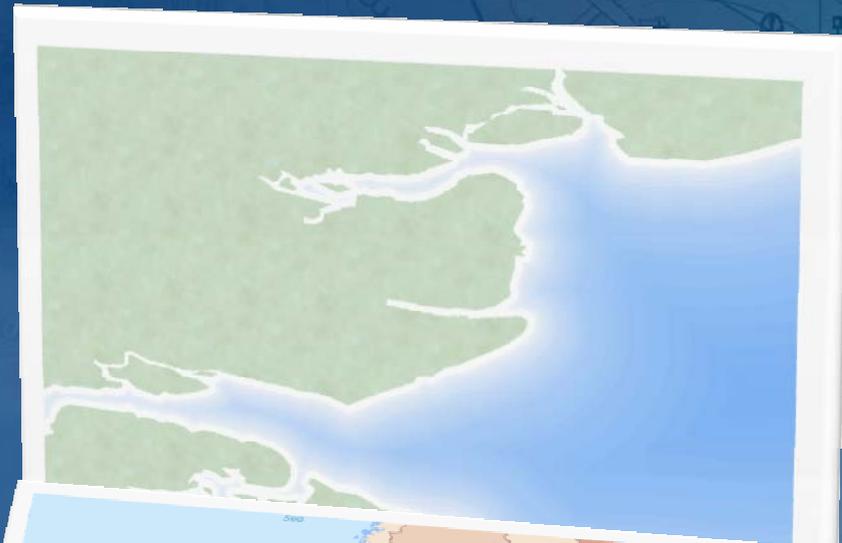




Representation高级制图技巧

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- 制图表达之探索篇
- 制图表达之剖析篇
- 制图表达之进阶篇
- 制图表达之畅想篇

制图表达之探索篇



- 什么是制图表达？
- 何时使用制图表达？
- 制图表达和标准符号化之比较

什么是制图表达?



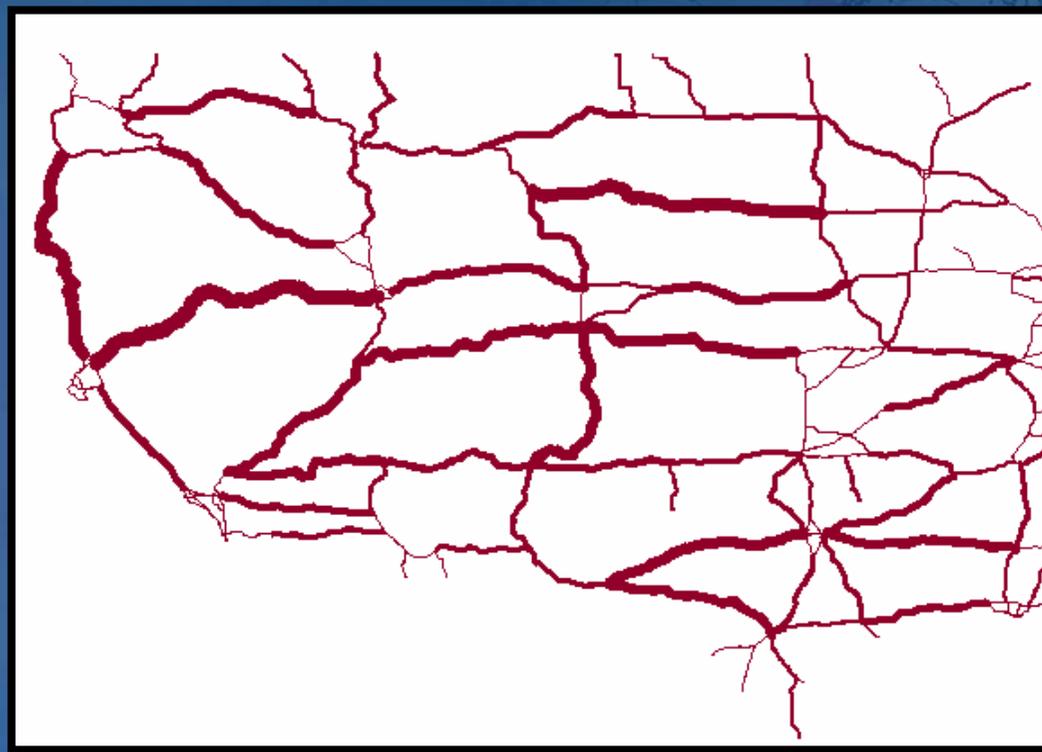
- 智能的符号化方案
- 符号化方案的存储模型
- 一种新的GIS制图理念

- 制图表达不是:
 - 一种新的数据类型
 - 一种新的图层类型

何时使用制图表达？



- 标准符号化方法不能很好满足需求



何时使用制图表达?



Layer Properties

Labels Joins & Relates HTML Popup

General Source Selection Display Symbology Fields Definition Query

Show:

Features

Categories

- Unique values
- Unique values, many to one
- Match to symbols in a layer

Quantities

Charts

Multiple Attributes

Representations

Draw categories using unique values of one field. Import...

Value Field: width

Color Ramp: [Color Ramp]

Symbol	Value	Label	Count
<input checked="" type="checkbox"/>	<all other values>	<all other values>	0
	<Heading>	width	679
	.00141	.00141	1
	.00315	.00315	1
	.00404	.00404	1
	.0076	.0076	1
	.00852	.00852	1
	.00924	.00924	2
	.0101	.0101	1
	.01106	.01106	1
	.0114	.0114	1

Add All Values Add Values... Remove Remove All Advanced

确定 取消 应用(A)

何时使用制图表达?



Attributes of USA_Roads

OBJECTID *	Shape *	width	RuleID	Override	LENGTH	TYPE
1	Polyline	1.40931	Rule_1	Blob	140.931	Multi-Lane Divided
2	Polyline	1.8606	Rule_1	Blob	186.06	Multi-Lane Divided
3	Polyline	.08642	Rule_1	Blob	8.642	Multi-Lane Divided
4	Polyline	.09439	Rule_1	Blob	9.439	Multi-Lane Divided
5	Polyline	.08208	Rule_1	Blob	8.208	Multi-Lane Divided
6	Polyline	.22106	Rule_1	Blob	22.106	Multi-Lane Divided
7	Polyline	.18154	Rule_1	Blob	18.154	Multi-Lane Divided

Record: 0

Layer Properties

Labels Joins & Relates HTML Popup

General Source Selection Display Symbology Fields Definition Query

Show: Draw using representation stored in the layer's data source. Import...

