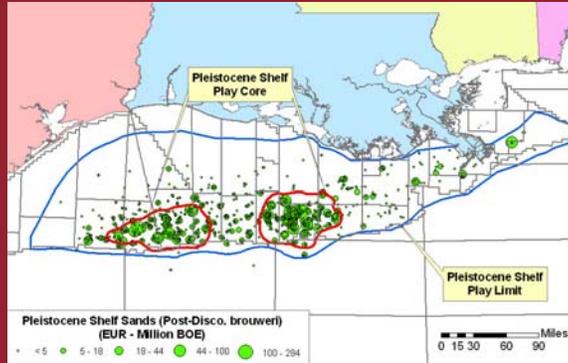


# GOM<sup>3</sup>

## May 2007 Monthly Newsletter Defining GOM Plays

While the data provided through GOM<sup>3</sup> from MMS is a valuable component of the system, some MMS analysis may not lead to the best use of their underlying data for exploration and production decisions. An example is the MMS definition of plays.



EUR. These focus deposodes govern trapping mechanisms and both the timing of source maturation and the creation of migration pathways through both faulting and salt movement in response to loading.

Hydrocarbon plays are typically defined by common reservoirs, sourcing and trapping mechanisms. For the Gulf of Mexico, the MMS approach since the 1990s has been to group reservoirs across fields based on laterally extensive definitions of (principally log-identified) depositional packages (e.g., the Middle Pleistocene progradational play). This focuses on only one play factor (reservoir) and makes almost all larger fields members of multiple plays (up to 11). While such classification yields insights on commonalities of reservoir performance, it is a poor foundation for the exploration analysis that the definition of plays was developed to support.

The series containing the largest sand, and the depositional environment it represents, define the play to which a field belongs. That environment also spatially identifies both the limit of the play and a "core" within it (see map). New field and extension exploration risks vary systematically inside and outside the play core; so do if-successful discovery sizes. The opportunity to add new reservoirs in discovered fields (the principal mechanism of reserve growth in the GOM) exists throughout the play's spatial limit. New field exploration risk and if-successful discovery size, however, are systematically better within the play core compared to outside.

At the 2007 Annual AAPG, ESA's John Grace gave a paper proposing a different approach, using the Plio-Pleistocene shelf section as an example. Plays were defined based on the principal geologic events responsible for field organization. This classification recognizes that the estimated ultimate recovery (EUR) of reservoirs *within* fields is highly skewed and usually lognormally distributed. The largest sand in a field typically contains 15-28% of field EUR in very large fields (>19 sands) and a much greater share in smaller fields. Moreover, the series including the largest sand almost always dominates field

Using this method, several dozen plays defined by the MMS in the Plio-Pleistocene shelf section were consolidated into three: Lower Pliocene, Upper Pliocene and Pleistocene. In order to build this framework, reservoir and sand-level MMS data were combined with biostratigraphic data from PDI and correlations made by Dick Fillon in his GOM Deposystem analysis, all within GOM<sup>3</sup>.

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### GOM<sup>3</sup> Calendar

**Next Public Training  
July 18 and 19, 2007**

**2007 End User Conference  
October 25, 2007**

