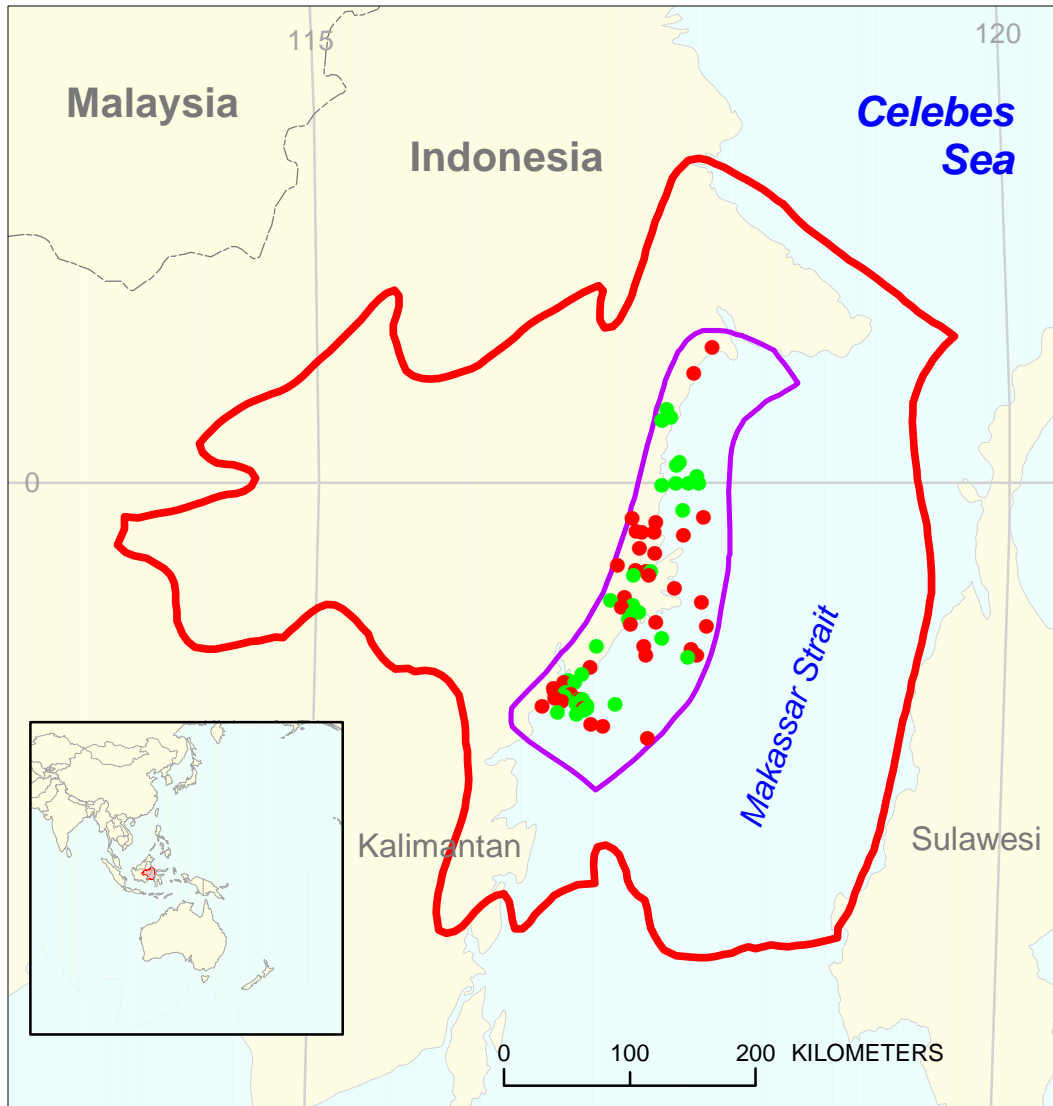


# Kutei Basin Deltaics Assessment Unit 38170101



 Kutei Basin Deltaics Assessment Unit 38170101

 Kutei Basin Geologic Province 3817

**USGS PROVINCE:** Kutei Basin (3817)

**GEOLOGIST:** P.J. McCabe

**TOTAL PETROLEUM SYSTEM:** Kutei Basin (381701)

**ASSESSMENT UNIT:** Kutei Basin Deltaics (38170101)

**DESCRIPTION:** Middle to Upper Miocene deltaics that accumulated on the margin of the Macassar Straits.

**SOURCE ROCKS:** Terrestrially derived organic matter. Coals are possible source rocks but the organics are probably also concentrated in marine condensed intervals associated with major transgressive episodes.