[1] Rule_1

Line

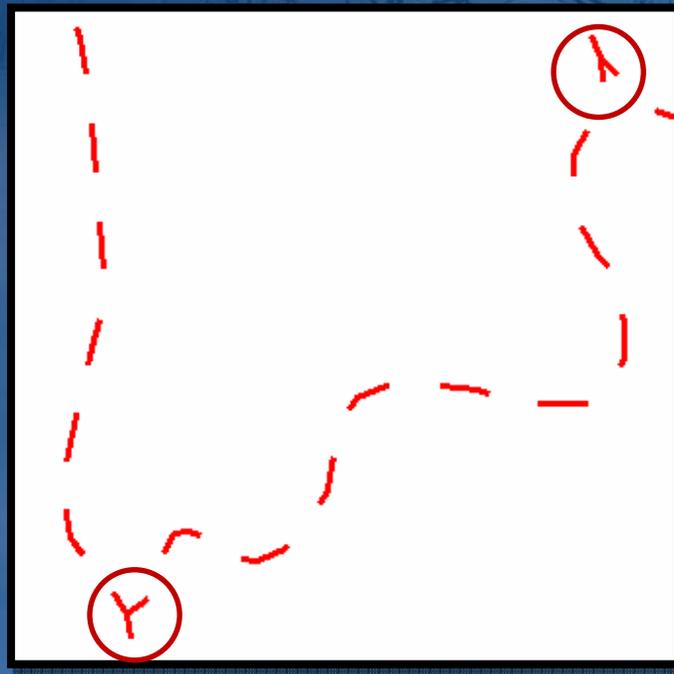
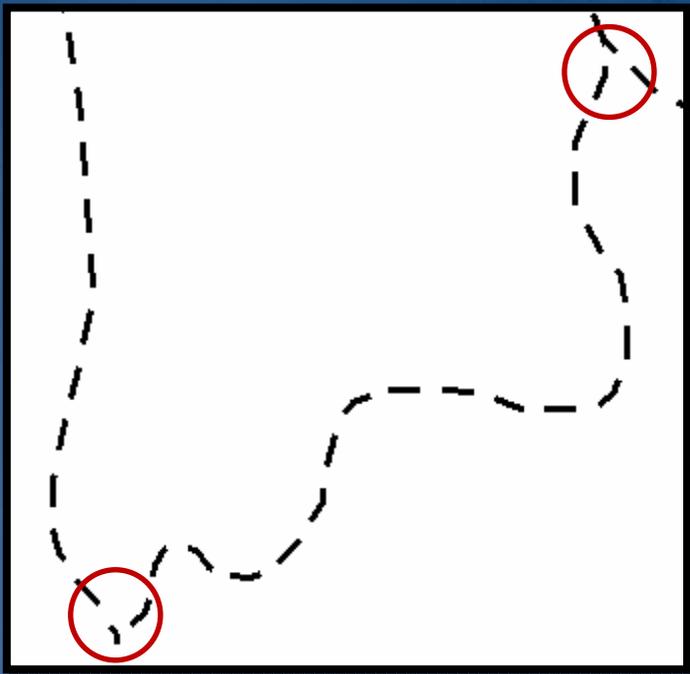
Width: width

Caps: <Override Field>

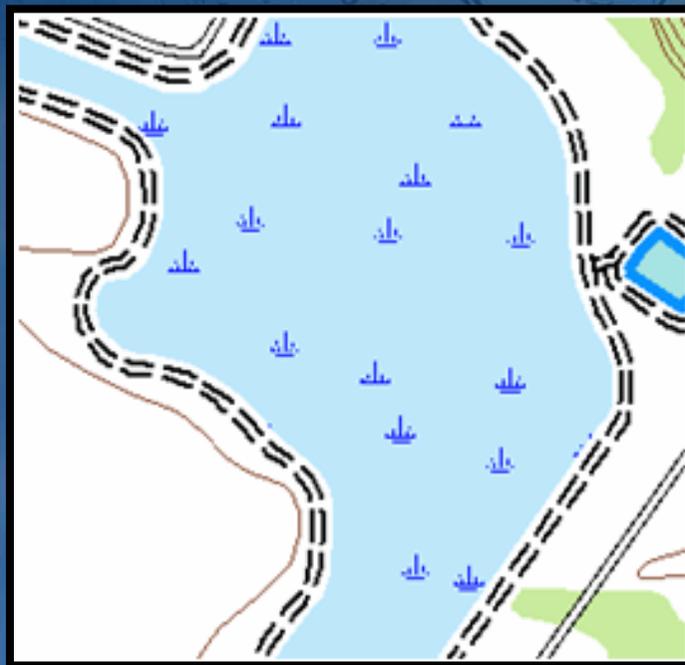
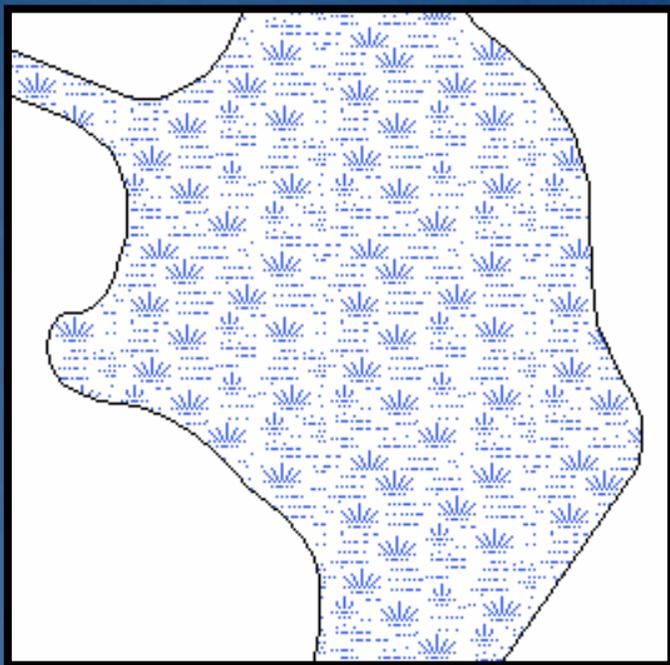
Joins: <Override Field>

