:**
<http://geonames.nga.mil/names/request.asp?>
- WMS Resources:
 - Wikipedia: http://en.wikipedia.org/wiki/Web_Map_Service
 - WMS Public Providers:
<http://www.google.com/search?q=free+wms+services&rls=com.microsoft:en-us&ie=UTF-8&oe=UTF-8&startIndex=&startPage=1>
 - WMS Clients:
<http://www.google.com/search?q=free+wms+clients&rls=com.microsoft:en-us&ie=UTF-8&oe=UTF-8&startIndex=&startPage=1>

Web Feature Service (WFS)

- WFS Version 1.0.0 *** (Get Capabilities Link):
<http://geonames.nga.mil/nameswfs/request.asp?REQUEST=GetCapabilities&SERVICE=wfs&VERSION=1.0.0>
- WFS Version 1.1.0 *** (Get Capabilities Link):
<http://geonames.nga.mil/nameswfs/request.asp?REQUEST=GetCapabilities&SERVICE=wfs&VERSION=1.1.0>
- **You may want to try the following link to map it to your client:**
<http://geonames.nga.mil/nameswfs/request.asp?>
- The maximum feature return is set to 8,500 (best practice is to always set a maxFeatures)
- WFS Resources:
 - WFS Public Providers: http://www.google.com/search?hl=en&rls=com.microsoft%3Aen-us&q=wfs+services&aq=f&aqi=g-sx1g1g-msx6g-m1&aql=&oq=&gs_rfai=
 - WFS Clients: http://www.google.com/search?hl=en&rls=com.microsoft%3Aen-us&q=wfs+clients&aq=f&aqi=g-s1&aql=&oq=&gs_rfai=

Web Feature Service - Gazetteer Profile (WFS-G)

- WFS-G Version 1.1.0 *** (Get Capabilities Link):
<http://geonames.nga.mil/nameswfs/request.aspx?service=WFS&request=GetCapabilities>
- The maximum feature return is set to 8,500 (best practice is to always set a maxFeatures).

*** In order to take full advantage of the WMS or WFS Services, you will need a WMS and/or WFS enabled client.

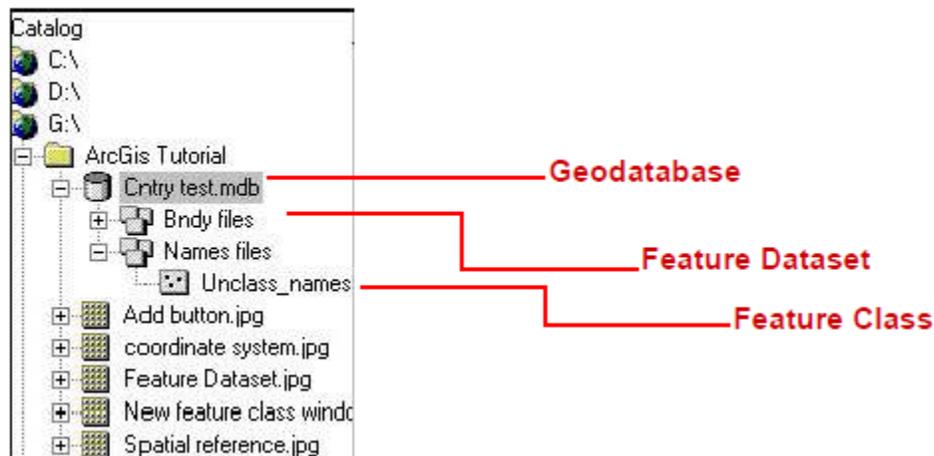
Importing Names data into ArcGIS (tested with 9.x)

Important terms

Geodatabase – provides a framework for geographic information and supports topologically integrated feature classes. Simply put, it is an MS Access database containing spatial information that can be used to query attributes and related spatial data.

Feature Dataset – a collection of feature classes with user-defined spatial relationships and topologies. It is stored in a geodatabase.

Feature Classes – a collection of geographic features with the same geometry type, the same attributes, and the same spatial reference. They are similar to shapefiles, but they are capable of storing topological information.



Applications



ArcMap – Lets you view, create, edit and query maps and data. Most of your work will be performed in ArcMap.



ArcCatalog – Provides data access and spatial data management tools. Used for reading and creation of metadata. Used to manage data sources.



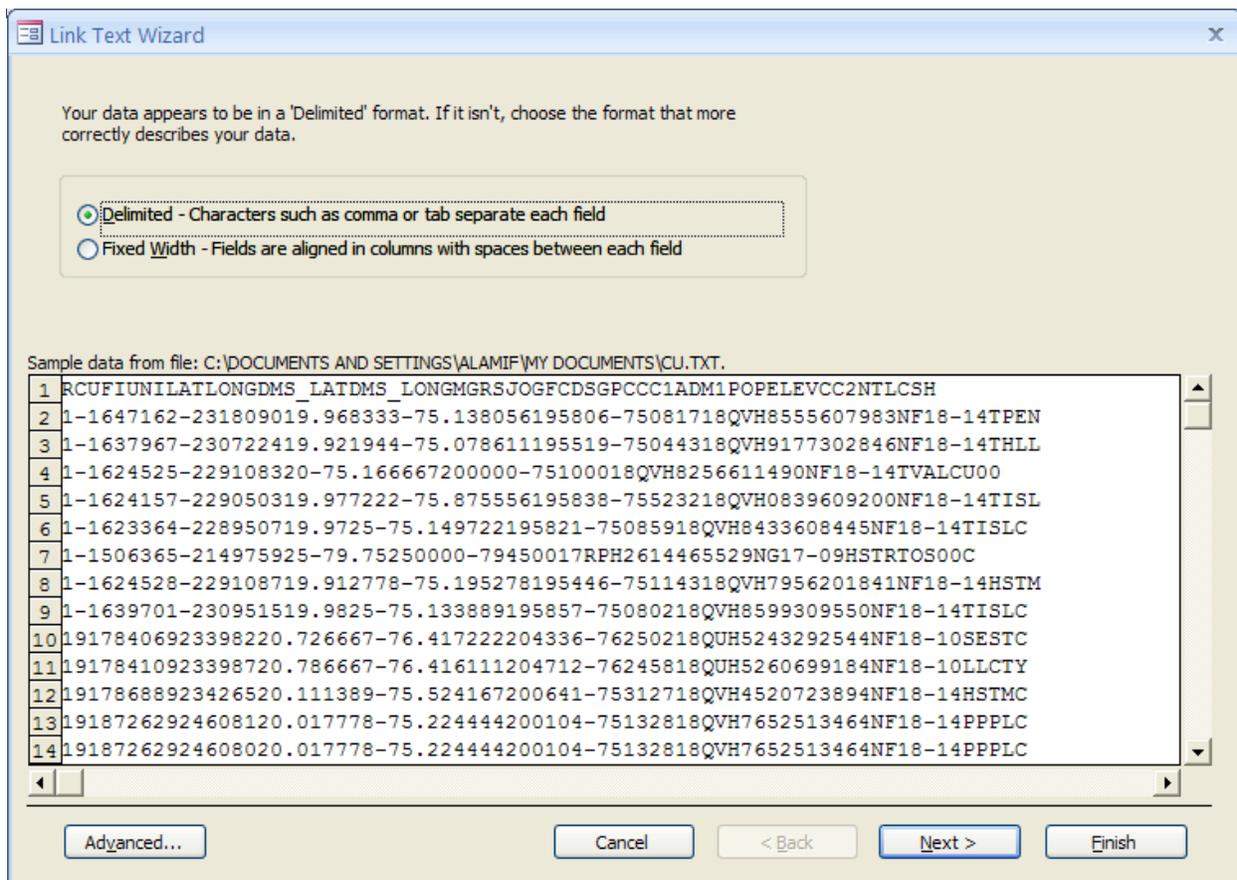
ArcToolbox – Contains models, scripts, and other geoprocessing tools useful to perform many GIS analysis tasks including data conversion.

Loading Names Data into ArcMap - Microsoft Office Access, Unicode UTF-8 Text File

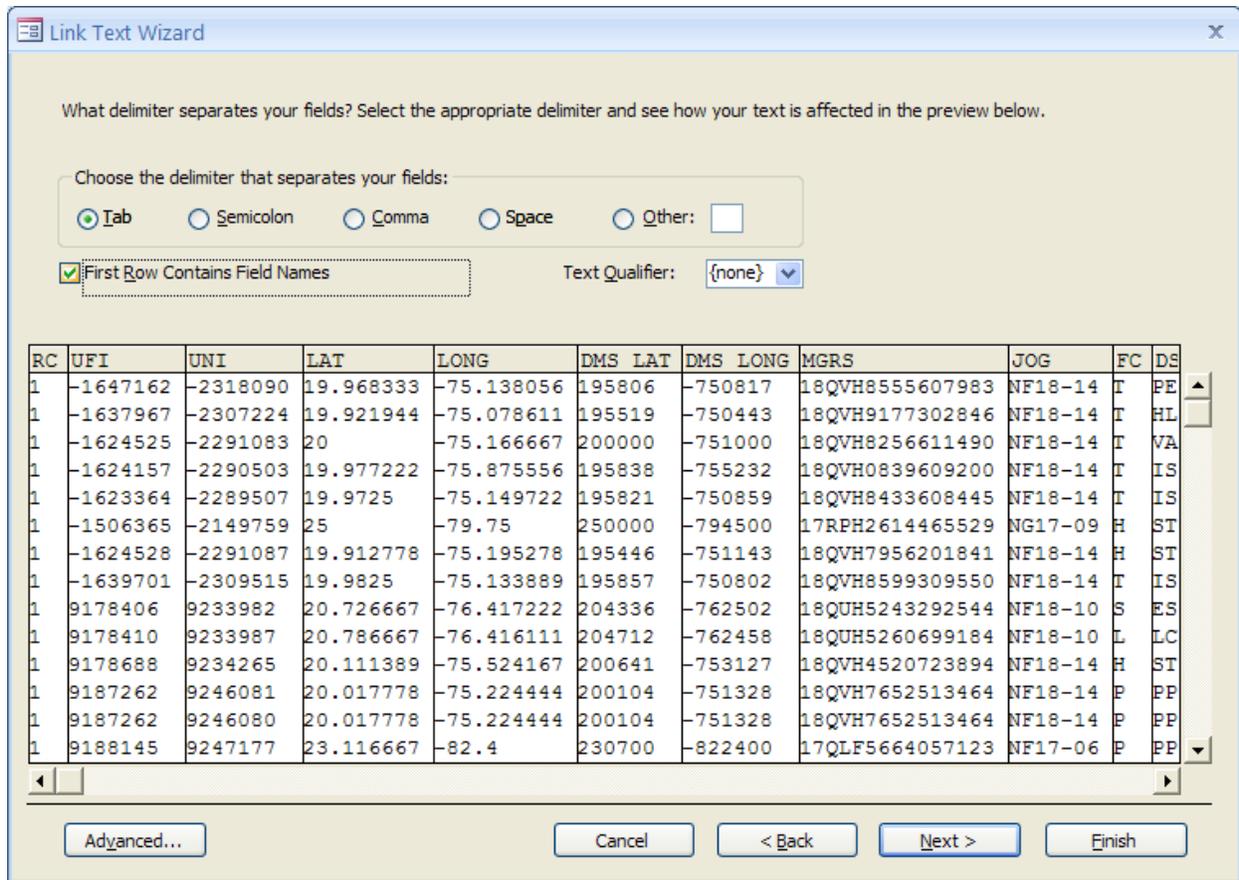
Note: Please see ESRI's knowledge Base Technical Article, "How To: Connect to Microsoft Access 2007 (ACCDB) files in ArcGIS", at <http://support.esri.com/en/knowledgebase/techarticles/detail/32976>. The method described in this document has you saving in the older mdb file format, while the knowledge base article discusses using the newer accdb file format. The mdb file format does not require any special connection type, but the accdb file format requires creating an OLE DB connection. The final result should be the same using either method.

Preparing the file using Access

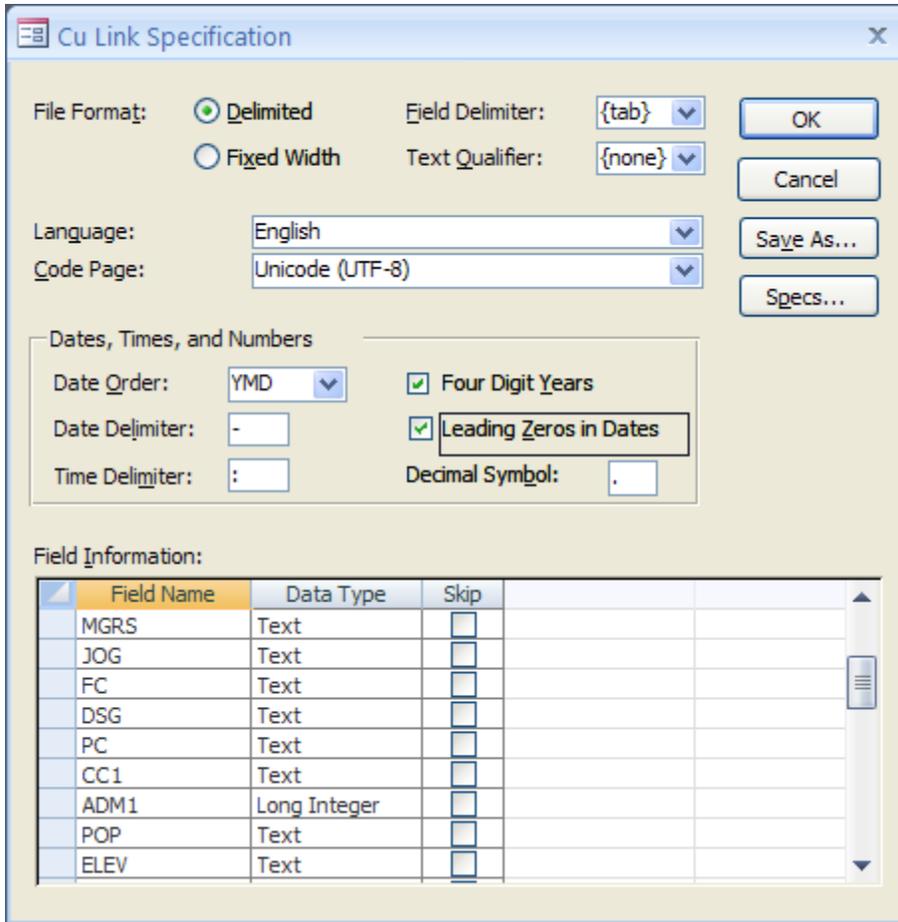
- Download a country file, Cuba for this example, from <http://earth-info.nga.mil/gns/html/namefiles.htm>, and expand the compressed zip file.
- Open Microsoft Access
- Open the text file in Access
- Select Delimited.



- Click Next.
- Leave delimiter type set at Tab and check the box next to First Row Contains Field names.



- Click the “Advanced” button in the lower left corner. This will open the “Link Specification” window.
- Set Code Page to Unicode (UTF-8). Set Date Order to YMD. Set Date Delimiter to a hyphen (-). Check Leading Zeros in Dates. See Below



The image shows a dialog box titled "Cu Link Specification" with the following settings:

- File Format: Delimited, Fixed Width
- Field Delimiter: {tab}
- Text Qualifier: {none}
- Language: English
- Code Page: Unicode (UTF-8)
- Dates, Times, and Numbers:
 - Date Order: YMD
 - Four Digit Years:
 - Date Delimiter: -
 - Leading Zeros in Dates:
 - Time Delimiter: :
 - Decimal Symbol: .
- Field Information table:

Field Name	Data Type	Skip
MGRS	Text	<input type="checkbox"/>
JOG	Text	<input type="checkbox"/>
FC	Text	<input type="checkbox"/>
DSG	Text	<input type="checkbox"/>
PC	Text	<input type="checkbox"/>
CC1	Text	<input type="checkbox"/>
ADM1	Long Integer	<input type="checkbox"/>
POP	Text	<input type="checkbox"/>
ELEV	Text	<input type="checkbox"/>

- Change Data Type of ADM1 from Long Integer to Text (Only applies to files where the ADM1 values contain alpha-numeric; leave at default if ADM1 values in entire file are numeric. If not sure, make the change to Text).
- Click OK.
- Click Next.

Link Text Wizard

You can specify information about each of the fields you are importing. Select fields in the area below. You can then modify field information in the 'Field Options' area.

Field Options

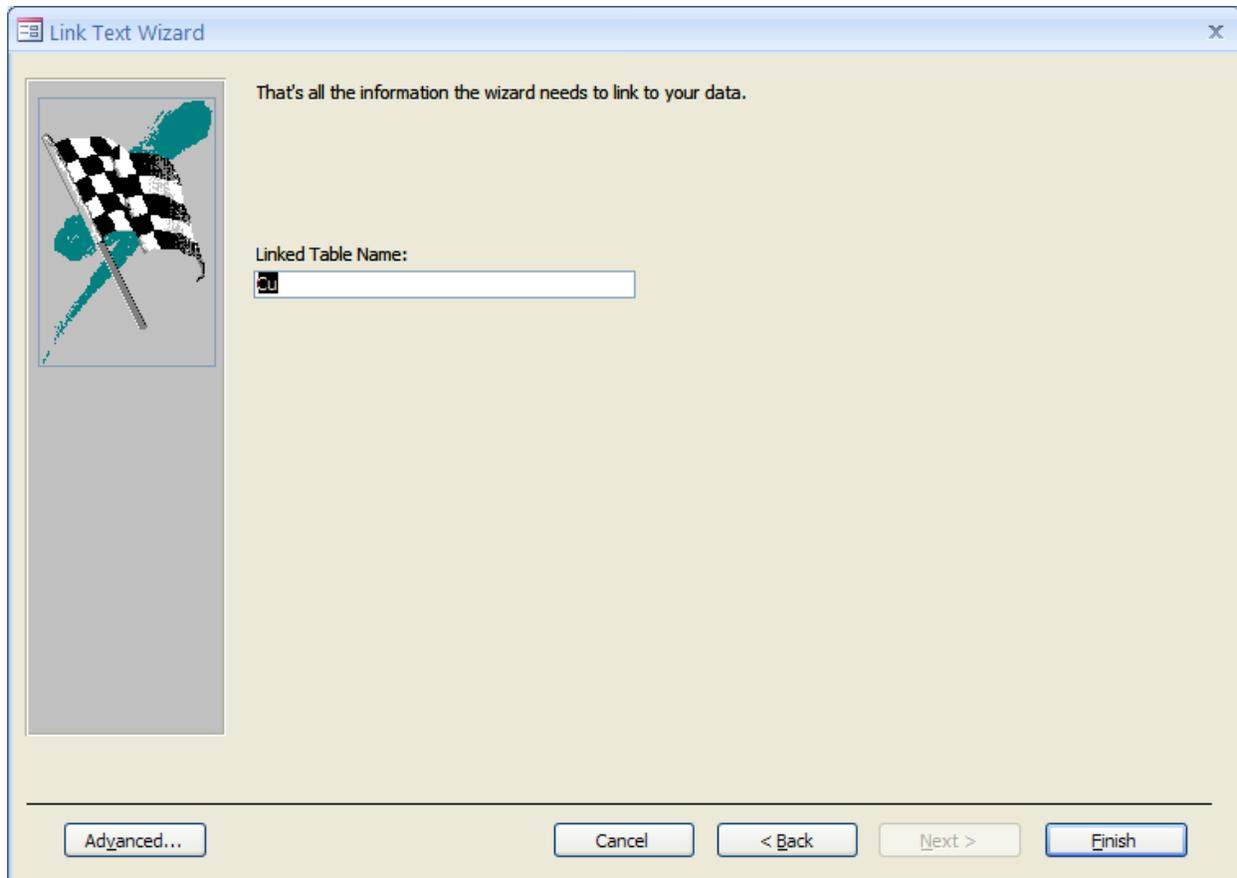
Field Name: Data Type:

Indexed: Do not import field (Skip)

RC	UFI	UNI	LAT	LONG	DMS LAT	DMS LONG	MGRS	JOG	FC	DS
1	-1647162	-2318090	19.968333	-75.138056	195806	-750817	18QVH8555607983	NF18-14	T	PE
1	-1637967	-2307224	19.921944	-75.078611	195519	-750443	18QVH9177302846	NF18-14	T	HL
1	-1624525	-2291083	20	-75.166667	200000	-751000	18QVH8256611490	NF18-14	T	VA
1	-1624157	-2290503	19.977222	-75.875556	195838	-755232	18QVH0839609200	NF18-14	T	IS
1	-1623364	-2289507	19.9725	-75.149722	195821	-750859	18QVH8433608445	NF18-14	T	IS
1	-1506365	-2149759	25	-79.75	250000	-794500	17RPH2614465529	NG17-09	H	ST
1	-1624528	-2291087	19.912778	-75.195278	195446	-751143	18QVH7956201841	NF18-14	H	ST
1	-1639701	-2309515	19.9825	-75.133889	195857	-750802	18QVH8599309550	NF18-14	T	IS
1	9178406	9233982	20.726667	-76.417222	204336	-762502	18QUH5243292544	NF18-10	S	ES
1	9178410	9233987	20.786667	-76.416111	204712	-762458	18QUH5260699184	NF18-10	L	LC
1	9178688	9234265	20.111389	-75.524167	200641	-753127	18QVH4520723894	NF18-14	H	ST
1	9187262	9246081	20.017778	-75.224444	200104	-751328	18QVH7652513464	NF18-14	P	PP
1	9187262	9246080	20.017778	-75.224444	200104	-751328	18QVH7652513464	NF18-14	P	PP
1	9188145	9247177	23.116667	-82.4	230700	-822400	17QLF5664057123	NF17-06	P	PP

Advanced... Cancel < Back Next > Finish

- Click Next.



- Name the table if you want or accept the default. Click Finish.
- In the Database window you will now see the new table you created. Double click the table to open it and visually check to make sure everything looks OK.
- Go to the main menu bar and select Format > Font and select Arial Unicode MS.

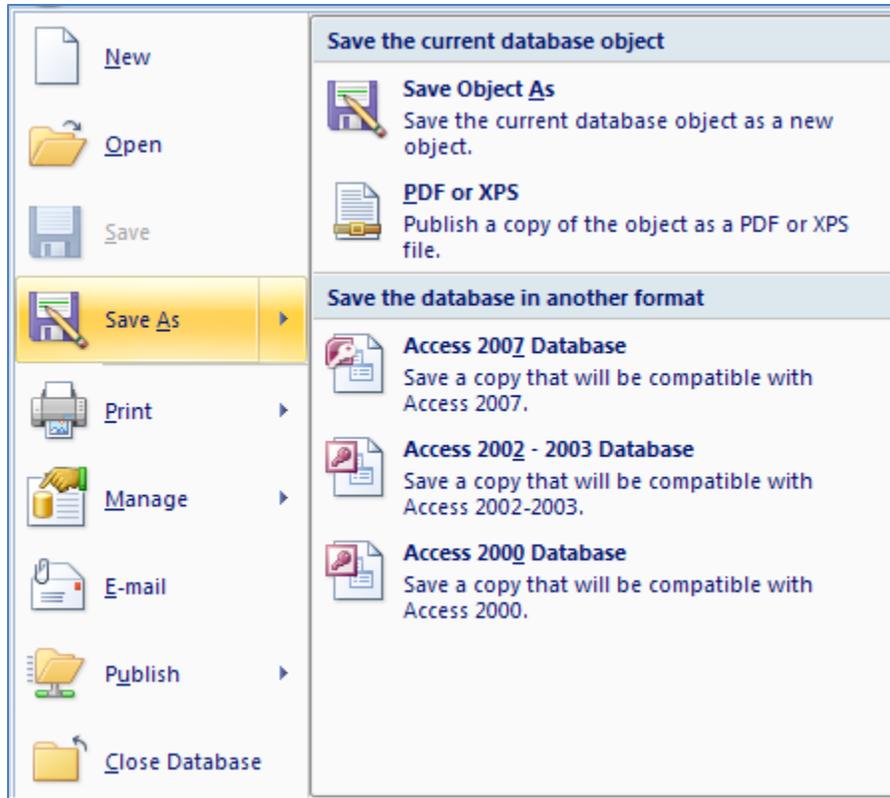
If the steps were followed correctly, this is what you should see (FULL_NAME_RO):

Canal Santa Lucía
Trucutú
Sabana de Imías
Punta Los Muertos
Brisas del Mar
El Progreso
Bajo de Ballenatos
Laguna Blanca
La Hortensia
Ensenada Palmar
Río Muñóz
Río Jiquí

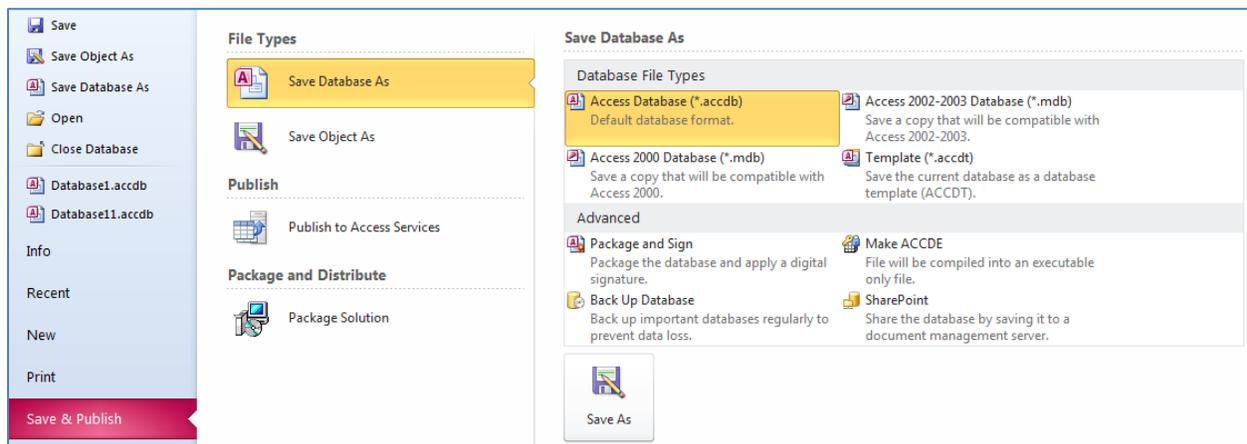
Otherwise, you will see this:

Canal Santa LucÃ-a
TrucutÃº
Sabana de ImÃ-as
Punta Los Muertos
Brisas del Mar
El Progreso
Bajo de Ballenatos
Laguna Blanca
La Hortensia
Ensenada Palmar
RÃ-o MuÃ±Ãºz
RÃ-o JiquÃ-

- Close the table. Select YES to save changes.
- In Access 2007, select Save As and choose Access 2002 - 2003 Database to end up with an mdb file.



