

Building GIS-Based Annual Maps

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Why Annual Maps?

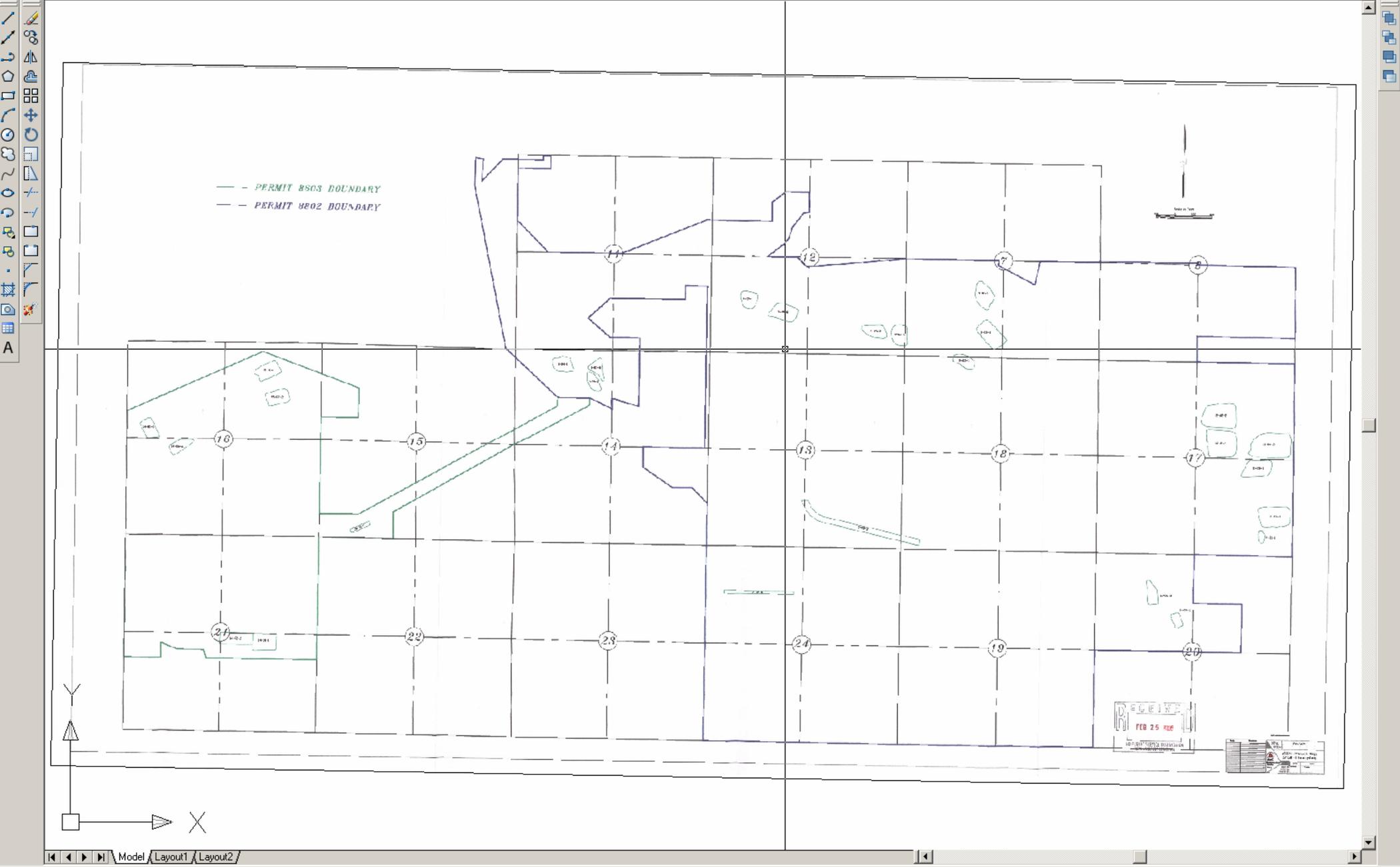
- ◆ Maps show mine activity that occurred that year
- ◆ Maps also show cumulative activities
- ◆ Summary Reports show SPGM volumes and Ownership
- ◆ Show locations of Stockpiles, Ponds, Haulroads, etc.

Go Digital- What did We Do?

- ◆ Initiated scanning of Annual Maps in 2001 using summer interns
- ◆ Not for GIS, but to save space
- ◆ Over 500 Annual Map images generated from scanning

What's the format of submitted Annual Maps?