Color: <Override Field>

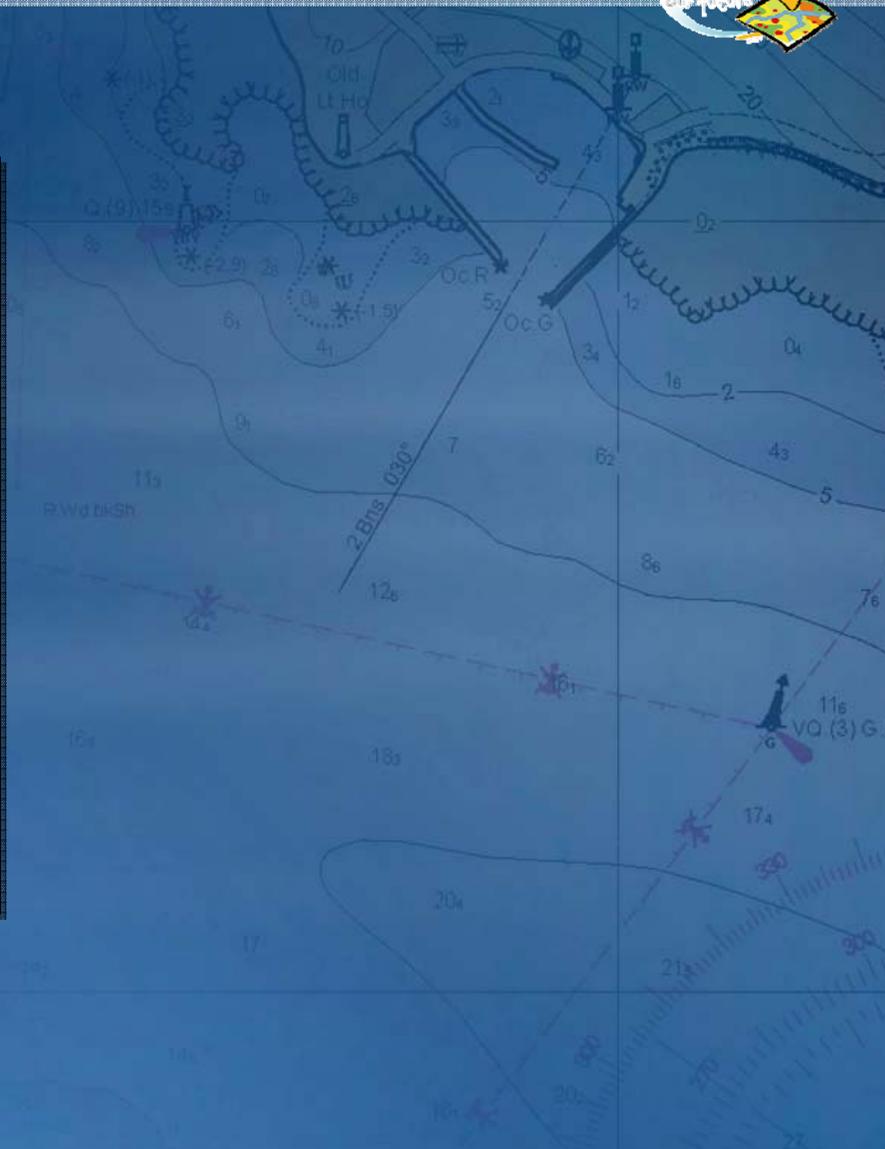
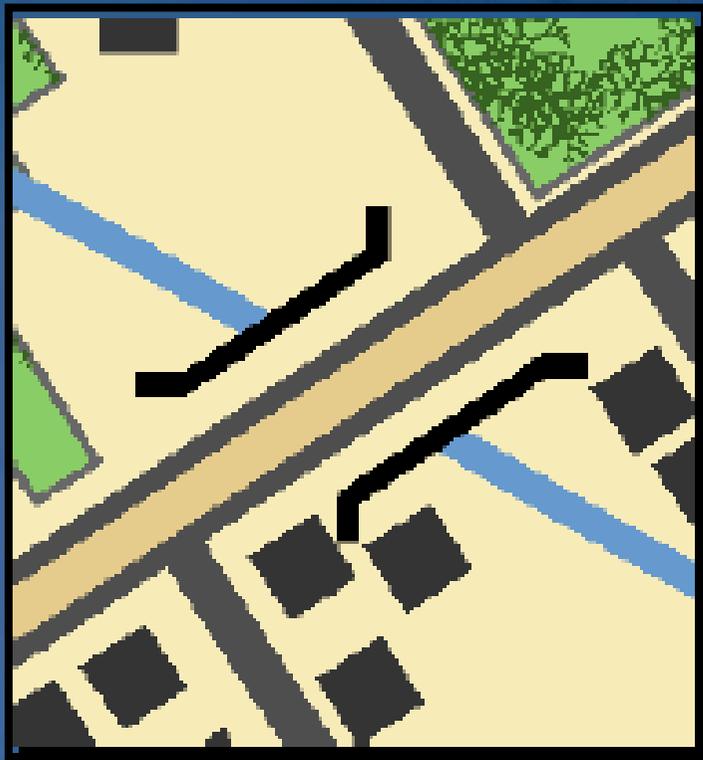
何时使用制图表达?



何时使用制图表达?



何时使用制图表达?



何时使用制图表达?



