June 2005 Monthly Newsletter
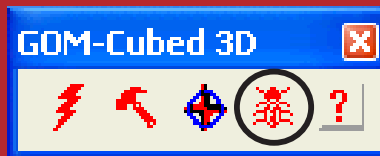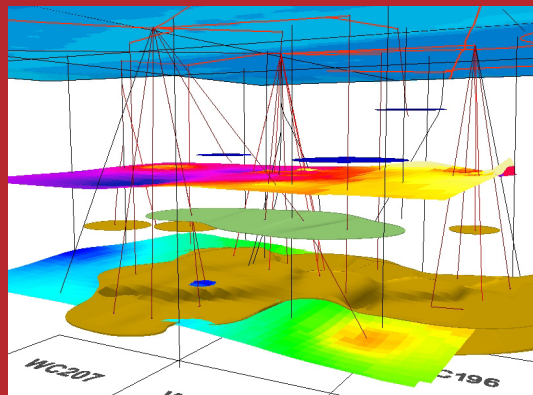
The Paleo Wizard Tool

One of the greatest advantages of *GOM³* is the ability to put any producing field in the Gulf into a 3-D GIS scene. This includes a field's wells, paleo and completions and 3-D volume models of all of the sands. The seafloor reflects NOAA's high-resolution bathymetry and pipelines are draped over it. It is possible to change the legends for all elements in a 3-D scene, just as you can in 2-D ArcMap. Logical restrictions can also be imposed on the layers (e.g., just show wells with production in 2004). To open a 3-D model of a field, simply click on the field polygon with the ESA Hot Link Tool in the 2-D map.

Above: The GOM³ 3-D Toolbar with the Paleo Wizard Tool highlighted in the black circle.

Above: 3-D GIS model of WC205 showing wells, sands and two biostratigraphic surfaces: Cib. op. (deep surface) and the Big. A (shallow surface).

representing the tops into a 3-D model, pick the 3-D Paleo Wizard from the *GOM³* 3D Toolbar (upper picture) and choose "Add Paleo Surface." If you want to contour by fossil, you will be presented with a table that shows all bugs reported in the field, their average depth and how many observations are present.

The best maps of tops are made from those fossils that have the highest number of observations. If there are only a half-dozen samples with a particular fossil, the grid is likely to be of very limited areal extent relative to the field. After choosing the bug to map – click apply; to add more surfaces, simply highlight additional fossils and click apply again.

On the *GOM³* 3D Toolbar is a button with a bug on it (see upper picture). This is our 3-D Paleo Wizard. If you subscribe to Paleo Data Inc's service, the 3-D Paleo Wizard will add PDI data to the 3-D scene. With either PDI or MMS paleo, it is then possible to estimate a surface reflecting the paleo tops throughout the field and automatically hang those grids within the 3-D scene.

The lower picture shows the 3-D model for the WC205 field. In addition to the wells and sands, two estimated surfaces have been introduced. The shallow surface is the top of Big. A; the deeper is the top of Cib. op. To add 3-D grids

In addition to providing excellent biostratigraphic reference for the completions, sands and wells, the estimated grids may be used to group the sand and completion data. For instance, it is possible in the scene shown in the lower picture to extract all the completions or sands that produce between the Big. A and Cib. op.

We would like your input on the Newsletter. If there is an issue you think we should address, please contact us by email or phone (or, of course, visit us in Long Beach).

- Earth Science Associates (562) 437-7373