**MATURATION:** Timing of maturation varies from latest Miocene to the present. The eastern region is still undergoing subsidence and is an area of active deltaic sedimentation.

**MIGRATION:** Upward migration along faults is probable. Migration through facies in an updip direction from condensed intervals is also likely.

**RESERVOIR ROCKS:** All fields found to date are in sandstones. These probably represent a mixture of facies. Sandstones were deposited in rivers, distributary channels, and shoreface during regression. Incised valleys cut during lowstands, were subsequently filled with fluvial and tidal sandstones. There are also carbonates associated with transgressive systems tracts that may be reservoirs.

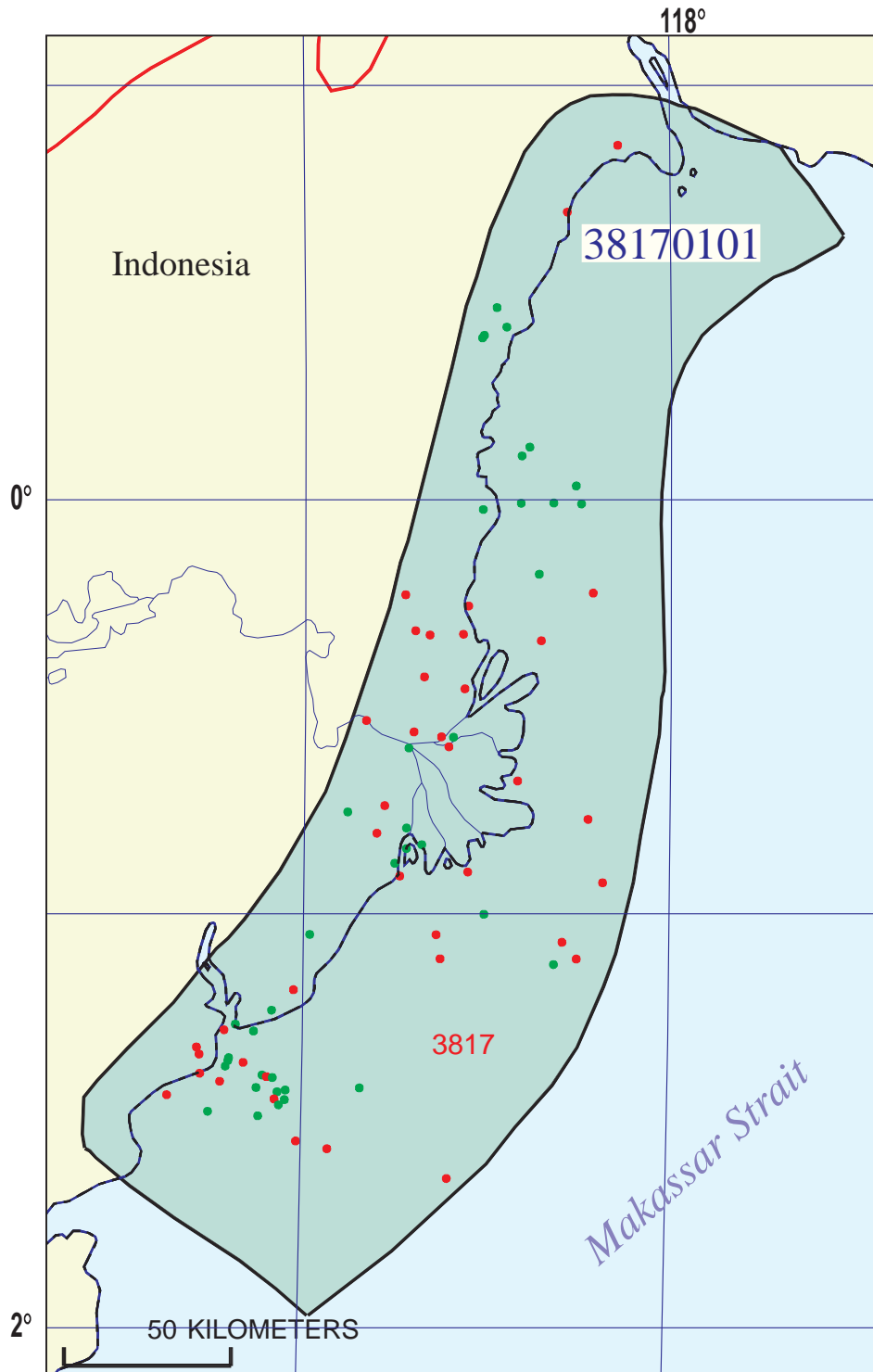
**TRAPS AND SEALS:** Producing reservoirs are anticlinal features associated with compression of the region. There may be reservoirs caused by fault seals; faults are related to compression and growth faulting. There presumably are also many stratigraphic traps. Within reservoirs, the seals are probably mainly marine flooding surfaces.