- ◆ Older Maps were submitted on paper
 - Several operators still use this format.
- ◆ .pdf
- ◆ .dwf
- ◆ .dwg (rare)



Specify corner of window, enter a scale factor (nX or nXP), or [All/Center/Dynamic/Extents/Previous/Scale/Window/Object] <real time>: e

Command:

For Maps Submitted on Paper:

- 1) Scan to .tif
- 2) Scale & Geo-Reference in ArcMap or Raster Design
- 3) Perform Heads-Up Digitizing
- 4) Build Tables/Attributes

For Maps Submitted in .pdf:

- 1) Convert .pdf to .tif
- 2) Scale & Geo-Reference in ArcMap or Raster Design
- 3) Perform Heads-Up Digitizing
- 4) Build Tables/Attributes

For Maps Submitted in .dwf:

- ◆ Turn off unwanted layers (if layering is enabled)
- ◆ Several Options:
 1. Plot Map for Scanning
 2. Use **Universal Document Converter** to plot to .tif file

For Maps Submitted in .dwf

- Another Option:
- Use **Any DWF to DWG Converter**
- Converts .dwf to .dwg or .dxf
- Preserves layers
- Can also “batch convert”
- Extracts Embedded Images
- Stand Alone – No Autocad Required



Any DWF to DWG Converter

Convert DWF files to AutoCAD DWG and DXF files.

Please click the "Add a DWF File" button to add a file you want to convert or click the "Add a Folder" button to add some files. You can also drag the files from Explorer and drop them on the list below.

File List	Status

Add a DWF File...

Add a Folder...

Include subdirectories

These DWFs are password protected

Remove Selected

Remove All

Output Options

Output File Type: DWG DXF

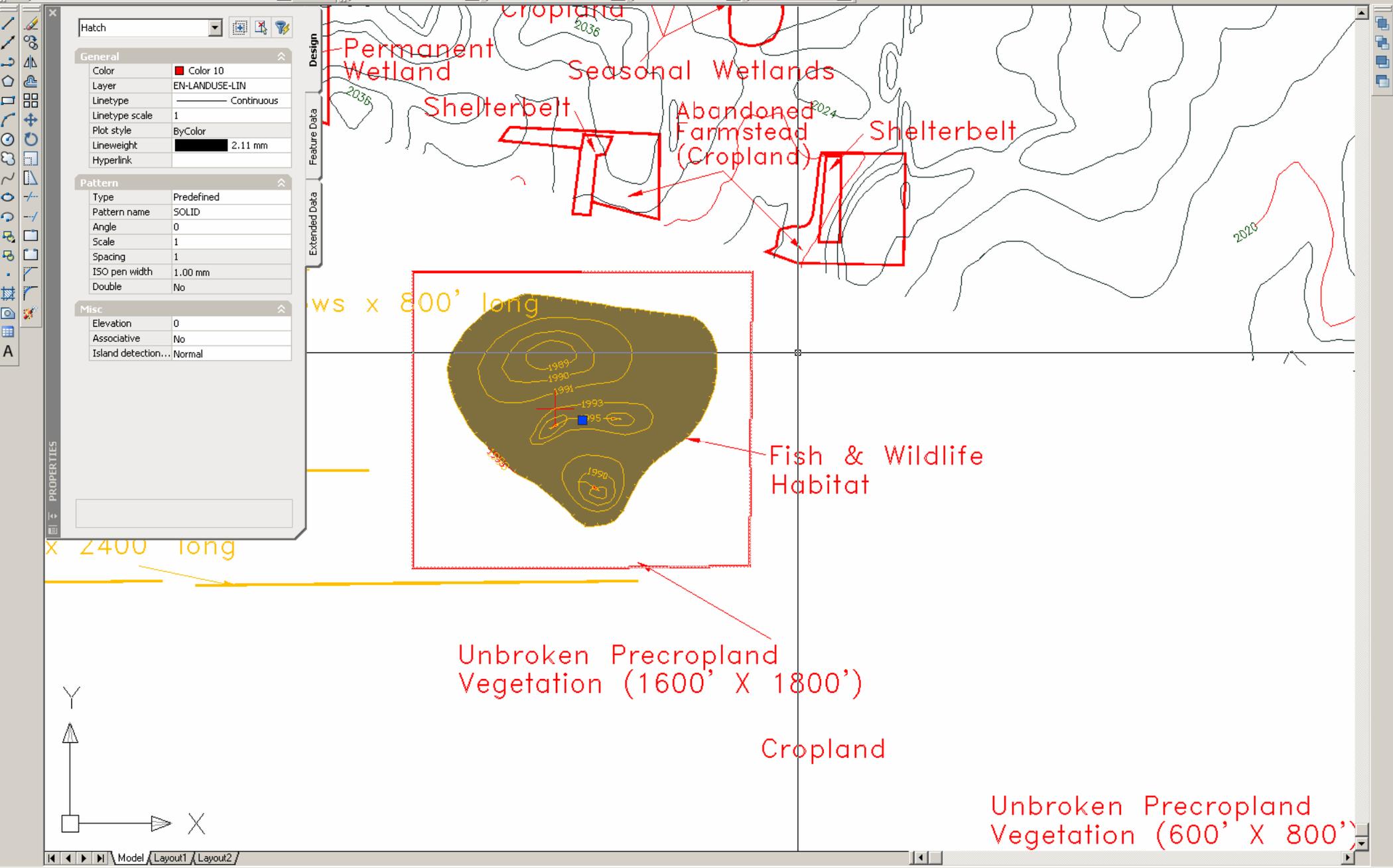
Output File Version: AutoCAD 2000/2002

Output Folder: Browser...