- In Access 2010, select Save & Publish and choose Access 2002 - 2003 Database (*.mdb) to end up with an mdb file.

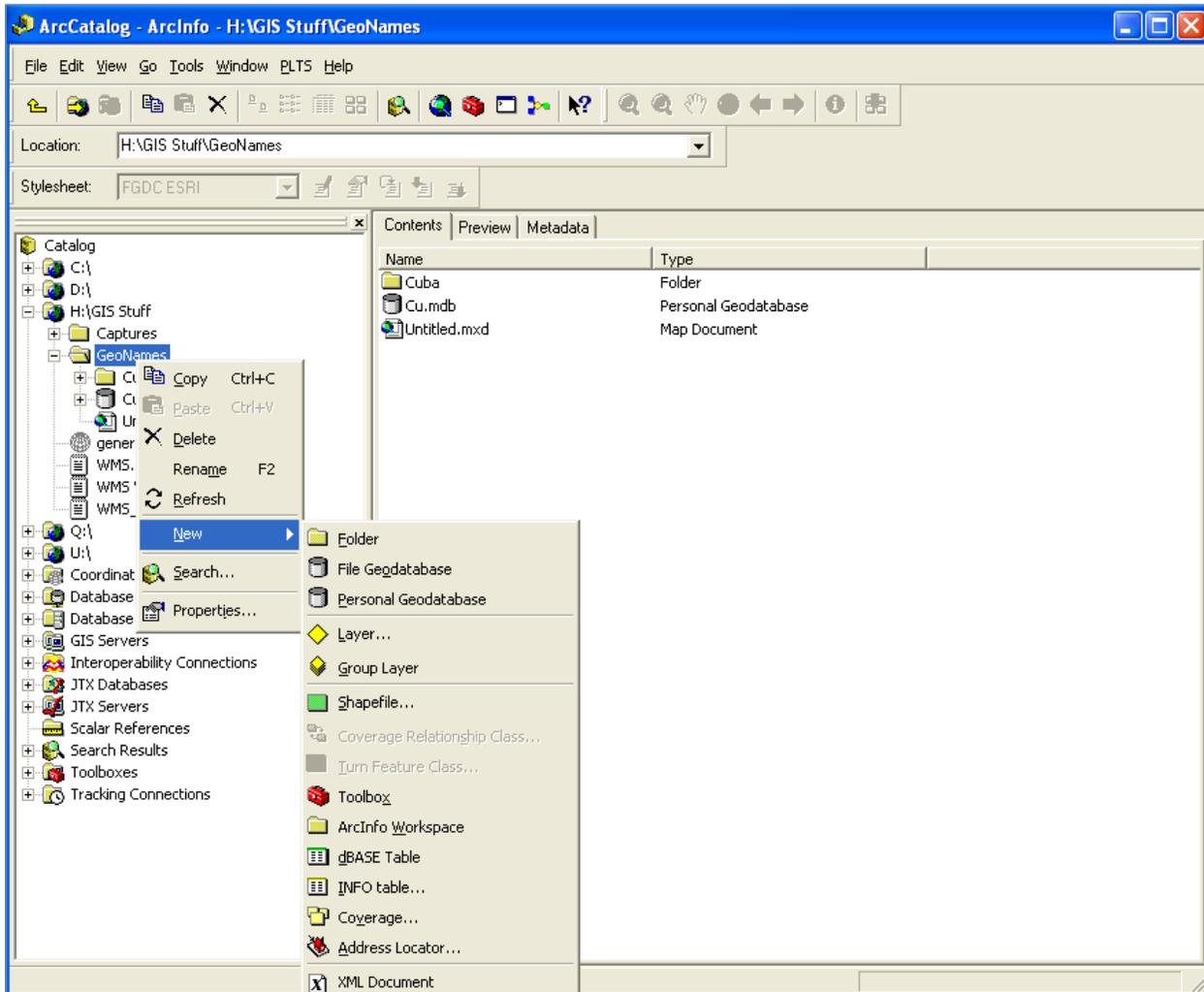


- Exit Microsoft Access

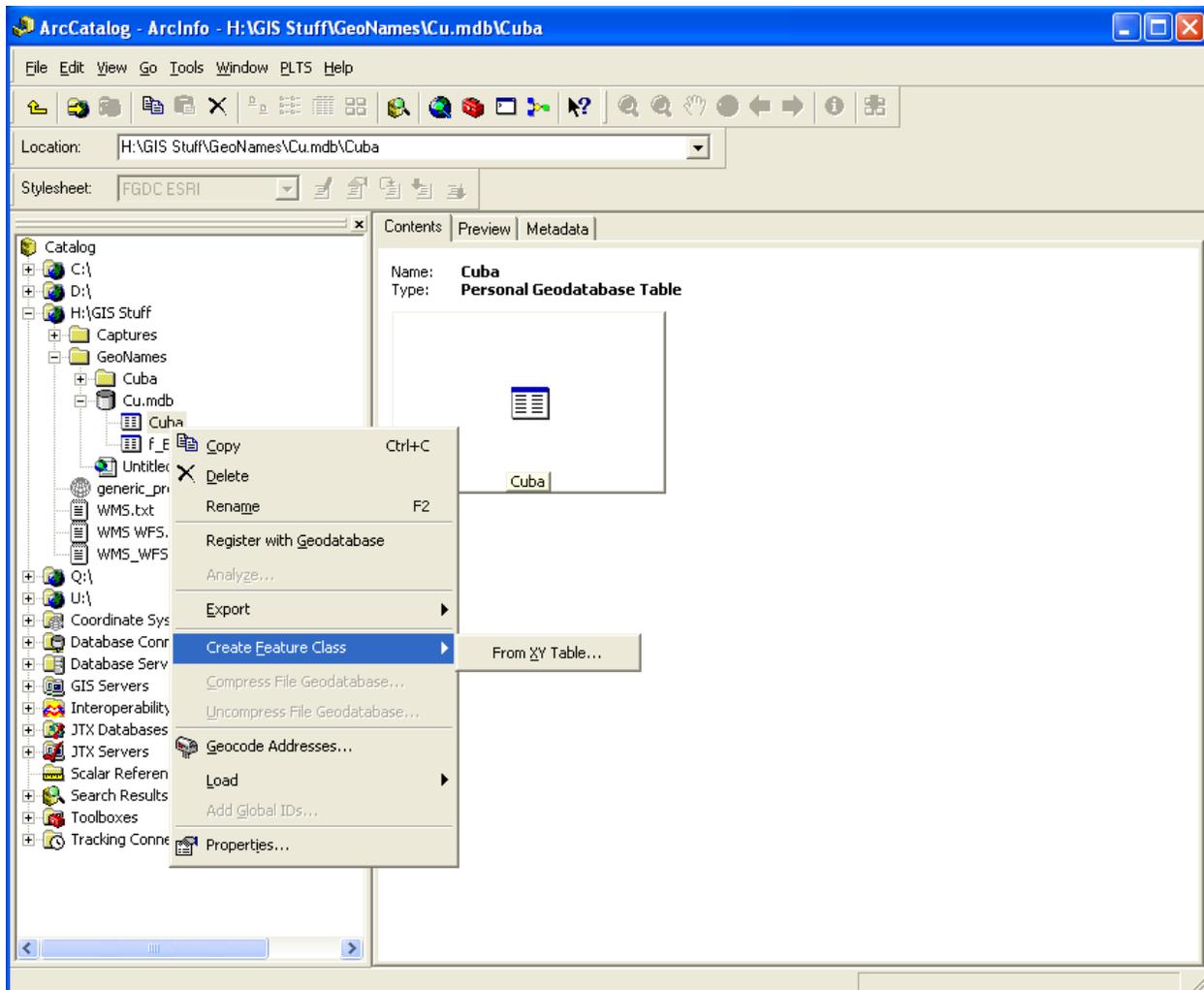
Now that we have linked the text file to a database, we need to bring it into ArcGIS. In order to do this we need to create a feature class.

Creating a feature class in ArcCatalog

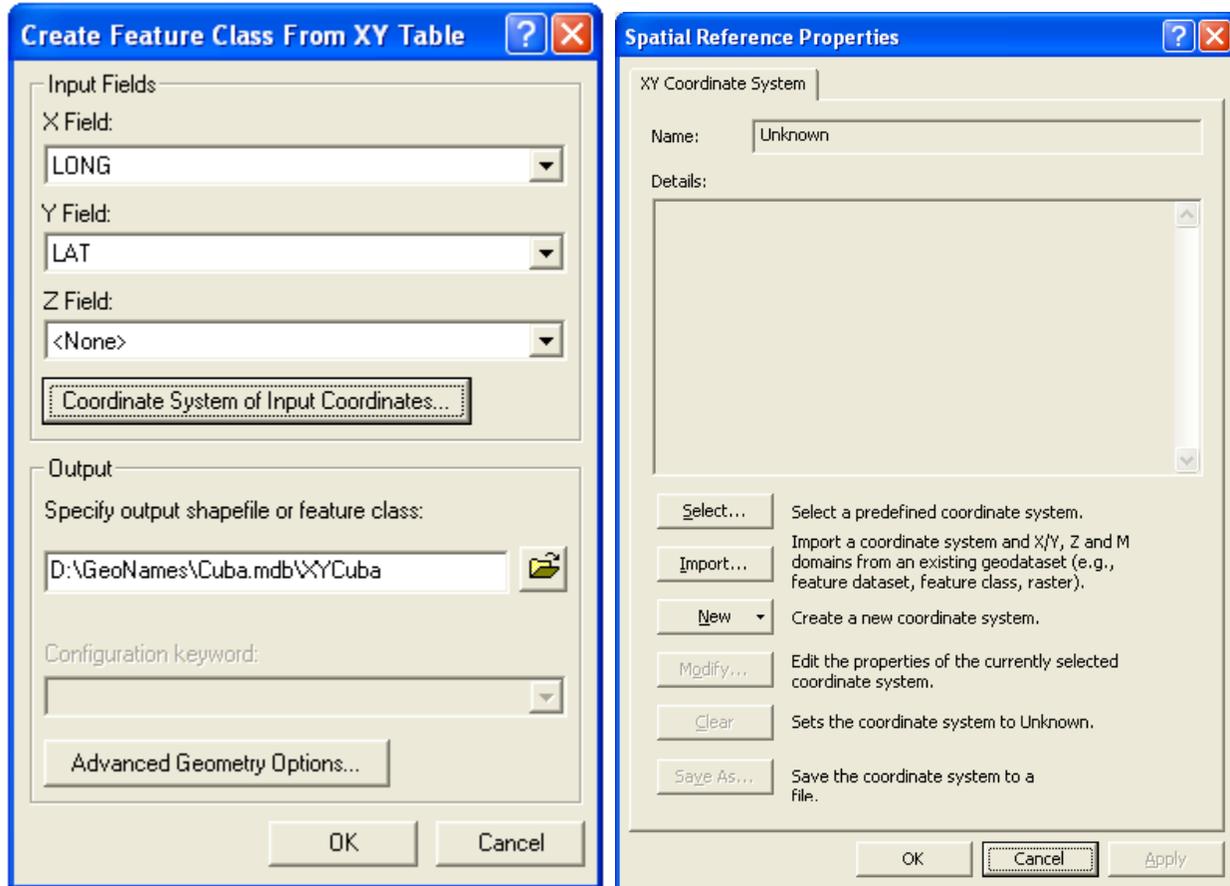
- Launch ArcCatalog.
- Create a new Personal Geodatabase to export the data into by right mouse clicking on the drive or folder where you want the geodatabase to reside, scroll down to New, then select Personal Geodatabase (Cuba for this example).



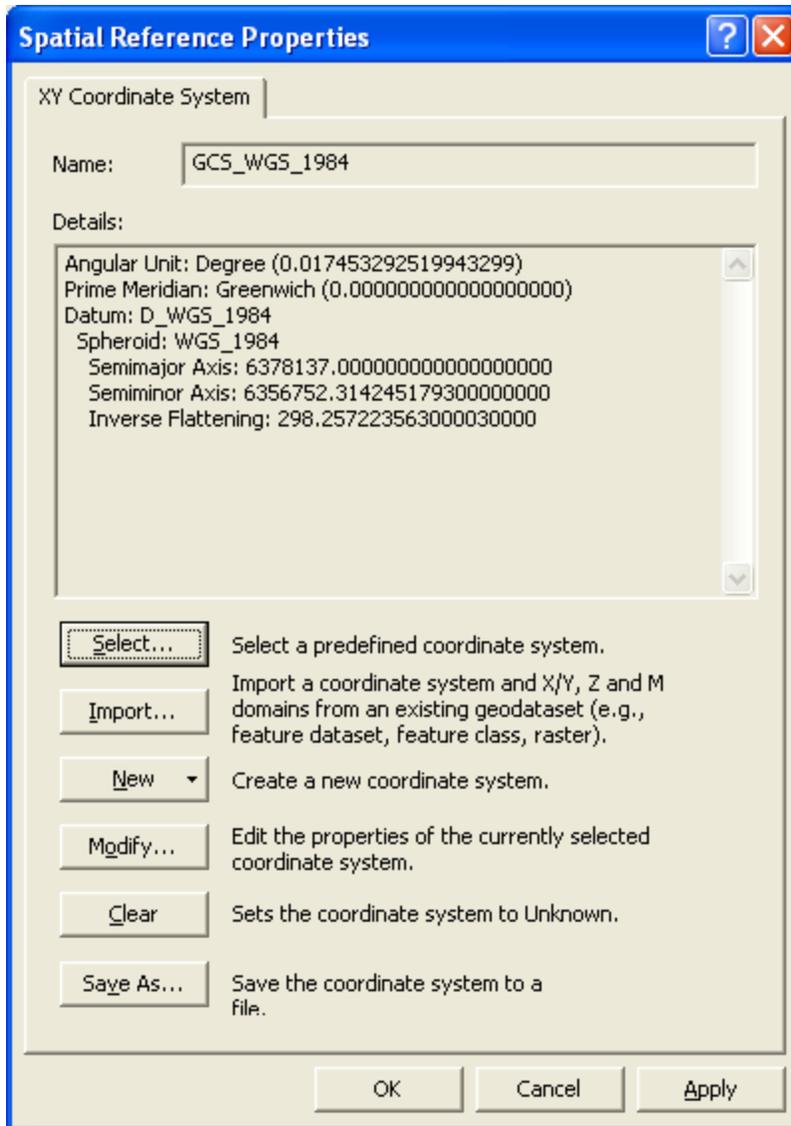
- Navigate to where you saved your Access database of linked data.
- Make sure the "Contents" tab is selected. In the window you should see a personal Geodatabase table. Right click on the table. Select "Create Feature Class" -> From XY Table.



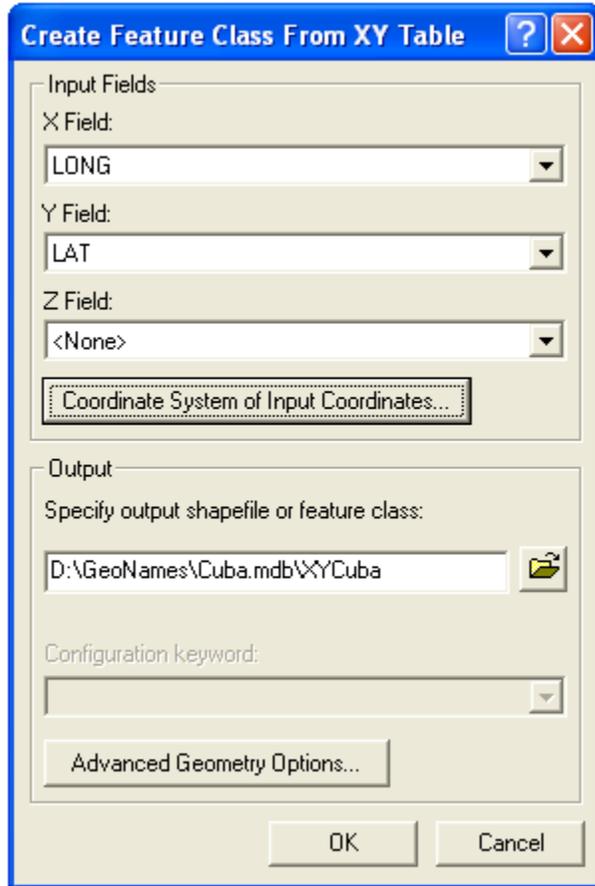
- In the Create Feature Class from XY table window – make sure the X and Y fields are correct.
- Click on Coordinate System of Input Coordinates...



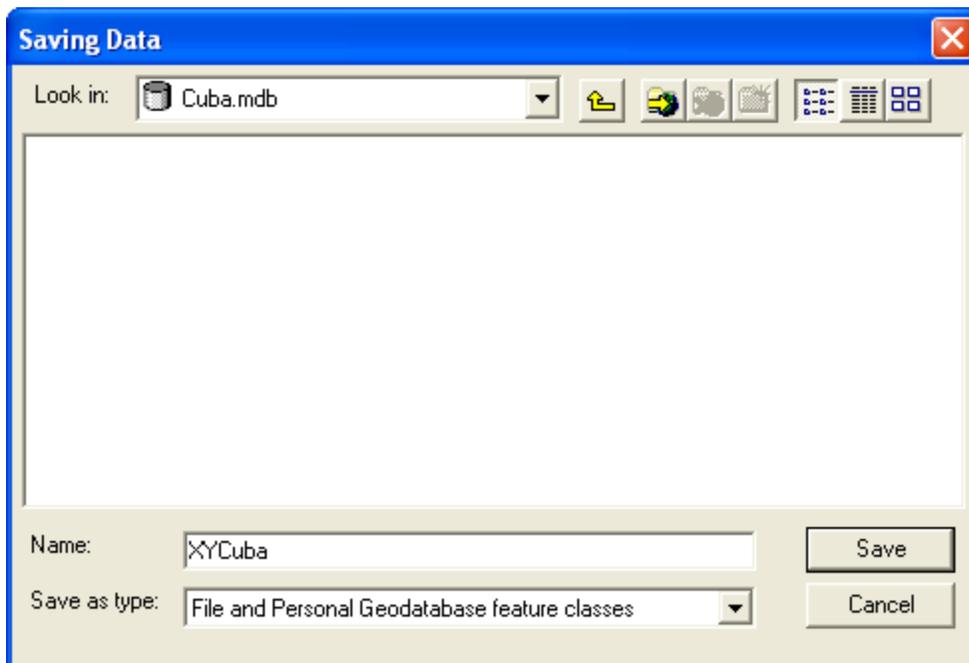
- In the Spatial reference Properties window click the Select button and find the coordinate system that matches your data. (Since we are dealing with names from the GNDB it will be WGS 84. In the future, if you are using data from another source, make sure you select the correct coordinate system.) Click OK.



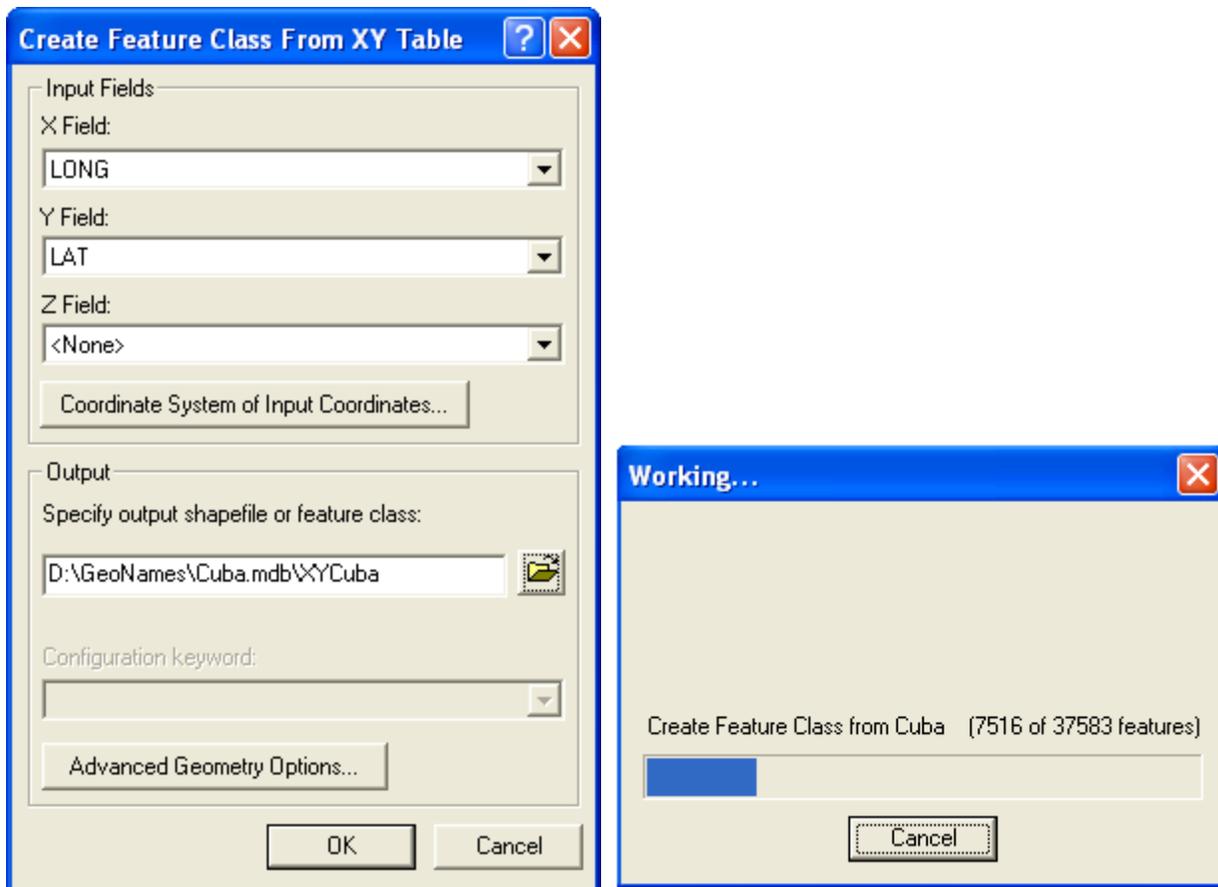
- Now you need to export this data set into the newly created personal geodatabase. Click on the yellow folder button in the Output section and navigate to the Cuba personal geodatabase.



