



ArcGIS高级制图技术

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大纲



- 制图表达简介
- 使用制图表达
- 制图表达处理工具
- 资源



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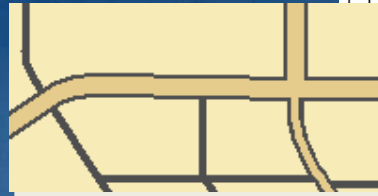


常见问题



- 属性驱动制图

ID	Type	Casing	Fill	RuleID	Override
1	Street	1	0	StreetSym	<null>
2	Major Road	3	2	StreetSym	<null>
3	Minor Road	2	1	StreetSym	<null>
	Minor Road	2	1	StreetSym	<null>
	Street	1	0	StreetSym	<null>



- 实际与表象的协调



- 同一数据，多个应用



什么是制图表达



- 符号化空间要素的智能方法
- 解决以往制图方法难以处理的解决方案
- 存储在空间数据库（GDB）中，能够反复使用且共享的符号信息的存储模型
 - 要素类的属性
 - 通过图层进行管理



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制图表达原理



基于规则 (Rules-based)

- 一个制图表达是一系列制图表达规则的集合
 - 可以将已有的符号转化为制图表达规则
 - 可以新建制图表达规则
- 制图表达规则创建并符号化动态的空间几何数据, 该数据与空间要素的空间数据无关
- 使用ArcMap或者ArcCatalog来管理制图表达规则
- 使用ESRI的符号库(Style)来共享制图表达规则