Help... About... Convert Now Stop Exit

For Maps Submitted in .dwf

- ◆ One Problem with **Any Dwf to Dwg Converter** and others:
- ◆ Extracts some polylines that have width as hatches – ArcMap cannot “see” hatches
- ◆ Best to open .dwg converted from .dwf in Autocad and draw polylines over hatched lines



For Maps Submitted in .dwf

- ◆ If objects convert to hatch:
 1. Isolate the layer, then print to file (.tif) with Universal Document Converter
 2. Insert image into Raster Design, convert to bitonal image
 3. Vectorize the image

For Maps Submitted in .dwf

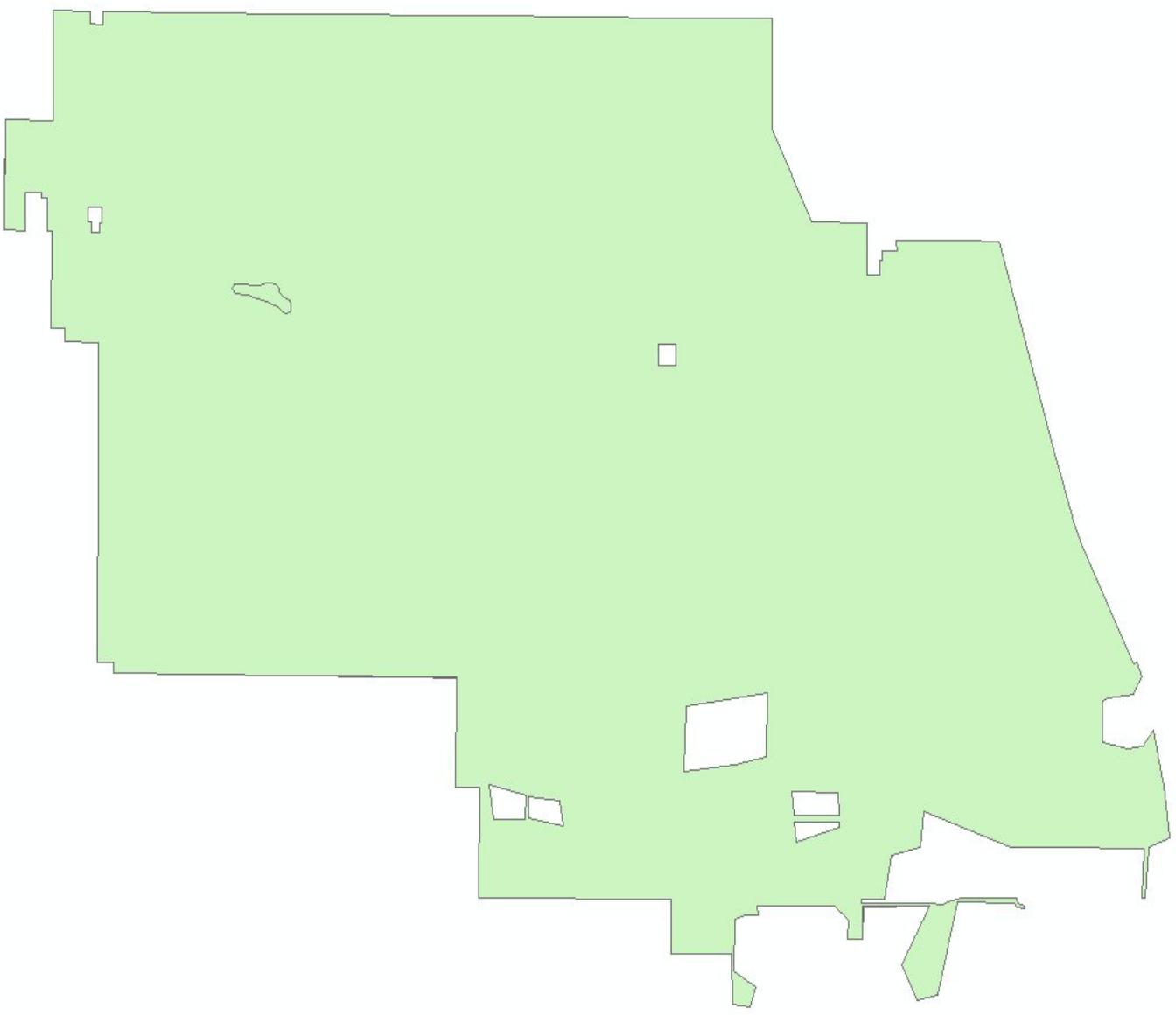
- ◆ New .dwg that was converted from .dwf will need to be opened in Autocad to be scaled and geo-referenced
- ◆ Best to **wblock** required layers to a file (.dwg)

