



July 12, 2012
JAMSTEC

Integrated Ocean Drilling Program Expedition 337 Deep Coalbed Biosphere off Shimokita: Microbial Processes and Hydrocarbon System Associated with Deeply Buried Coalbed in the Ocean

The deep-sea drilling vessel *Chikyu*, operated by the Japan Agency for Marine-Earth Science and Technology (JAMSTEC), will embark on her next mission, IODP (*1) Expedition 337: Deep Coalbed Biosphere off Shimokita-Microbial Processes and Hydrocarbon System Associated with Deeply Buried Coalbed in the Ocean (see Appendix) - from 26 July to 27 September 2012, in the northwestern Pacific Ocean. The expedition is supported in part by "Strategic Fund for Strengthening Leading-Edge Research and Development" by the Japan Society for the Promotion of Science to JAMSTEC.

*1. The Integrated Ocean Drilling Program (IODP).

IODP is an international marine research-drilling program dedicated to advancing scientific understanding of the Earth by monitoring and sampling subseafloor environments. Through multiple platforms, scientists explore IODP's principal themes: the deep biosphere, environmental change, and solid Earth cycles. IODP has been in operation since October 2003, funded jointly by the Japan Ministry of Education, Culture, Sports, Science and Technology and by the U.S. National Science Foundation. The 18-member European Consortium of Ocean Research Drilling (ECORD), the People's Republic of China, the Republic of Korea, India, Australia and New Zealand (ANZIC), provide additional support.

Appendix

Deep Coalbed Biosphere off Shimokita: Microbial Processes and Hydrocarbon System Associated with Deeply Buried Coalbed in the Ocean

1. Schedule

26 July 2012: Departure from the Port of Hachinohe

27 September 2012: Completion of Expedition 337

The above schedule is subject to change depending on operational requirements or weather.

2. Scientific participants from Japan

Name	Organization	Expertise

Fumio Inagaki	JAMSTEC	Co-Chief Scientist
Akira Ijiri	JAMSTEC	Organic Geochemist
Wataru Tanikawa	JAMSTEC	Physical Properties Specialist
Tatsuhiko Hoshino	JAMSTEC	Microbiologist
Tomoyuki Hori	The National Institute of Advanced Industrial Science and Technology (AIST)	Microbiologist
Masafumi Murayama	Kochi University	Sedimentologist
Sumito Morita	The National Institute of Advanced Industrial Science and Technology (AIST)	Physical Properties Specialist
Yuki Morono	JAMSTEC	Microbiologist
Yasuhiro Yamada	Kyoto University	Logging Specialist

3. Operation summary

The D/V *Chikyu's* riser drilling system will be used to reconnect to and extend the bore hole drilled to 650 m below the sea floor 80 km offshore of Hachinohe ([Fig. 1](#)) during the 2006 shakedown cruise. This expedition will extend the borehole to 2,200 meters below the sea floor to collect core samples and fluids (groundwater, etc. in strata) along with LWD (logging-while-drilling) to collect physical properties data on the strata. This investigation was originally planned for March 2011 but was delayed due to the impact of the Tohoku Earthquake.

4. Purpose of the expedition

Understanding the system of carbon cycling, including methane hydrates and natural gas, below the continental coastal sea floor is not only directly linked to issues of Japan's energy resources but is also an important scientific area for understanding past global environmental warming events, ecosystem changes, and for building a future sustainable low-carbon society. Previous studies of this sea floor area found natural gas (methane) from coal beds more than 2,000 m beneath the sea floor in the marine sediments offshore of

Shimokita-Hachinohe. In addition, it has been shown that methane hydrates have accumulated in relatively shallow strata down to about 365 m below the sea floor. It is believed that underground microorganisms have been involved in producing this natural gas and methane hydrates. The core samples collected during this expedition and analysis of physical data from the strata will clarify deep underground biological activity with the objective of understanding the carbon cycling system beneath the sea floor. In addition, it is anticipated that these research results will provide the basis for research on carbon dioxide sequestration in deep sediments beneath the sea floor and the possibility of sustainable carbon cycling based on the activity of underground microorganisms.