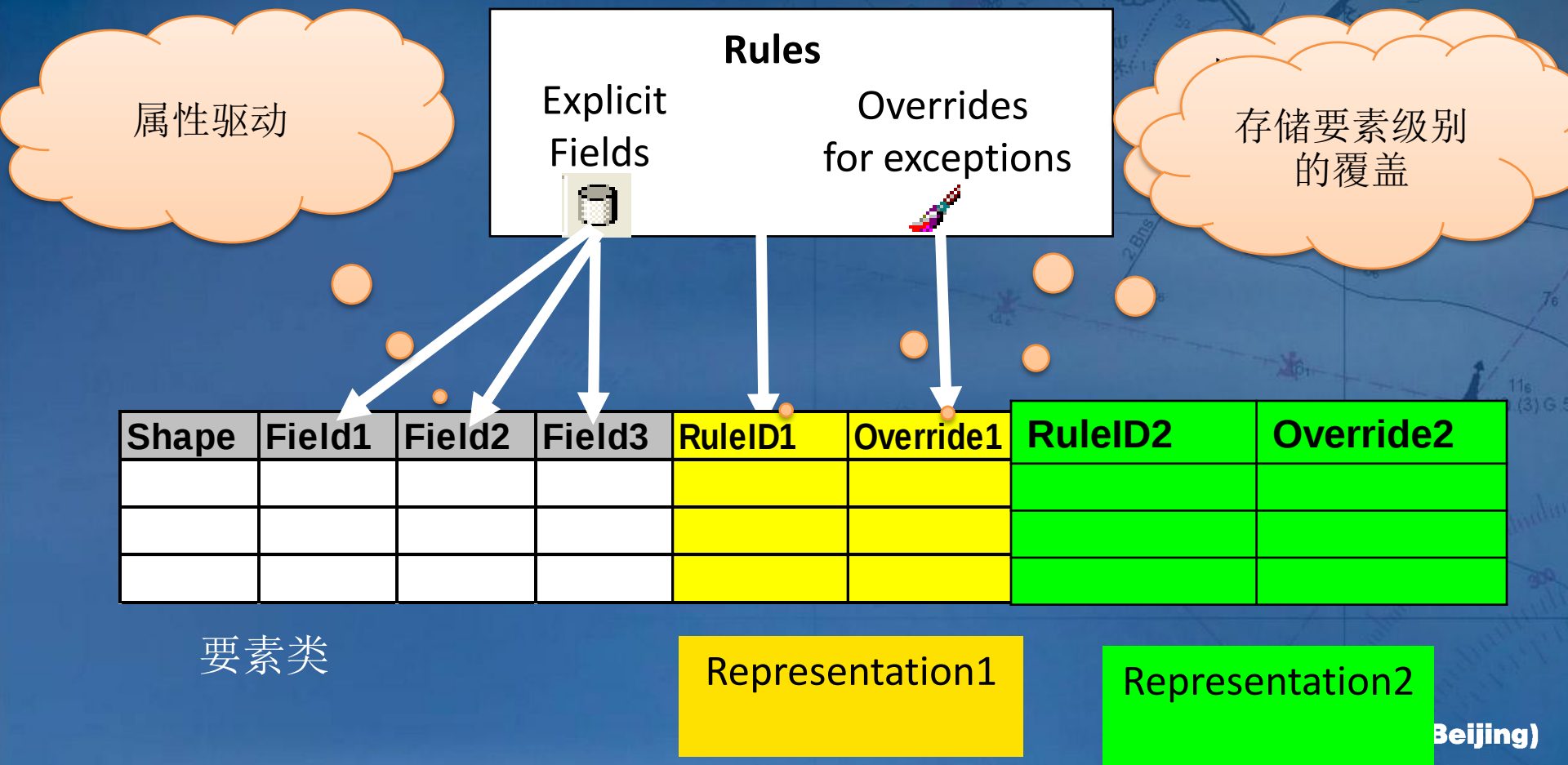


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制图表达原理

- 规则存在在要素类的扩展表中，保存在数据库中



制图表达原理



Layer Properties

General | Source | Selection | Display | Symbology | Fields | Definition Query | Labels | Joins & Relates

Show:

Features
Categories
Quantities
Charts
Multiple Attributes
Representations
Buildings_Rep

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

[1] <all other values>
[2] Z_WBecken
[3] Z_Treibhaus
[4] Z_Station
[5] Z_Schloss

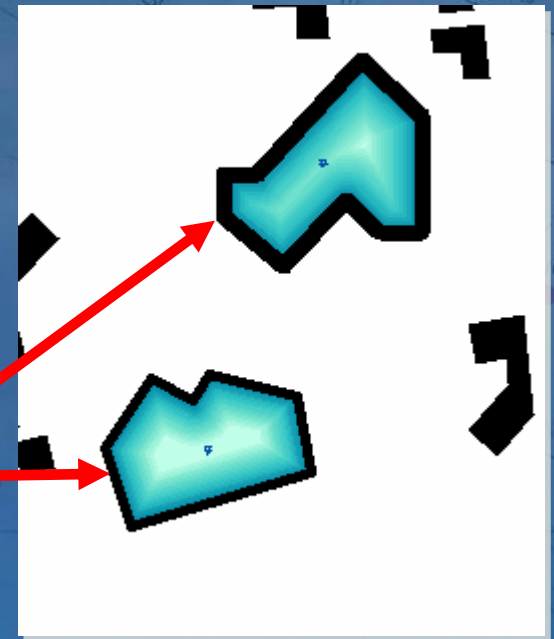
Line

Width: Width
Caps: <Override Field>
Joins: <Override Field>
Color: <Override Field>

Selected Attributes of Buildings

	FACE	OBJECTID	SHAPE_Length	SHAPE_Area	RuleID	Override	Width
▶	Bad	73859	163.265348	1563.96	Z_WBecken	Blob	1.5
▶	Bad	74001	186.609908	1689.79	Z_WBecken	Blob	0.4

Record: 1 Show: All Selected Records (2 out of *2000 Selected)

