

Table 1: Comparison of 3-D data and terrain visualization tools in use at MBARI

	Inherent coordinate system	Platforms / Licenses / Accessibility / Learning curve	Data types & database integration / Data entry ease	Support for 3-D visualization and interaction	Extensibility & integrating with other tools
ArcInfo/ ArcView	Georeferenced coordinates are inherent.	At MBARI 5 user Unix license and 7 PC licenses, \$200 for each additional seat. About 1 day of effort to learn.	Images and hyperlinks can be included. Able to have live connections to databases.	ARC/View is inherently 2-dimensional. ArcView 3D Analyst adds on TIN objects to a 2-D map for fly-through visualizations.	Avenue scripting language, database queries via ArcInfo. Able to interface with shared libraries and DLLs for network communication, etc.
Fledermaus	Georeferenced coordinates are inherent.	Licensed per SGI system. Requires 3-D acoustic mouse for full capabilities. About an hour of effort to learn to use.	Terrain data, contour, volume, seismic images. http://www.omg.unb.ca/ivs/products/products.html	Great for quick fly-throughs of terrain datasets. Uses available rendering hardware on the client for maximum 3-D performance.	Unknown, would need access to source code.
VRML	Georeferenced coordinates are not inherent, but 3-D coordinate system is inherent.	Free web browser plugin for Unix, Mac, & Windows. Shallow learning curve for anyone familiar with using the Web. Worlds can be created with set viewpoints to help with navigation. Visual and audio cues can be included to help draw a visitor into the world.	Terrain, Images, sound, movies, any 3-D object, and hyperlinks to more detailed information. Database connections through Java/JDBC and via conventions developed by VRML/database working group.	Uses OpenGL and available rendering hardware on the client, if not available then slower software rendering is used.	Java, and JavaScript languages can extend functionality for network and file I/O capabilities. The ExternProto node allows creation of new VRML constructs.