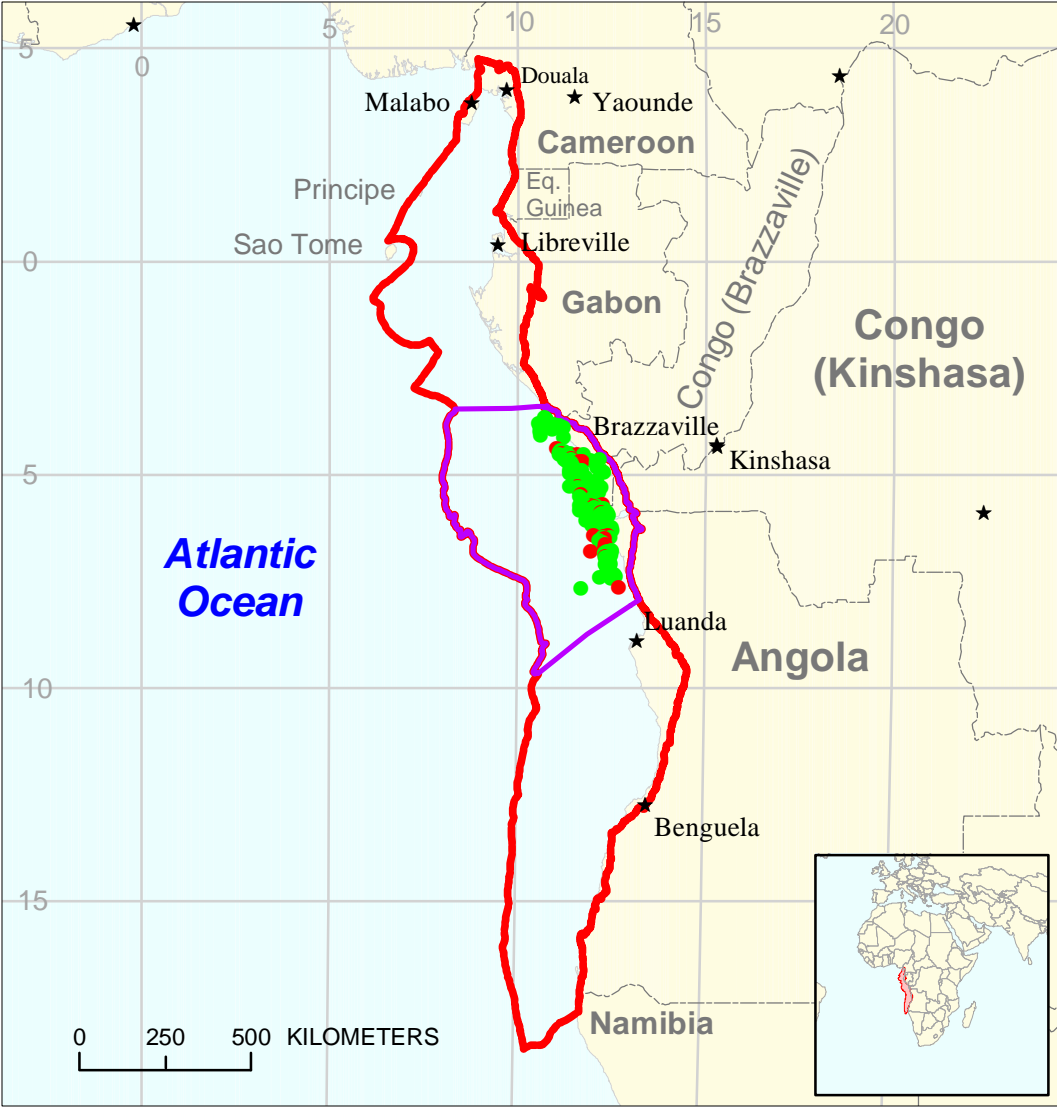


Central Congo Delta and Carbonate Platform Assessment Unit 72030301



- Central Congo Delta and Carbonate Platform Assessment Unit 72030301
- West-Central Coastal Geologic Province 7203

USGS PROVINCE: West-Central Coastal (7203)

GEOLOGISTS: R.R. Charpentier and M.E. Brownfield

TOTAL PETROLEUM SYSTEM: Congo Delta Composite (720303)

ASSESSMENT UNIT: Central Congo Delta (72030301)

DESCRIPTION: Both subsalt and suprasalt source rocks and reservoirs of the Mesozoic through Eocene in the area of the thick Congo Delta

SOURCE ROCKS: Primary source rock is the subsalt Lower Cretaceous lacustrine shales of the Bucomazi Formation. Additional marine source rocks from the suprasalt section are shales from the Upper Cretaceous Iabe Formation, the Paleocene-Eocene Landana Formation, and the Miocene Malembo Formation. Oils are paraffinic.

