

Cruise Summary

1. Cruise Information

- 1) Cruise ID, Name of Vessel: NT13-06, R/V Natsushima
- 2) Title of the Cruise: “NT13-06 Hyper-Dolphin Dive Research, FY2012
- 3) Principal Investigator: Takao Yoshida (Japan Agency for Marine-Earth Science and Technology (JAMSTEC))
- 4) Title of Proposal and Representative of Science Party [Affiliation]:
 - I) Transfer analysis of intracellular bacterial symbiont from *Calyptogena* clams to next generation (Takao Yoshida [JAMSTEC])
 - II) Morphological observation of *Osedax* polychaetes using MRI (Yoshihiro Fujiwara [JAMSTEC])
 - III) Development of the technique to photograph the fluorescence that deep sea organisms emit in in-situ (Yasuo Furushima [JAMSTEC])
 - IV) Exploring protists associated with tubeworms (Kiyotaka Takishita [JAMSTEC])
 - V) Diverse Glycoconjugates and their Receptors in the Deep Sea Invertebrates (Yasuhiro Ozeki [Graduate School of Yokohama City University])
- 5) Cruise Period: March 24, 2013 ~ March 30, 2013
- 6) Port Call: from JAMSTEC (March 24, 2013) to JAMSTEC (March 30, 2013)
- 7) Research Area: Off Hatsushima, and Off Atami, Sagami Bay
- 8) Research map: (Fig.1)

Science Party: Yoshihiro Fujiwara, Yasuo Furushima, Yuki Hongo, Tetsuro Ikuta, Hidetaka Nomaki, Kiyotaka Takishita, Akinori Yabuki, Fumiya Noguchi, Masayuki Miyazaki, Ayaka Kasai (Institute of Bigoceanosciences, JAMSTEC), Masahiko Sasano (National Maritime Research Institute), Sadao Suzuki (Oceanographic Research Engineering), Yasuhiro Ozeki, Yasuhiro Koide (Graduate School of Yokohama City University), Noriaki Kojima, Misaki Fujio (Yokohama Science Frontier High School), Masashi Ito (Nippon Marine Enterprises, LTD)

2. Overview of Observations

In this cruise, five proposals participated. To investigate these objectives, we planned to four dives at Off Atami, Sagami Bay and six dives at Off Hatsushima, Sagami Bay (7 days in total). During the cruise, several biological samples, such as *Calyptogena*

clams, *Bathymodiolus* mussels, tubeworms, whale bone, etc., and segment by MBARI cores were collected. Detailed analyses of these samples will be performed after the cruise. We also observed the *in situ* biological fluorescence for physiological study of deep-sea animals, and time laps movies for investigating whale bone ecosystem.

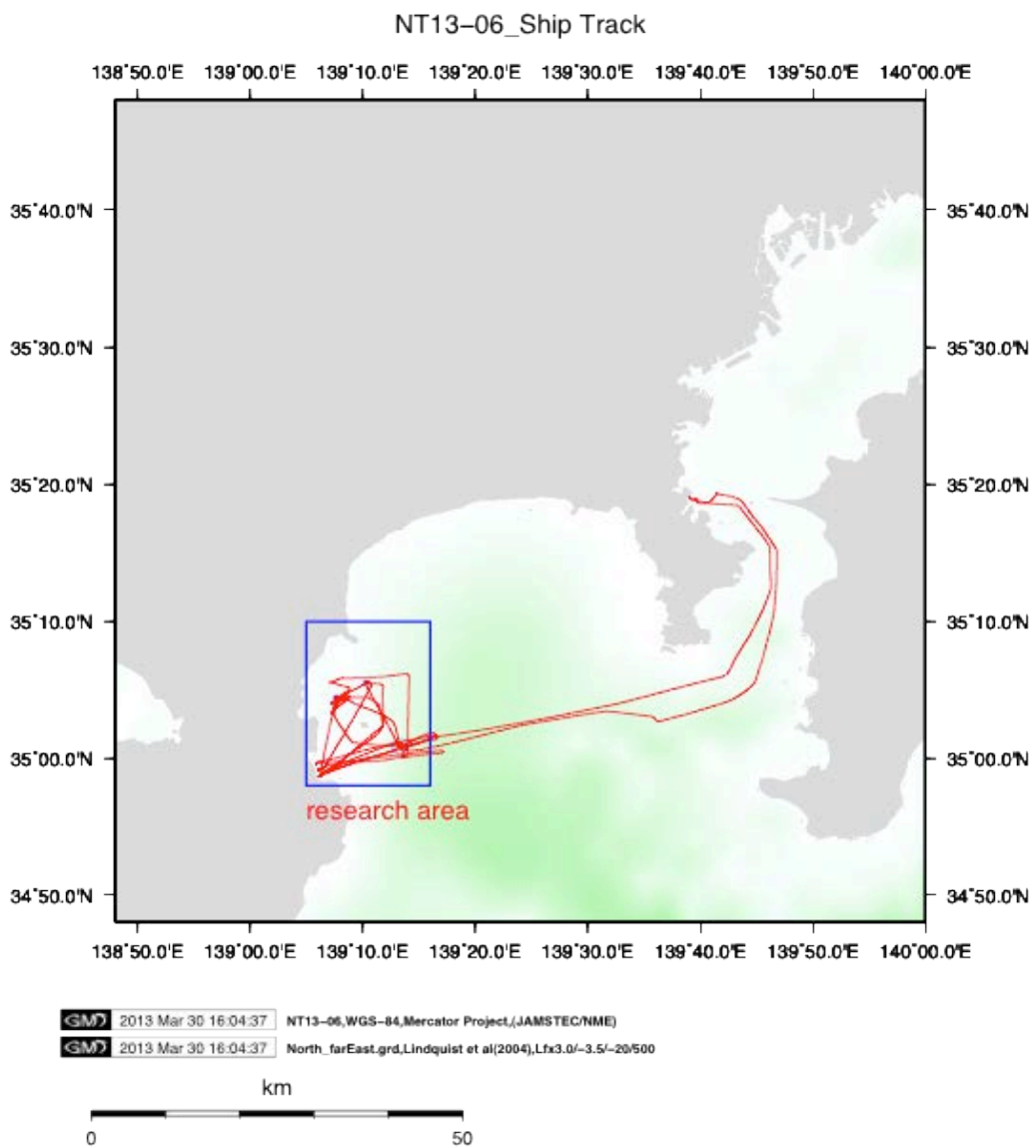


Fig1. The track chart of the R/V Natsushima research cruise NT13-06