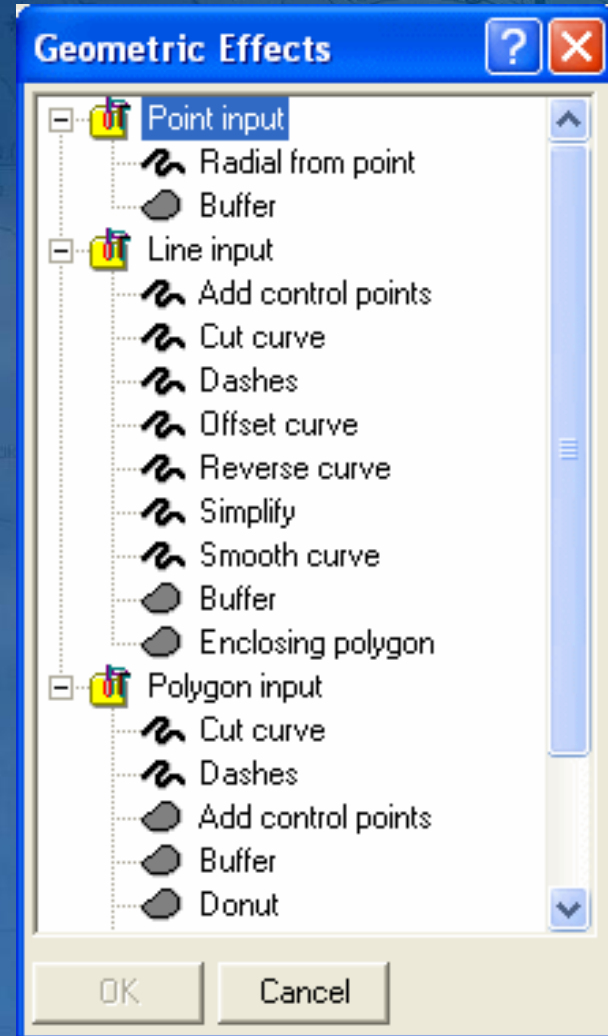


制图表达原理

- 类似编辑的操作
- 类似GP的操作

目的:

- 1、创建复杂灵活的符号
- 2、减少数据处理过程

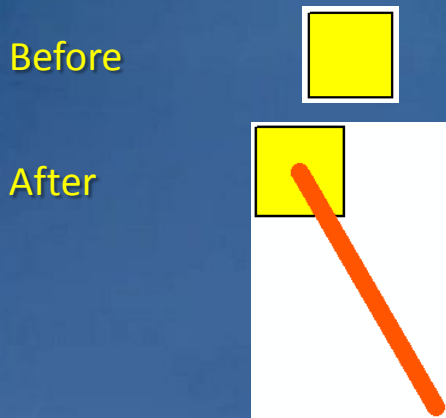


制图表达原理



- 点的几何效果

显示为线



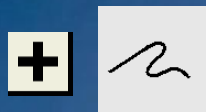
显示为面



制图表达原理



- 线的几何效果



Wave

Period: 5, Width: 3, Style: Square

Before



After



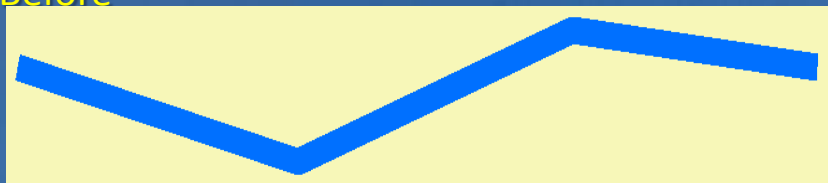
以面来显示



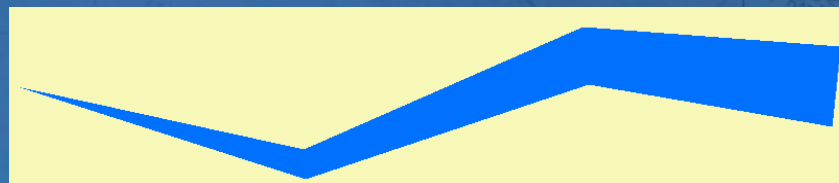
Tapered Polygon

From width: 0, To width: 2, Length: 45

Before



After



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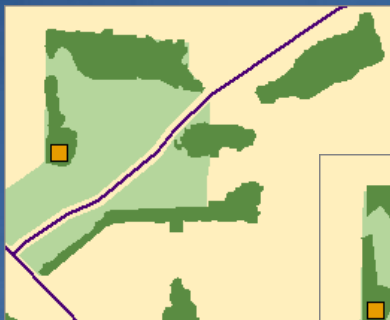
制图表达原理



