



**DISTRIBUTION OF METALLIC MINERALS ON THE DEEP SEABED**  
**RÉPARTITION DES MINÉRAUX MÉTALLIQUES DANS LES FONDS ABYSSAUX**

MAP 1659A CARTE  
 Échelle: 1:40 000 000  
 Échelle: 1:40 000 000

**TYPE OF MINERAL DEPOSIT / TYPE DE GÎTE MINÉRIEL**

- Hydrothermal vents, chimneys, stacks, and mounds
- Vents, stockworks, cheminées, colonnes et monticules hydrothermaux
- Fibrous, stockworks, minéraux destinés dans le rôle en élève
- Basal metalliferous sediments
- Sédiments métallifères de base
- Metalliferous crusts, surface or near surface
- Croûtes métallifères, sédiments métallifères en surface
- Manganese nodules, and crusts
- Modules de manganèse, et croûtes
- Manganese nodules with higher content of Ni, Cu, and Co
- Modules de manganèse ayant une plus haute teneur en Ni, Cu, et Co

**DEPOSIT OCCURRENCE / COMPOSITION OF GÎTE**

- Subsidence-bearing occurrence
- Ventes contenant des sulfures
- Iron-rich occurrence
- Ventes riches en fer
- Manganese-rich occurrence
- Ventes riches en manganèse

**TECTONIC FEATURES / ÉLÉMENTS TECTONIQUES**

- Active spreading ridge and transform faults
- Dorsale active et failles transformantes en expansion
- Subduction or thrust fault zone
- Zone de subduction ou de failles de chevauchement
- Plate collision zone
- Zone de collision des plaques
- Plate motion in cm/year
- Mouvement des plaques en centimètre
- 200 miles offshore
- 200 milles au large des côtes

Compiled by G.A. Gross and C.R. McLeod, Geological Survey of Canada, 1986  
 Carte dressée par G.A. Gross et C.R. McLeod, Commission géologique du Canada, 1986

Refer to GSC Paper 86-21 for sources of map information  
 La source des renseignements contenus sur la carte se trouve dans l'étude 86-21 de la GSC

Geological cartography by the Geological Survey of Canada  
 Cartographie géologique établie par la Commission géologique du Canada

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**MINERAL AREAS**  
 \*See footnote for list of abbreviations

**ZONES MINÉRALISÉES**  
 \*Voir note en bas de page pour les abréviations

**MEDITERRANEAN AND RED SEA**  
 1. Ile Santoro (Thra)  
 2. Ile Volcano  
 3. Mont sous-marin Palirou  
 4. Atlantid Deep, Red Sea

**INDIAN OCEAN**  
 5. Gulf of Aden  
 6. Owen Fracture Zone  
 7. Carlsberg Ridge  
 8. Viaz Fracture Zone  
 9. Hole 28-DSDP\*  
 10. Amiranite Passage  
 11. LSDA 1200, SIO\*  
 12. DODO 110PG, SIO\*  
 13. Ninety East Ridge  
 14. Wharton Basin

**NORTH ATLANTIC OCEAN**  
 15. Hole 112-DSDP\*  
 16. Hole 114-DSDP\*  
 17. Hole 177A-DSDP\*  
 18. Western Biscay Abyssal Plain  
 19. Site 126-DSDP\*  
 20. Site 137-DSDP\*  
 21. Site 138-DSDP\*  
 22. Site 141-DSDP\*  
 23. Sommet Seamount, Kane Fracture Zone  
 24. Central Cañeros, Mid-Atlantic Ridge  
 25. Median Valley, Mid-Atlantic Ridge  
 26. Eastern Flank, Mid-Atlantic Ridge  
 27. Ramona Asy, Mid-Atlantic Ridge  
 28. TAG Hydrothermal Field, Mid-Atlantic Ridge  
 29. TAG Hydrothermal TAG, Mid-Atlantic Ridge  
 30. Mid-Atlantic Ridge  
 31. Flanks of Mid-Atlantic Ridge  
 32. Vema Fracture Zone  
 33. Vema Fracture Zone, Mid-Atlantic Ridge  
 34. San Pablo Seamount  
 35. Bermuda Rise  
 36. Site 10-DSDP\*  
 37. Central Bermuda Rise