MATURATION: Oil generation began in Late Cretaceous and has continued to the present.

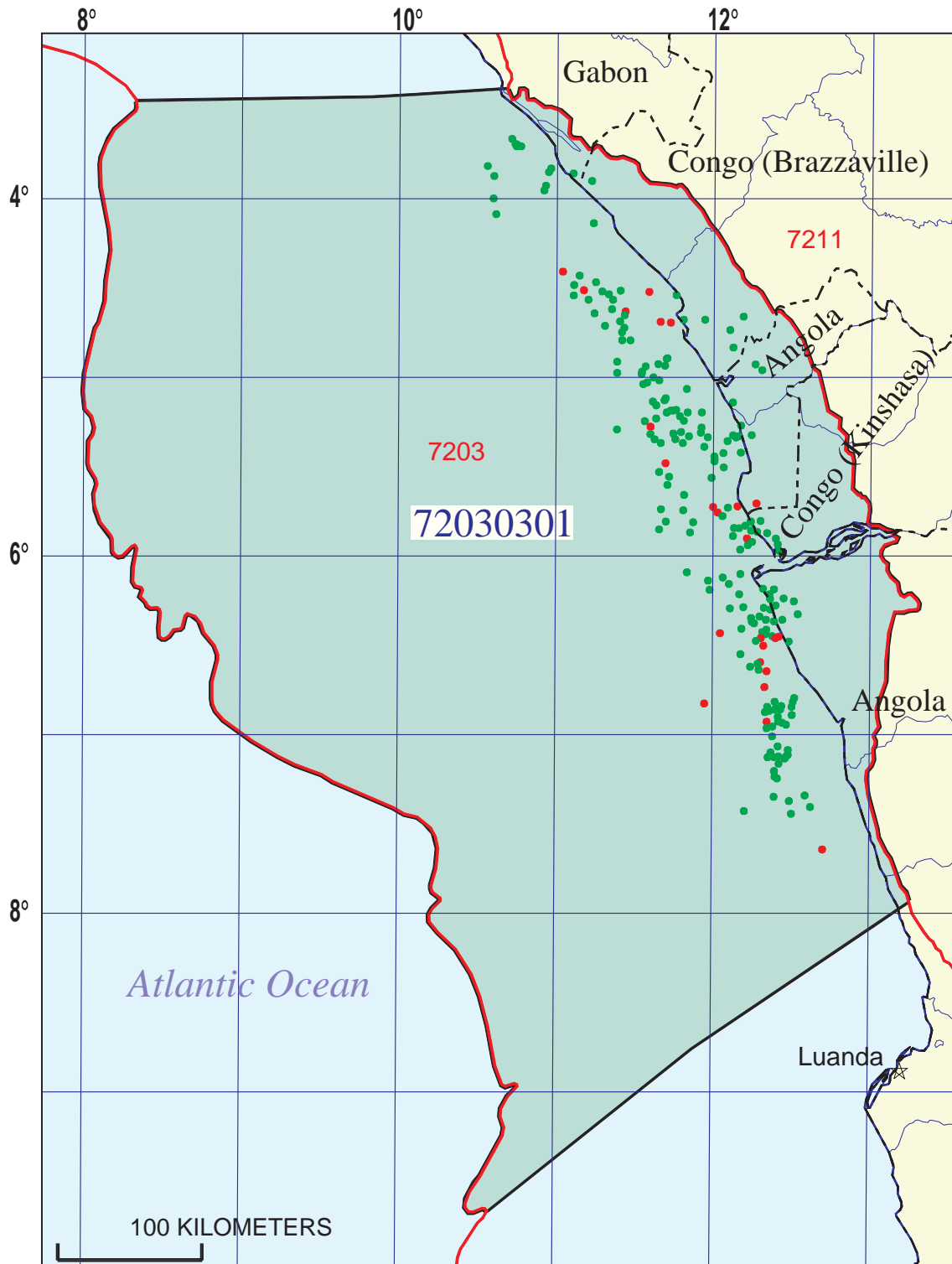
MIGRATION: Pathways are mostly fault related. Some lateral migration took place along the Chela Formation.