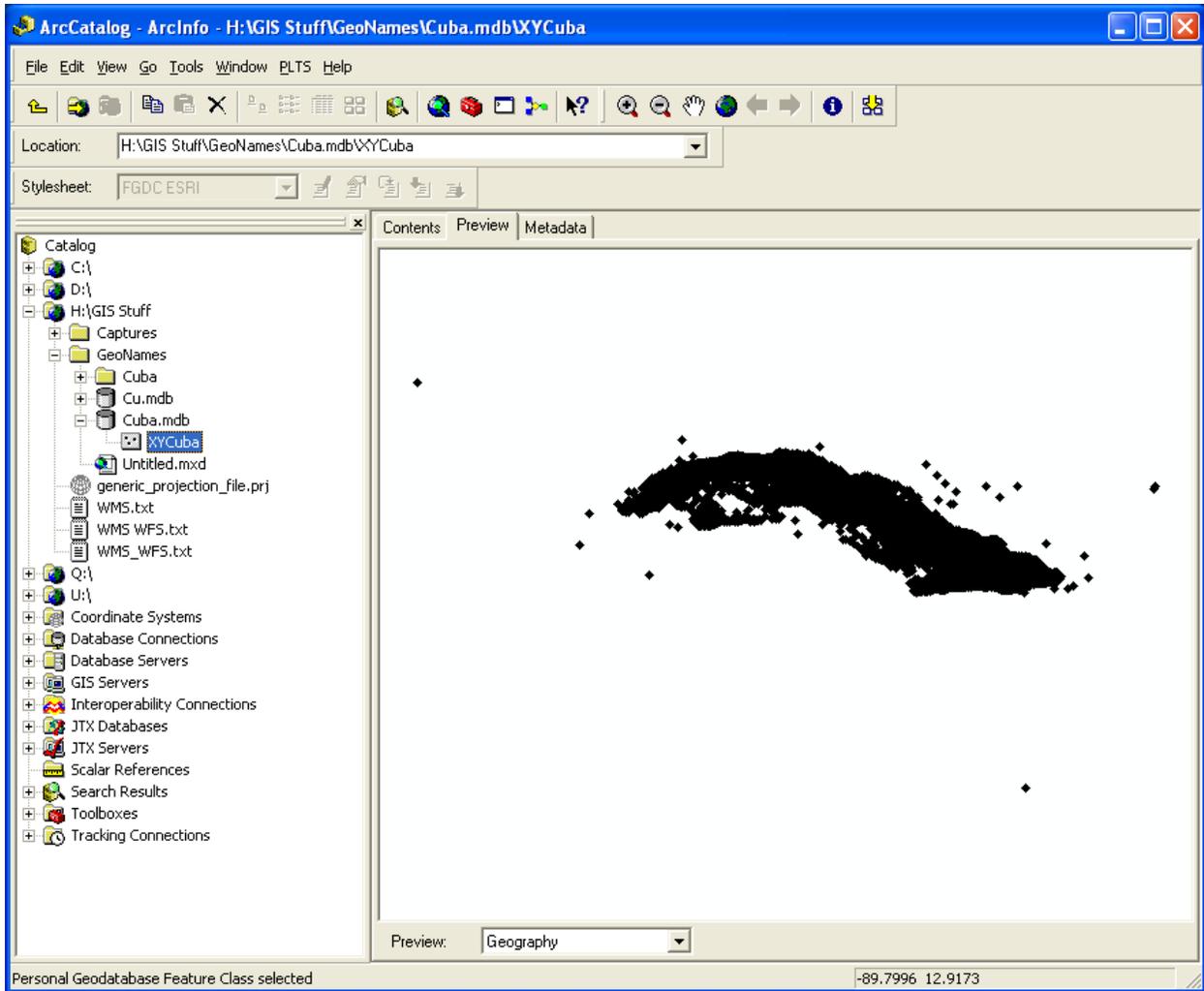
- Name your exported dataset, XYCuba for this example. Select File and Personal Geodatabase feature class in the Save as type drop down selection. Click on Save.

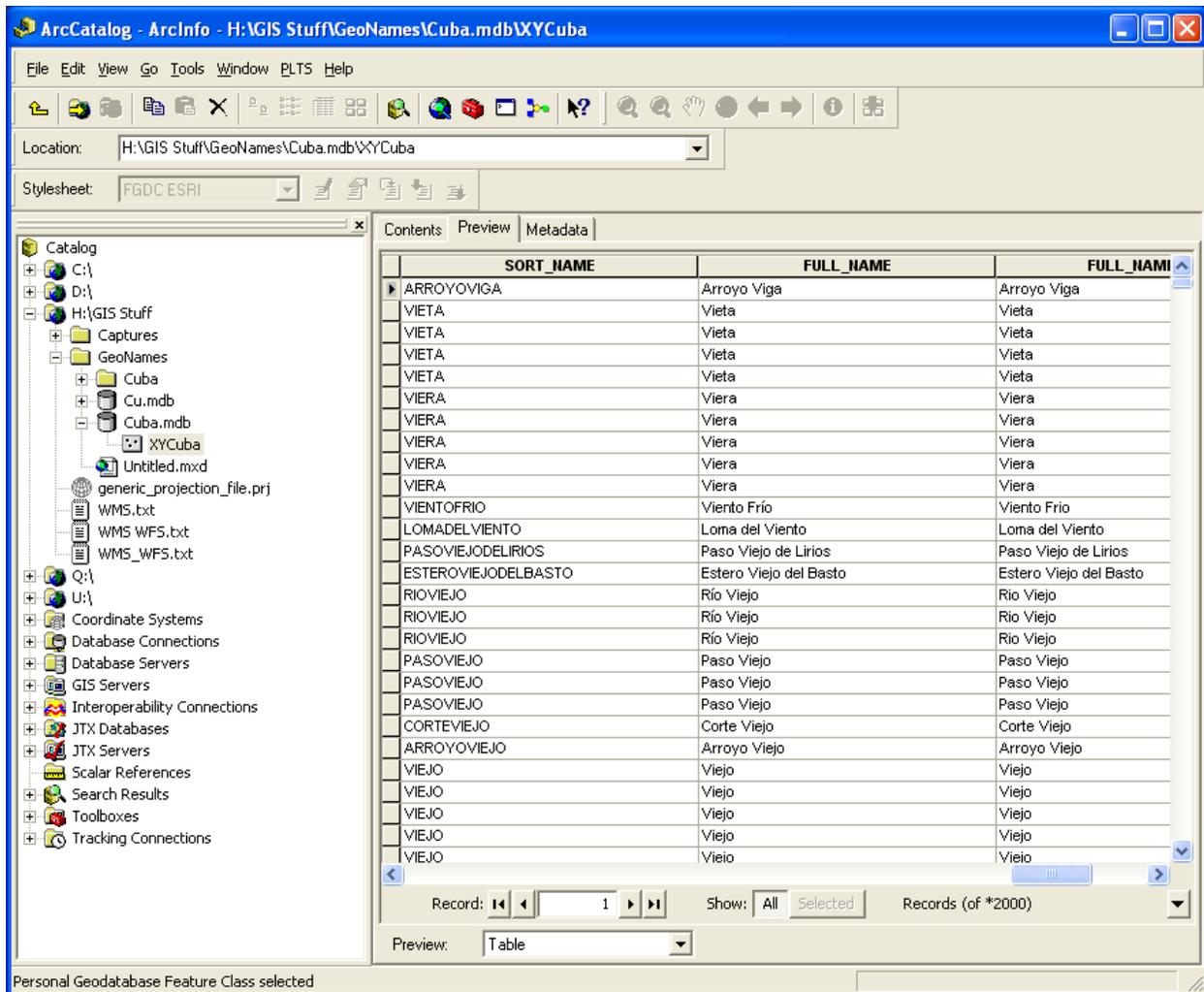


- Click OK to start the export process, which will also create your personal geodatabase.



- Refresh the location where you created the personal geodatabase file.

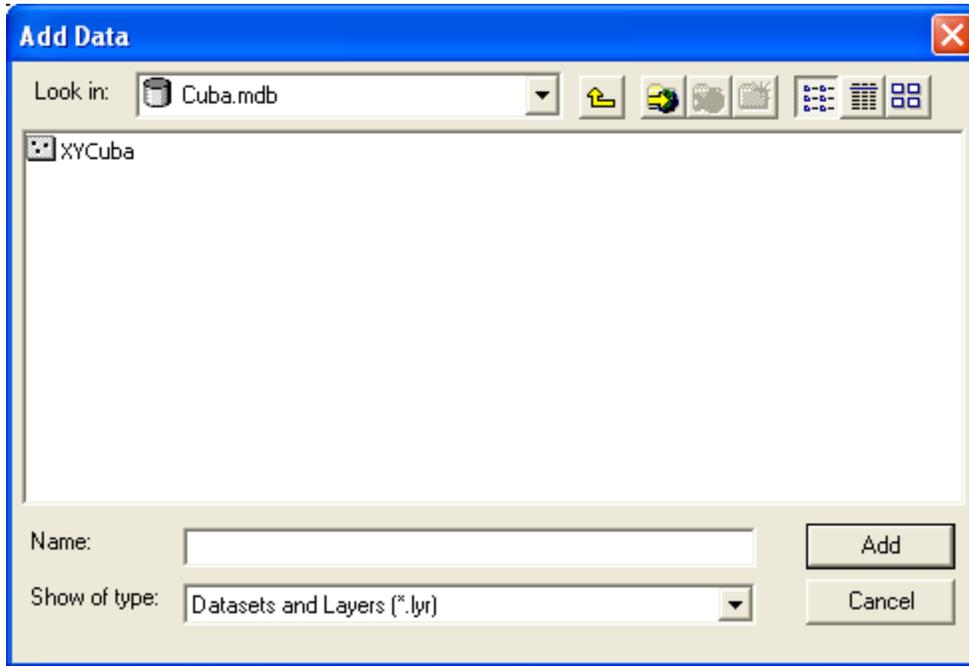


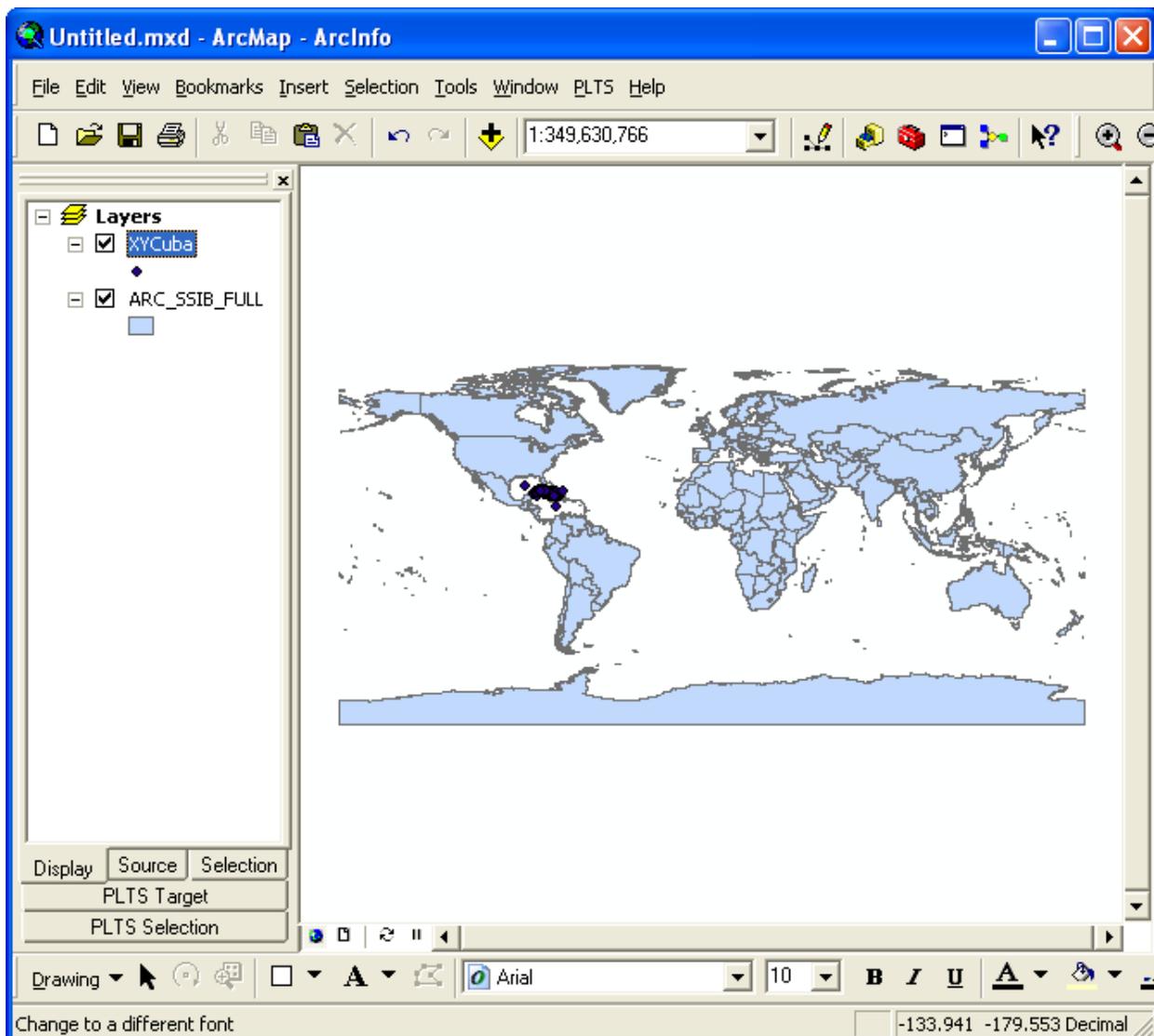


- Close Arc Catalog

Displaying the data in ArcMap

- Launch ArcMap.
- Click the add data button  and look in the Geodatabase. Select the feature class you just created and click “Add”.





- One last thing. Right click on the table in the layers menu. And select “open attribute table”.
- Click the “Options” button at the bottom and select appearance.
- In the Table Appearance window set the font to “Arial Unicode MS”. If you want you can also increase the size or change the color.

Take a look at the names in the table to ensure they are being displayed properly. If so, Congratulations! You have just imported a names file into ArcGIS.

Attributes of XYCuba

GENERIC	SORT_NAME	FULL_NAME	FULL_NAME_ND	
Arroyo	ARROYOVIGA	Arroyo Viga	Arroyo Viga	<
<Null>	VIETA	Vieta	Vieta	<
<Null>	VIETA	Vieta	Vieta	<
<Null>	VIETA	Vieta	Vieta	<
<Null>	VIETA	Vieta	Vieta	<
<Null>	VIERA	Viera	Viera	<
<Null>	VIERA	Viera	Viera	<
<Null>	VIERA	Viera	Viera	<
<Null>	VIERA	Viera	Viera	<
<Null>	VIERA	Viera	Viera	<
<Null>	VIENTOFRIO	Viento Frío	Viento Frio	<
Loma	LOMADELVIENTO	Loma del Viento	Loma del Viento	<
Paso	PASOVIEJODELIRIOS	Paso Viejo de Lirios	Paso Viejo de Lirios	<
Estero	ESTEROVIEJODELBASTO	Estero Viejo del Basto	Estero Viejo del Basto	<
<Null>	RIOVIEJO	Río Viejo	Rio Viejo	<
Río	RIOVIEJO	Río Viejo	Rio Viejo	<
<Null>	RIOVIEJO	Río Viejo	Rio Viejo	<
Paso	PASOVIEJO	Paso Viejo	Paso Viejo	<
<Null>	PASOVIEJO	Paso Viejo	Paso Viejo	<
<Null>	PASOVIEJO	Paso Viejo	Paso Viejo	<
Corte	CORTEVIEJO	Corte Viejo	Corte Viejo	<
Arroyo	ARROYOVIEJO	Arroyo Viejo	Arroyo Viejo	<
<Null>	VIEJO	Viejo	Viejo	<
<Null>	VIEJO	Viejo	Viejo	<
<Null>	VIEJO	Viejo	Viejo	<
<Null>	VIEJO	Viejo	Viejo	<
<Null>	VIEJO	Viejo	Viejo	<
<Null>	VIEJO	Viejo	Viejo	<
<Null>	VIEJAUNIQUE	Vieja Unique	Vieja Unique	<

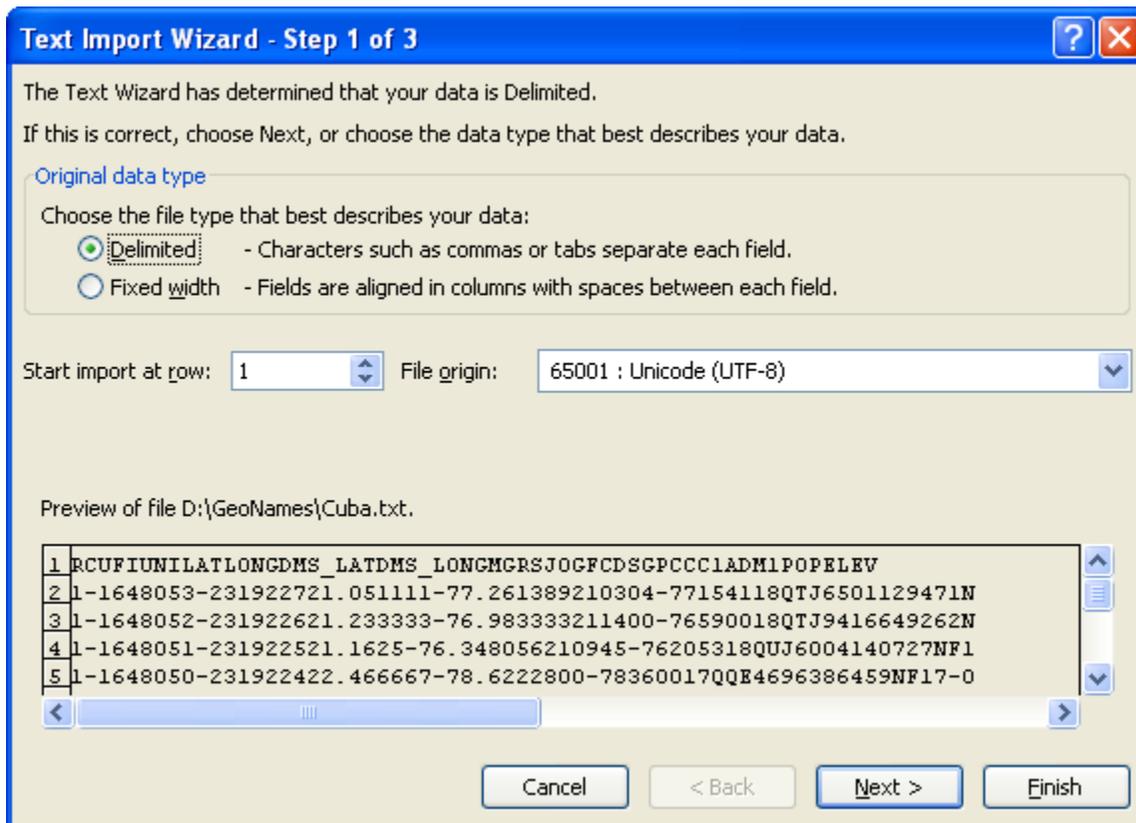
Record: 1 Show: All Selected Records (0 out of *2000 Selected) Options

Loading Names Data into ArcMap - Microsoft Office Excel, Unicode UTF-8 Text File

The simplest method to bring GNS names data into ArcGIS is by preparing the downloadable country file using Microsoft Office Excel (or any application that can produce an XLS or XLSX file such as OpenOffice, LibreOffice, or Kingsoft Office suites). Excel is used to convert the TXT files into XLS (maximum number of rows = 65,536) or XLSX (maximum number of rows = 1,048,576) spreadsheet files that can be brought into ArcGIS, and then converted to feature class in a personal geodatabase. This should help maintain the original file encoding and avoid loss of data fidelity. To accomplish this, please follow these steps:

Preparing the file using Excel

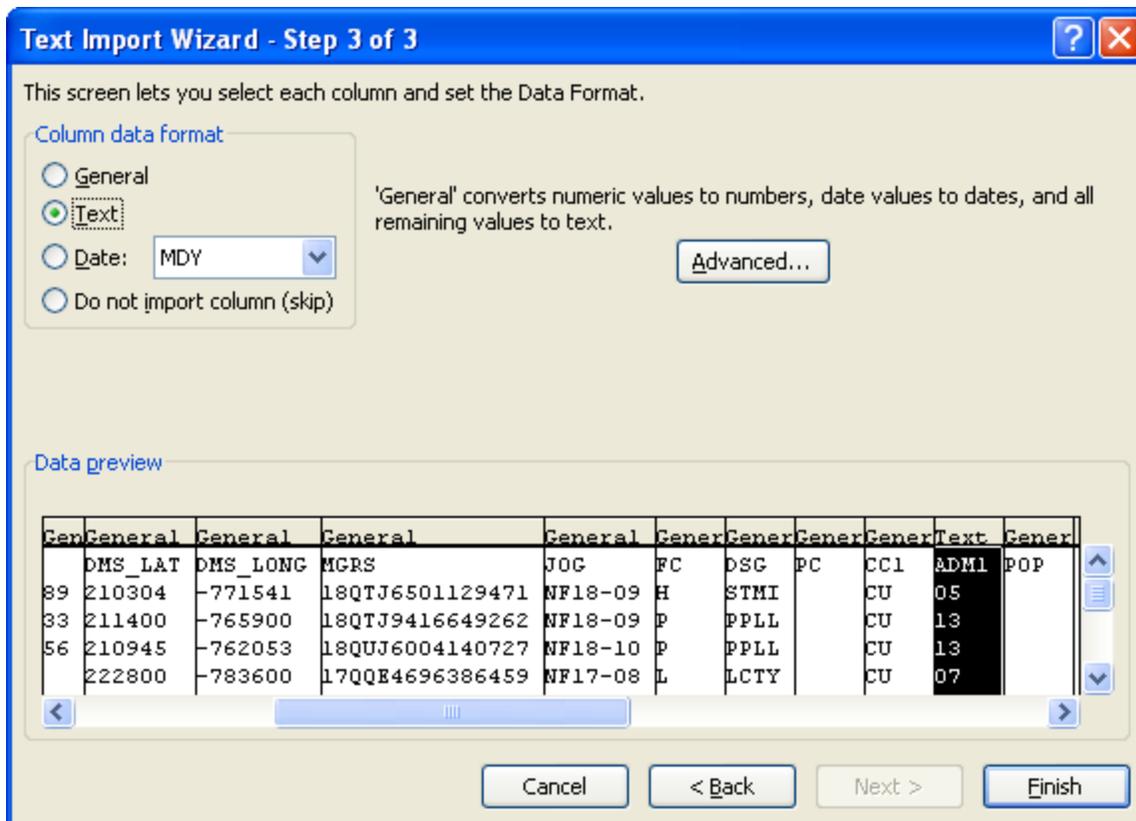
- Download a country file, Cuba for this example, from <http://earth-info.nga.mil/gns/html/namefiles.htm>, and expand the compressed zip file.
- Launch Microsoft Excel
- Select File > Open
- Browse to the location of the downloaded file and select it. Click Open.
- Select Delimited.



- Make sure the File origin displays 65001: Unicode (UTF-8).
- Click Next.
- Leave delimiter type set at Tab.



- Click Next.
- Change Column data format of ADM1 to Text (Only applies to files where the ADM1 values contain alpha-numeric; leave at default if ADM1 values in entire file are numeric. If not sure, make the change to Text).



- Click Finish.
- In the spreadsheet window you will now see the imported data. Visually check to make sure everything looks OK.
- Go to the main menu bar and change the font to Arial Unicode MS.