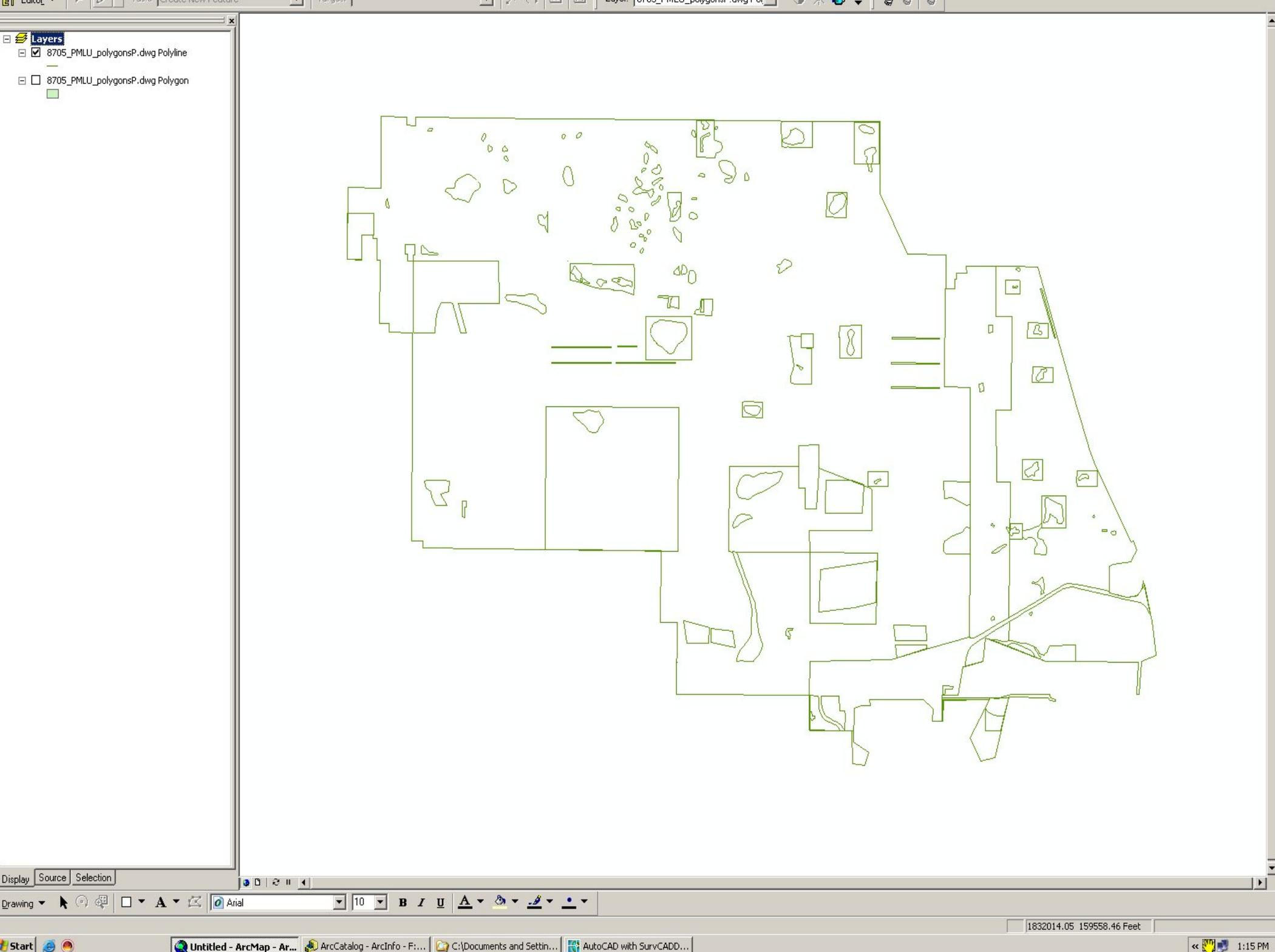
We now have a .dwg to import into ArcMap, Right?