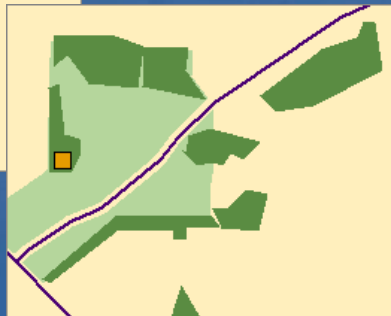
- 面的几何效果

简化

Before



After



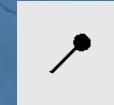
Offset curve -3



Size: 3 Placement:
Along line



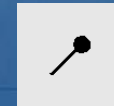
Offset curve -7



Size: 2 Placement:
Along line



Offset curve -10



Size: 1 Placement:
Inside polygon



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制图表达原理

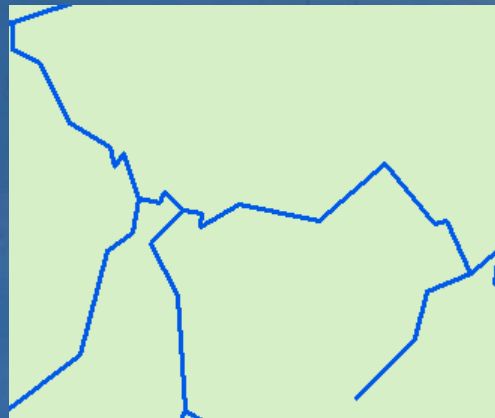


- 几何效果按设置顺序工作，前一个效果的作用结果是下一个效果的输入(顺序不同，效果不同)



Width: 2

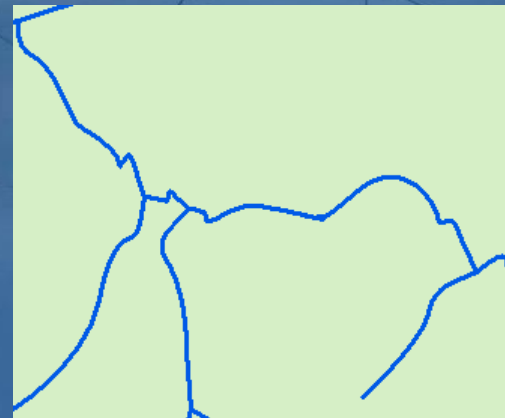
Color:



Smooth



Simplify



Simplify



Smooth



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什么情况下使用制图表达



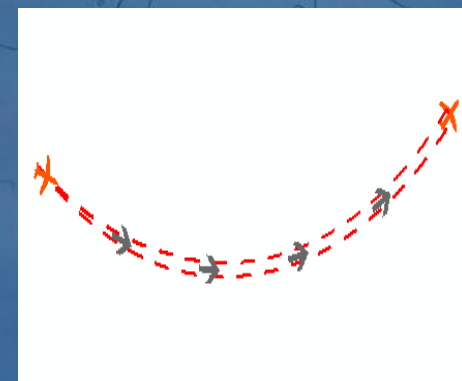
- 标准的符号 (Symbology) 不满足制图要求/规范
- 一套空间数据，生产多种制图产品
- 需ArcEditor或ArcInfo级别



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如何使用制图表达



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编辑制图表达



- 编辑过程中使用override

Override包括以下两方面:

- 1、属性覆盖
 - 符号图层属性
 - 几何效果属性
 - 点标记布局样式属性
- 2、几何覆盖
 - 要素表达的几何形状或位置

Override是对规则的一个修改，也称规则的覆盖

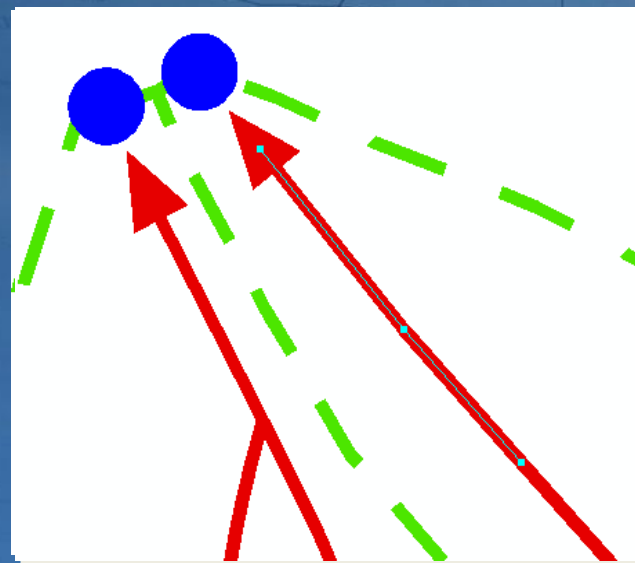
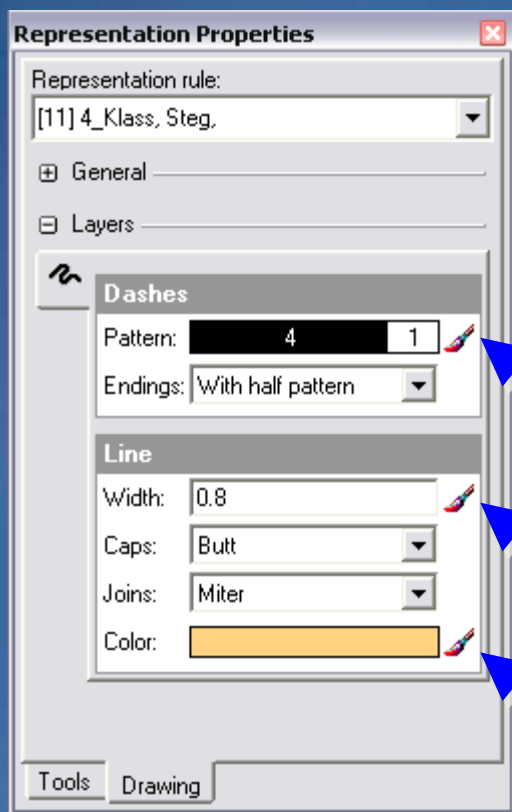
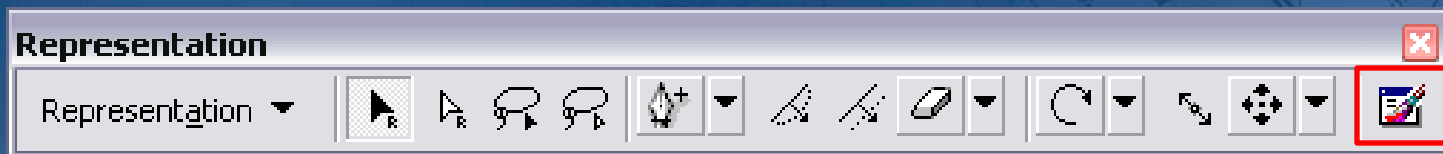


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如何编辑制图表达

- 制图表达工具条提供编辑工具



DEMO



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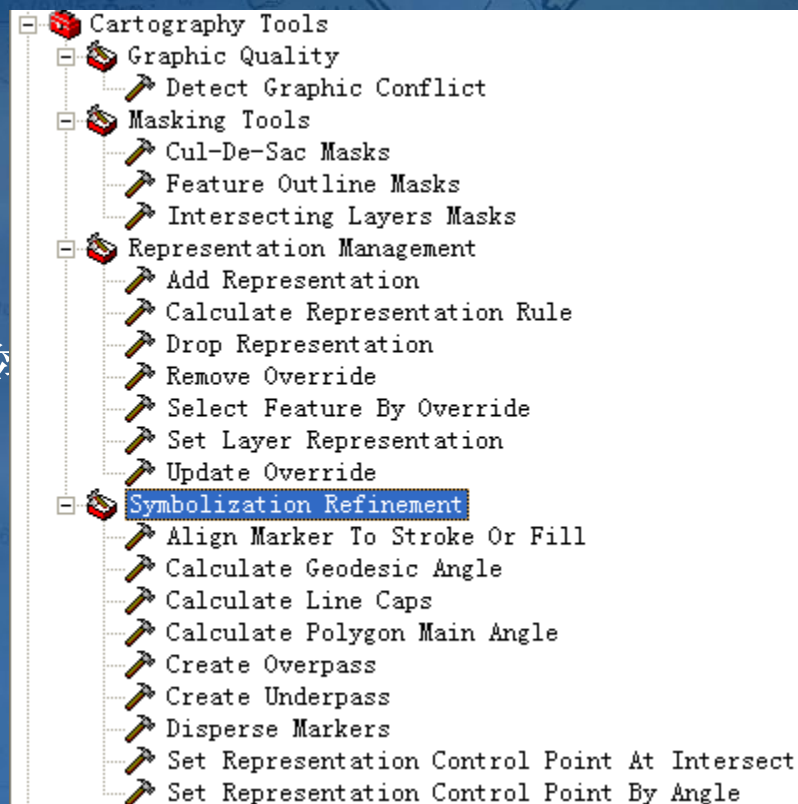
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制图表达处理工具