If the steps were followed correctly, this is what you should see (FULL_NAME):

Canal Santa Lucía
Trucutú
Sabana de Imías
Punta Los Muertos
Brisas del Mar
El Progreso
Bajo de Ballenatos
Laguna Blanca
La Hortensia
Ensenada Palmar
Río Muñoz
Río Jiquí

Otherwise, you will see this:

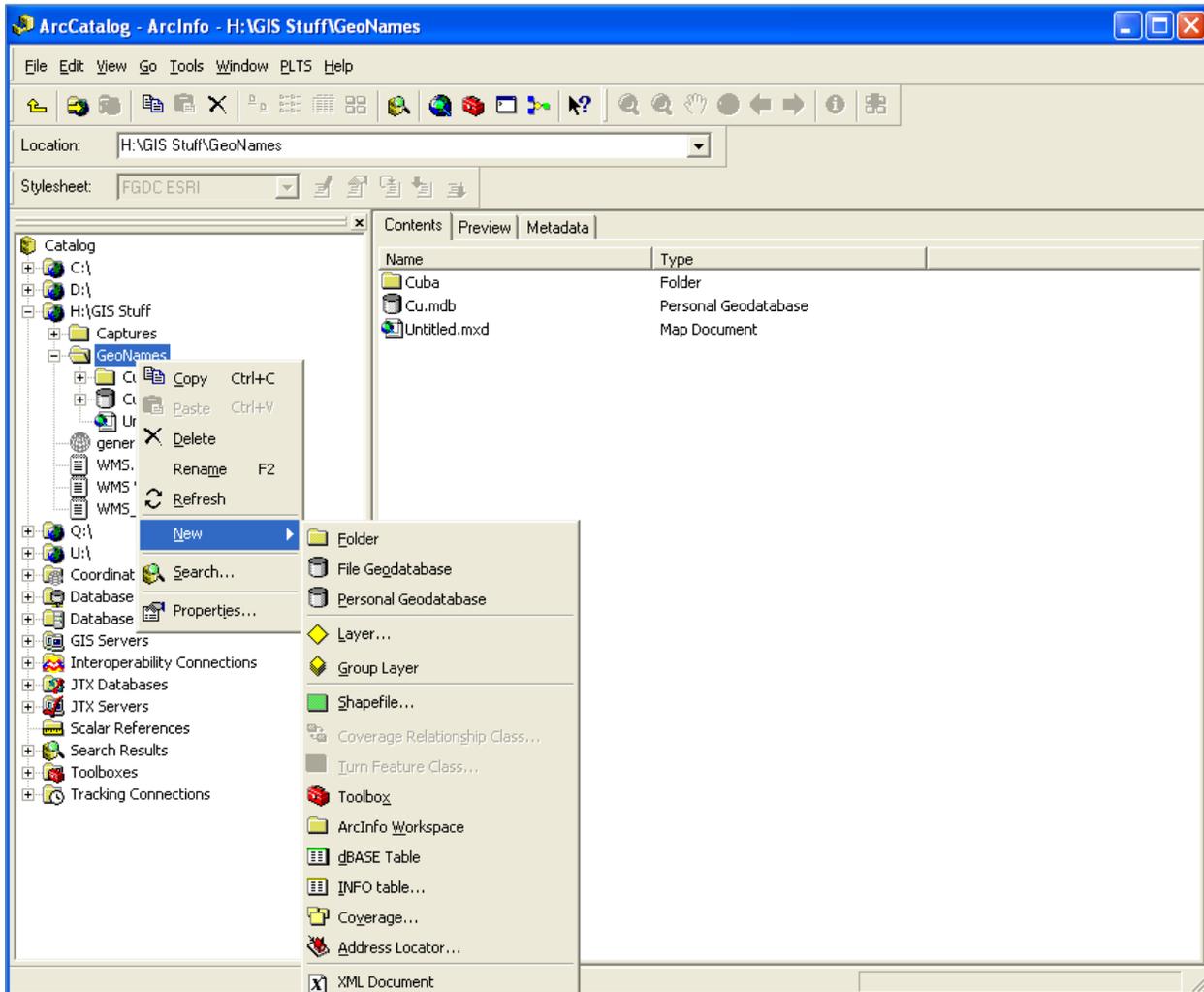
Canal Santa LucÃ-a
TrucutÃº
Sabana de ImÃ-as
Punta Los Muertos
Brisas del Mar
El Progreso
Bajo de Ballenatos
Laguna Blanca
La Hortensia
Ensenada Palmar
RÃ-o MuÃ±Ã±z
RÃ-o JiquÃ-

- Select Save As and choose either xls or.xlsx.
- Exit Microsoft Excel

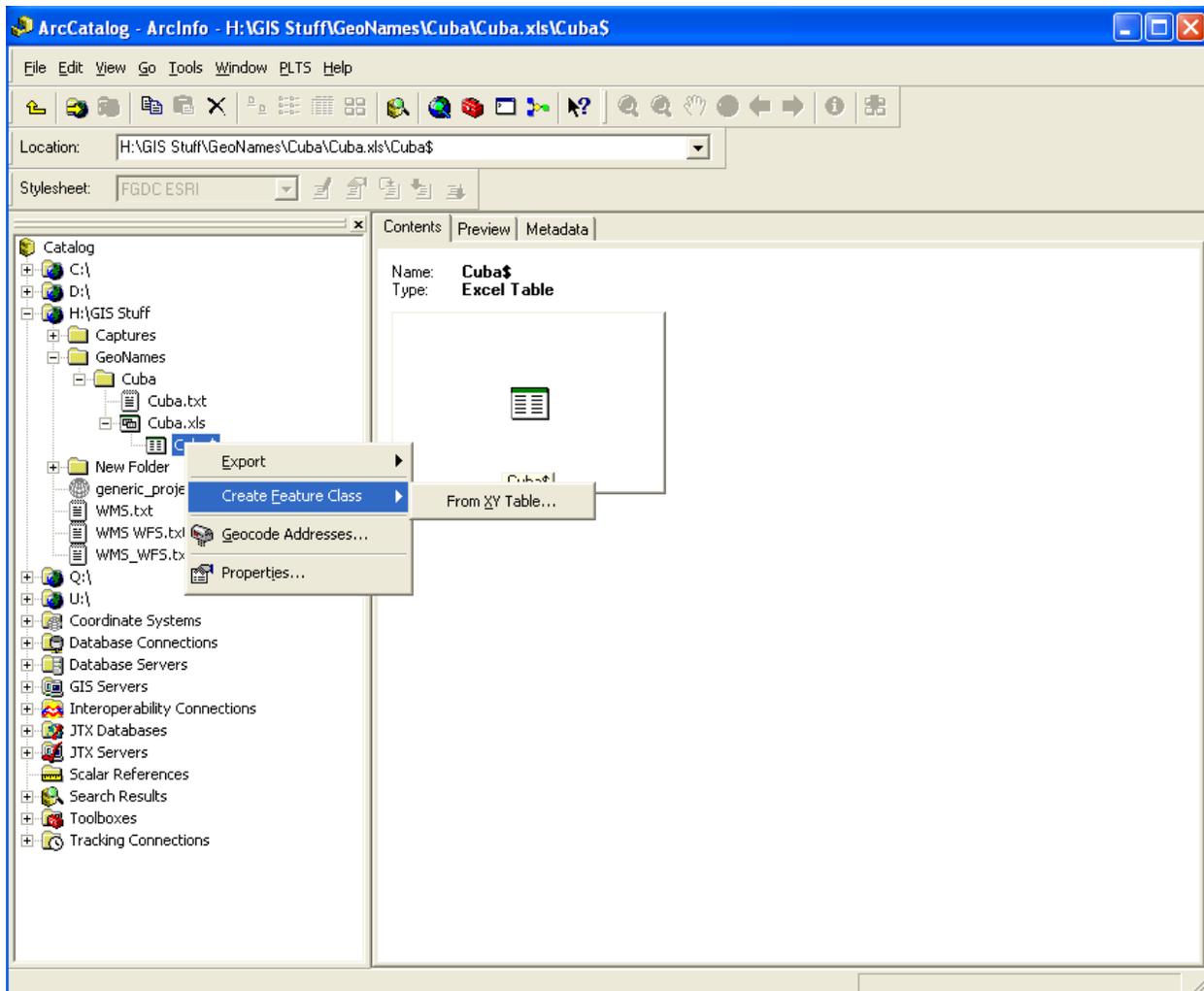
Now that you have created the spreadsheet, you need to bring it into ArcGIS. In order to do this you need to create a feature class.

Creating a feature class in ArcCatalog

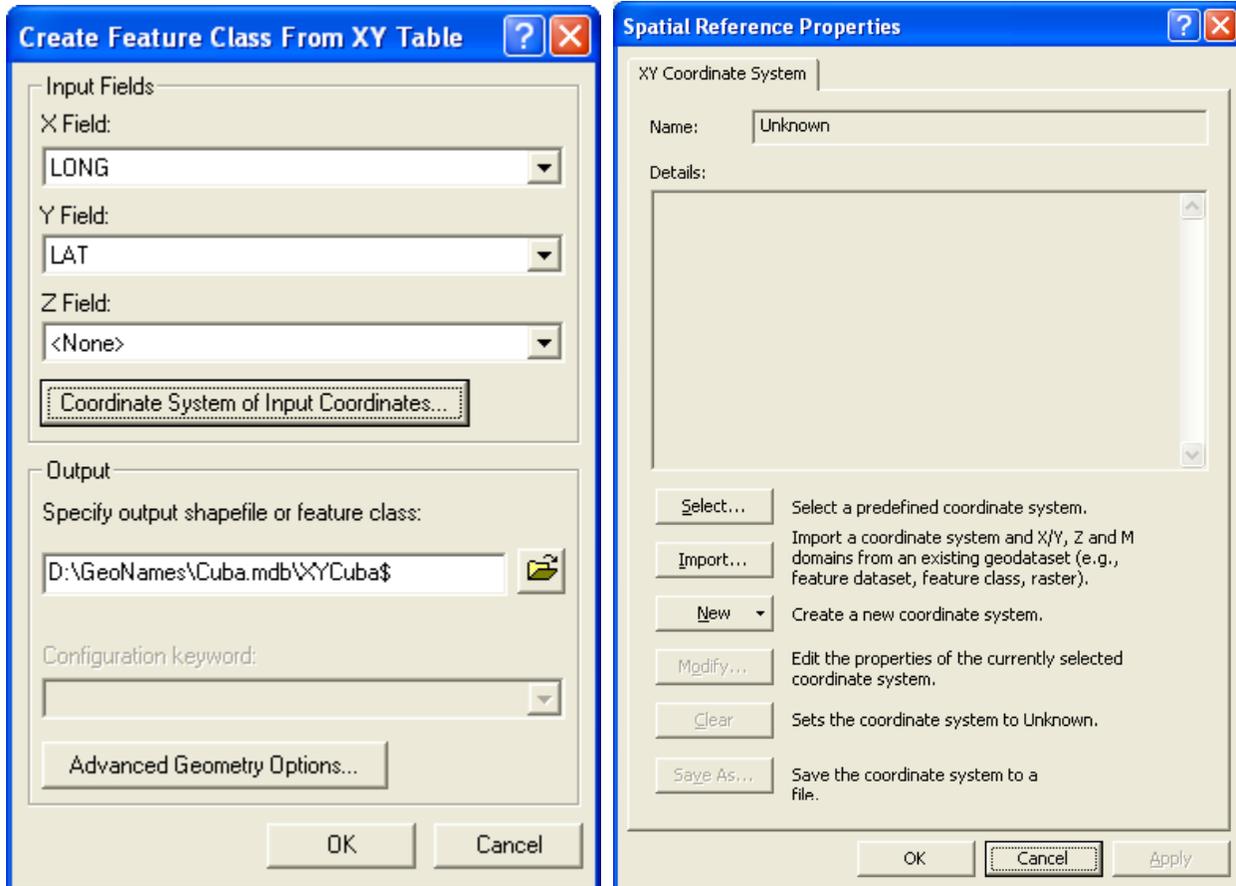
- Launch ArcCatalog.
- Create a new Personal Geodatabase to export the data into by right mouse clicking on the drive or folder where you want the geodatabase to reside, scroll down to New, then select Personal Geodatabase (Cuba for this example).



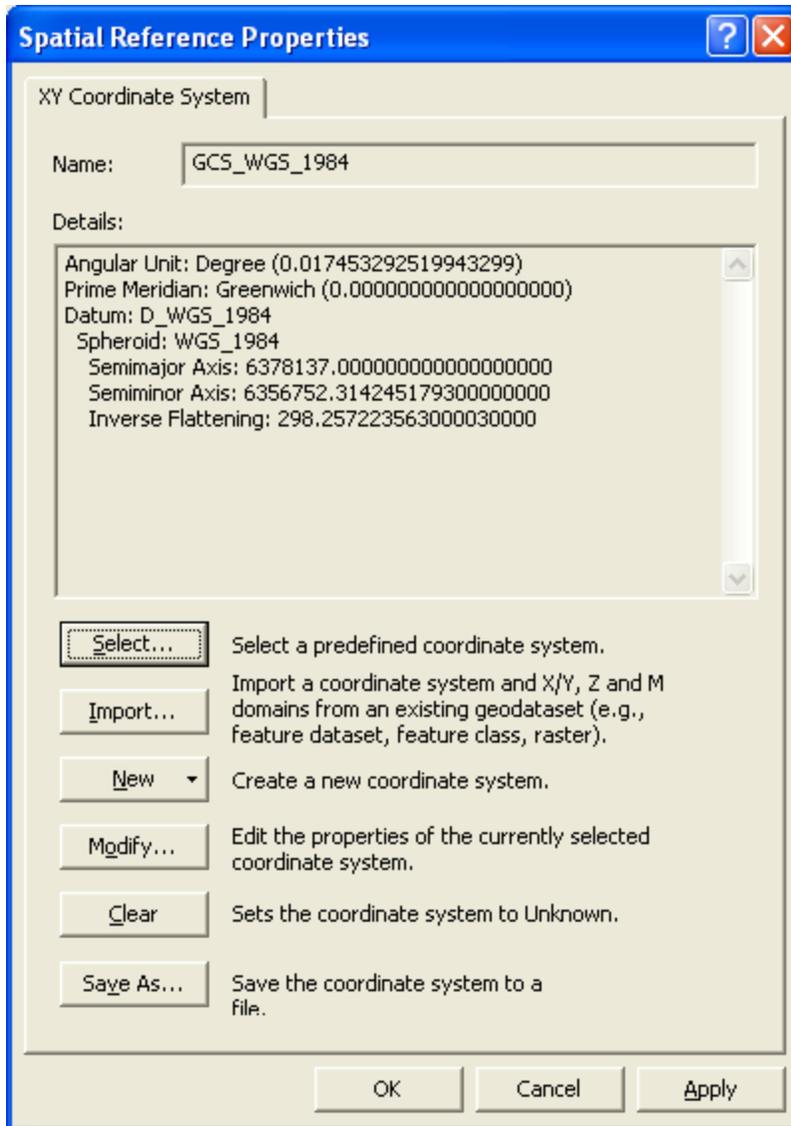
- Locate the spreadsheet you just created.
- Expand the spreadsheet. Right click on the table. Select Create Feature Class > From XY Table.



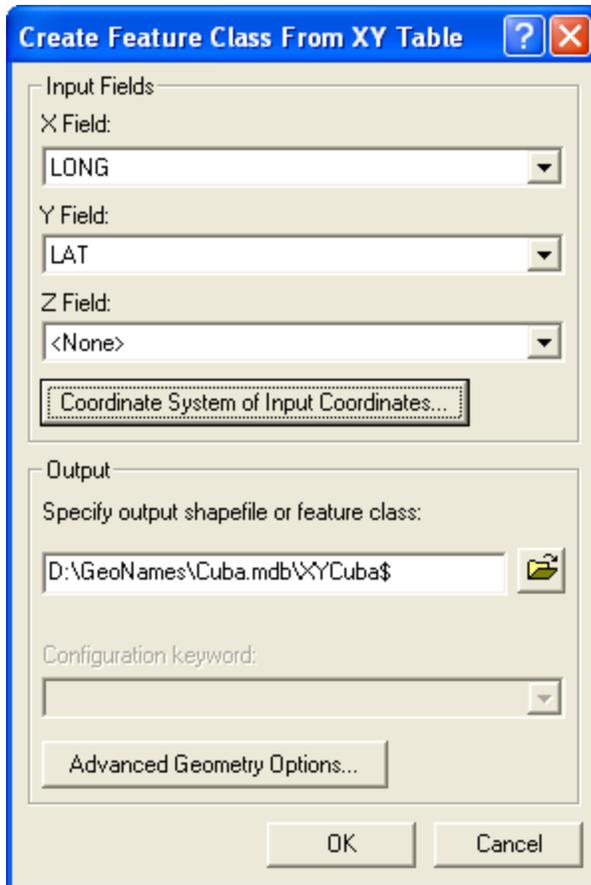
- In the Create Feature Class from XY table window – make sure the X and Y fields are correct.
- Click Coordinate System of Input Coordinates...



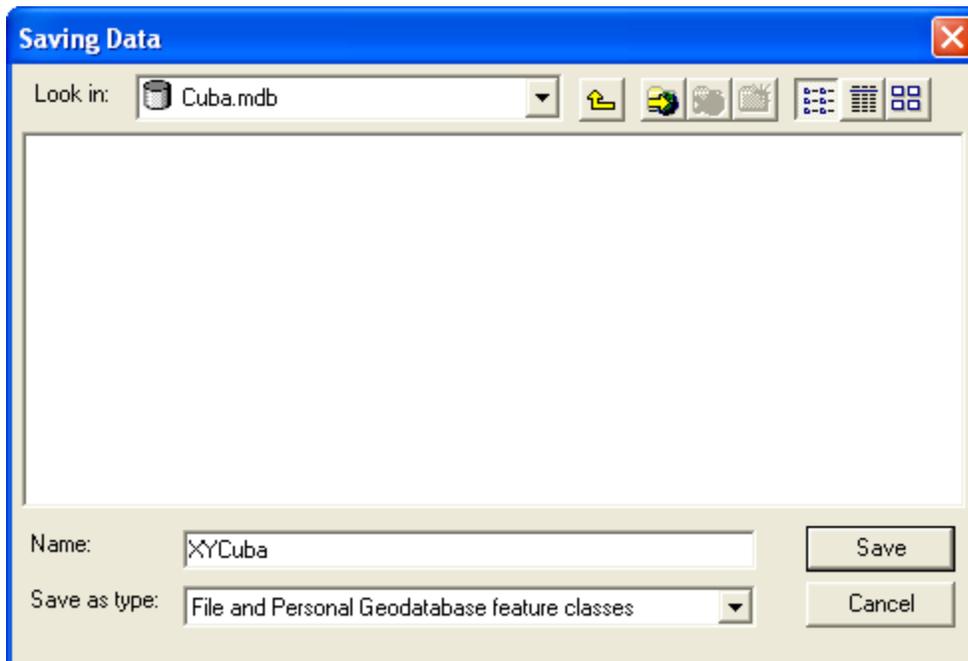
- In the Spatial reference Properties window click the Select button and find the coordinate system that matches your data. (Since you are dealing with names from GNS it will be WGS 84. In the future, if you are using data from another source, make sure you select the correct coordinate system.) Click OK.



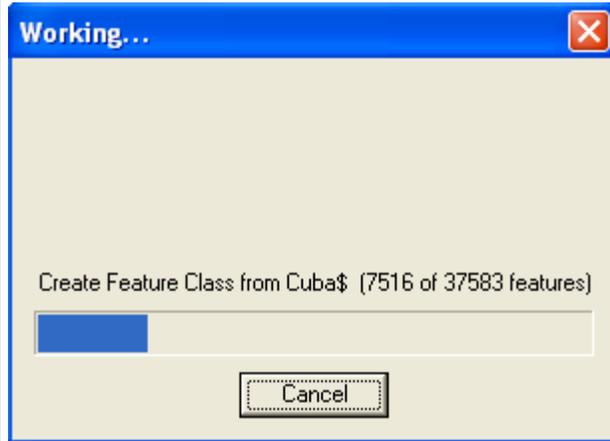
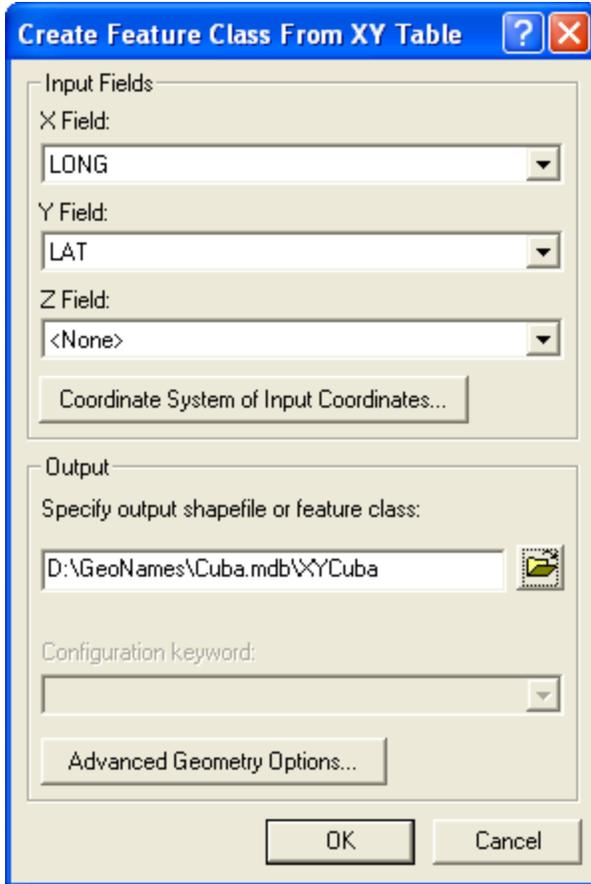
- Now you need to export this data set into the newly created personal geodatabase. Click on the yellow folder button in the Output section and navigate to the Cuba personal geodatabase.



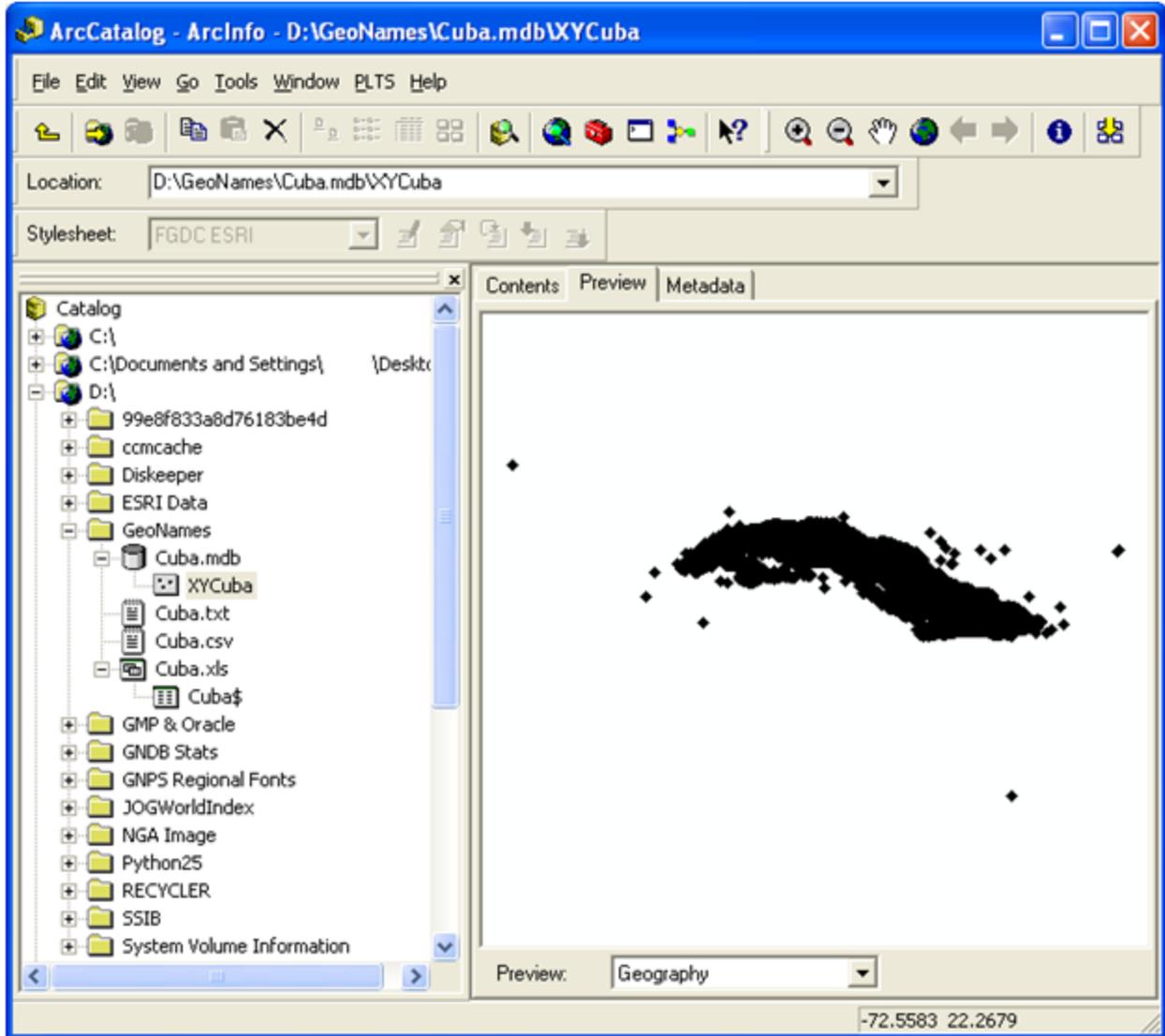
- Name your exported dataset, XYCuba for this example. Select File and Personal Geodatabase feature class in the Save as type drop down selection. Click on Save.