- ◆ Maybe. Best to check in Autocad for closed polygons, dangles and overshoots, objects on correct layers, etc.
- ◆ Or we can import into ArcMap and use ET GeoWizards to clean the layer
- ◆ Usually import as polylines, Use ET GeoWizards to clean and convert to polygons

Layers

- 8705_PMLU_polygonsP.dwg Polyline
- 8705_PMLU_polygonsP.dwg Polygon





Layers

- 8705_PMLU_polygonsP.dwg Polyline
- 8705_PMLU_polygonsP.dwg Polygon

Display Source Selection

Drawing Arial 10 B I U A

Start **Untitled - ArcMap - Ar...** **ArcCatalog - ArcInfo - F...** **C:\Documents and Sett...** **AutoCAD with SurvCADD...** 1832014.05 159558.46 Feet << >> 1:15 PM

Layers

- 8705_PMLU_line

ET GeoWizards

ET Geo Wizards

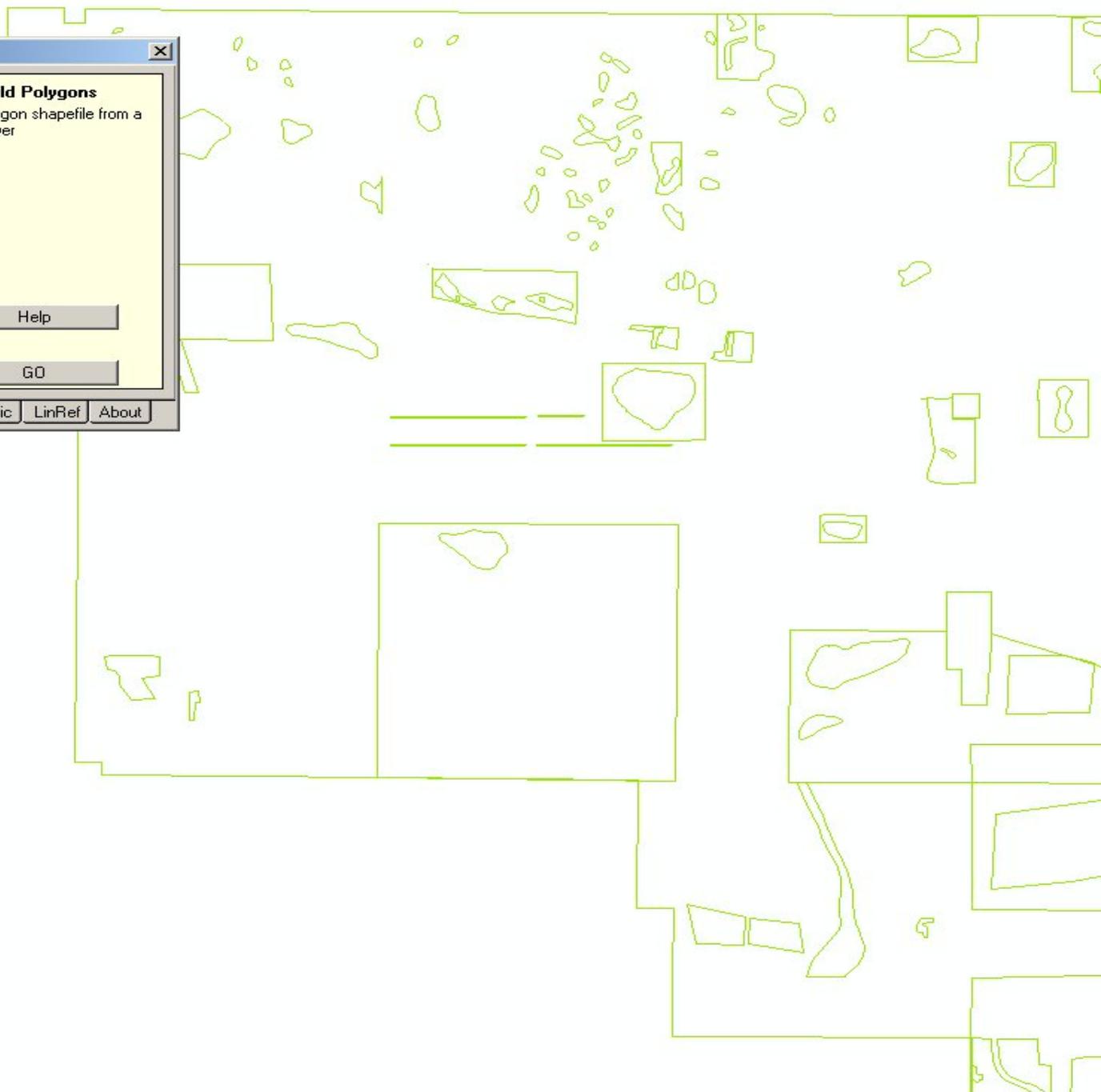
- Clean Polygon Layer
- Eliminate
- Clean Gaps
- Advanced Merge
- Dissolve Polygons
- Build Polygons
- Global Snap Polygons
- Get Adjacent Polygons

