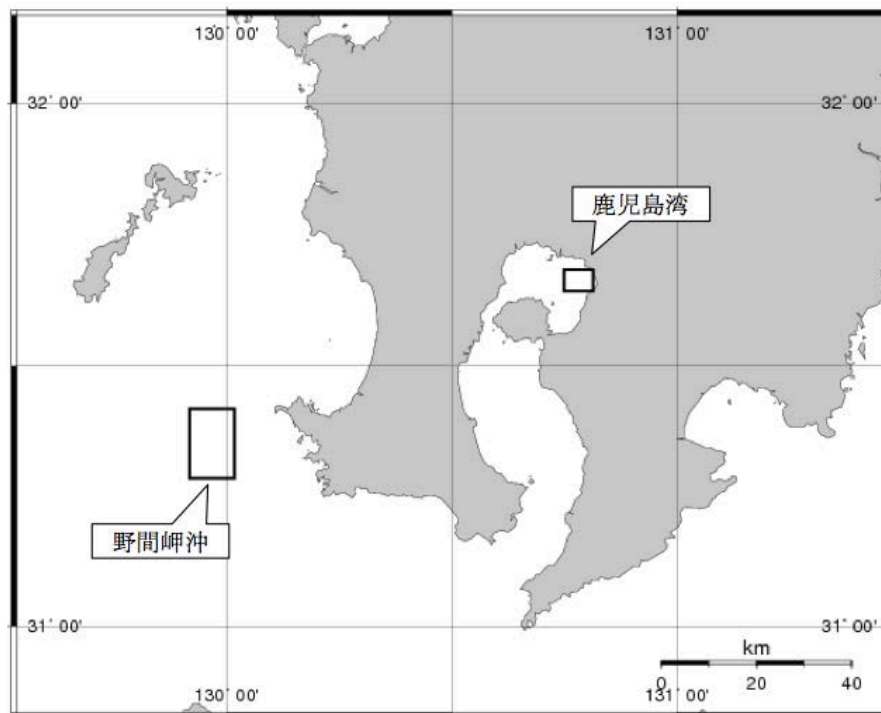


Cruise Summary

- : must be included
- : may be included as necessary

1. Cruise Information

- Cruise ID: NT12-09
- Name of vessel: R/V Natsushima
- Title of the cruise: ROV Hyper Dolphin research dive, deep sea research, FY2012
- Chief scientist [Affiliation]: Norio Miyamoto [JAMSTEC]
- Representative of the Science Party [Affiliation]: Norio Miyamoto [JAMSTEC]
- Title of proposal: Evolutionary and developmental biology on siboglinid polychaetes, *Lamellibrachia satsuma* and *Osedax japonicus*
- Cruise period: Apr. 11, 2012-Apr. 16, 2012
- Ports of call: Kagoshima – Yura
- Research area: Kagoshima Bay and off Noma-misaki
- Research map



2. Overview of the Observation

- Overview of the observation

Purpose, background

The goal of the research proposal is to elucidate the evolutionary origin of the body plan, physiological characteristics and cellular mechanisms of symbiosis in the vestimentiferan tubeworm *Lamellibrachia satsuma* and the bone-eating worm *Osedax japonicus*. The aim of the present cruise is collecting whole bones on which the worms are attaching. Animals will be kept in aquaria in a laboratory. Then, we will perform developmental and cellular biological studies to reveal the developmental mechanisms of *Lamellibrachia* and *Osedax* and cellular characteristics of host-symbiont relationships in the worms.

Observations

HPD#1367

Date: April 12, 2012

Site: Kagoshima Bay

Landing (Lat., Long., Time, Depth): 31°39.719'N, 130°48.069'E, 8:28, 105m

Leaving (Lat., Long., Time, Depth): 31°39.752'N, 130°48.055'E, 10:37, 102m

Purpose:

- 1) Retrieval of whale bones
- 2) Collecting *Lamellibrachia satsuma* and animals living around its colony
- 3) MBARI corer sampling
- 4) Deployment of whale bones

HPD#1368

Date: April 12, 2012

Site: Kagoshima Bay

Landing (Lat., Long., Time, Depth): 31°39.738'N, 130°48.053'E, 12:50, 102m

Leaving (Lat., Long., Time, Depth): 31°39.751'N, 130°48.055'E, 14:38, 101m

Purpose:

- 1) Retrieval of whale bones
- 2) Collecting *Lamellibrachia satsuma* and animals living around its colony
- 3) MBARI corer sampling

HPD#1369

Date: April 13, 2012

Site: Off Noma-misaki

Landing (Lat., Long., Time, Depth): 31°20.993'N, 129°59.131'E, 8:47, 225m

Leaving (Lat., Long., Time, Depth): 31°20.998'N, 129°59.156'E, 13:14, 226m

Purpose:

- 1) Deployment of a whale vertebra and pieces of whale bones attached to a frame
- 2) Retrieval of whale bones
- 3) Collecting animals around the bones
- 4) MBARI corer sampling
- 5) NISKIN water sampling

HPD#1370

Date: April 13, 2012

Site: Off Nomamisaki

Landing (Lat., Long., Time, Depth): 31°18.515'N, 129°59.372'E, 15:42, 249m

Leaving (Lat., Long., Time, Depth): 31°18.514'N, 129°59.377'E, 16:25, 251m

Purpose:

- 1) Observation of #12 whale
- 2) Benthos sampling around the carcass
- 4) MBARI corer sampling
- 5) NISKIN water sampling

HPD#1371

Date: April 14, 2012

Site: Kagoshima Bay

Landing (Lat., Long., Time, Depth): 31°39.728'N, 130°48.057'E, 14:11, 102 m

Leaving (Lat., Long., Time, Depth): 31°39.745'N, 130°48.056'E, 15:06, 102 m

Purpose:

- 1) Deployment of whale bones
- 2) Collecting *Lamellibrachia satsuma* and animals living around its colony
- 3) MBARI corer sampling
- 4) NISKIN water sampling