- ArcToolBox提供了制图工具箱:
 - Graphic Quality (图形质量)
 - Masking Tools(掩膜工具)
 - Representation Management
 - Symbolization Refinement (符号 refinement)



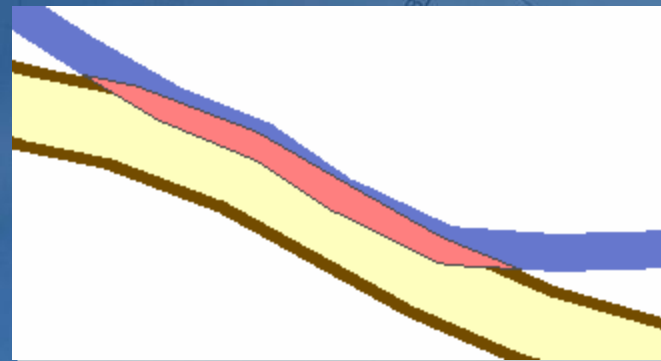
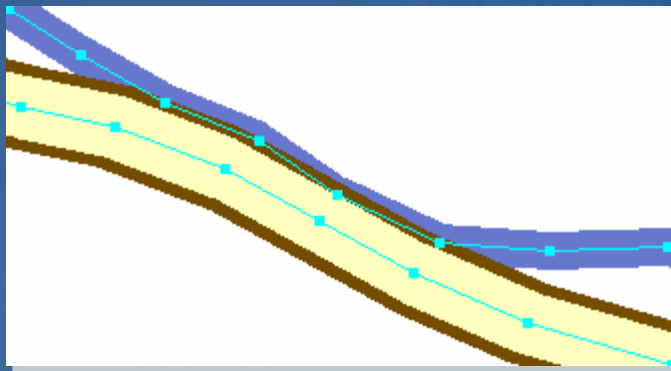
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制图表达处理工具



- Detect Graphic Conflict (检查图形冲突)
 - 查找制图表达的符号相互压盖的区域，可能数据本身并不压盖



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制图表达处理工具



- Align Marker to Stroke/Fill (对齐)



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制图表达处理工具



- Create Overpass / Underpass(建桥/隧道)



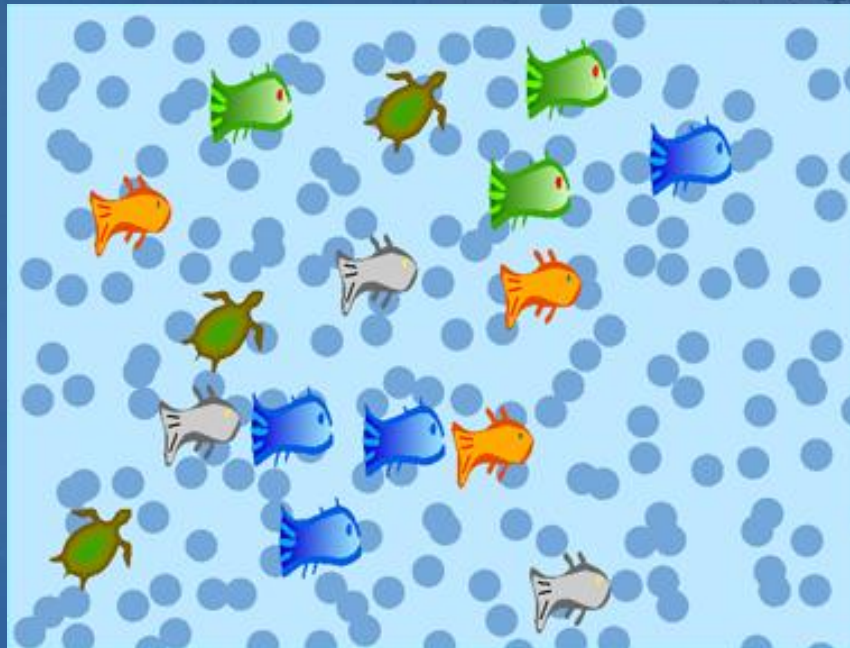
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制图表达处理工具



- Disperse Markers(分散点)