Build Polygons
Builds polygon shapefile from a polyline layer

Help

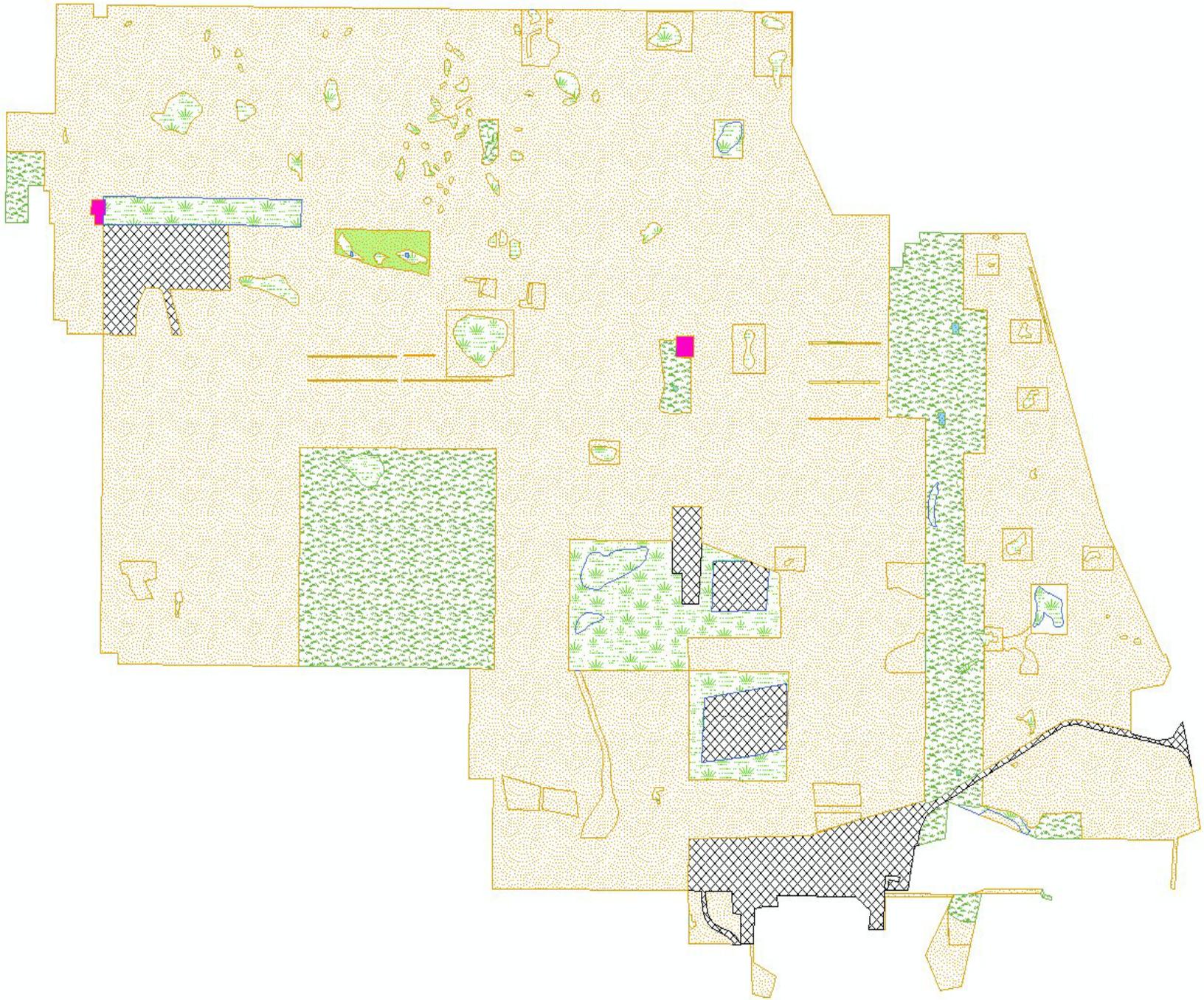
GO

Point Polyline Polygon Convert Surface Geoprocessing Basic LinRef About

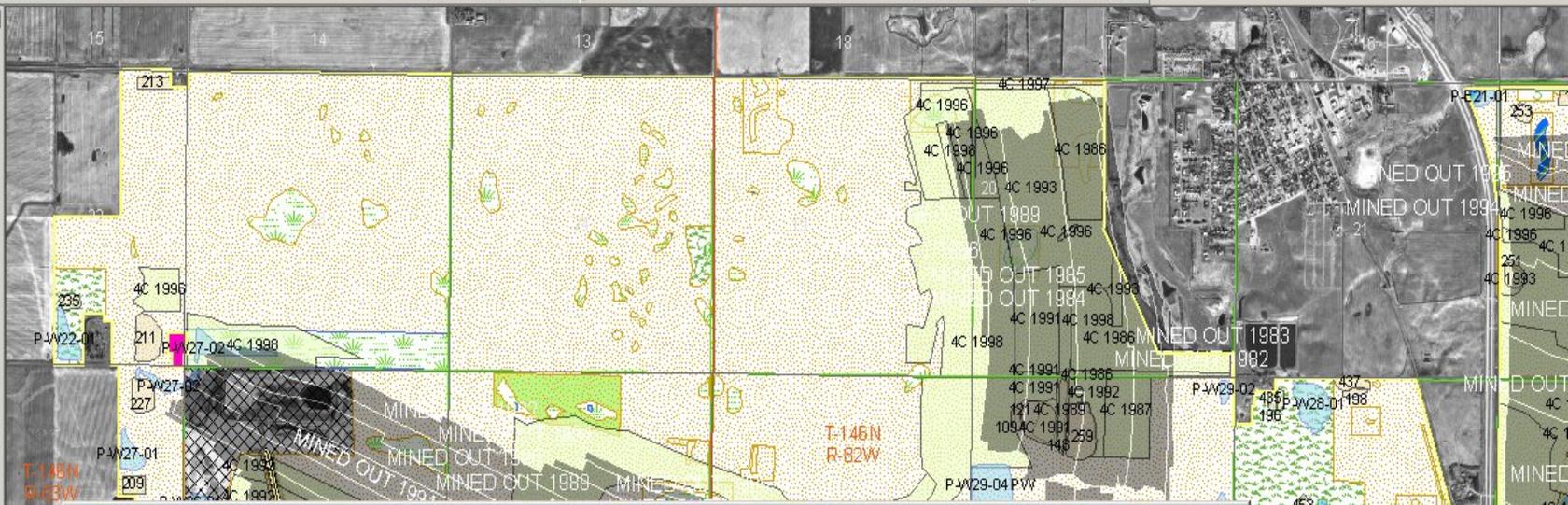


Layers

- PSCGID_T.BRUCEJ.GEN_MCL_PLSS_CTY
- PSCGID_T.BRUCEJ.GEN_MCL_PLSS_TWP
- PSCGID_T.BRUCEJ.FK_GEN_PBNL_ALL
- PSCGID_T.BRUCEJ.FK_GEN_PLSS_SURVEYED
- PSCGID_T.BRUCEJ.FK_OP_PROAD_2004
- PSCGID_T.BRUCEJ.FK_OP_COALR_ALL
- PSCGID_T.BRUCEJ.FK_OP_PILES
- PSCGID_T.BRUCEJ.FK_OP_WATMN
- PSCGID_T.BRUCEJ.FK_POST_SEED
- PSCGID_T.BRUCEJ.FK_POST_USE_8405
- PSCGID_T.BRUCEJ.FK_POST_USE_8705