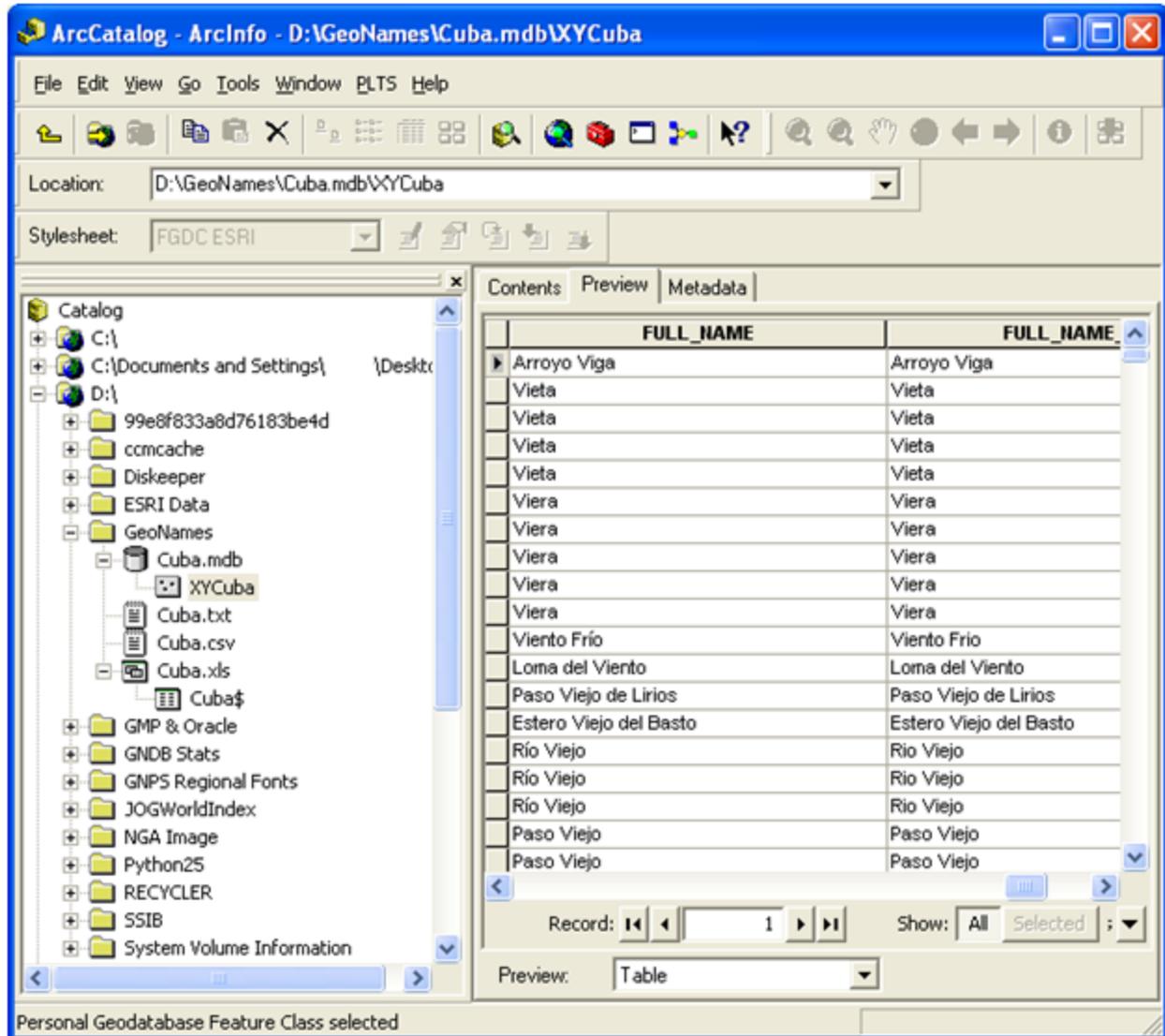


- Click OK to start the export process, which will also create your personal geodatabase.



- Refresh the location where you created the personal geodatabase file.

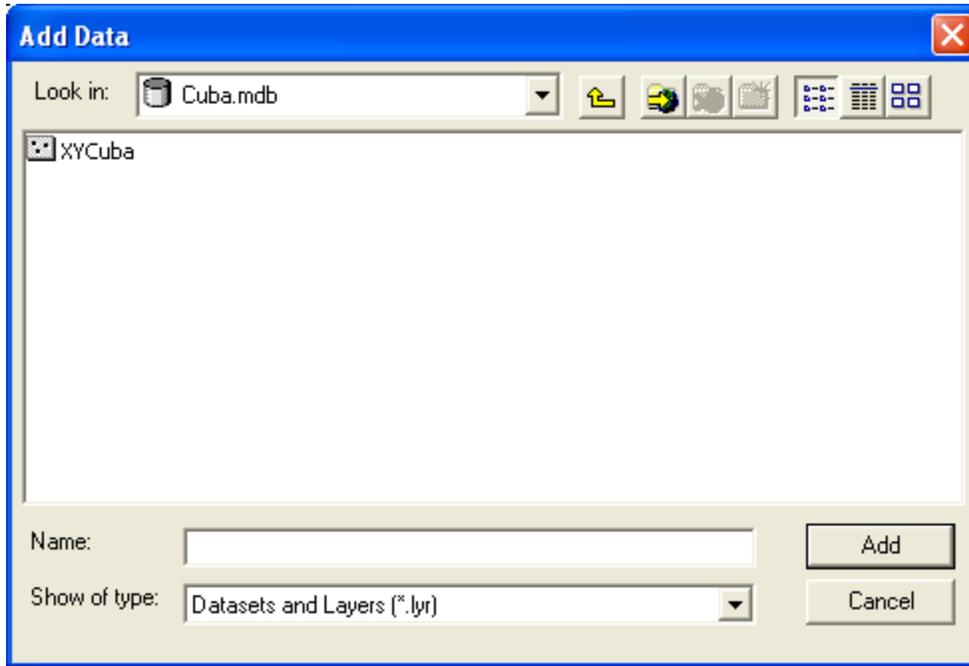




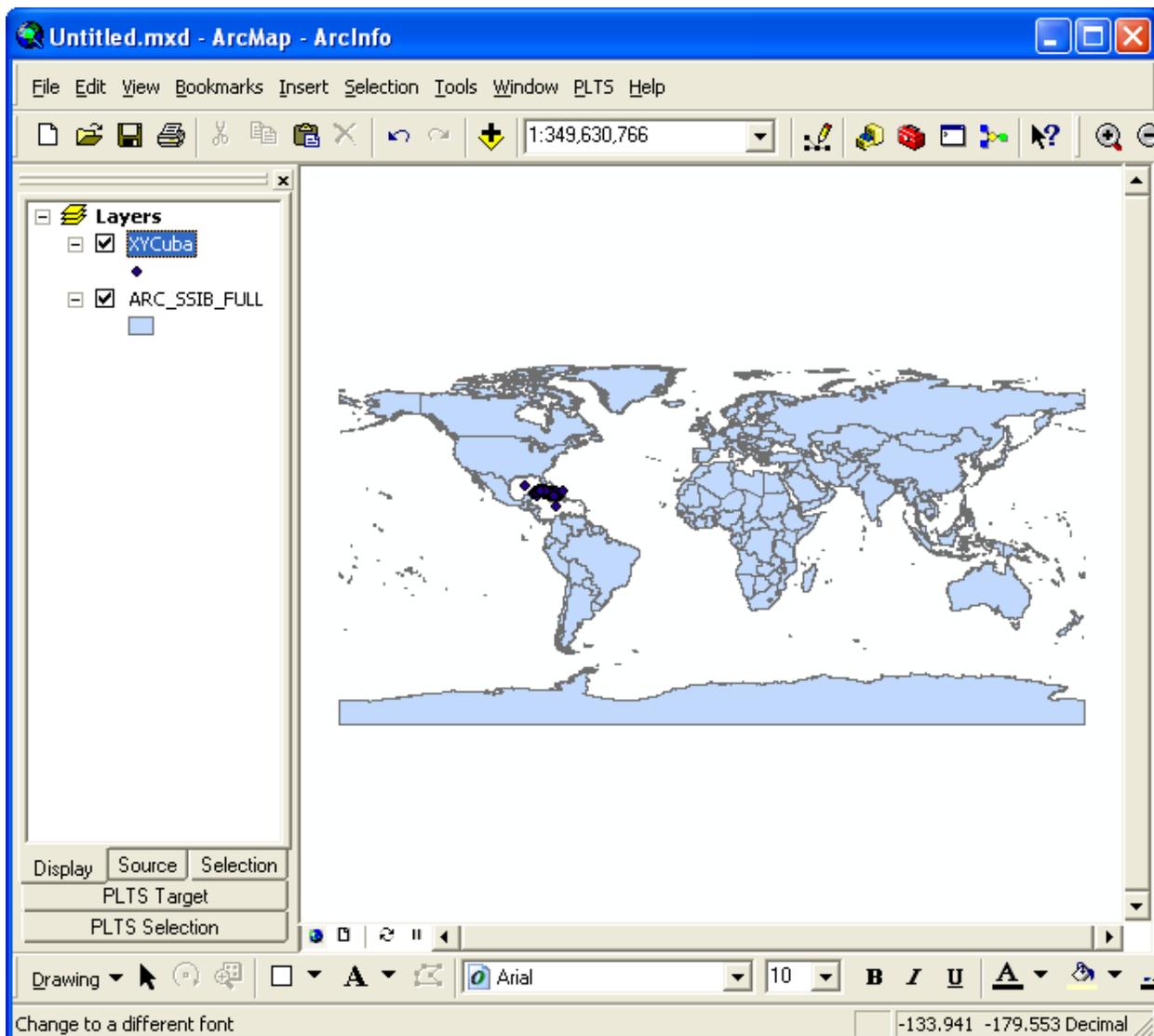
- Close Arc Catalog

Displaying the data in ArcMap

- Launch ArcMap.
- Click the add data button  and look in the Geodatabase. Select the feature class you just created and click “Add”.



- The data will be displayed in ArcMap.



- One last thing. Right click on the table in the layers menu. And select “open attribute table”.
- Click the “Options” button at the bottom and select appearance.
- In the Table Appearance window set the font to “Arial Unicode MS”. If you want you can also increase the size or change the color.

Take a look at the names in the table to ensure they are being displayed properly. If so, Congratulations! You have just imported a names file into ArcGIS.

Attributes of XYCuba				
GENERIC	SORT_NAME	FULL_NAME	FULL_NAME_ND	
Arroyo	ARROYOVIGA	Arroyo Viga	Arroyo Viga	<
<Null>	VIETA	Vieta	Vieta	<
<Null>	VIETA	Vieta	Vieta	<
<Null>	VIETA	Vieta	Vieta	<
<Null>	VIETA	Vieta	Vieta	<
<Null>	VIERA	Viera	Viera	<
<Null>	VIERA	Viera	Viera	<
<Null>	VIERA	Viera	Viera	<
<Null>	VIERA	Viera	Viera	<
<Null>	VIERA	Viera	Viera	<
<Null>	VIENTOFRIO	Viento Frío	Viento Frio	<
Loma	LOMADELVIENTO	Loma del Viento	Loma del Viento	<
Paso	PASOVIEJODELIRIOS	Paso Viejo de Lirios	Paso Viejo de Lirios	<
Estero	ESTEROVIEJODELBASTO	Estero Viejo del Basto	Estero Viejo del Basto	<
<Null>	RIOVIEJO	Río Viejo	Rio Viejo	<
Río	RIOVIEJO	Río Viejo	Rio Viejo	<
<Null>	RIOVIEJO	Río Viejo	Rio Viejo	<
Paso	PASOVIEJO	Paso Viejo	Paso Viejo	<
<Null>	PASOVIEJO	Paso Viejo	Paso Viejo	<
<Null>	PASOVIEJO	Paso Viejo	Paso Viejo	<
Corte	CORTEVIEJO	Corte Viejo	Corte Viejo	<
Arroyo	ARROYOVIEJO	Arroyo Viejo	Arroyo Viejo	<
<Null>	VIEJO	Viejo	Viejo	<
<Null>	VIEJO	Viejo	Viejo	<
<Null>	VIEJO	Viejo	Viejo	<
<Null>	VIEJO	Viejo	Viejo	<
<Null>	VIEJO	Viejo	Viejo	<
<Null>	VIEJO	Viejo	Viejo	<
<Null>	VIEJAUNIQUE	Vieja Unique	Vieja Unique	<

Record: 1 Show: All Selected Records (0 out of *2000 Selected) Options

Loading Names Data into ArcMap - GNS Generated Shapefile

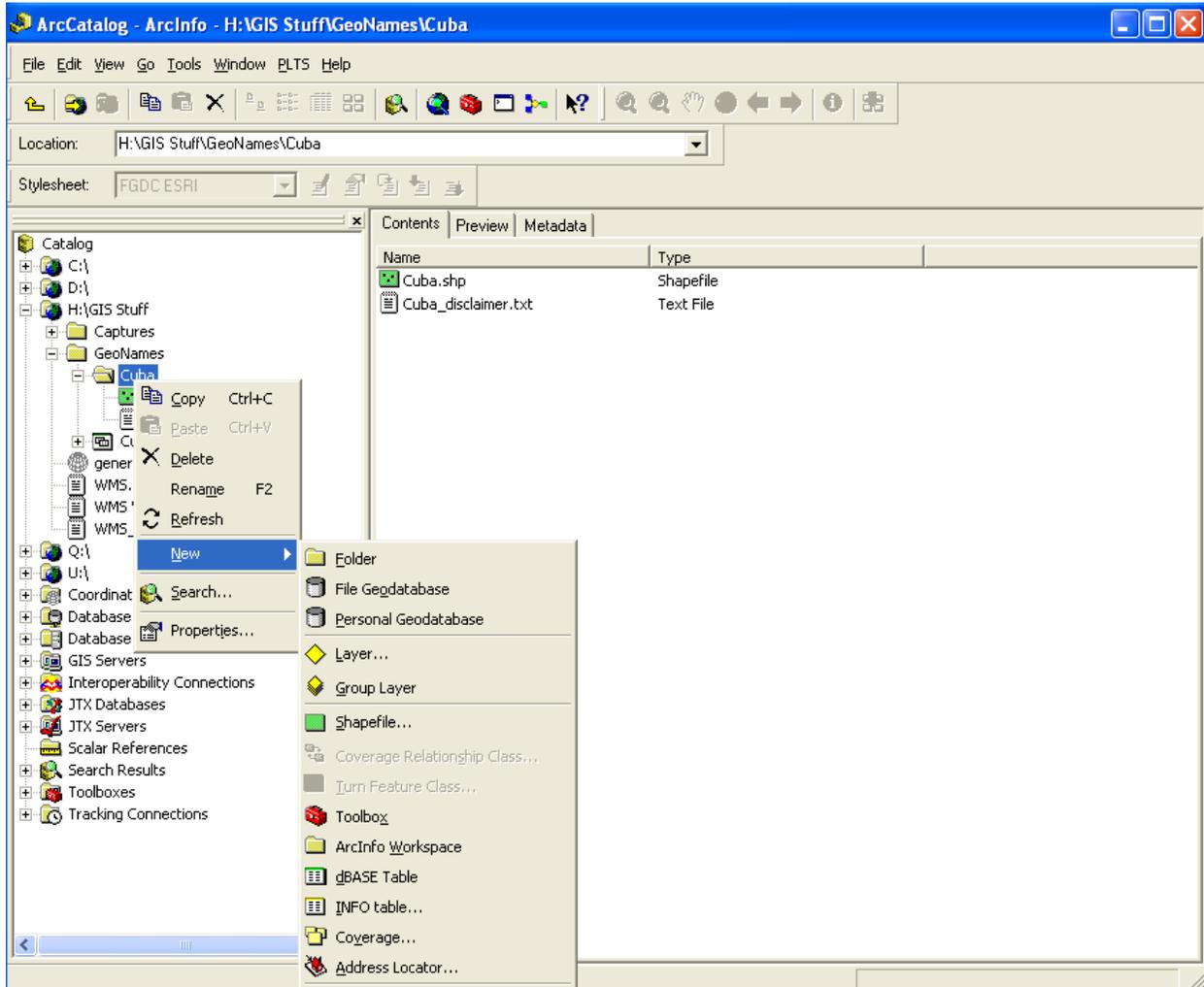
If you generated your own shapefile using GNS, you'll end up with a Unicode UTF-8 encoded dataset. Again, using Cuba as an example, the compressed shapefile will contain the following:

Cuba.cpg	Code page file, used by ESRI's ArcGIS to identify data encoding, that contains the following text: <ul style="list-style-type: none"> UTF-8.
Cuba.dbf	dBase table used by ESRI's ArcGIS.
Cuba.ini	Code page file, used by Intergraph's GeoMedia to identify data encoding, that contains the following text: <ul style="list-style-type: none"> TEXT ENCODING: Cuba_shapefile=UTF-8
Cuba.prj	Projection file, used by ESRI's ArcGIS, that contains the following text: <ul style="list-style-type: none"> GEOGCS["GCS_WGS_1984",DATUM["D_WGS_1984",SPHEROID["WGS_1984",6378137.0,298.257223563]],PRIMEM["Greenwich",0.0],UNIT["Degree",0.0174532925199433]]
Cuba.shp	ESRI's ArcGIS shapefile.
Cuba.shx	ESRI's ArcGIS index file.
Cuba_disclaimer.txt	Contains the following disclaimer note: <ul style="list-style-type: none"> The geographic names in this database are provided for the guidance of and use by the Federal Government and for the information of the general public. The names, variants, and associated data may not reflect the views of the United States Government on the sovereignty over geographic features.

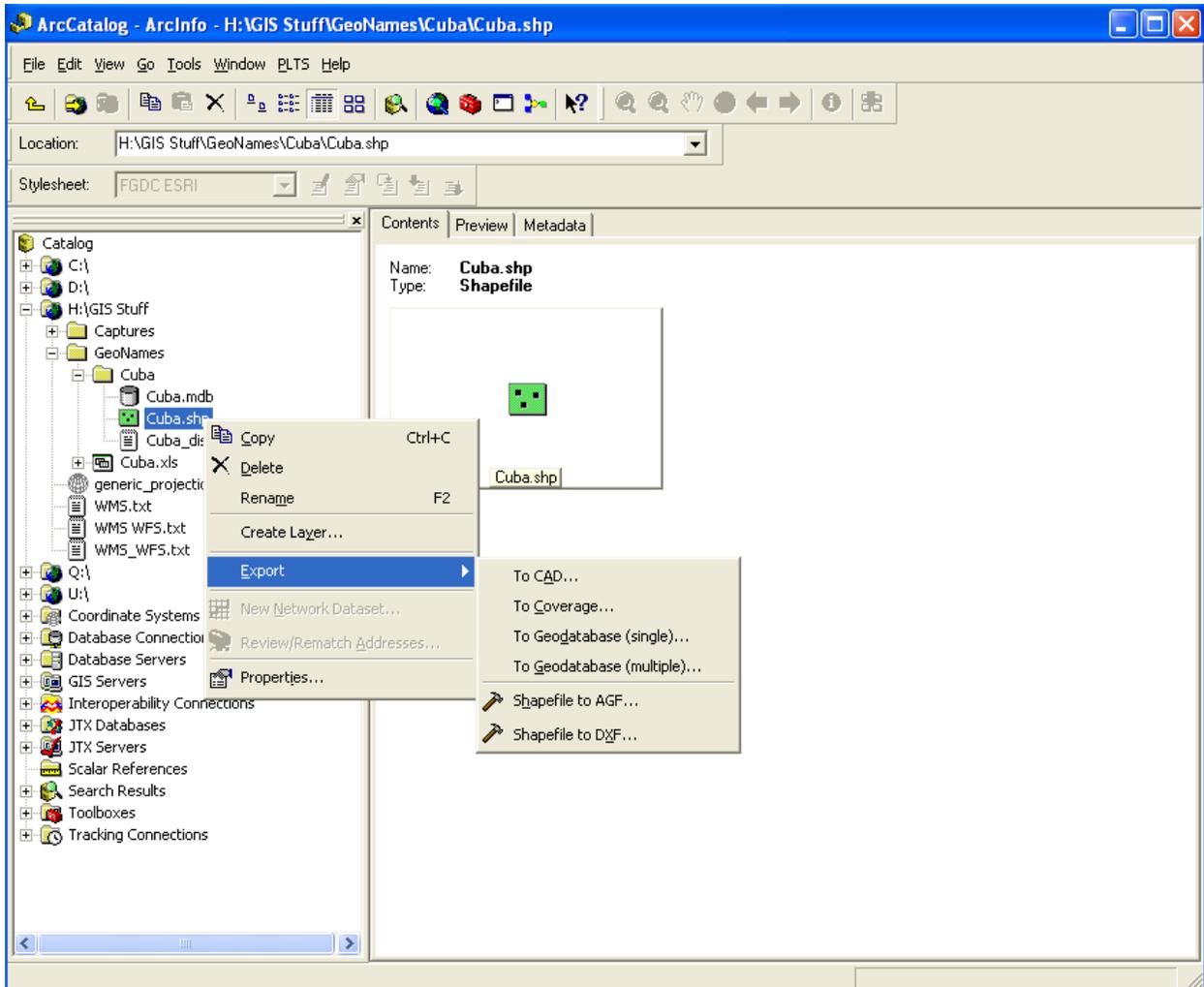
If all you need is to display the shapefile as a read-only layer, just follow the standard procedures to add it. If, however, you need to edit the data, then you need to first convert the shapefile into a personal geodatabase to maintain data encoding.

Creating a feature class in ArcCatalog

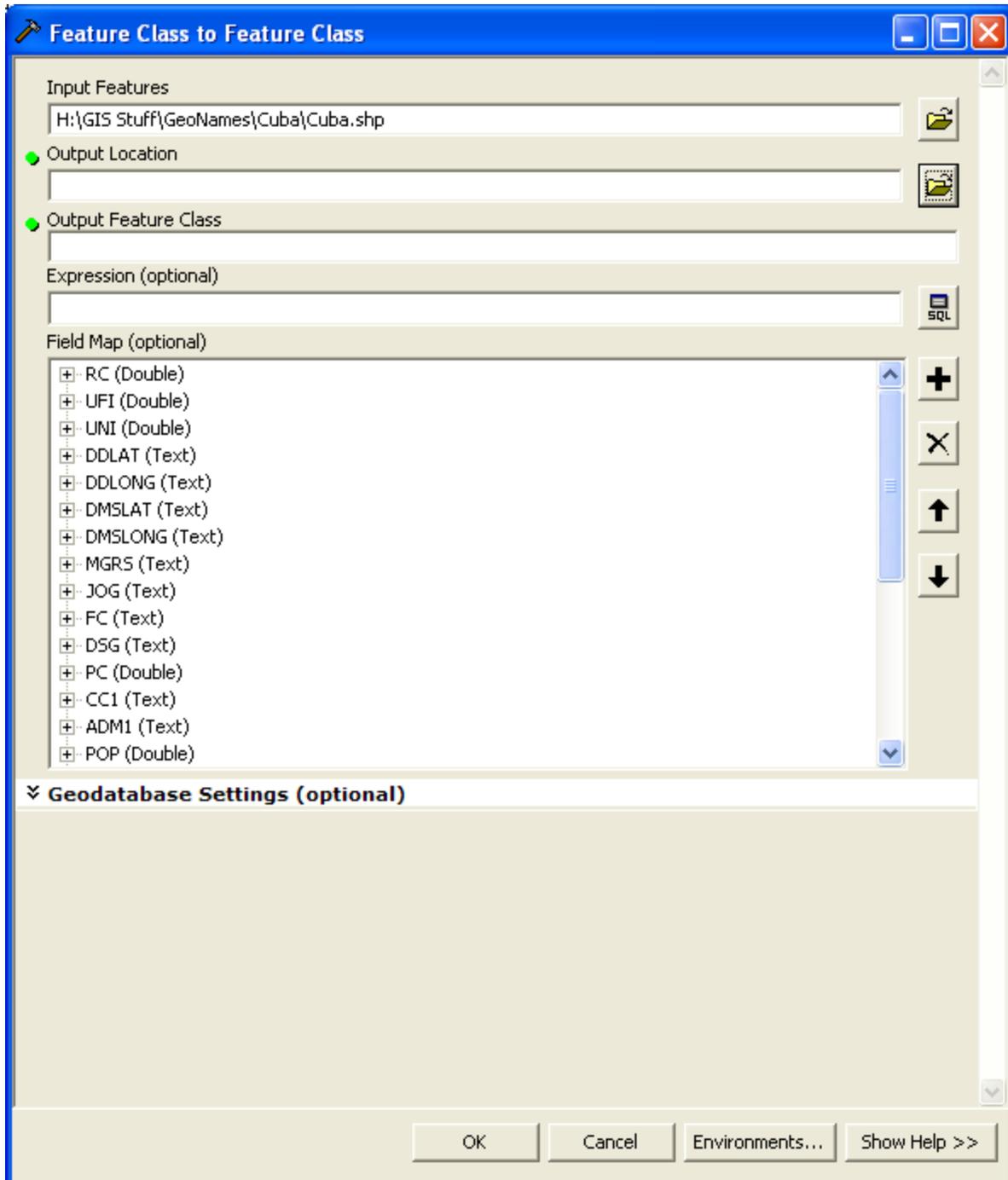
- Launch ArcCatalog.
- Load the shapefile.
- Create a new Personal Geodatabase to export the data into by right mouse clicking on the drive or folder where you want the geodatabase to reside, scroll down to New, then select Personal Geodatabase (Cuba for this example).