- 便于重用和共享
 - 存储在GDB中
 - 可保存为style文件
- 更加灵活的制图
 - Free Representation

制图表达和标准符号化之比较



	Standard Symbol	Representation
符号化方案	存储在.MXD中	存储在GDB中
数据驱动	否	是
遵循点线面几何类型	是	否
符号的使用	符号库中符号	动态编辑



- 制图表达之探索篇
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Desktop License要求



	ArcInfo	ArcEditor	ArcView
浏览/打印制图表达	是	是	是
定义制图表达规则	是	是	否
编辑制图表达	是	是	否
创建/删除制图表达	是	是	否
使用GP工具	是	否	否

Server/Engine/Mobile

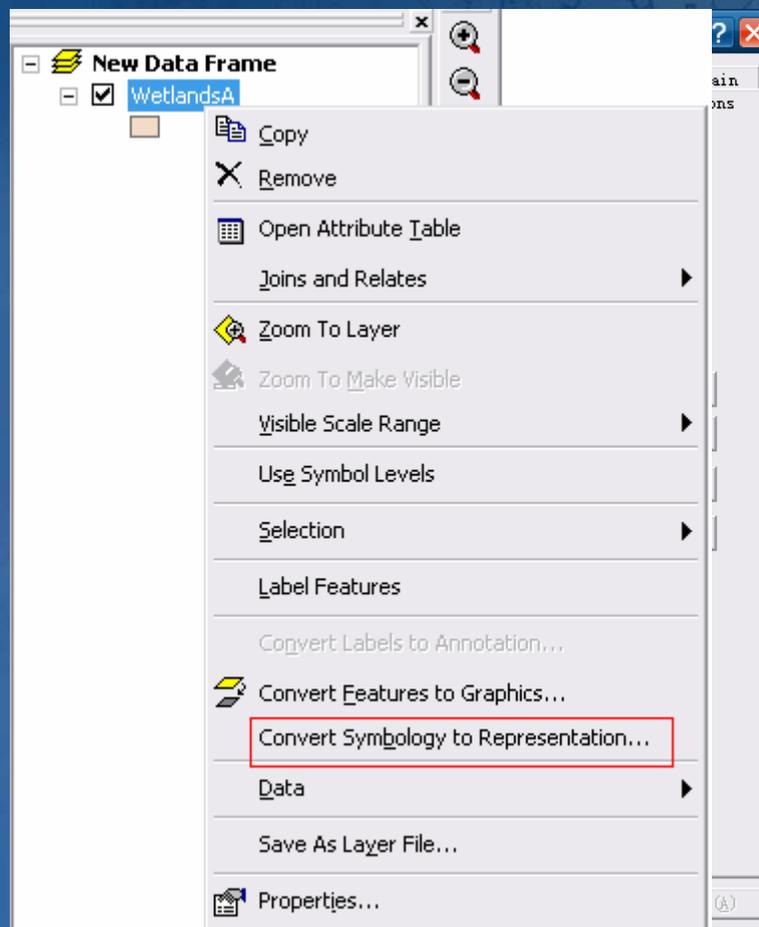


	ArcGIS Server	ArcGIS Engine (GDB Update Extension)	ArcPad
浏览/打印制图表达	是	是	否
定义制图表达规则	是	是	否
编辑制图表达	是	是	否
创建/删除制图表达	是	是	否
使用GP工具	是	否	否

创建制图表达



- ArcMap
- ArcCatalog



创建制图表达



Layer Properties

Labels | Joins & Relates | HTML Popup

General | Source | Selection | Display | Symbology | Fields | Definition Query

Show: Draw using representation stored in the layer's data source. Import...

Features
Categories
Quantities
Charts
Multiple Attributes
Representations
WetlandsA_Rep

[1] Unspecified
[2] Swamp
[3] Bog

Solid color pattern
Color: [Light Green]

确定 取消 应用(A)

Attributes of WetlandsA_Rep

OBJECTID *	Shape *	FCsubtype	RuleID	Override
2	Polygon	2	3	Blob
3	Polygon	2	2	Blob

Record: 0 Show: All Selected

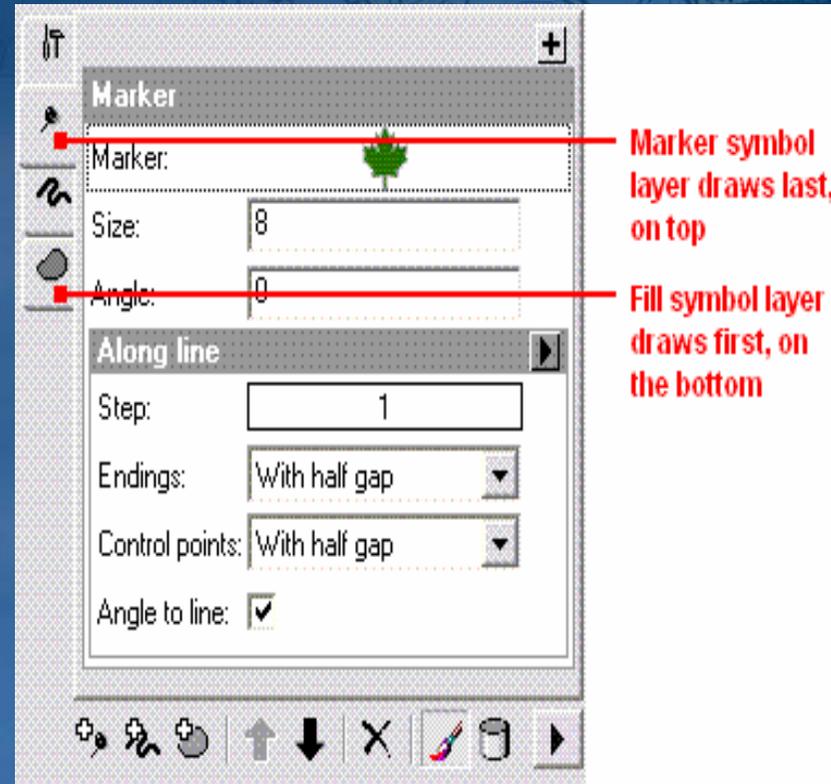
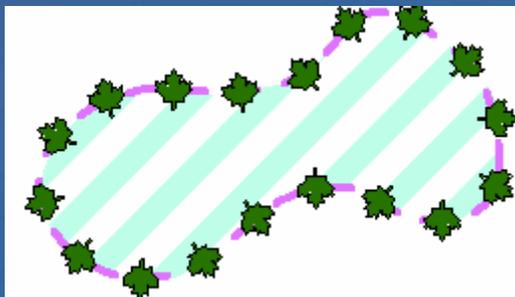
理解制图表达



