



Wood Mackenzie

**2014 OCS Advisory Board
Workshop**

Jackson M. Sandeen

Research Analyst – Deepwater Gulf of Mexico

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Agenda

1. Deepwater GoM rig market then and now

2. Gulf production leaders and key areas of growth

3. Production profile and capex forecast by play-type

4. Key emerging plays

5. Global rig supply and demand

Deepwater GoM rig market then and now

Several operators experienced a rig crunch in mid-2012

- ◆ Inadequate rig positions and inequitable distribution
- ◆ Lack of available rig slots and elevated day rates
- ◆ Increased global competition particularly within the Golden Triangle
- ◆ Permitting delays impacted smaller independents' contracting strategy

By 2014, the deepwater GoM rig market has loosened up

- ◆ Operators turned to the newbuild market
- ◆ Rig contract extensions improved rig positions
- ◆ Rig sharing between operators continues
- ◆ Rig fleet has been high-graded in terms of specifications

Agenda

1. Deepwater GoM rig market then and now

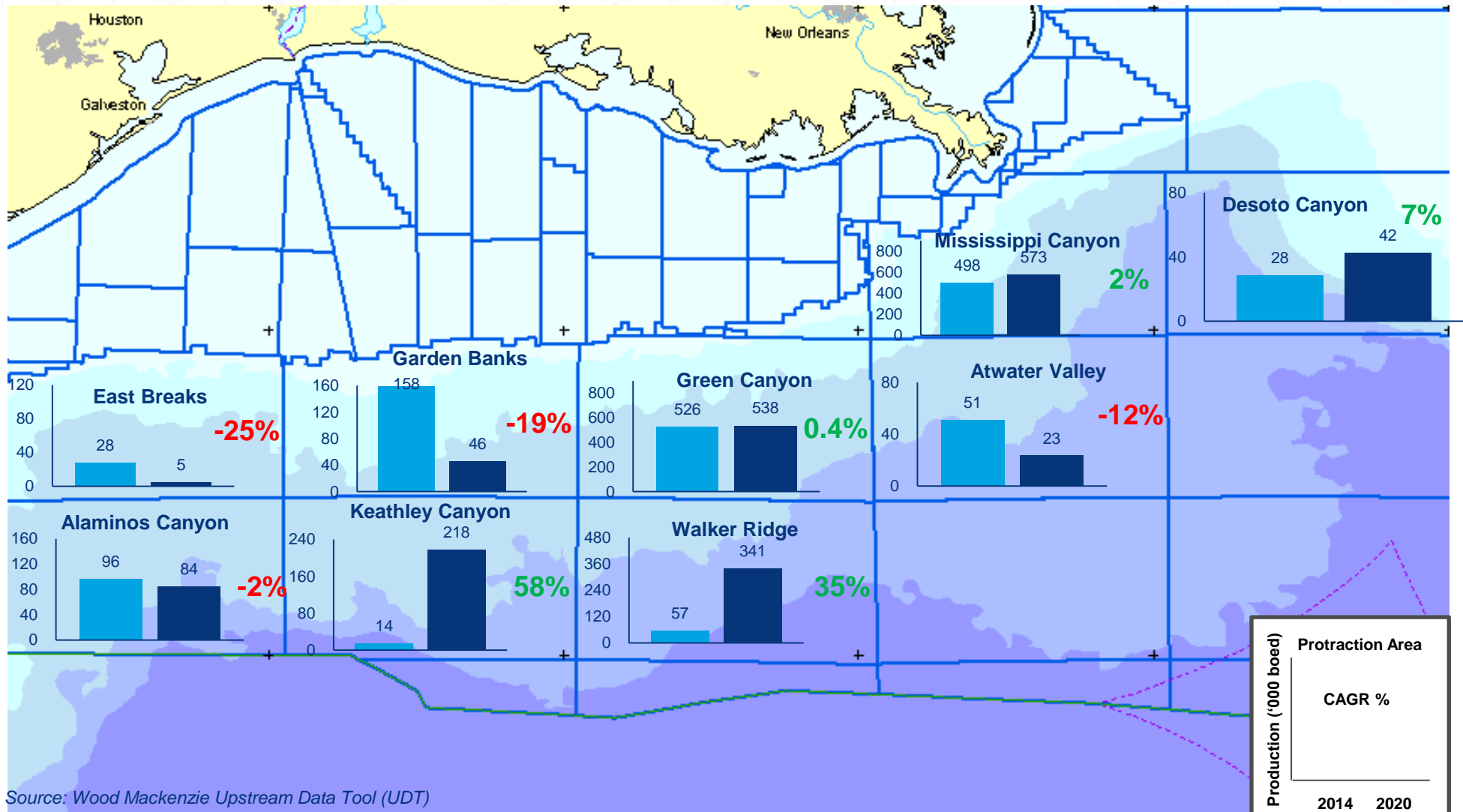
2. Gulf production leaders and key areas of growth