- PSCGID_T.BRUCEJ.FK_POST_USE_9503
- NAFK_3ft_10_26_2005.sid



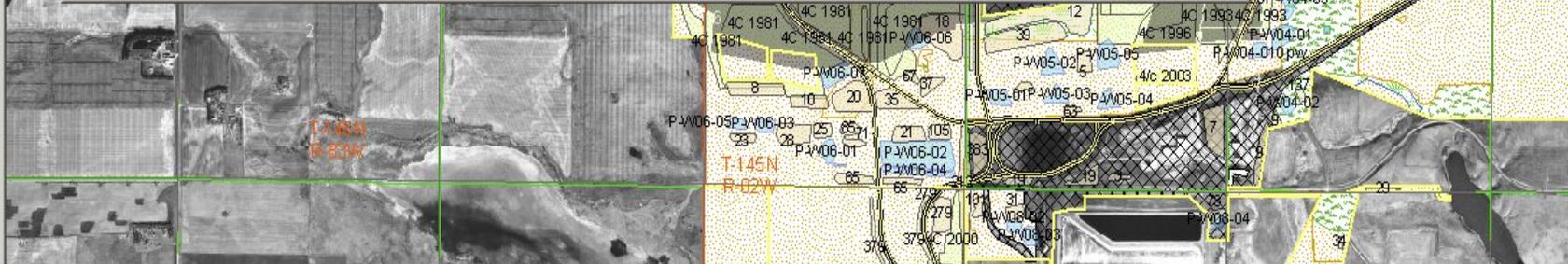
- Layers**
- PSCGID_T.BRUCEJ.GEN_MCL_PLSS_CTY
 - PSCGID_T.BRUCEJ.GEN_MCL_PLSS_TWP
 - PSCGID_T.BRUCEJ.FK_GEN_PBND_ALL
 - PSCGID_T.BRUCEJ.FK_GEN_PLSS_SURVEYED
 - PSCGID_T.BRUCEJ.FK_GEN_PBND_R22_8405
 - PSCGID_T.BRUCEJ.FK_OP_PROAD_2004
 - PSCGID_T.BRUCEJ.FK_OP_COALR_ALL
 - PSCGID_T.BRUCEJ.FK_OP_PILES
 - PSCGID_T.BRUCEJ.FK_OP_WATMN
 - PSCGID_T.BRUCEJ.FK_POST_SEED
 - PSCGID_T.BRUCEJ.FK_POST_USE_8405
 - PSCGID_T.BRUCEJ.FK_POST_USE_8705**
 - PSCGID_T.BRUCEJ.FK_POST_USE_9503
 - NAFK_3ft_10_26_2005.sid