- 规则的集合
- 规则=符号图层 (symbol layer) + 几何外观 (geometry effect)
- 点符号放置样式 (Maker placement styles)

Symbol layer

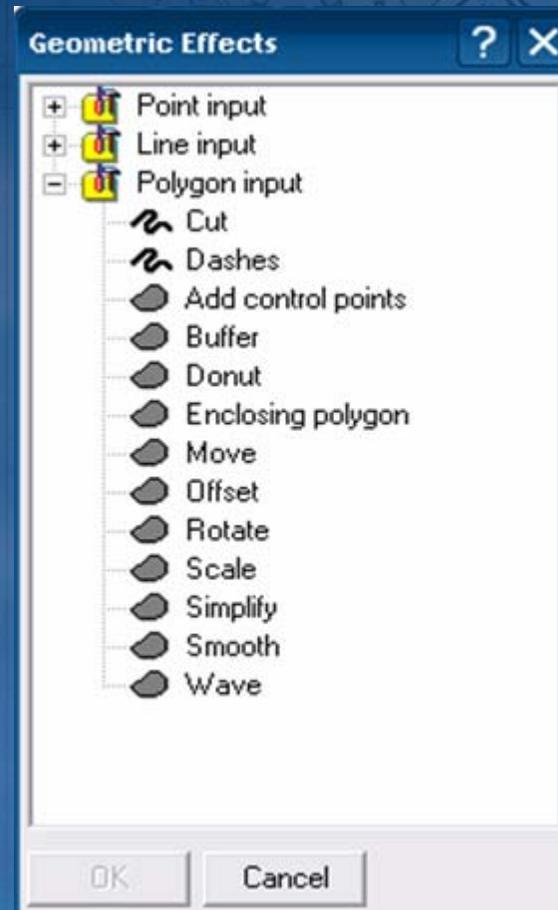
- Marker symbol layer
- Stroke symbol layer
- Fill symbol layer
 - Solid
 - Hatch
 - Gradient



Geometry effect



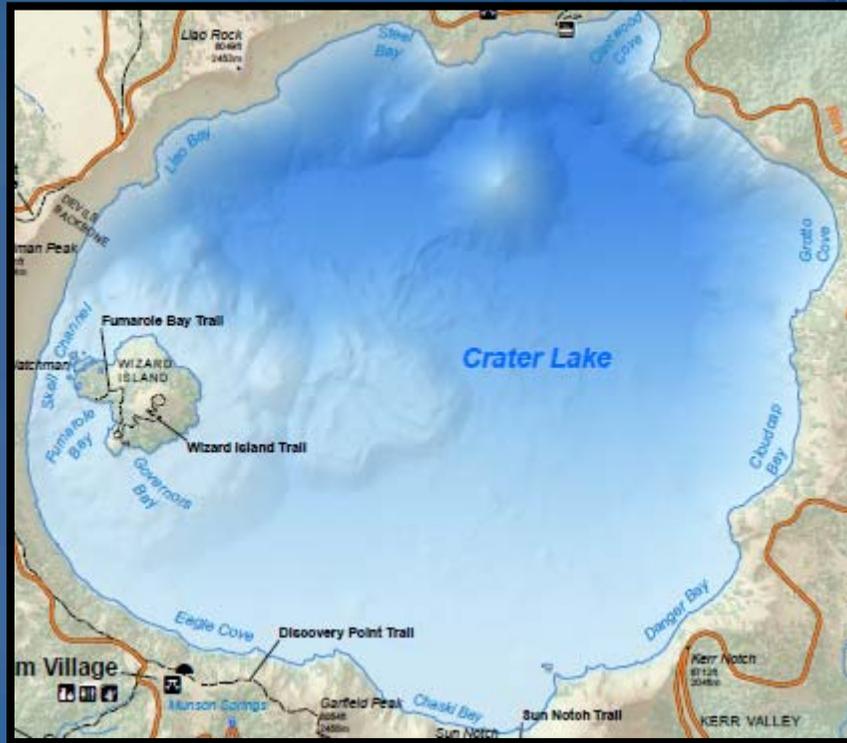
- 应用于symbol layer
- 一个symbol layer可使用多个geometry effect
- 动态地改变出图时的形状