**PETROLEUM INDUSTRY ACTIVITY:** Interest in the area commenced at the end of the 19<sup>th</sup> century and the first field was discovered in 1897. However, there was little activity through most of the 20<sup>th</sup> century until 1970. The first offshore fields were also discovered in the early 1970s. Natural gas produced in the area is shipped to The Far East as LNG.

**REFERENCES:**

- Duval, B.C., Choppin de Janvry, G., and Loiret, B., 1992, The Mahakam Delta province—an ever-changing picture and a bright future: Proceedings Offshore Technology Conference, v. 24, p. 393-404.
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- Paterson, D.W., Bachtiar, A., Bates, J.A., Moon, J.A., and Surdam, R.C., 1997, Petroleum system of the Kutei Basin, Kalimantan, Indonesia: Indonesian Petroleum Association Proceedings of the Petroleum Systems of SE Asia and Australasia Conference, p. 709-726.
- Peters, K.E., Snedden, J.W., Sulaeman, A., Sarg, J.F., and Enrico, R.J., 2000, A new geochemical-sequence stratigraphic model for the Mahakam Delta and Makassar Slope, Kalimantan, Indonesia: American Association of Petroleum Geologists Bulletin, v. 84, p. 12-44.



## Kutei Basin Deltas Assessment Unit - 38170101

### EXPLANATION

- Hydrography
- Shoreline
- 3817 — Geologic province code and boundary
- Country boundary
- Gas field centerpoint
- Oil field centerpoint
- 38170101 — 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>7/29/99</u>	
Assessment Geologist:.....	<u>P.J. McCabe</u>	
Region:.....	<u>Asia Pacific</u>	Number: <u>3</u>
Province:.....	<u>Kutei Basin</u>	Number: <u>3817</u>
Priority or Boutique:.....	<u>Priority</u>	
Total Petroleum System:.....	<u>Kutei Basin</u>	Number: <u>381701</u>
Assessment Unit:.....	<u>Kutei Basin Deltaics</u>	Number: <u>38170101</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>28</u>	Gas: <u>35</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>67</u>	2nd 3rd <u>11</u>	3rd 3rd <u>13</u>	
Median size (grown) of discovered gas fields (bcfg):			
1st 3rd <u>147</u>	2nd 3rd <u>86</u>	3rd 3rd <u>512</u>	

**Assessment-Unit Probabilities:**

<u>Attribute</u>	<u>Probability of occurrence (0-1.0)</u>
1. <b>CHARGE:</b> Adequate petroleum charge for an undiscovered field ≥ minimum size.....	<u>1.0</u>
2. <b>ROCKS:</b> Adequate reservoirs, traps, and seals for an undiscovered field ≥ minimum size.....	<u>1.0</u>
3. <b>TIMING OF GEOLOGIC EVENTS:</b> 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. <b>ACCESSIBILITY:</b> 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>10</u> median no. <u>75</u> max no. <u>150</u>
Gas fields:.....min. no. (>0) <u>20</u> median no. <u>110</u> max no. <u>230</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>5</u> max. size <u>750</u>
Gas in gas fields (bcfg):.....min. size <u>6</u> median size <u>70</u> max. size <u>15000</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).....	1400	2800	4200
NGL/gas ratio (bnl/mmcf).....	30	60	90
<u>Gas fields:</u>	minimum	median	maximum
Liquids/gas ratio (bnl/mmcf).....	15	25	35
Oil/gas ratio (bo/mmcf).....			