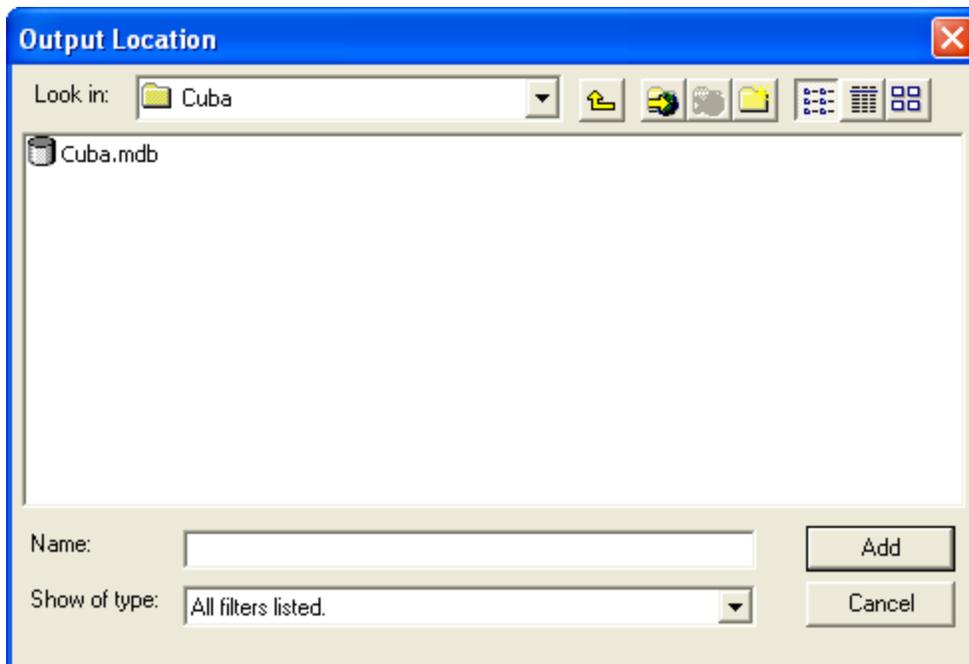
- Right mouse click on the shapefile you generated from GNS and brought into ArcCatalog. Select Export > To Geodatabase (Single).



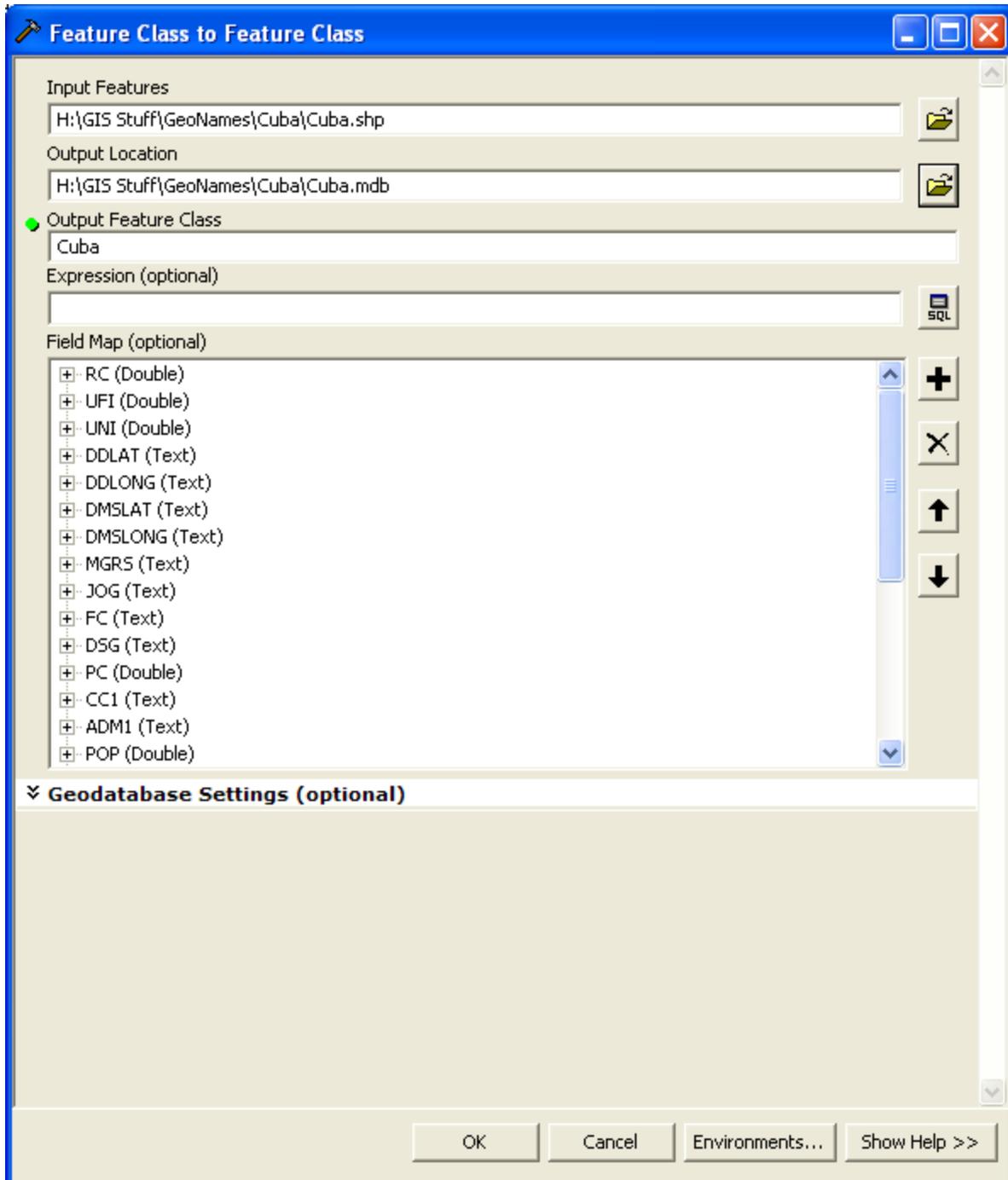
- You'll see the Feature Class to Feature Class dialog box.



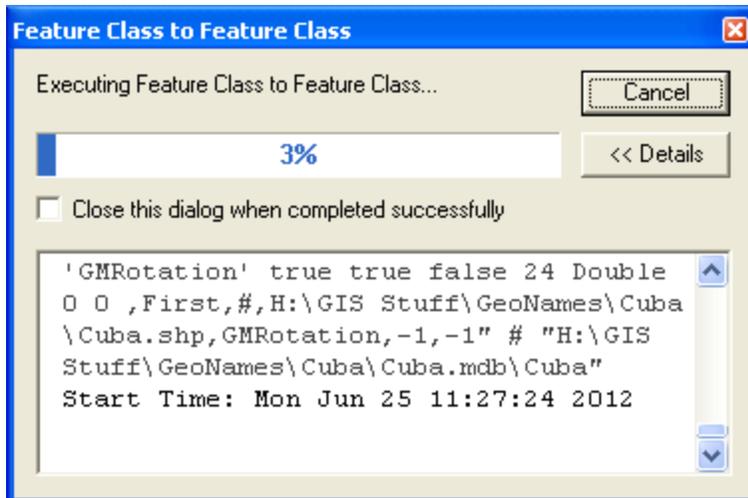
- Under the Output Location widget, browse to the newly created geodatabase and select it. Click Add.



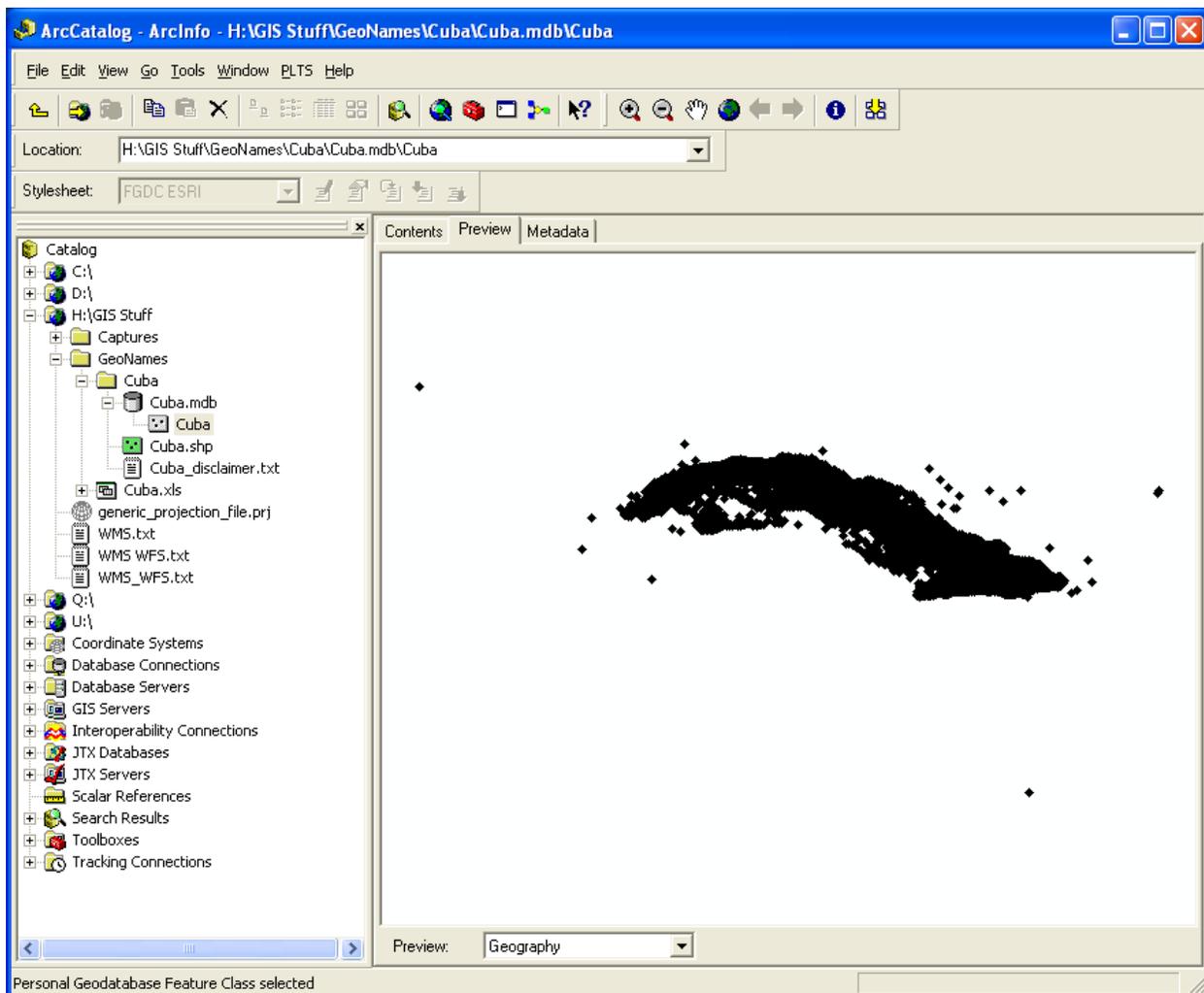
- Supply a name for the feature class in the Output Feature Class widget.



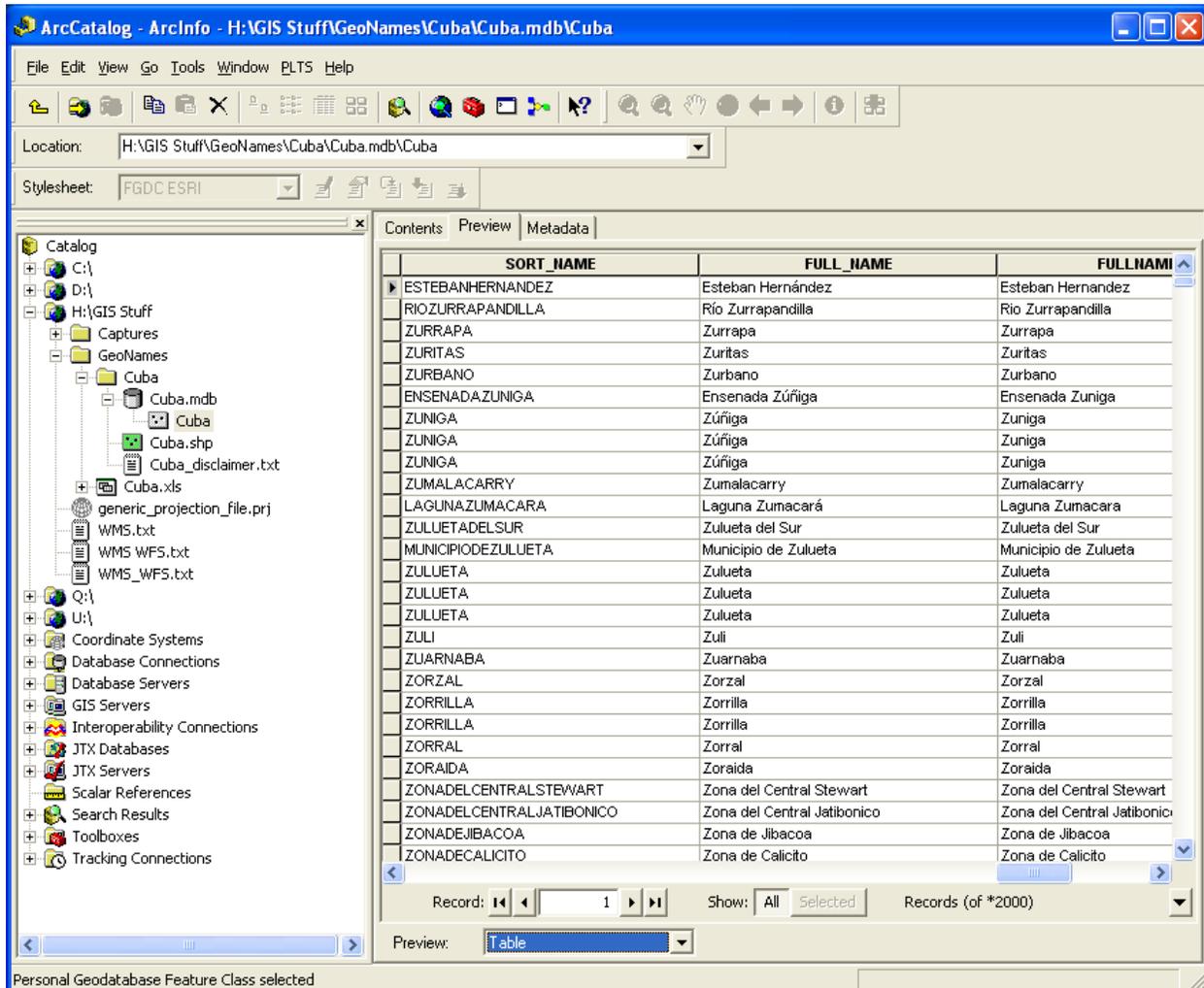
- Click OK. The export wizard will start the process and display a progress bar.



- When the process completes, perform a refresh so you'll see the added feature class in the geodatabase.
- Expand the geodatabase and select the feature class. Click the Preview tab to make sure data is OK.



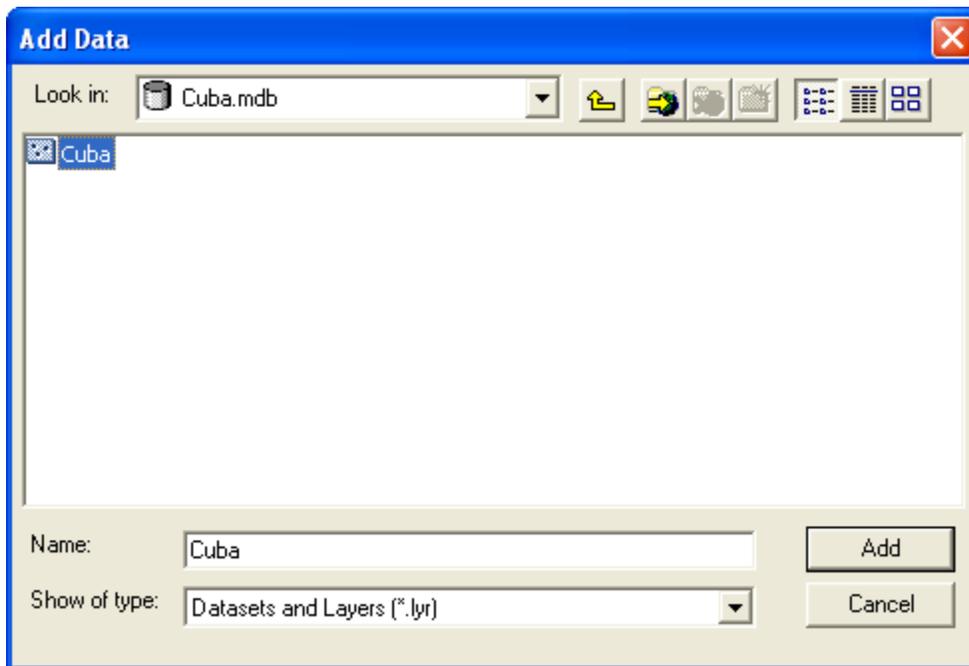
- Switch from Geography to Table and inspect the names data to make sure it maintained its encoding.



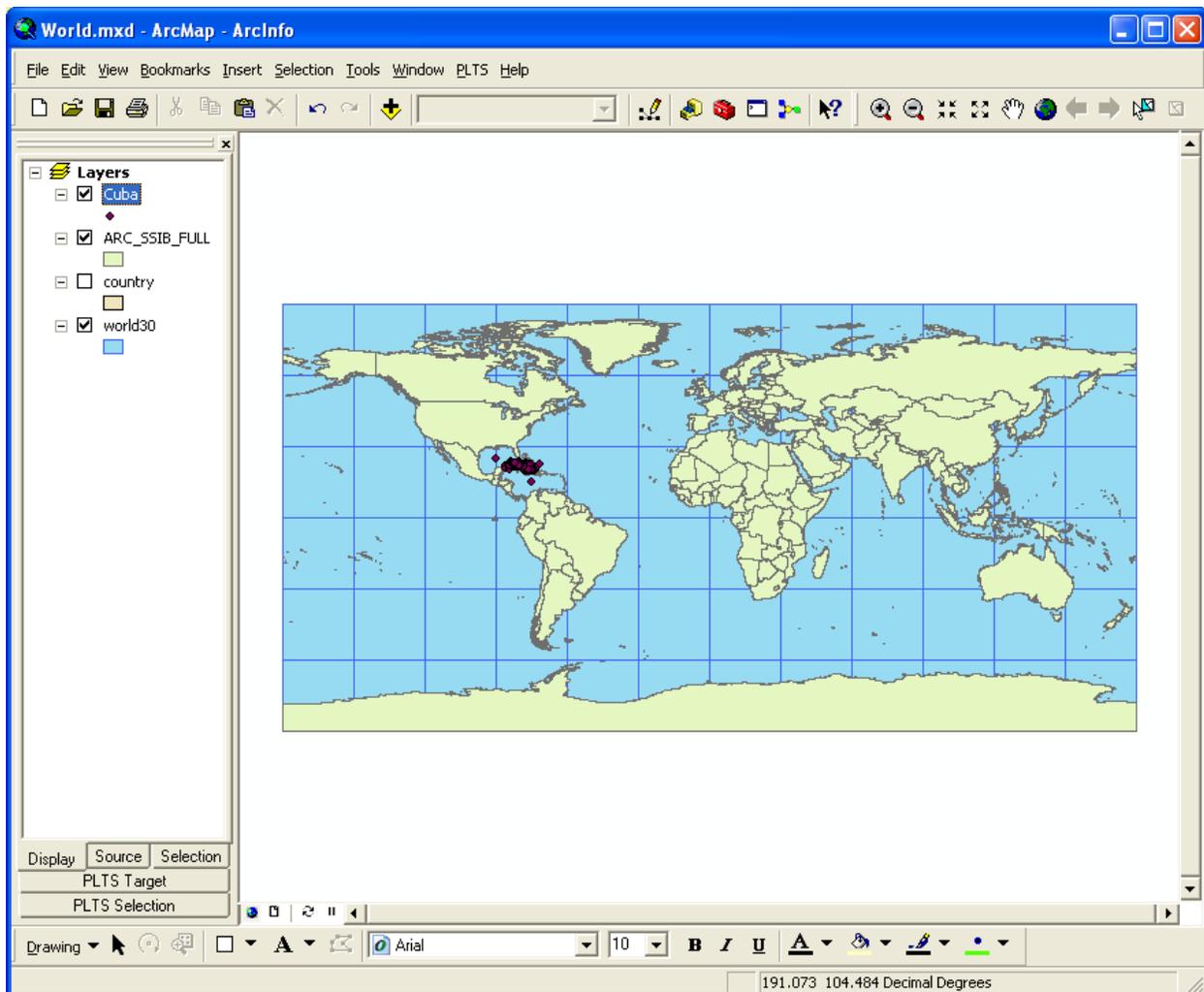
- Close ArcCatalog.

Displaying the data in ArcMap

- Launch ArcMap
- Click the add data button  and look in the Geodatabase. Select the feature class you just created and click “Add”.



- ArcMap will display your new names layer.



- Open the attribute table for the dataset and inspect the names for correct encoding.

NT	SHORT_FOR	GENERIC	SORT_NAME	FULL_NAME	FULLNAMEND	NOTE
N			ESTEBANHERNANDEZ	Esteban Hernández	Esteban Hernandez	
N		Río	RIOZURRAPANDILLA	Río Zurrapandilla	Río Zurrapandilla	
N			ZURRAPA	Zurrapa	Zurrapa	
N			ZURITAS	Zuritas	Zuritas	
N			ZURBANO	Zurbano	Zurbano	
N		Ensenada	ENSENADAZUNIGA	Ensenada Zúñiga	Ensenada Zuniga	
N			ZUNIGA	Zúñiga	Zuniga	
N			ZUNIGA	Zúñiga	Zuniga	
N			ZUNIGA	Zúñiga	Zuniga	
N			ZUMALACARRY	Zumalacarry	Zumalacarry	
N		Laguna	LAGUNAZUMACARA	Laguna Zumacará	Laguna Zumacara	
N			ZULUETADELSUR	Zulueta del Sur	Zulueta del Sur	
N	Zulueta		MUNICIPIODEZULUETA	Municipio de Zulueta	Municipio de Zulueta	
N			ZULUETA	Zulueta	Zulueta	
N			ZULUETA	Zulueta	Zulueta	
N			ZULUETA	Zulueta	Zulueta	
N			ZULI	Zuli	Zuli	
N			ZUARNABA	Zuarnaba	Zuarnaba	
N			ZORZAL	Zorzal	Zorzal	
N			ZORRILLA	Zorrilla	Zorrilla	
N			ZORRILLA	Zorrilla	Zorrilla	
N			ZORRAL	Zorral	Zorral	
N			ZORAIDA	Zoraida	Zoraida	
N			ZONADELCENTRALSTEWART	Zona del Central Stewart	Zona del Central Stewart	
N			ZONADELCENTRALJATIBONICO	Zona del Central Jatibonico	Zona del Central Jatibonico	
N			ZONADEJIBACOA	Zona de Jibacoa	Zona de Jibacoa	
N			ZONADECALICITO	Zona de Calicito	Zona de Calicito	
N			ZONAAGUILA	Zona Águila	Zona Aguila	
N			ZOILA	Zoila	Zoila	

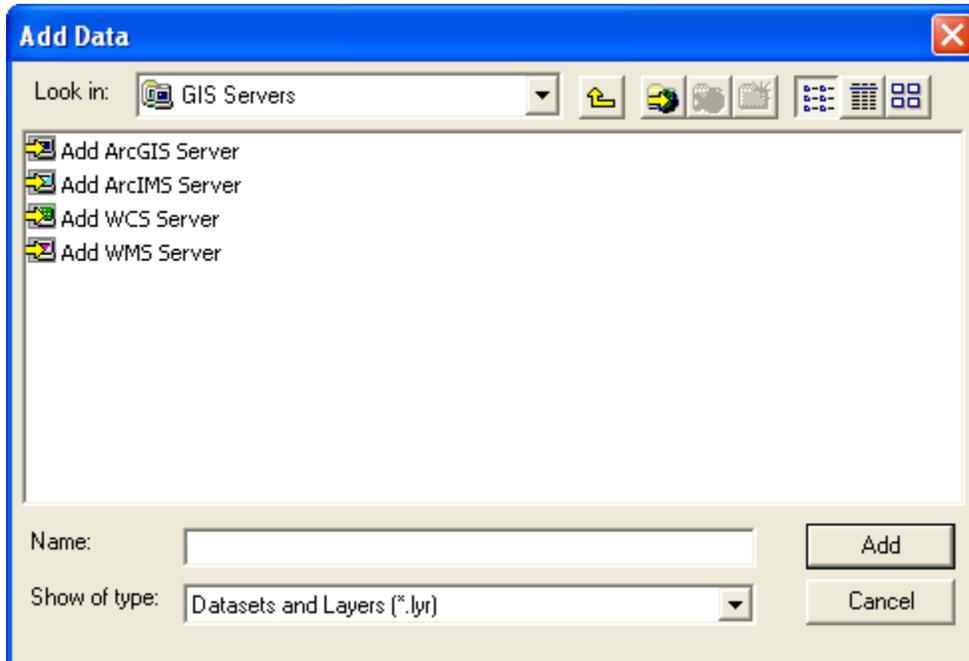
Record: 1 Show: All Selected Records (0 out of *2000 Selected) Options