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Future growth lies predominantly in the frontier protraction areas of Keathley Canyon and Walker Ridge



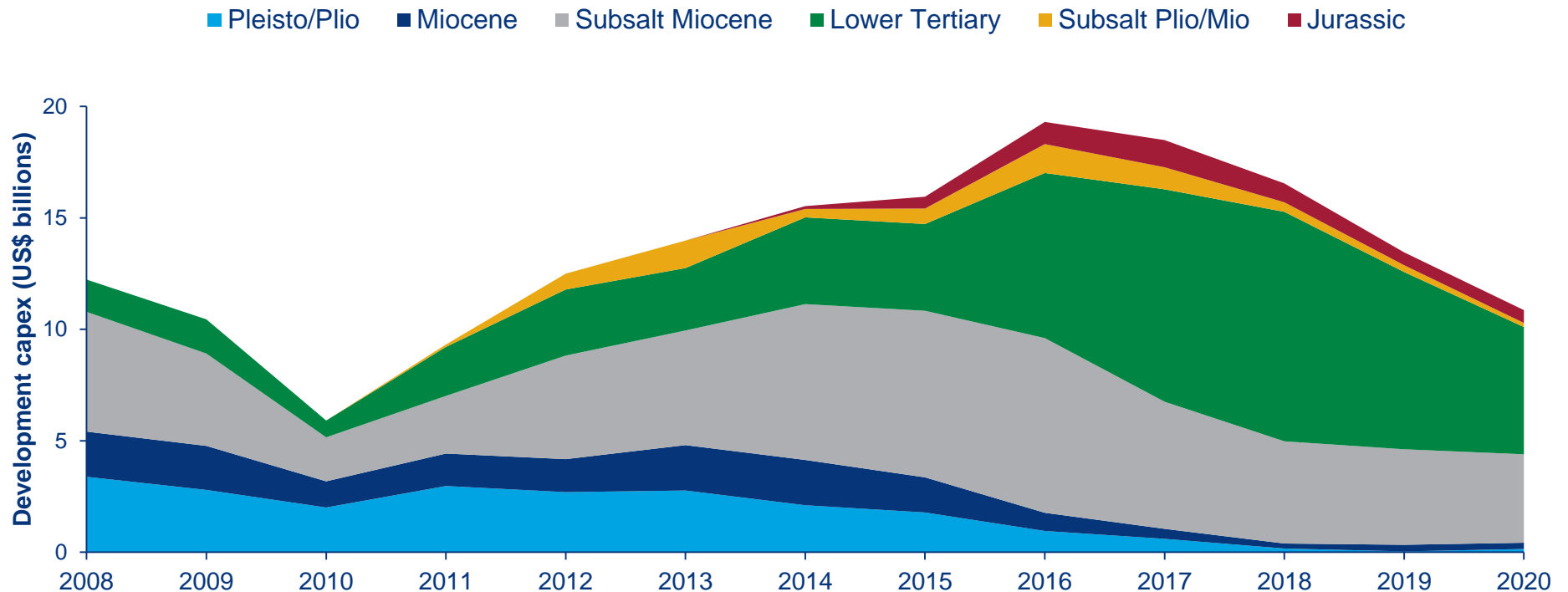
Source: Wood Mackenzie Upstream Data Tool (UDT)

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Lower Tertiary displaces Subsalt Miocene as key investment area as region approaches new capex peak in 2016