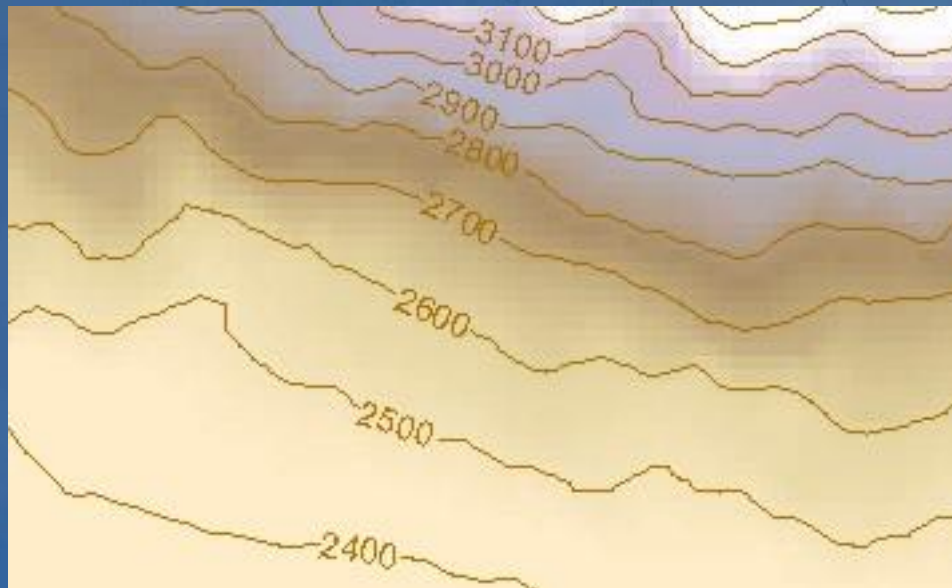
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制图表达处理工具



- Intersecting Layers Masks(创建相交掩膜)



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- http



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Welcome to Mapping Center

Mapping Center is about *the use of ArcGIS in the graphic delivery of geographic information*. Its goal is to help you make great looking maps with GIS using the same cartographic concepts and techniques that professional cartographers use.

Current Blog Feeds

Tips for caching ArcGIS Server map services faster

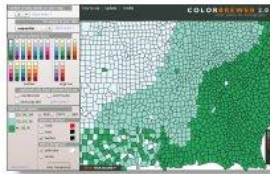


How fast can you cache? We keep asking ourselves that and keep finding that the more we know the faster we cache.

If you're involved in the job of caching maps for online map services, you are already familiar with the need to optimize the process as much as possible so that it takes less time and effort. One way you can do this is to optimize how your maps are displayed - another is to optimize the environment you are caching your map in or the circumstances under which you are caching. This blog post is dedicated to the latter....(read more)

ColorBrewer Version 2.0

Recently, a new version of ColorBrewer called ColorBrewer 2 (colorbrewer2.org) was released by Axis Maps (www.axismaps.com). ColorBrewer is a web tool for selecting colors for maps. The original ColorBrewer was released in 2002, and the update incorporates comments that the developers, Dr. Cynthia Brewer of Penn State University and Dr. Mark Harrower of University of Wisconsin Madison (he used to be a grad student at Penn State), have received over the years. Here are what some of the new features are....(read more)



Getting Started with Map Templates - Live Training Seminar

On Thursday, June 25, Charlie Frye (ESRI Mapping Center) and Mark Ho (ESRI Educational Services) will present the Live Training Seminar Getting Started with Map Templates at 9am, 11am, and 3pm Pacific Time.



This seminar will provide an overview of what map templates contain, how to get started, and how to adapt the contents of the templates or evolve your data to your mapping needs. Participants will learn where to find and download map templates. Templates include example map documents, data models, geoprocessing tools, and more-each template is a complete solution for a given kind of map. This seminar will then discuss how you can use your data with map templates to produce professional quality basemaps and publish them....(read more)

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- About the Mapping Center Team
- Getting Started
- Site Map

Mapping Center Blog

- About the Blog RSS
- Terms of Use
- Submit an Entry

Announcements

Posted July 1, 2009



We've hidden this small icon of Mercator somewhere on Mapping Center. If you find it and enter our **Hidden Cartographer Contest**, you could win a year of free access to [ESRI's Virtual Campus](#)*. To help you, we'll provide a hint a day (except on Saturday and Sunday) until the contest closes. Look here tomorrow for the next hint.

To enter, [send us an email](#) with your name, address, and phone number, along with a brief description of the hidden cartographer's location. If we receive your entry by 11:59 pm PDT on July 10th, you'll be

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