3D Analyst – An Introduction

Deepinder Deol
Michael Contreras
Contents

• What is 3D Analyst?
• ArcGlobe
• **Demo**
• ArcScene
• 3D Effects
• 3D Symbology
• 3D Editing
• Graphics, Animation and Customization
• 3D Geoprocessing
• **Demo**
What is 3D Analyst?

- ArcGIS extension that provides capabilities for:
  - Interactive 3D Visualization of spatial data
  - 3D Editing of feature data
  - 3D Geoprocessing tools
  - Publish globe services (ArcGIS Server)
  - Publish globe documents (Publisher toolbar) for use in ArcReader
Applications with 3D Functionality

ArcGlobe

ArcScene

ArcMap

ArcCatalog
Data Types

• Vector features
  - Points, lines, polygons, multipatches

• Surface models
  - Triangular Irregular Networks (TINs)
  - Rasters
  - Terrain datasets
ArcGlobe

- **3D visualization application**
  - Data placed on 3D globe
  - Map like & oblique views

- **Integrated topography**
  - One logical ‘globe surface’
  - One multi-resolution mesh

- **Caching**
  - Disk cache and memory cache
  - Levels-of-detail *(raster data)*
ArcGlobe: Levels-of-detail

Far (less detail)  Near (more detail)
ArcGlobe: Types of layers

- **Elevation**
  - defines globe surface
- **Draped**
  - relative to globe surface
- **Floating**
  - Not relative to globe surface
ArcGlobe: Navigation Modes

Global mode

Surface mode
Demo
ArcScene

- 3D visualization application
- Memory based application
- Better for smaller study areas
- Stereo viewing is supported
3D Effects Toolbar

- Real-time feedback for
  - Transparency
  - Front/backface culling
  - Lighting
  - Depth priority *(ArcScene only)*
  - Swipe tool *(ArcGlobe only)*
  - Flicker tool *(ArcGlobe only)*
**3D Symbology**

- Applied to feature data
- Add realism to your documents
- Match to symbols in style
3D Styles

- **Points**
  - 3D Geometric primitives: Spheres, Cones, etc.
  - 3D Models: Street furniture, Houses, etc.
  - 3D Character Markers
  - **Import 3D models** –
    - OpenFlight (*.flt), 3DS Max (*.3ds), Virtual Reality Markup Language (*.vrml), and SketchUp (*.skp), Collada (*.dae) models

- **Lines**
  - 3D Texture Line Symbols: Pavement, Concrete, etc.
  - 3D Geometric primitives *(ArcScene)*: Tube, Strip, Wall etc.

- **Polygons**
  - 3D Texture Fill Symbols: grass texture...
3D Editing

- Feature editing in ArcGlobe and ArcScene
- Template based editing
- Support for classic snapping
3D Graphics and KML support

• 3D Graphics Toolbar
  - Digitize point, line, polygons and text graphics
  - Apply 3D Symbology to the graphic elements

• Keyhole MarkUp Language (ArcGlobe only)
  - Add KML data using the KML toolbar in ArcGlobe
  - Strong support for KML 2.2
Animation Tools
3D Geoprocessing

- Surface creation (TINs, Terrains, Rasters)
- Surface analysis
- Output raster and vector datasets
- 3D feature creation derived from surfaces
- Data Conversion
Customization framework

- **Customization environments**
  - Visual Basic for Applications (VBA) in ArcGlobe and ArcScene applications
  - C#, VB.NET, Java, C++, etc.

- **GlobeControl and SceneControl**
  - Used in custom applications
  - Can easily view existing documents
Steps to evaluate UC sessions

- My UC Homepage > “Evaluate Sessions”

- Choose session from planner
  OR

- Search for session

www.esri.com/ucsurvey sessions
• Thank you for attending
• Have fun at UC2012
• Open for Questions

• Please fill out the evaluation:

www.esri.com/ucsessionssurveys

Offering ID: 581