Loading Names Data into ArcMap - GNS WMS service

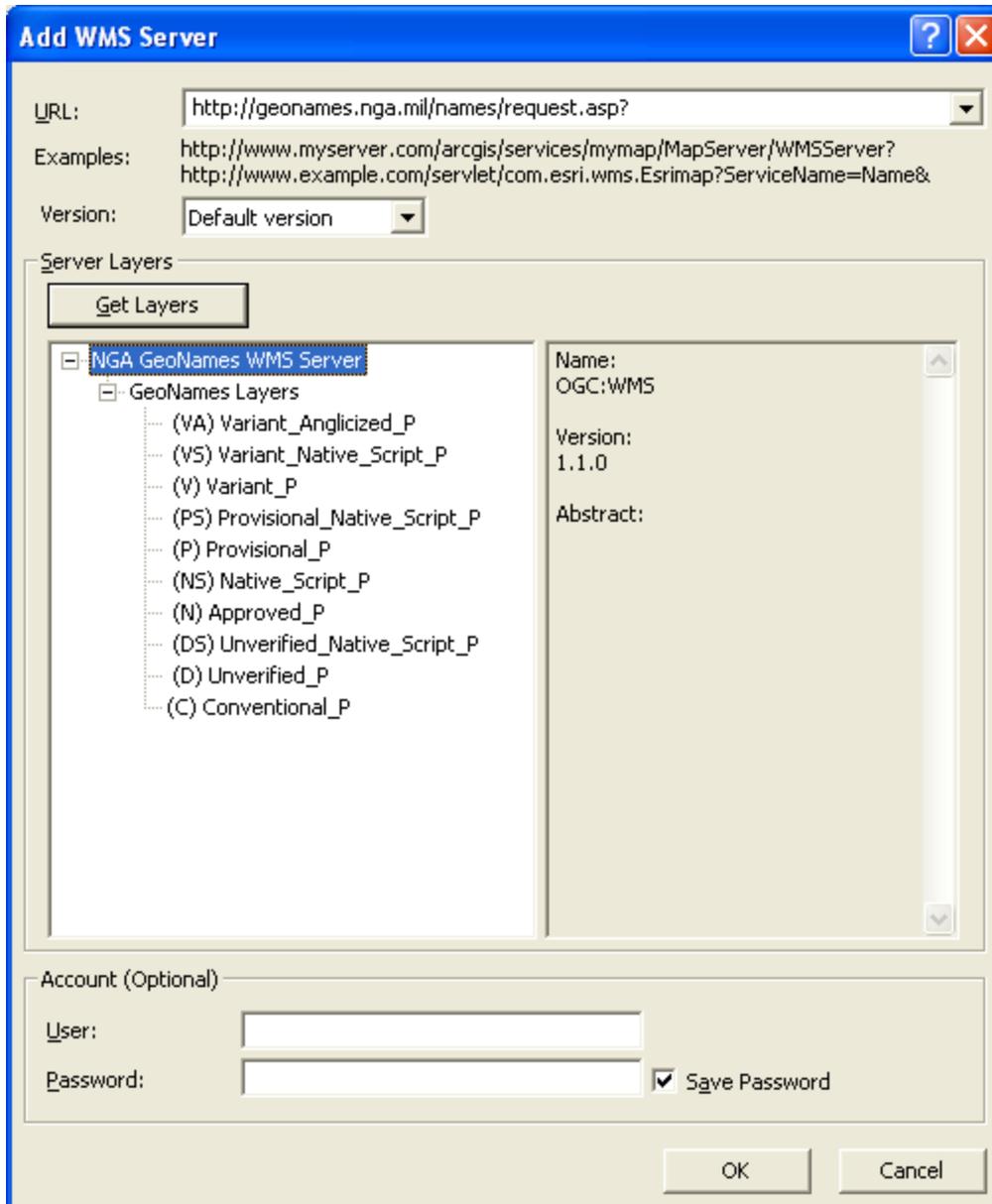
To learn more about consuming WMS services into ArcGIS, follow the steps outlined on ESRI's web site (http://webhelp.esri.com/arcgisserver/9.3/java/index.htm#wms_service.htm).

Making the connection and displaying the data in ArcMap

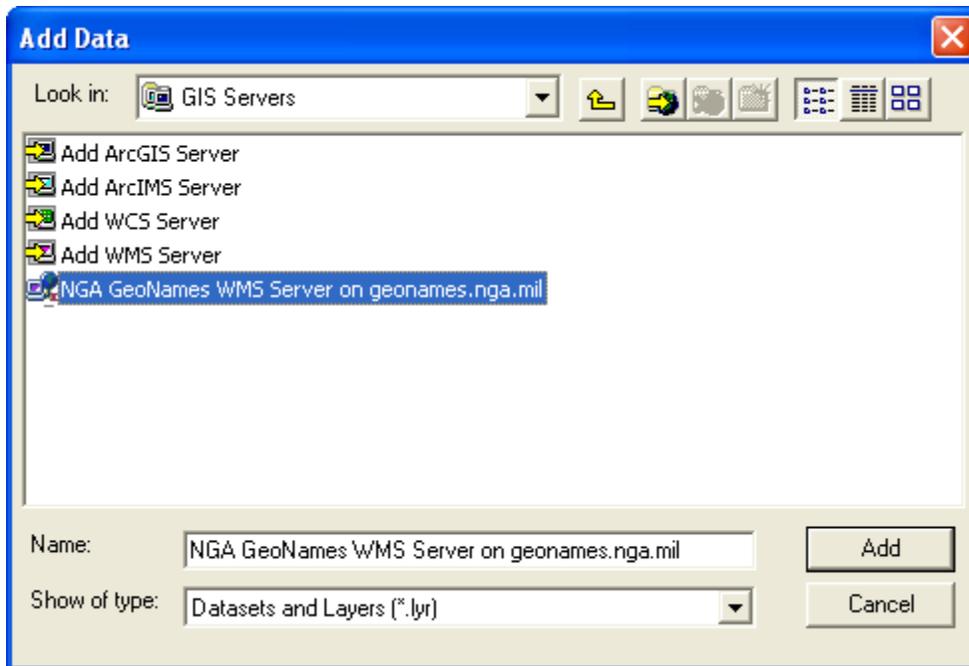
- In ArcMap, click the Add data button  to add a new layer.
- Click the Look in drop-down arrow and click GIS Servers.



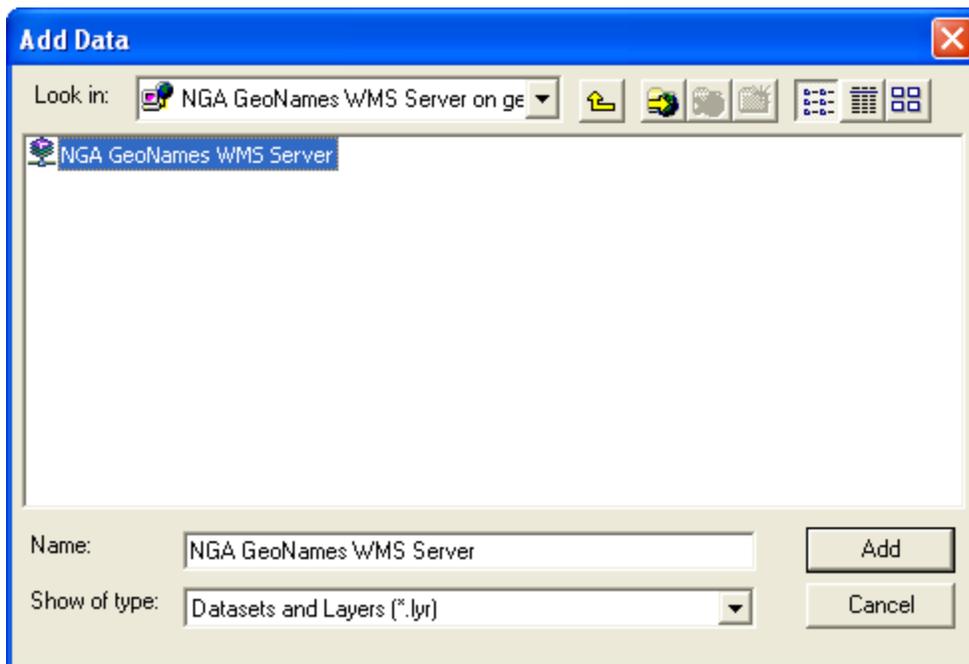
- Select Add WMS Server from your list of connections to add the service's contents as a layer.
- Enter the URL for the WMS service (for GNS WMS, enter <http://geonames.nga.mil/names/request.asp?>, with or without the question mark).
- Click on Get Layers to show all the GNS WMS provided ones.



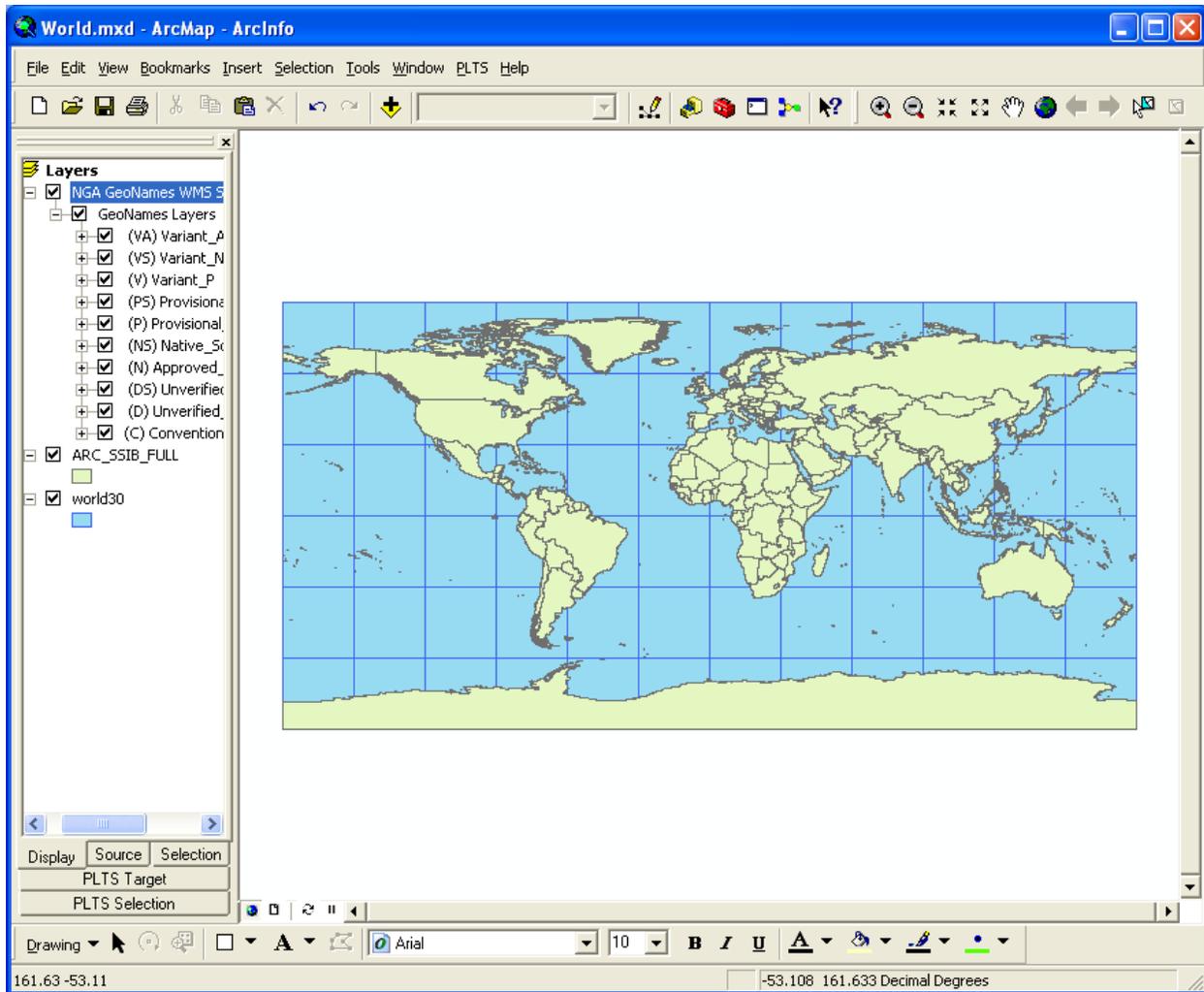
- Click OK.



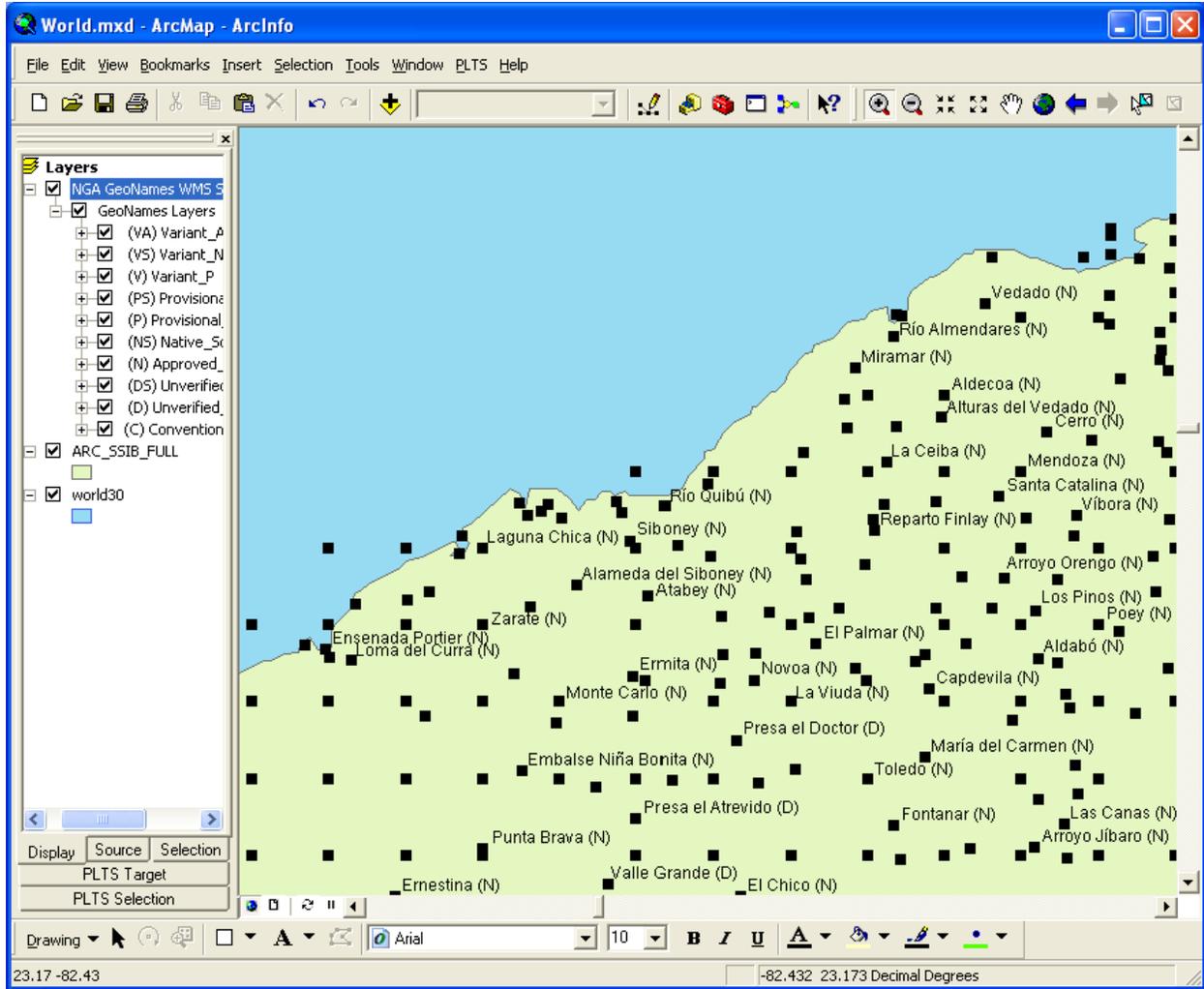
- Select NGA GeoNames WMS Server on geonames.nga.mil. Click Add.



- Select NGA GeoNames WMS Server. Click Add.
- The GNS GeoNames WMS layer appears in ArcGIS with all name types selected. If you're only interested in primary names, only select (C) Conventional, (N) Approved, and possibly (D) Unverified.



- As you start zooming in, you'll start seeing dots representing geonames data. Depending on the density of the area, you may have to keep zooming in until you start seeing names next to those dots.



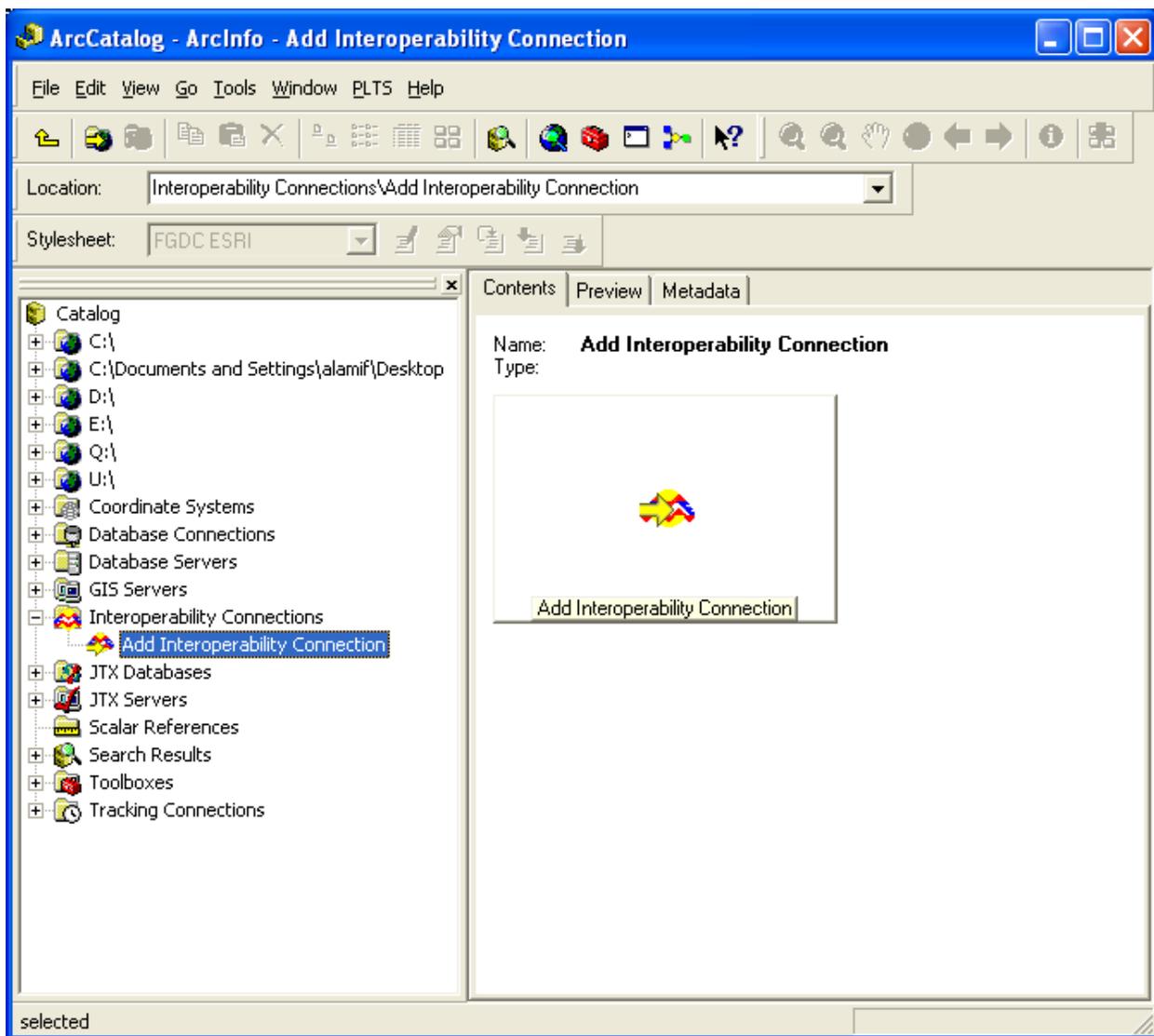
Loading Names Data into ArcMap - GNS WFS service

To learn more about consuming WFS services into ArcGIS (requires the Data Interoperability extension), follow the steps outlined on ESRI's web site

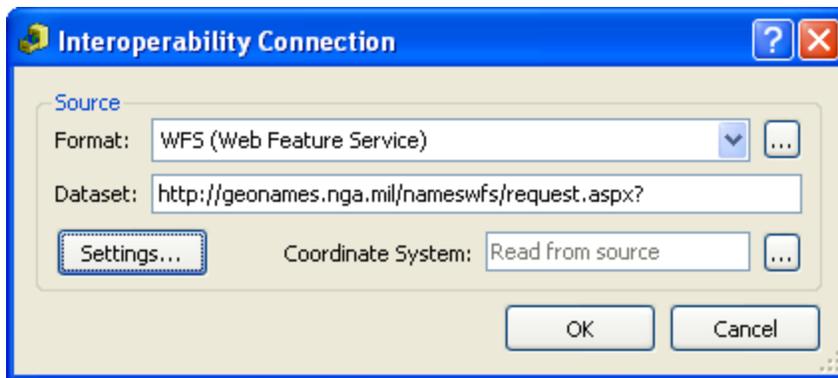
(http://webhelp.esri.com/arcgisdesktop/9.3/index.cfm?TopicName=Adding_a_WFS_service_layer_to_a_rcmap).

Making the connection in ArcCatalog

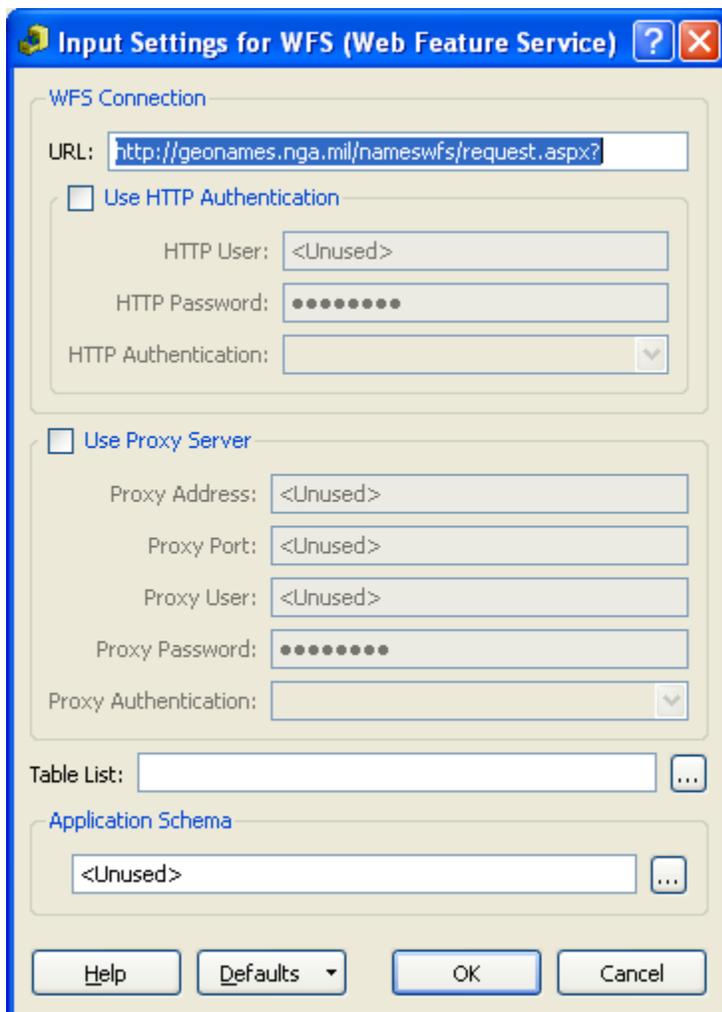
- In ArcCatalog, click the Add data button  to add a new map layer.
- Click the Look in drop-down arrow and click Interoperability Connections.