Geometry effect



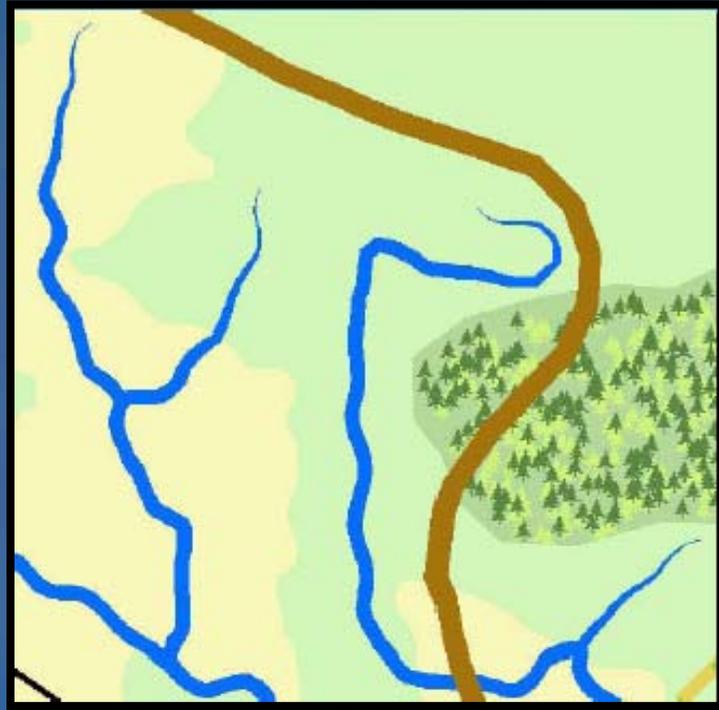
- 应用线性渐变色填充效果



Geometry effect



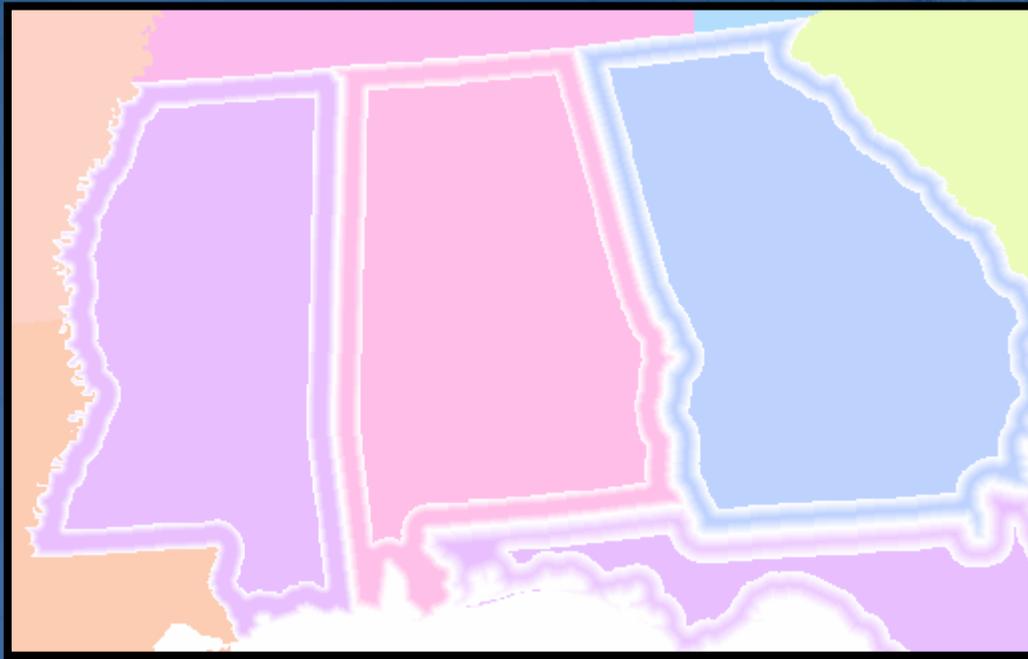
- 应用tapered polygon效果



Geometry effect



- 应用donut的效果



Geometry effect



- 应用渐变色填充buffer



Marker placement styles



- Randomly inside polygon
 - Clip markers at boundary
 - Whole markers cross boundary
 - No markers touch boundary



编辑制图表达



Representation

Representation ▾

- Make Invisible
- Make Visible
- Clear Shape Overrides
- Clear Property Overrides
- Free Representation ▶
- Options...

Convert to Free Representation

Convert Effect to Geometry

Ungroup Elements

Separate Symbol Layers

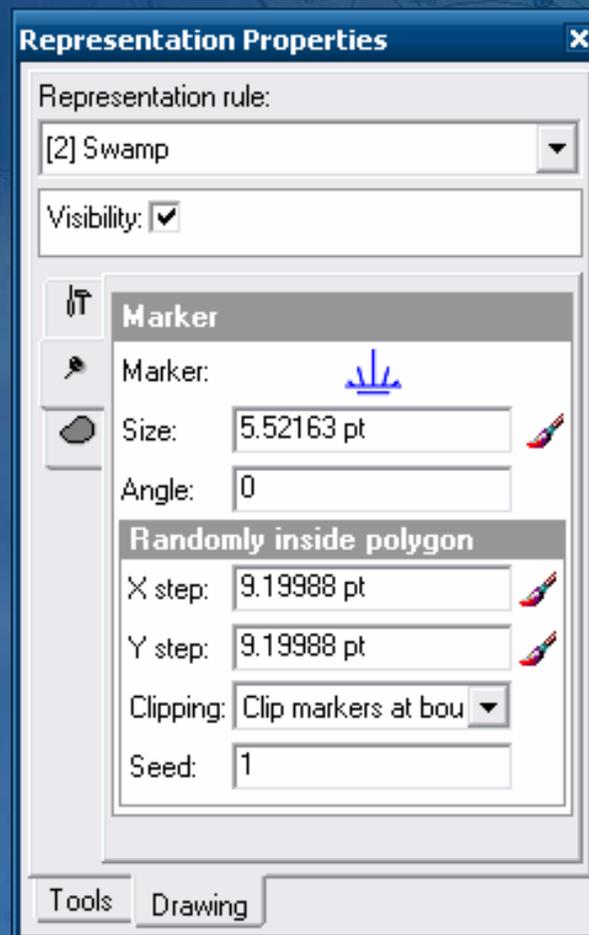
Delete Element

Edit Free Representation...