RESERVOIR ROCKS: The majority of reservoirs are sandstones of both the presalt and postsalt sections. A large number of reservoirs are carbonates (about 50 percent limestone reservoirs, 50 percent dolomite reservoirs), mainly those of Albian platforms. Overall, porosities average about 21 percent and permeabilities average 450 mD.

TRAPS AND SEALS: Mostly anticlinal traps, some related to rollovers. Some fault block and paleotopography traps. Shale seals.

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- Edwards, Alan, and Bignell, Roger, 1988, Hydrocarbon potential of W. African salt basin: Oil and Gas Journal, v. 86, no. 50, p. 71-74.
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Central Congo Delta and Carbonate Platform Assessment Unit - 72030301

EXPLANATION

- Hydrography
- Shoreline
- 7203 — Geologic province code and boundary
- Country boundary
- Gas field centerpoint
- Oil field centerpoint
- 72030301 — Assessment unit code and boundary

Projection: Robinson. Central meridian: 0

**SEVENTH APPROXIMATION
NEW MILLENNIUM WORLD PETROLEUM ASSESSMENT
DATA FORM FOR CONVENTIONAL ASSESSMENT UNITS**

Date:.....	<u>9/21/99</u>	
Assessment Geologist:.....	<u>R.R. Charpentier and M.E. Brownfield</u>	
Region:.....	<u>Sub-Saharan Africa and Antarctica</u>	Number: <u>7</u>
Province:.....	<u>West-Central Coastal</u>	Number: <u>7203</u>
Priority or Boutique:.....	<u>Priority</u>	
Total Petroleum System:.....	<u>Congo Delta Composite</u>	Number: <u>720303</u>
Assessment Unit:.....	<u>Central Congo Delta and Carbonate Platform</u>	Number: <u>72030301</u>
* Notes from Assessor	<u>MMS growth function.</u>	

CHARACTERISTICS OF ASSESSMENT UNIT

Oil (<20,000 cfg/bo overall) **or** Gas (≥20,000 cfg/bo overall):... Oil

What is the minimum field size?..... 1 mmboe grown (≥1mmboe)
(the smallest field that has potential to be added to reserves in the next 30 years)

Number of discovered fields exceeding minimum size:.....	Oil: <u>174</u>	Gas: <u>18</u>
Established (>13 fields) <u>X</u>	Frontier (1-13 fields) _____	Hypothetical (no fields) _____

Median size (grown) of discovered oil fields (mmboe):			
	1st 3rd <u>25.3</u>	2nd 3rd <u>14.4</u>	3rd 3rd <u>17.4</u>
Median size (grown) of discovered gas fields (bcfg):			
	1st 3rd <u>93.9</u>	2nd 3rd <u>107.8</u>	3rd 3rd <u>24.9</u>

Assessment-Unit Probabilities:

<u>Attribute</u>	<u>Probability of occurrence (0-1.0)</u>
1. CHARGE: Adequate petroleum charge for an undiscovered field ≥ minimum size.....	<u>1.0</u>
2. ROCKS: Adequate reservoirs, traps, and seals for an undiscovered field ≥ minimum size.....	<u>1.0</u>
3. TIMING OF GEOLOGIC EVENTS: Favorable timing for an undiscovered field ≥ minimum size	<u>1.0</u>

Assessment-Unit GEOLOGIC Probability (Product of 1, 2, and 3):..... 1.0

4. ACCESSIBILITY: Adequate location to allow exploration for an undiscovered field ≥ minimum size.....	<u>1.0</u>
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UNDISCOVERED FIELDS

Number of Undiscovered Fields: How many undiscovered fields exist that are ≥ minimum size?:
(uncertainty of fixed but unknown values)

Oil fields:.....min. no. (>0)	<u>30</u>	median no. <u>200</u>	max no. <u>400</u>
Gas fields:.....min. no. (>0)	<u>5</u>	median no. <u>40</u>	max no. <u>80</u>