◆ JAMSTEC is going to launch a special website for Expedition 337 (<http://www.jamstec.go.jp/chikyuu/exp337/>). The website features a detailed expedition outline, profiles of the participating scientists, and daily reports from CHIKYU.

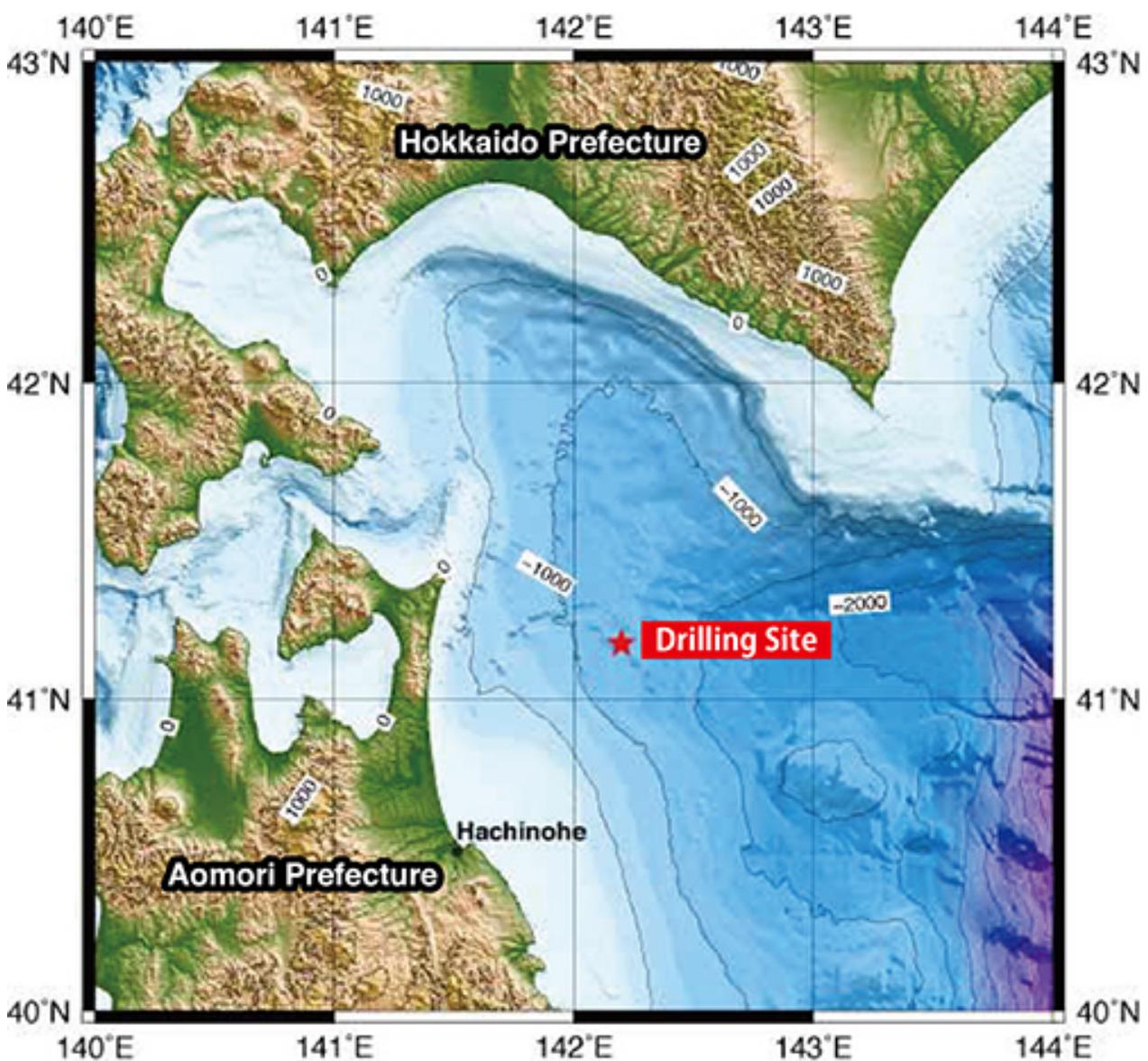


Figure 1: Study area of IODP Expedition 337

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