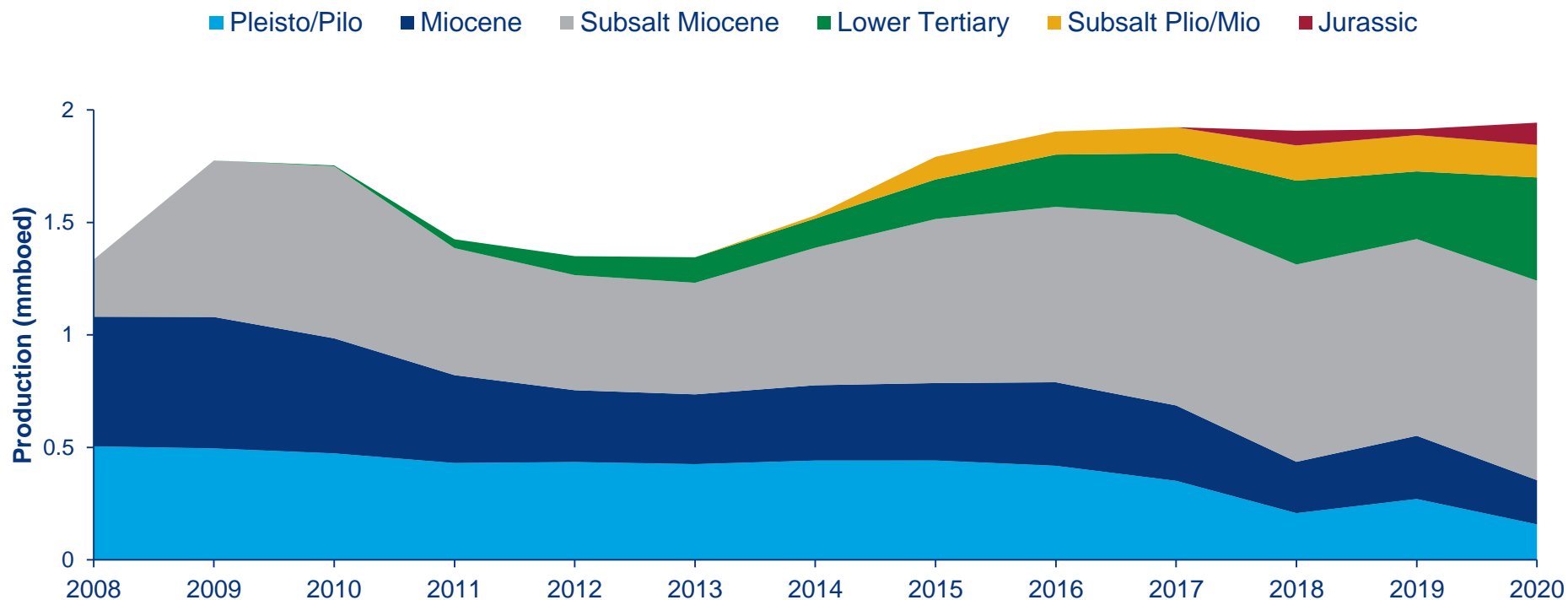
Development capex by play (2008-2020)



Source: Wood Mackenzie Upstream Data Tool (UDT)

Drilling moratorium results in production deferment which is finally trending upwards

Commercial production by play (2008-2020)



Source: Wood Mackenzie Upstream Data Tool (UDT)

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Two key emerging plays: Lower Tertiary and Jurassic

Lower Tertiary

- High yet-to-find volumes driven by commercial success to date
- Marginal economics given current low recovery factors
- HP/HT technology and EOR will be key driver to unlocking value

Jurassic

- Limited commercial success with fewer than 10 wells drilled
- Appomattox field potentially a one-off discovery in terms of recoverable reserves
- Uncertainties regarding near-term success, aerial extent and Eastern Gulf leasing
- Economics favorable given higher permeability/porosity and shallower reservoir depths relative to the Lower Tertiary

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Global rig supply and demand

- ◆ 2016 could potentially result in a pinch point for rig demand
- ◆ Can rigs be built?
 - » 90 currently being built but a further 95 required to meet demand
- ◆ Can service sector and construction meet demand
 - » 170 new floating facilities and 220 sub sea tie-backs
 - » Not to mention the hiring and training of staff
- ◆ New era of deepwater cost inflation on the horizon.....



Jackson M. Sandeen

Research Analyst – Deepwater Gulf of Mexico

- ◆ Jackson is currently a Research Analyst working on the Deepwater Gulf of Mexico Upstream Research team. In this role he performs asset valuations, assists with consulting projects and publishes topical reports on key regional trends. He has spent his time focusing on rig market constraints, play-level economics and the commercial impact of emerging plays.
- ◆ Jackson earned dual degrees in Economics and Broadcast Journalism from Boston University.

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Europe +44 131 243 4400
Americas +1 713 470 1600
Asia Pacific +65 6518 0800

Email contactus@woodmac.com
Website www.woodmac.com



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