编辑制图表达



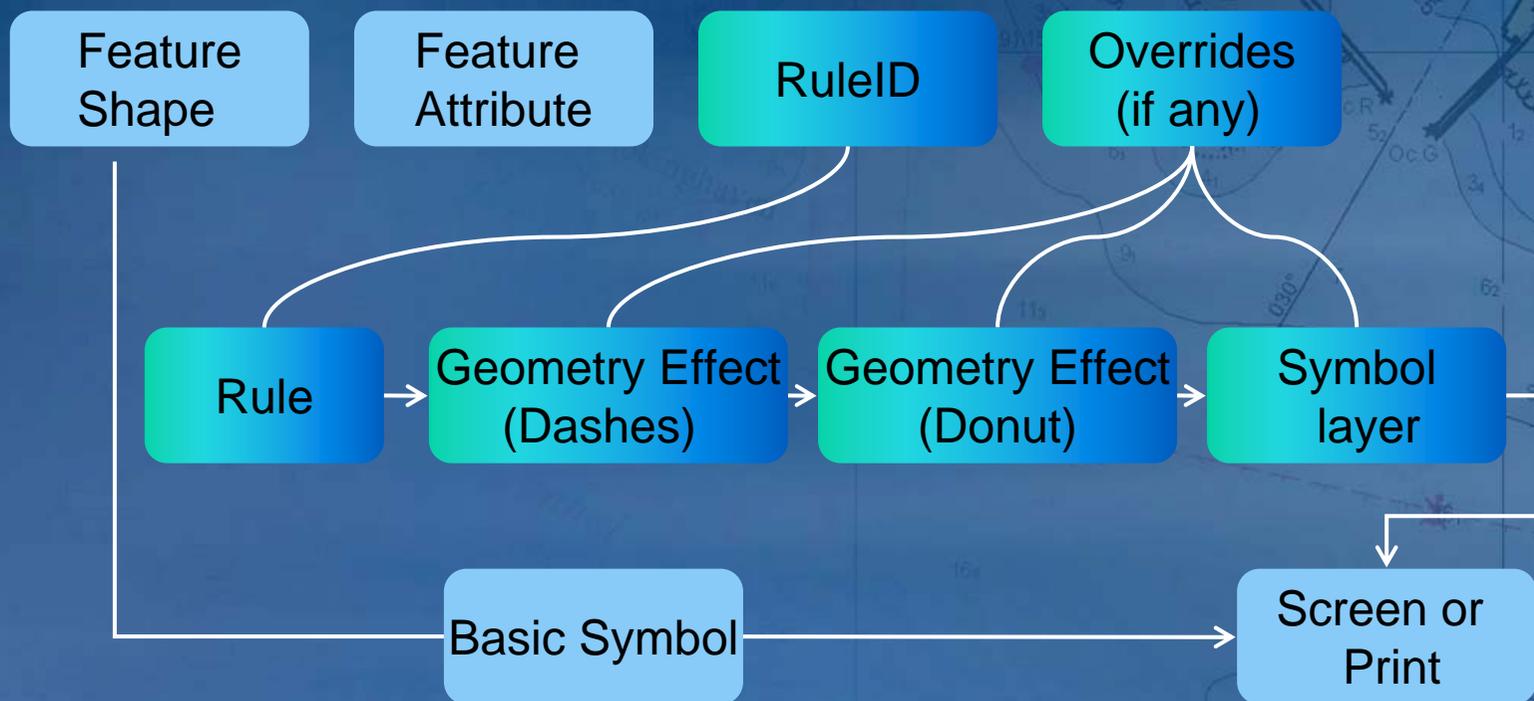
- 更改规则
- 修改属性 (override)
- 使用制图表达工具





演示：如何让你的地图“立”起来？





制图表达小结:



- 根据规则来符号化要素
- 可以是数据驱动
- 不拘泥于要素的几何形状
- 更加丰富的显示效果
- 同一数据可以生产出多幅不同的地图
- 便于重用和共享符号化方案
-