**SOUTH ATLANTIC OCEAN**  
 38. North Brazilian Ridge Rise  
 39. Rondeletia Offset Zone, Mid-Atlantic Ridge  
 40. Guinea Basin  
 41. Hole 14-DSDP\*, Rio Grande Rise  
 42. Hole 15-DSDP\*, Rio Grande Rise  
 43. Hole 16-DSDP\*, Rio Grande Rise  
 44. Hole 19-DSDP\*, Rio Grande Rise  
 45. Hole 20-DSDP\*, Rio Grande Rise  
 46. Hole 22-DSDP\*

**SOUTH PACIFIC OCEAN**  
 47. Piau Basin  
 48. Peru Basin  
 49. Bauer Deep  
 50. Bauer Deep  
 51. Bauer Deep  
 52. Bauer Deep  
 53. Bauer Deep  
 54. Bauer Deep  
 55. Bauer Deep  
 56. Bauer Deep  
 57. Bauer Deep  
 58. Bauer Deep  
 59. Central Basin  
 60. Central Basin  
 61. Central Basin  
 62. Juan Fernandez "microplate"  
 63. East Pacific Rise  
 64. East Pacific Rise  
 65. Seamount site  
 66. Seamount site  
 67. Hydrothermal site  
 68. East Pacific Rise  
 69. East Pacific Rise  
 70. East Pacific Rise  
 71. East Pacific Rise  
 72. East Pacific Rise  
 73. East Pacific Rise  
 74. East Pacific Rise  
 75. 21°S East Pacific Rise  
 76. West Flank, East Pacific Rise  
 77. East Pacific Rise  
 78. West Challenger Fracture Zone  
 79. West of East Pacific Rise  
 80. Central East Pacific Basin  
 81. Central East Pacific Basin  
 82. Central East Pacific Basin  
 83. Central East Pacific Basin  
 84. Central East Pacific Basin  
 85. Central East Pacific Basin  
 86. Central East Pacific Basin  
 87. Central East Pacific Basin  
 88. Tivi Basin  
 89. South Marquesas Islands  
 90. Marquesas Islands  
 91. Tuamotu Archipelago  
 92. West of Tuamotu Archipelago  
 93. West of Tuamotu Archipelago  
 94. Western Samoa  
 95. Western Samoa  
 96. Lau Basin  
 97. Northern Lau Basin  
 98. Southern Lau Basin, Valu Fa Ridge  
 99. Tonga-Kermadec Ridge  
 100. Basin of Fiji Basin, South  
 101. North Fiji Basin, North  
 102. Fiji Basin, New Hebrides Arc  
 103. Shelf off New South Wales  
 104. Manus Back-Arc Basin  
 105. Site 323-DSDP\*

