MEDIA RELEASE

NEWS FROM THE INSTITUTE FOR MARINE AND ANTARCTIC STUDIES

DATE: THURSDAY 24 MAY 2012

ATTENTION: Chiefs of Staff, News Directors

Deep-sea animals reach new habitats by hitching a ride on submarines

Marine scientists have discovered that disease-carrying deep-sea animal species can be inadvertently transported by submersibles to new areas, with the potential to alter some of the last pristine ecosystems on the planet.

Dr Amanda Bates of the Institute for Marine and Antarctic Studies at the University of Tasmania is one of a team studying hardy deep-sea animals that survive extreme changes in pressure, as well as exposure to air, which occur when a research submarine rises to the ocean surface and is lifted onboard a ship. The team's research is published today in *Conservation Biology.*

While using the manned submersible Alvin to collect animals from the Juan de Fuca Ridge, in the northeastern Pacific Ocean, from depths exceeding 2000 m, the team discovered 38 deep-sea limpets, *Lepetodrilus gordensis,* among their samples. This species is believed to be unique to the vents of the Gorda Ridge, 635 km to the south of the Juan de Fuca Ridge.

During her PhD Dr Bates discovered that limpets are particularly hardy and carry diseases. When limpets were found more than 600 km from their habitat, living in sediment at a water depth of 2213 m, she was immediately suspicious that they might have been transported by Alvin and was concerned about the implications.

Dr Janet Voight, from the Field Museum of Natural History in Chicago, who led the investigation, explains: "We discovered that the individuals must have been transported from the Gorda Ridge to the Juan de Fuca Ridge by our submersible. Even though we clean the submersible after sampling, we had assumed that the extreme pressure change and exposure to air would kill any species which are missed."

The introduction of new species to an ecosystem by humans is one of the biggest challenges for marine conservation. How a new species will interact in new surroundings, and the impact it can have, is unpredictable. Increases in deep-sea drilling and submersible activity can contribute to this problem, but until now hydrothermal vents have been considered too extreme and too isolated to be at risk from human activity.

In coastal environments one of the biggest threats posed by invasive species is disease as newly introduced pathogens and parasites can cause mass mortalities.

“Diseases at deep-sea hot vents are not at all well studied and should not be ignored when considering the risks associated with scientific activity in these habitats,” Dr Bates said.

“We’ve discovered that it is possible to accidently introduce a species, and any potential diseases it may carry, from a deep-sea vent to a new location,” concluded Drs Bates and Voight. “Our study has implications for the future exploration of hydrothermal vents as it reveals the previously unconsidered risk of exploration and science in a remote ecosystem.”

To arrange interviews with Dr Bates please contact Sam East, IMAS Communications, Outreach and Marketing Manager, on 03 6226 6683.

Information released on behalf of IMAS by:
The Media Office, University of Tasmania
Phone: (03) 6226 2124
Email: Media.Office@utas.edu.au