- 制图表达之探索篇
- 制图表达之剖析篇
- 制图表达之进阶篇
- 制图表达之畅想篇

自由制图表达



- 从override到规则结构的修改
- RuleID标识为-1
- 以要素为单位对其部分进行修改
- 耗费较多的系统资源

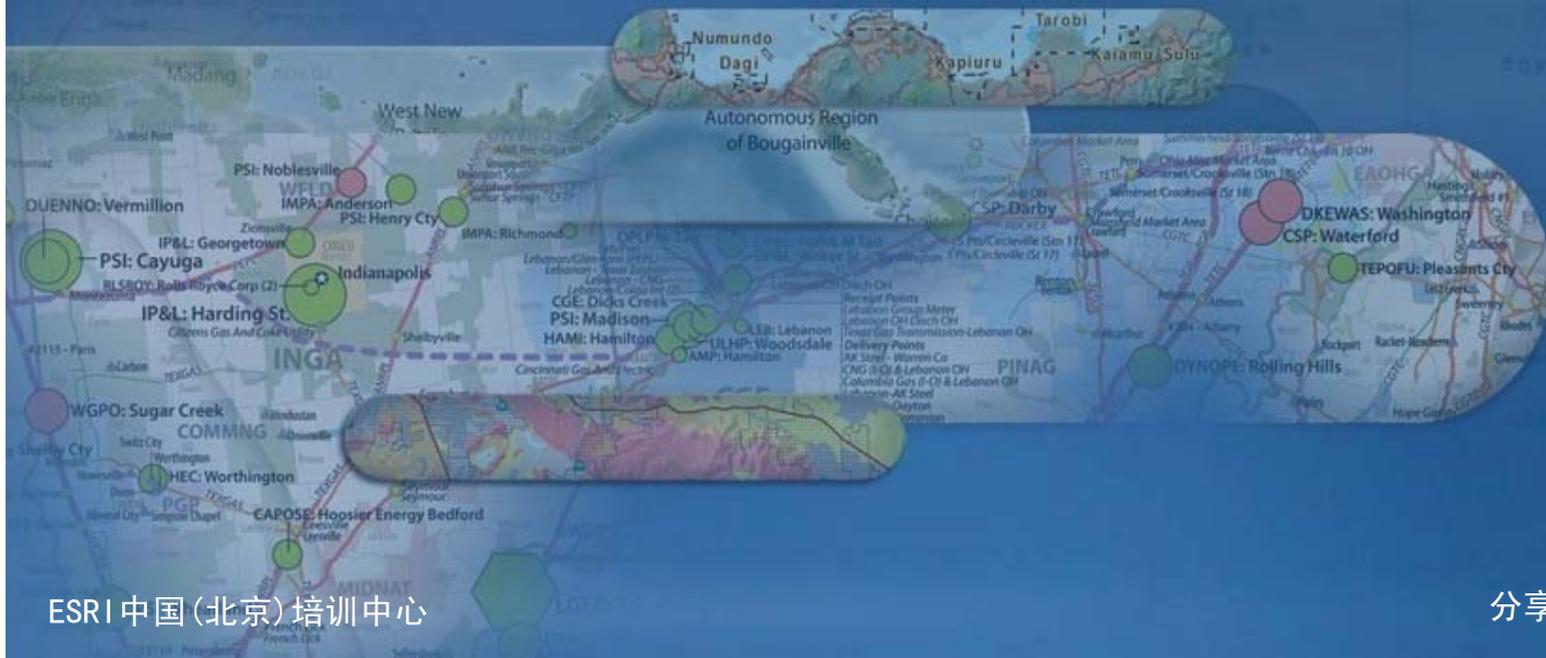
自由制图表达



A screenshot of a software window titled "Free Representation Editor". The window has a blue title bar with a question mark icon and a close button. The main area is white and contains a pink dashed outline of a map. A small yellow and black airplane icon is positioned on the right side of the outline. To the right of the map area is a toolbar with various icons: a globe, a hand, a magnifying glass with a plus sign, a magnifying glass with a minus sign, a rectangle, a circle, a line, a star, a leaf, and a cross. Below the toolbar is a text box containing "Center marker". At the bottom of the window, there is a status bar with the text "Units: Points GCS_WGS_1984 : X = -97.651322 Y = 30.360321" and two buttons labeled "OK" and "Cancel".



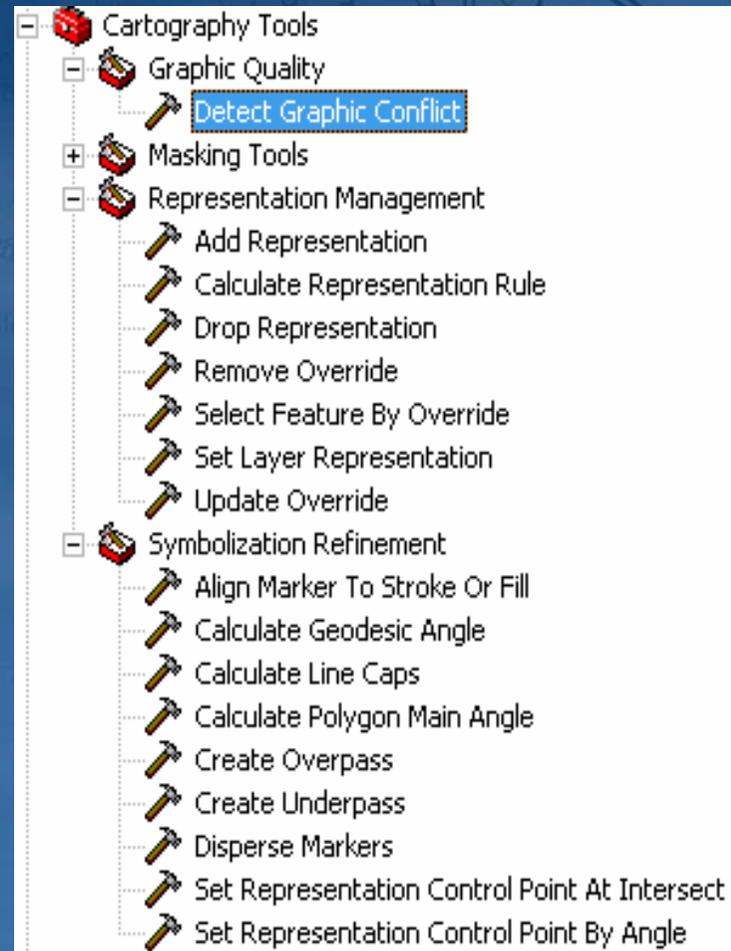
演示：使用自由制图表达



Geoprocessing与制图表达



- Graphic Quality
- Representation Management
- Symbolization Refinement



Geoprocessing与制图表达



- Graphic Quality (图形质量)

Detect Graphic Conflict

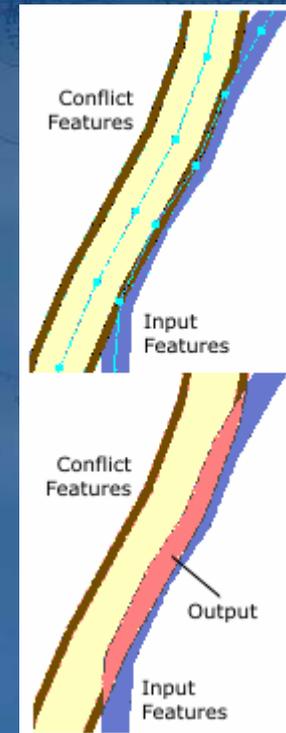
- Representation Management (制图表达管理)

Add Representation

Drop Representation

Remove Override

.....



Geoprocessing与制图表达



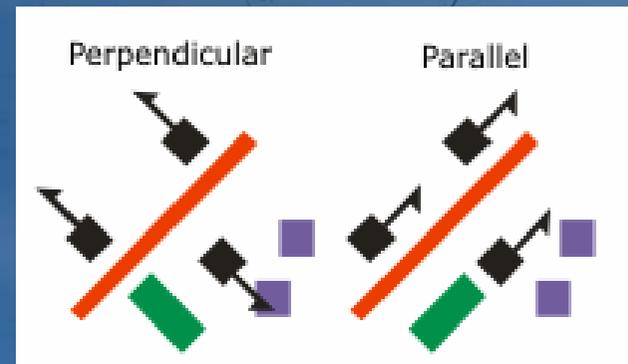
- Symbolization Refinement
(符号修饰)

Align Marker To Stroke Or Fill

Create Overpass

Create Underpass

.....





- 制图表达之探索篇
- 制图表达之剖析篇
- 制图表达之进阶篇
- 制图表达之畅想篇



- GIS环境中的Photoshop
- 能够提供行业符号化方案
- 绘制效率进一步提高
-



培训中心网站:

<http://training.esrichina-bj.cn>

<http://www.higis.cn>

资源:

<http://mappingcenter.esri.com>

http://www.esri.com/technology_trends/cartography