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**SELECTED ANCILLARY DATA FOR UNDISCOVERED FIELDS**

(variations in the properties of undiscovered fields)

<u>Oil Fields:</u>	minimum	median	maximum
API gravity (degrees).....	20	35	47
Sulfur content of oil (%).....	0.05	0.1	0.15
Drilling Depth (m) .....	500	2000	5000
Depth (m) of water (if applicable).....	0	80	250
<u>Gas Fields:</u>	minimum	median	maximum
Inert gas content (%).....		1	
CO <sub>2</sub> content (%).....		5.1	
Hydrogen-sulfide content (%).....		0	
Drilling Depth (m).....	500	2100	5000
Depth (m) of water (if applicable).....	0	80	250

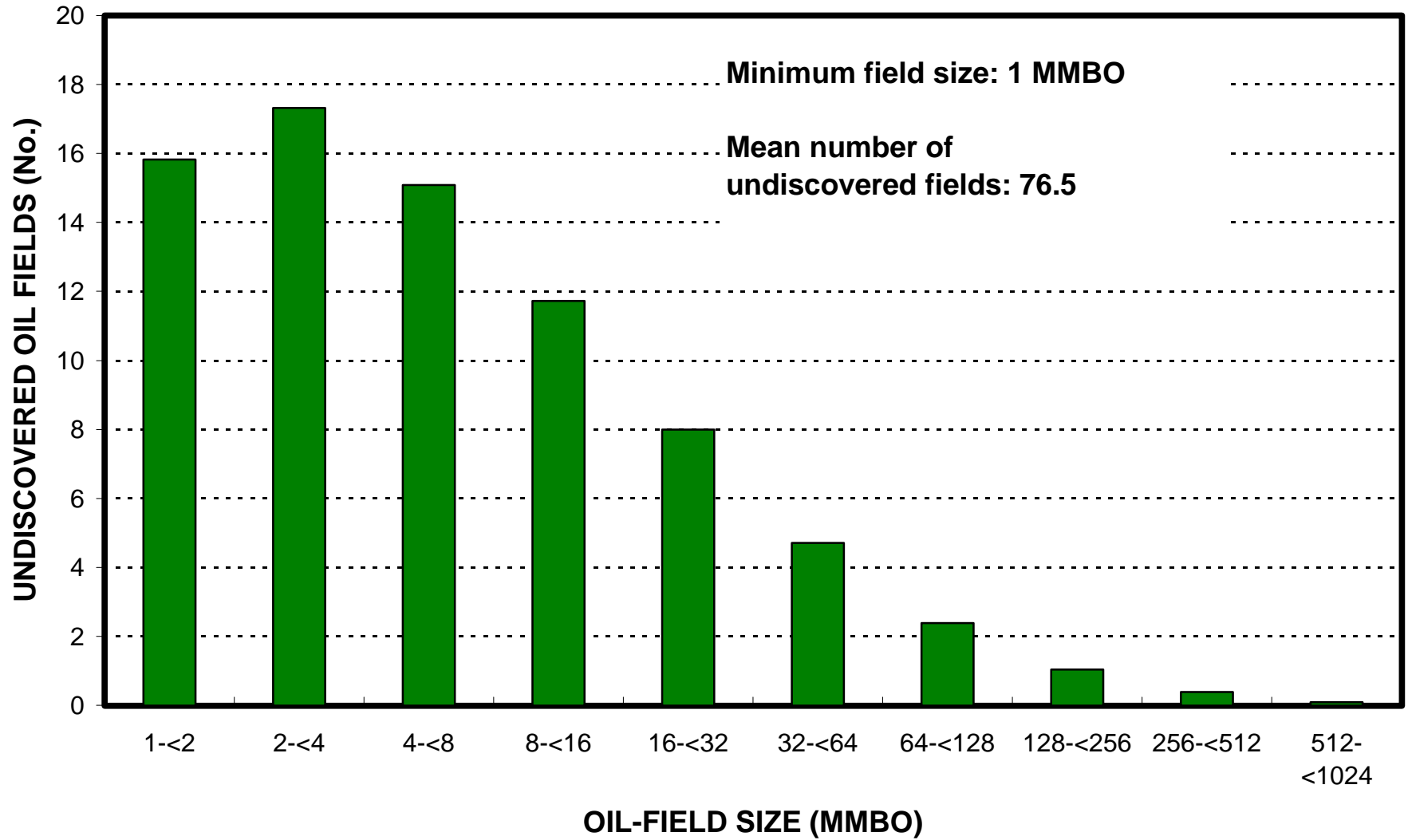
**ALLOCATION OF UNDISCOVERED RESOURCES IN THE ASSESSMENT UNIT  
 TO COUNTRIES OR OTHER LAND PARCELS** (uncertainty of fixed but unknown values)

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

# Kutei Basin Deltaics, AU 38170101

## Undiscovered Field-Size Distribution





# Kutei Basin Deltaics, AU 38170101

## Undiscovered Field-Size Distribution

