Elephants? In the U.S. Atlantic?

Presented by

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ABSTRACT

"Elephant" size oil and gas fields have been discovered since 2001 in deep and ultra-deep waters offshore Northwest Africa (conjugate to the U.S. Atlantic Margin), the conjugate transform margins of West Africa and South America, and the East African Transform Margin. These discoveries have been used as analogs to upgrade the prospectivity and resource potential of similar settings in the underexplored U.S. Atlantic Margin. Resource volumes in these evolving analog areas are significant. The Northwest African Margin and West African Transform Margin discoveries have each been estimated to contain approximately 5.5 and 3.4 billion barrels of oil equivalent (BBOE). The East African Transform Margin analogs are considered to hold between 140 and 180 trillion cubic feet of gas (TCFG), approximately 20 – 30 BBOE.

Before these discoveries, the exploration histories of the Northwest African Margin (Mauritania–Senegal), the African (Côte d'Ivoire–Ghana) and East African Transform Margins (Tanzania–Mozambique), and the U.S. Atlantic Margin were eerily similar; characterized by "modest" discoveries and dry holes on the shallow water shelves of these areas.

Recent exploration results in the analogs have shown that the probability of economic failure can be high. This is in part related to the lack of infrastructure and the level of exploration maturity in the analog areas requiring "material" discoveries with resources of 200 MMBbls or 5 TCFG to be the currently considered thresholds for stand-alone development. Similar volumes would likely be needed in the U.S. Atlantic Margin to qualify as economic discoveries that would be needed to anchor a production hub.

Geologic literature, corporate presentations, and other publications provide seismic and subsurface data that depict and characterize the analog deep and ultra-deepwater African discoveries. These data can be used to identify potentially similar features on the pre-1988 2D seismic data from the U.S. Atlantic Margin that has been vectorized, post-stack enhanced, in some cases reprocessed from the field tapes, and all of which was subsequently depth-converted and time-migrated. Comparisons suggest the possibility that elephants may exist in the U.S. Atlantic.

BIOGRAPHY

Paul Post is currently a staff geologist with the U.S. Department of Interior Bureau of Ocean Energy Management (BOEM) in New Orleans, LA. He has been a consultant, a Sr. Staff Geologist/Exploration Supervisor, and worked in other exploration and management positions for independents and major companies. Paul has diverse global exploration experience in more than 80 basins, exploring in hundreds of petroleum systems and plays in a wide range of structural and stratigraphic settings.

He has lead authored publications for BOEM, and has been lead and co-author of papers published by GCSSEPM, GCAGS, and AAPG. Paul was co-editor and lead author of the Geological Society of London's SP 369 "Conjugate Divergent Margins". He convened or co-convened three GCSSEPM Research Conferences. He has edited more than 300 papers for GCSSEPM, AAPG, and the Geological Society of London. He has a BS in geology from Virginia Tech.