Size of Undiscovered Fields: What are the anticipated sizes (**grown**) of the above fields?:
(variations in the sizes of undiscovered fields)

Oil in oil fields (mmbo).....min. size	<u>1</u>	median size <u>6</u>	max. size <u>1200</u>
Gas in gas fields (bcfg):.....min. size	<u>6</u>	median size <u>30</u>	max. size <u>4000</u>

AVERAGE RATIOS FOR UNDISCOVERED FIELDS, TO ASSESS COPRODUCTS

(uncertainty of fixed but unknown values)

<u>Oil Fields:</u>	minimum	median	maximum
Gas/oil ratio (cfg/bo).....	1125	2250	3375
NGL/gas ratio (bnl/mmcf).....	25	50	75
<u>Gas fields:</u>	minimum	median	maximum
Liquids/gas ratio (bnl/mmcf).....	22	44	66
Oil/gas ratio (bo/mmcf).....	_____	_____	_____

SELECTED ANCILLARY DATA FOR UNDISCOVERED FIELDS

(variations in the properties of undiscovered fields)

<u>Oil Fields:</u>	minimum	median	maximum
API gravity (degrees).....	15	35	50
Sulfur content of oil (%).....	0.05	0.15	0.85
Drilling Depth (m)	100	1800	4000
Depth (m) of water (if applicable).....	0	300	3500
<u>Gas Fields:</u>	minimum	median	maximum
Inert gas content (%).....	_____	_____	_____
CO ₂ content (%).....	_____	_____	_____
Hydrogen-sulfide content (%).....	_____	_____	_____
Drilling Depth (m).....	1000	2400	5000
Depth (m) of water (if applicable).....	0	300	4000

**ALLOCATION OF UNDISCOVERED RESOURCES IN THE ASSESSMENT UNIT
 TO COUNTRIES OR OTHER LAND PARCELS** (uncertainty of fixed but unknown values)

1. Gabon represents 21 areal % of the total assessment unit

<u>Oil in Oil Fields:</u>	minimum	median	maximum
Richness factor (unitless multiplier):.....	_____	_____	_____
Volume % in parcel (areal % x richness factor):...	_____	12	_____
Portion of volume % that is offshore (0-100%):.....	_____	95	_____
<u>Gas in Gas Fields:</u>	minimum	median	maximum
Richness factor (unitless multiplier):.....	_____	_____	_____
Volume % in parcel (areal % x richness factor):...	_____	12	_____
Portion of volume % that is offshore (0-100%):.....	_____	95	_____

2. Congo (Brazzaville) represents 22 areal % of the total assessment unit

<u>Oil in Oil Fields:</u>	minimum	median	maximum
Richness factor (unitless multiplier):.....	_____	_____	_____
Volume % in parcel (areal % x richness factor):...	_____	25	_____
Portion of volume % that is offshore (0-100%):.....	_____	85	_____
<u>Gas in Gas Fields:</u>	minimum	median	maximum
Richness factor (unitless multiplier):.....	_____	_____	_____
Volume % in parcel (areal % x richness factor):...	_____	25	_____
Portion of volume % that is offshore (0-100%):.....	_____	85	_____