**NORTH PACIFIC OCEAN**  
 106. Fossil des Philippines  
 107. West Philippine Basin  
 108. Mariana Trough, Back-Arc Basin  
 109. West of Christmas Islands  
 110. Line Islands Ridge, Mid-Pacific Mountains  
 111. Line Islands Ridge  
 112. Line Islands Ridge  
 113. Lohi Seamount, Hawaii  
 114. West Galapagos Fracture Zone  
 115. West Galapagos Fracture Zone  
 116. West Galapagos Fracture Zone  
 117. West Galapagos Fracture Zone  
 118. COMES\* Site C, Pacific of Northwest  
 119. West Galapagos Fracture Zone  
 120. East Zone, Galapagos Rift  
 121. South Galapagos Rift Zone  
 122. North Galapagos Rift Zone  
 123. MANDOP\* Site M, east of East Pacific Rise  
 124. Seamount, East Pacific Rise  
 125. 11°N East Pacific Rise  
 126. Clipperton Seamount  
 127. 13°N East Pacific Rise  
 128. Seamount, East Pacific Rise  
 129. 21°N East Pacific Rise  
 130. Gulf of California  
 131. Guaymas Basin  
 132. Site 472A-DSDP\*, Northeast Pacific  
 133. Site 471A-DSDP\*, Northeast Pacific  
 134. Site 470A-DSDP\*, Northeast Pacific  
 135. Site 469A-DSDP\*, Northeast Pacific  
 136. Hole 32-DSDP\*, Northeast Pacific  
 137. Hole 36-DSDP\*, Northeast Pacific  
 138. Northeast Pacific, Mendocino Fracture Zone  
 139. Northeast Pacific, Murray Fracture Zone  
 140. Site 37-DSDP\*, Mendocino Fracture Zone  
 141. Site 38-DSDP\*  
 142. Site 39-DSDP\*, Murray Fracture Zone  
 143. Northeast Pacific  
 144. Paramushir Island, Okhotsk Sea  
 145. Gorda Ridge, Escabotea Trough  
 146. North Gorda Ridge

**JUAN DE FUCA RIDGE SYSTEM**  
 147. Blanco Fracture Zone  
 148. Southern Segment, Juan de Fuca Ridge  
 149. Axial Seamount, Central Juan de Fuca Ridge  
 150. Northern Segment, Juan de Fuca Ridge  
 151. Northern Segment, Juan de Fuca Ridge  
 152. South Section Endeavour Ridge  
 153. Middle Valley, North Endeavour Ridge  
 154. Magic Mountain Explorer Ridge  
 155. Explorer Deep, Northeast Explorer Ridge  
 156. Northeast Explorer Ridge  
 157. Delwood Seamount, Tuzo Wilson Seamounts

**AFRICA / AFRIQUE**  
 158. Dorsale des Tonga-Kermadec, sud  
 159. Bassin des Fidji septentrionales, nord  
 160. Epi, arc des Nouvelles-Hébrides  
 161. Plateforme extérieure des Nouvelles-Galles méridionales  
 162. Bassin cacharc-ar de Manus  
 163. Site 323-DSDP\*

**ASIA / ASIE**  
 164. Zone de fractures de Blanco  
 165. Segment méridional, dorsale de Juan de Fuca  
 166. Mont sous-marin axial, dorsale de Juan de Fuca centrale  
 167. Segment septentrional, dorsale de Juan de Fuca  
 168. Vallée médiane, partie nord de la dorsale Endeavour  
 169. Sud de la dorsale Endeavour  
 170. Dorsale "Magic Mountain Explorer"  
 171. Fosse Explorer, partie nord-est de la dorsale Endeavour  
 172. Nord-est de la dorsale Explorer  
 173. Mont sous-marin Delwood, Monts sous-marins Tuzo Wilson

**ANTARCTICA / ANTAQTIQUE**  
 174. Zone de fractures de Blanco  
 175. Segment méridional, dorsale de Juan de Fuca  
 176. Mont sous-marin axial, dorsale de Juan de Fuca centrale  
 177. Segment septentrional, dorsale de Juan de Fuca  
 178. Vallée médiane, partie nord de la dorsale Endeavour  
 179. Sud de la dorsale Endeavour  
 180. Dorsale "Magic Mountain Explorer"  
 181. Fosse Explorer, partie nord-est de la dorsale Endeavour  
 182. Nord-est de la dorsale Explorer  
 183. Mont sous-marin Delwood, Monts sous-marins Tuzo Wilson

**ABBREVIATIONS / ABRÉVIATIONS**  
 Domes Deep Ocean Mining Environmental Study  
 DSDP Deep Sea Drilling Program  
 MANDOP Manganese Nodule Program  
 SIO Scripps Institute of Oceanography  
 TAG Trans-Atlantic Geotraverse

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