Attributes of PSCGID_T.BRUCEJ.FK_POST_USE_8705

OBJECTID*	Land Use Category	Land Use Subcategory	Acres	COMMENT
147	Fish & Wildlife	Wetland	0.53	
148	Fish & Wildlife	Wetland	0.65	
149	Fish & Wildlife	Wetland	7.48	WR-19-01
150	Fish & Wildlife	Wetland	0.32	
151	Fish & Wildlife	Wetland	0.17	
152	Fish & Wildlife	Wetland	3.01	WR-20-02
153	Cropland		27.94	Wetland Buffer
154	Cropland		18.84	Wetland Buffer
155	Fish & Wildlife	Wetland	1.62	
156	Cropland		21.13	
157	Cropland		7191.80	
158	Fish & Wildlife	Grassland	78.61	
159	Cropland		4.28	
160	Native Grassland		0.64	
161	Fish & Wildlife	Wetland	3.61	Temporary
162	Cropland		781.91	
163	Fish & Wildlife	Wetland	11.21	WR-33-01

Record: 1 Show: All Selected Records (0 out of 163 Selected.) Options



Temp_Storage

- \\Coal\rec data
- \\Pscsev1\rec_ls\CDSTOR
- \\Pscgaw2\NAIP_2004\Bowman_Co
- Database Connections
 - Add OLE DB Connection
 - Add Spatial Database Connection
 - ANMAPS.sde
 - PSCSDE.sde**
- Address Locators
 - PSCGID_T.BRUCJ.CR_GEN_AIR_2005_BW
 - PSCGID_T.BRUCJ.CT_AIR_2005_BW
 - PSCGID_T.BRUCJ.FK_GEN_PBND_ALL
 - PSCGID_T.BRUCJ.FK_OP_COALR_ALL_FD
 - PSCGID_T.BRUCJ.BU_GEN_AIR_2004_C
 - PSCGID_T.BRUCJ.BU_GEN_AIR_2005_C
 - PSCGID_T.BRUCJ.BU_GEN_OWN
 - PSCGID_T.BRUCJ.BU_GEN_PBND
 - PSCGID_T.BRUCJ.BU_OP_PILES_2004
 - PSCGID_T.BRUCJ.BU_OP_POST_SEED
 - PSCGID_T.BRUCJ.BU_OP_WATMN
 - PSCGID_T.BRUCJ.CR_GEN_PBND_ALL
 - PSCGID_T.BRUCJ.CR_OP_PILES
 - PSCGID_T.BRUCJ.CR_OP_WATMN
 - PSCGID_T.BRUCJ.CR_POST_SEED
 - PSCGID_T.BRUCJ.CT_GEN_PBND_ALL
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 - PSCGID_T.BRUCJ.FK_GEN_AIR_11_02_04
 - PSCGID_T.BRUCJ.FK_GEN_AIR_11_05_02
 - PSCGID_T.BRUCJ.FK_GEN_AIR_NAIP_2005_CLIP
 - PSCGID_T.BRUCJ.FK_GEN_PBND_ALL
 - PSCGID_T.BRUCJ.FK_GEN_PBND_R22_8405
 - PSCGID_T.BRUCJ.FK_GEN_PLSS_SURVEYED
 - PSCGID_T.BRUCJ.FK_OP_COALR_ALL
 - PSCGID_T.BRUCJ.FK_OP_PILES
 - PSCGID_T.BRUCJ.FK_OP_PROAD_2004
 - PSCGID_T.BRUCJ.FK_OP_WATMN
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 - PSCGID_T.BRUCJ.GEN_MCL_PLSS_TWP
 - PSCGID_T.BRUCJ.McL_PRE_SOIL
 - PSCGID_T.BRUCJ.MERC_PLSS_CTY
 - PSCGID_T.BRUCJ.NAII_BR_All
 - PSCGID_T.BRUCJ.OLIV_PLSS_CTY
 - PSCGID_T.BRUCJ.SP27_NZ_Template
 - PSCGID_T.BRUCJ.SP27_SZ_Template
 - PSCGID_T.BRUCJ.UTM_14_83_Template
 - PSCGID_T.BRUCJ.VV_BR7_8107LAW
 - PSCGID_T.BRUCJ.VV_BR_8107_All
- Address Locators
- Coordinate Systems
- GIS Servers
- Interoperability Connections
- Scalar References
- Search Results

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The selection cannot be previewed.

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- Add Spatial Database Connection
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- ANMAPS.BRUCJ.BU_95AM_PERMIT8603
- ANMAPS.BRUCJ.BU_95AM_SPGM_KRSB_8108_KRSB_8802
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- ANMAPS.BRUCJ.CR93_AM_PLATE3OF4
- ANMAPS.BRUCJ.CR93_AM_PLATE4OF4
- ANMAPS.BRUCJ.CR94_AM_PLATE1OF4