3. Angola represents 54 areal % of the total assessment unit

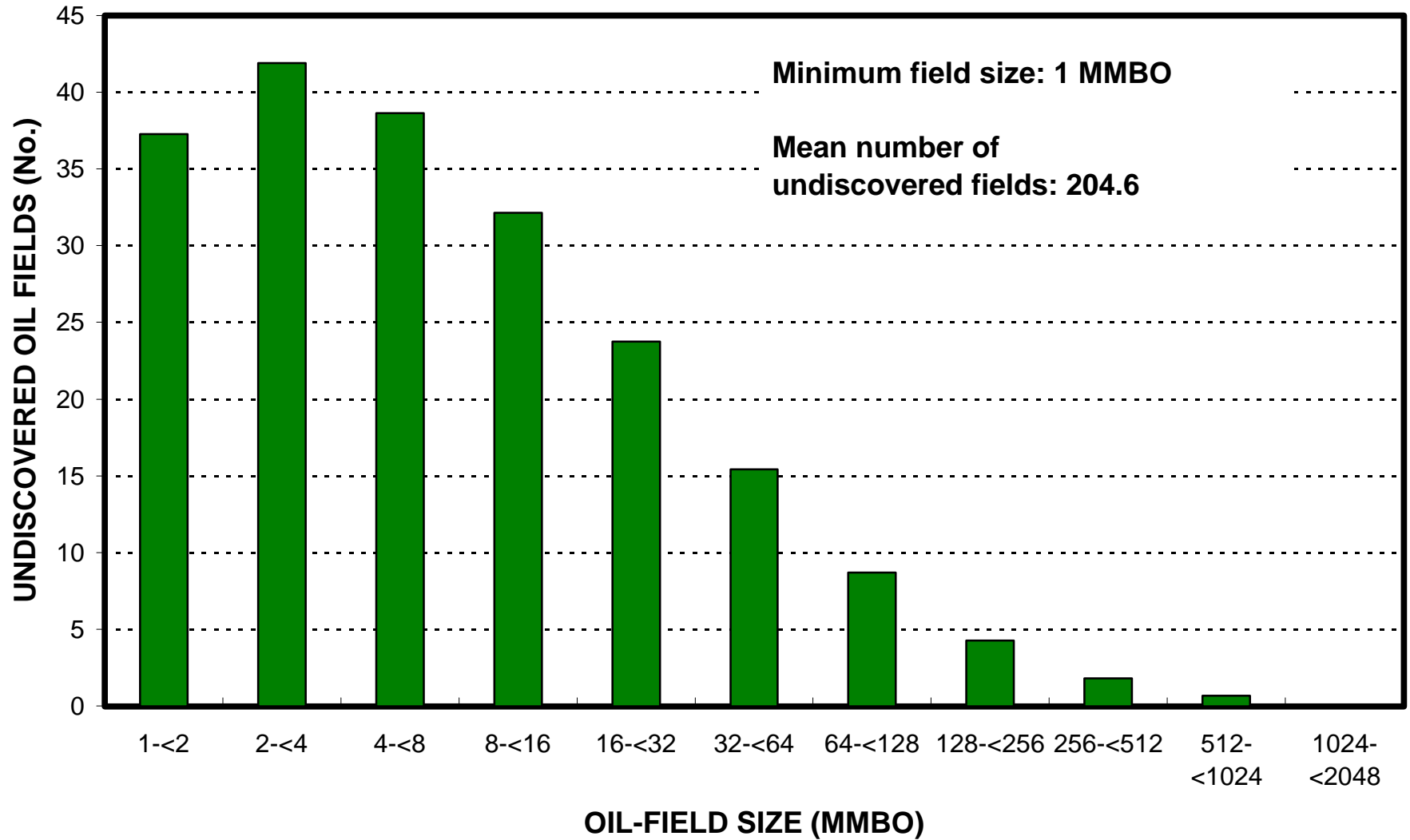
<u>Oil in Oil Fields:</u>	minimum	median	maximum
Richness factor (unitless multiplier):.....	_____	_____	_____
Volume % in parcel (areal % x richness factor):...	_____	60	_____
Portion of volume % that is offshore (0-100%):.....	_____	85	_____
<u>Gas in Gas Fields:</u>	minimum	median	maximum
Richness factor (unitless multiplier):.....	_____	_____	_____
Volume % in parcel (areal % x richness factor):...	_____	60	_____
Portion of volume % that is offshore (0-100%):.....	_____	85	_____

4. Congo (Kinshasa) represents 3 areal % of the total assessment unit

<u>Oil in Oil Fields:</u>	minimum	median	maximum
Richness factor (unitless multiplier):.....	_____	_____	_____
Volume % in parcel (areal % x richness factor):...	_____	3	_____
Portion of volume % that is offshore (0-100%):.....	_____	70	_____
<u>Gas in Gas Fields:</u>	minimum	median	maximum
Richness factor (unitless multiplier):.....	_____	_____	_____
Volume % in parcel (areal % x richness factor):...	_____	3	_____
Portion of volume % that is offshore (0-100%):.....	_____	70	_____

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Undiscovered Field-Size Distribution



Central Congo Delta and Carbonate Platform, AU 72030301

Undiscovered Field-Size Distribution