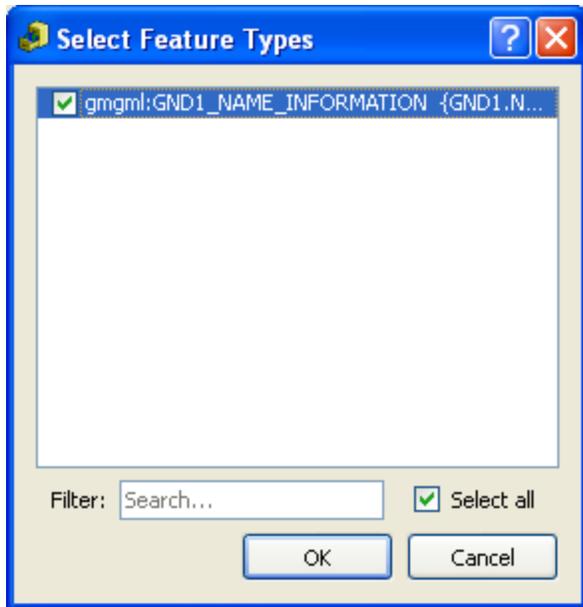
- Choose a WFS service from your list of WFS connections to add the service's contents as a map layer.



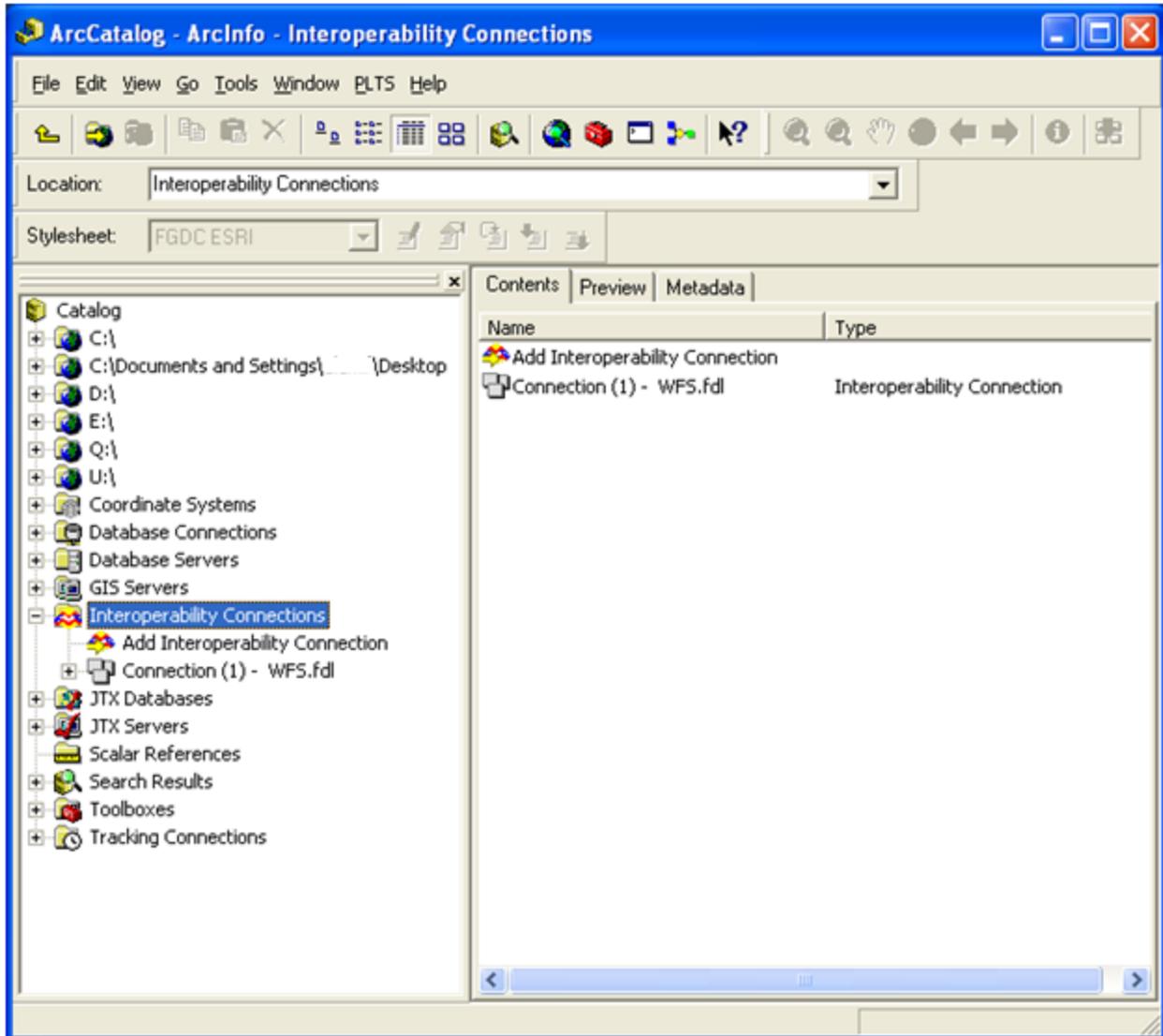
- Click on Settings.



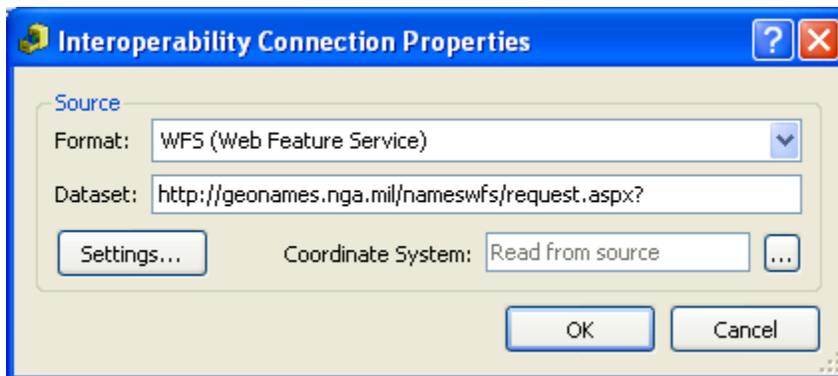
- Click on button to the right of Table List.
- Select gmgml:GND1_NAME_INFORMATION...



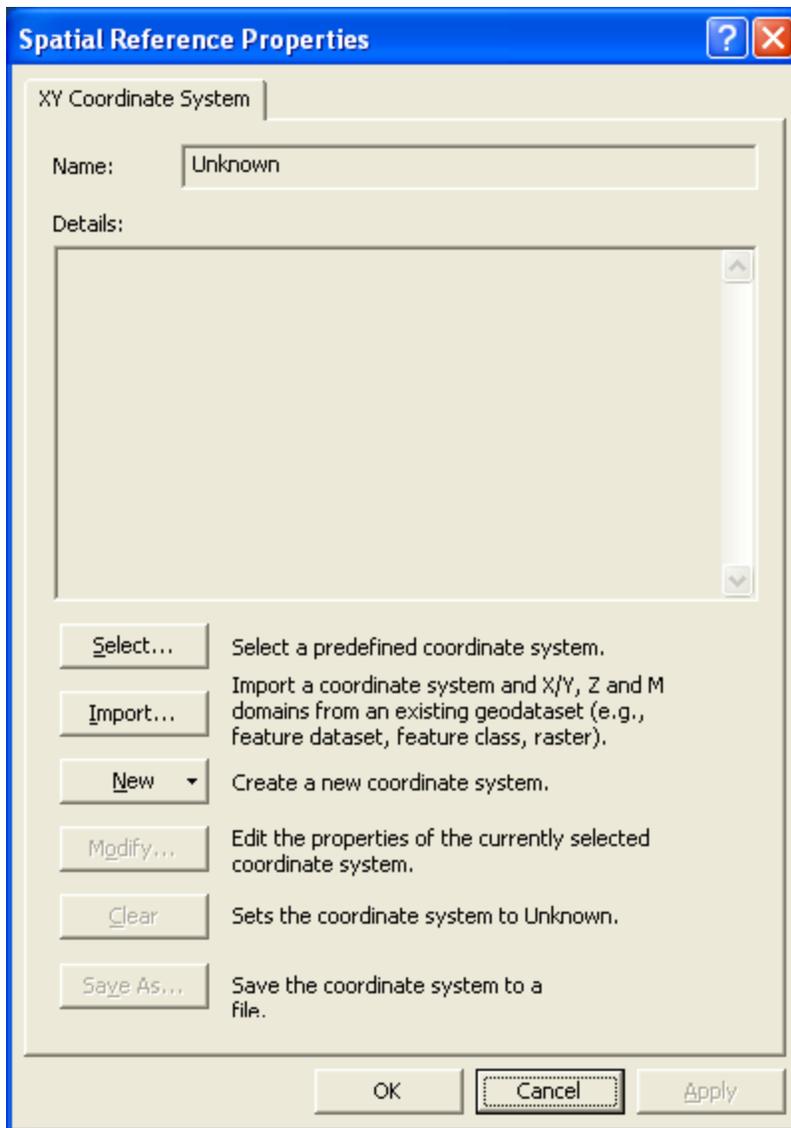
- Click OK. Click OK. Click OK.



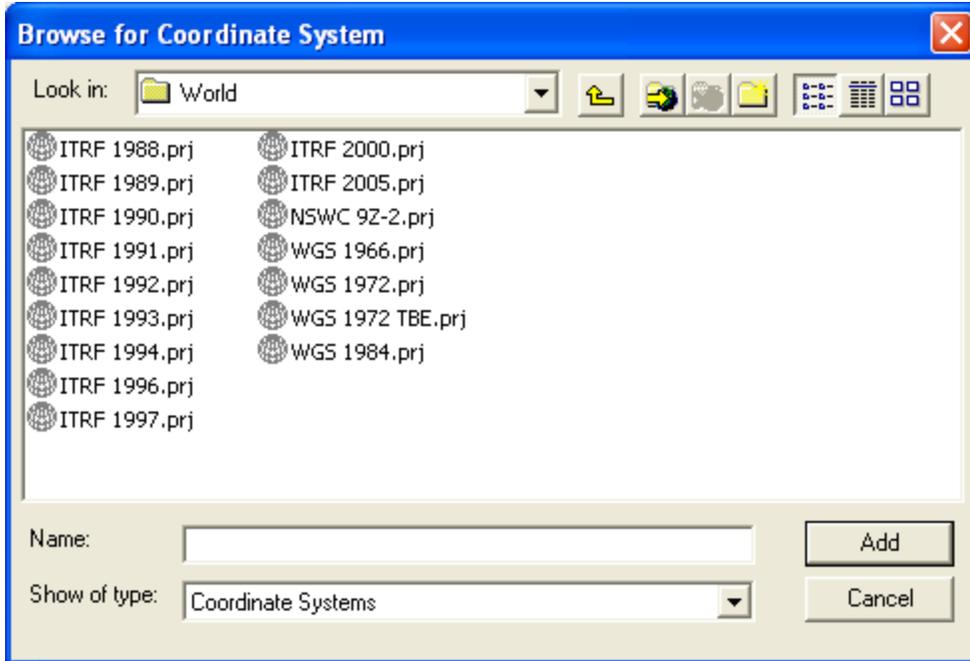
- Right mouse click on the WFS connection and select Connection Properties.

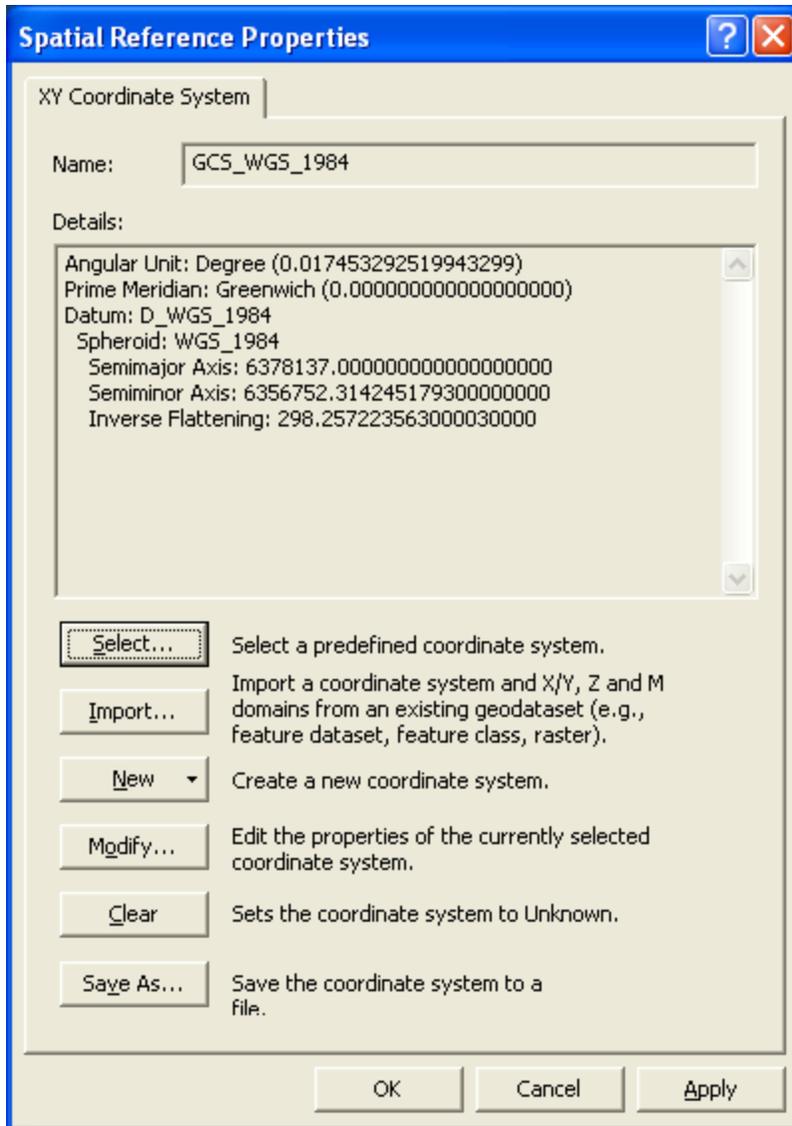


- Click on button to the right of Coordinate System.

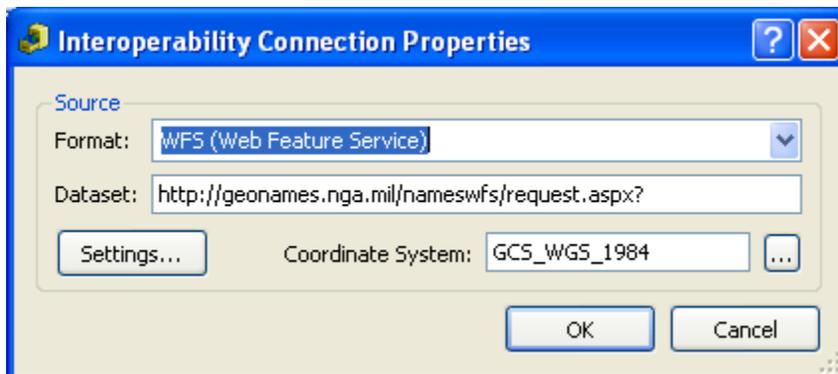


- Click on Select to select a predefined coordinate system, then navigate to where your installation of ArcGIS placed the coordinate system files, and choose WGS 1984.prj, then click Add.

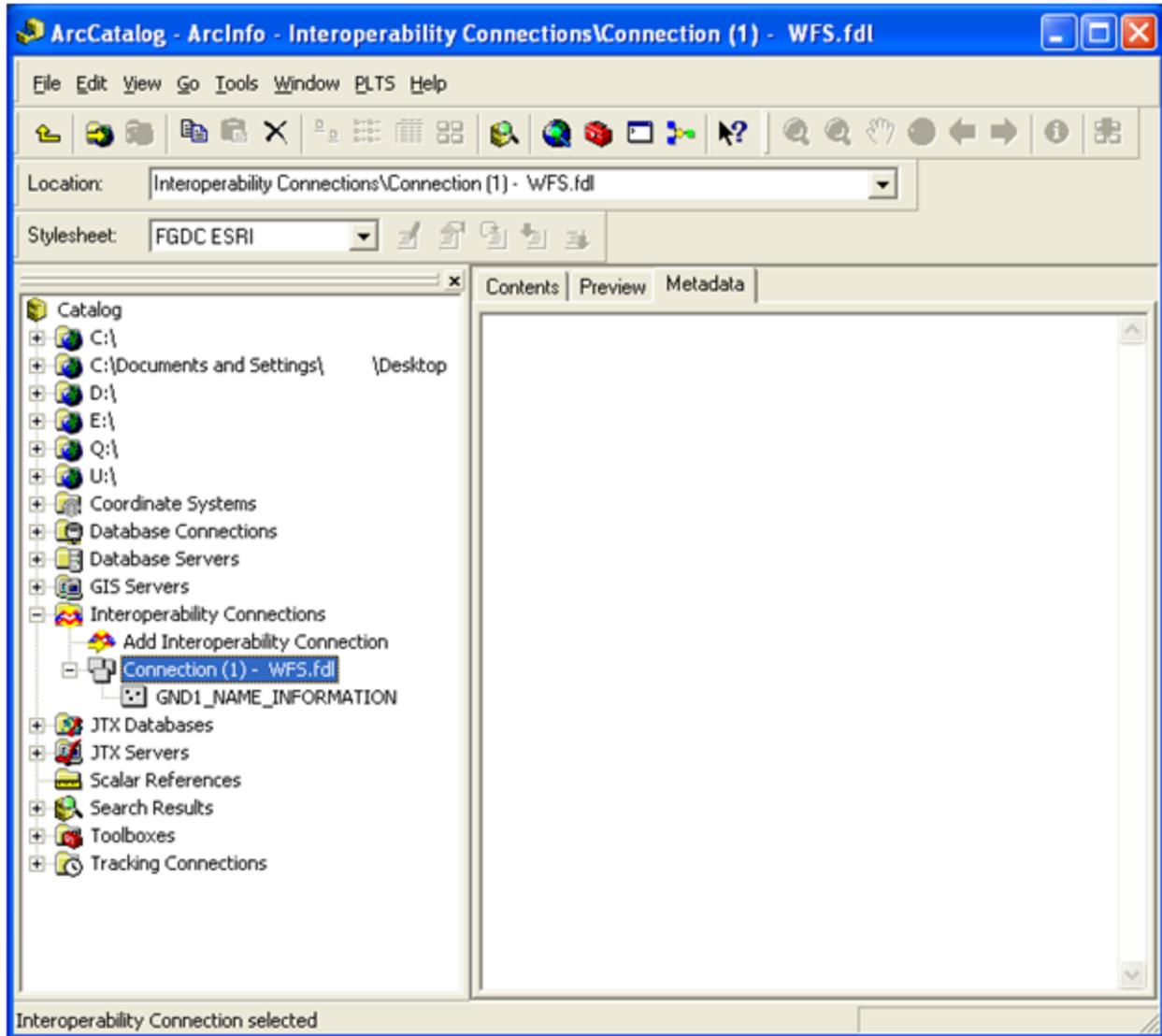




- Click OK.

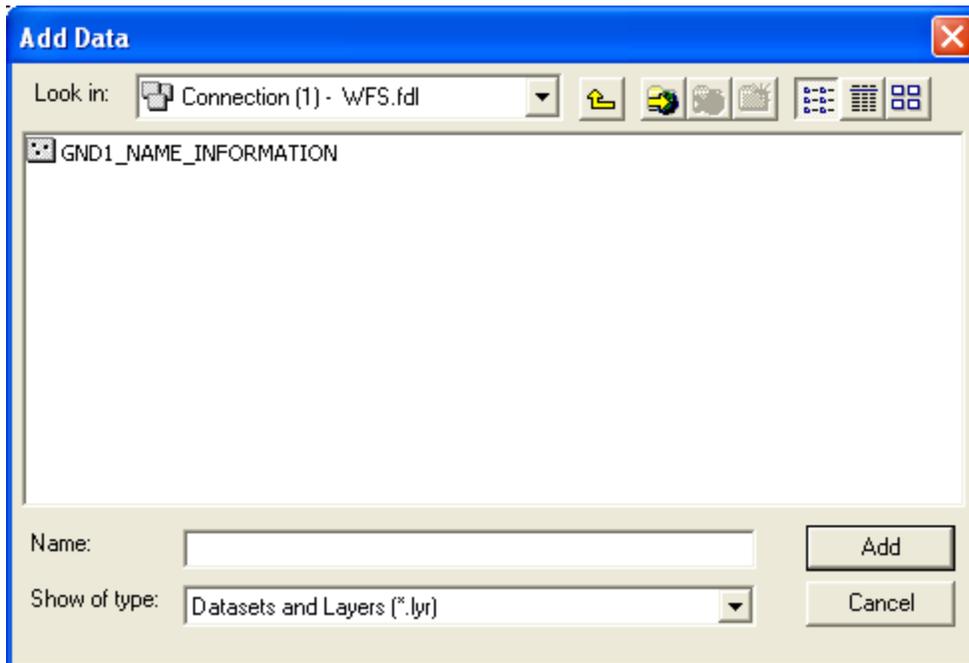


- Click OK.

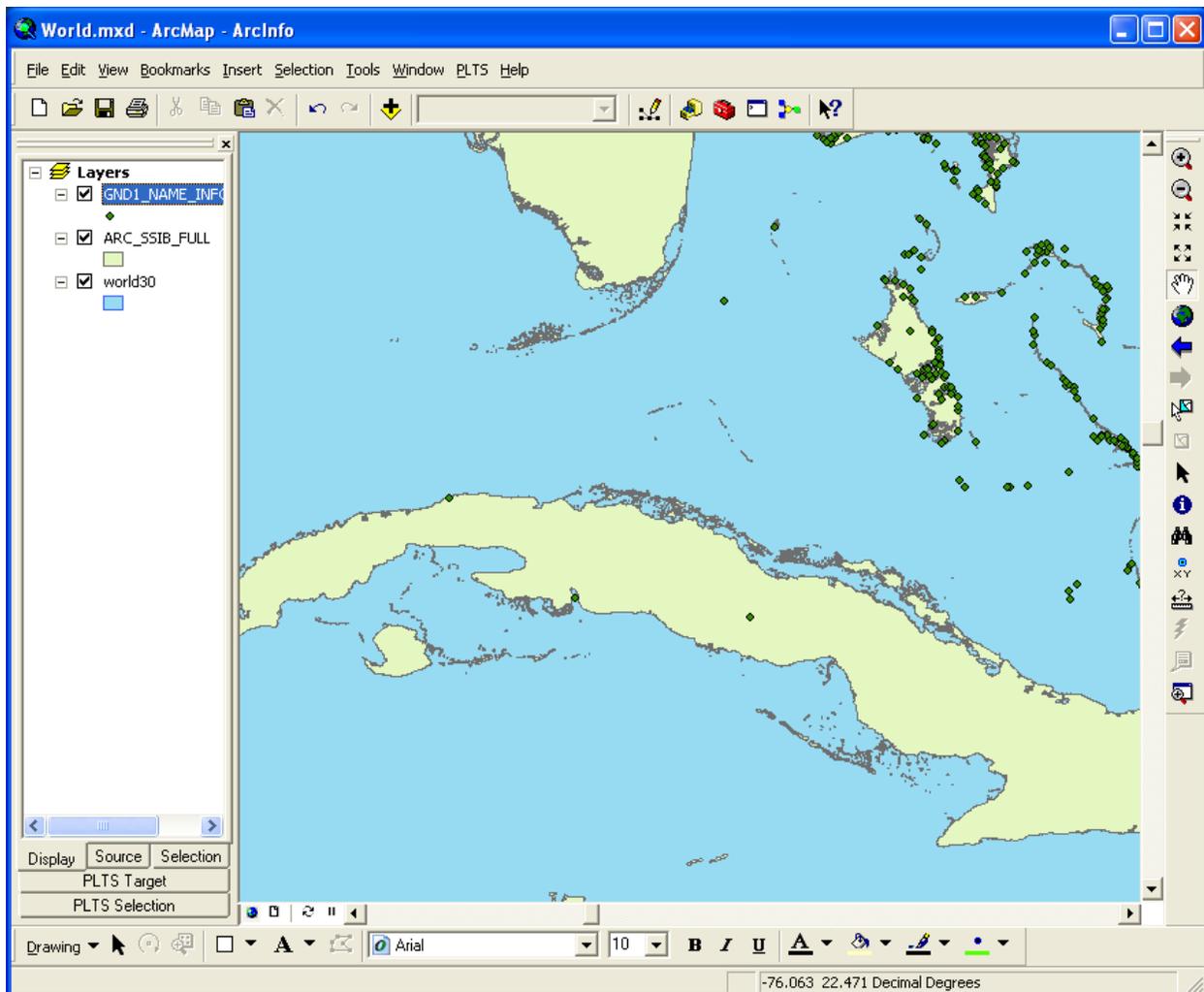


Displaying the data in ArcMap

- Launch ArcMap and select Add Layer 
- Double click on Interoperability Connections
- Double click on Connection (1) - WFS.fdl



- Select GND1... then click on Add.
- The GeoNames WFS is now available as a layer in ArcMap.



- You can select to display labels by right clicking on WFS entry in the legend then selecting Label Features.

