

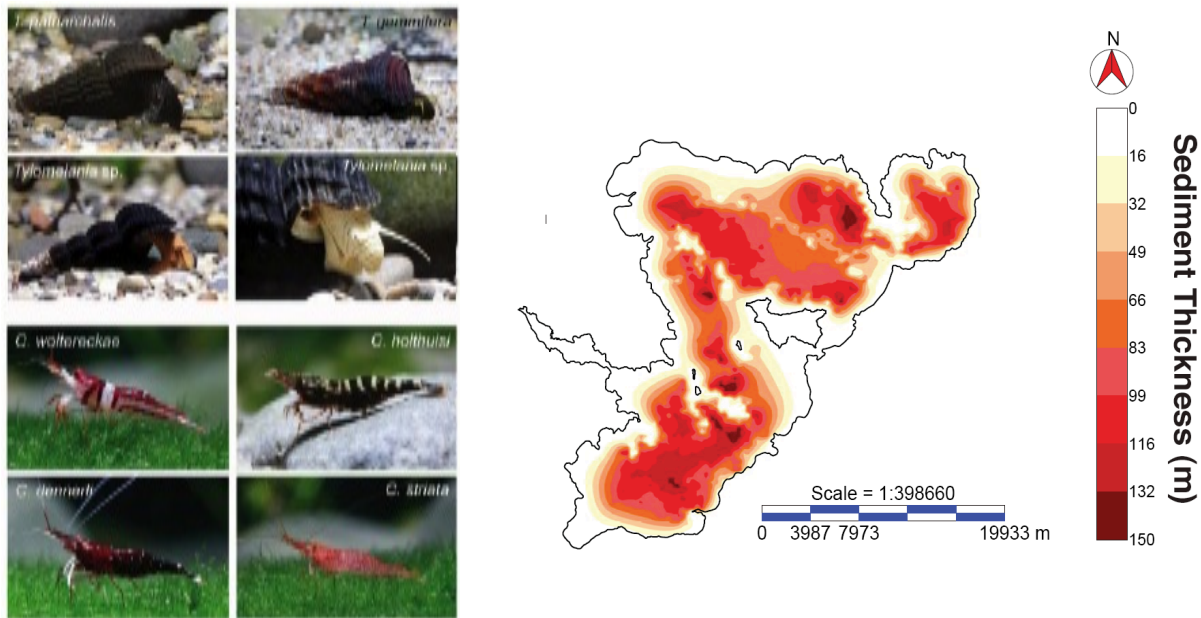
THE TOWUTI DRILLING PROJECT

Paleoenvironments, Biological Evolution, and Geomicrobiology of a Tropical Pacific Lake

An ICDP and NSF Workshop

Gunung Puteri Hotel, Bandung, Indonesia
March 26-29, 2012

Coordinators:
Jim Russell (USA)
Satria Bijaksana (Indonesia)



Workshop Goals:

- 1) To develop the scientific hypotheses, goals, and justification for drilling Lake Towuti
- 2) To develop the structure of the Towuti Drilling Project, including the science team, logistical plans, international funding structures, education and outreach, and partnerships
- 3) To discuss future (near-term) directions for research on existing samples from Towuti and future field/limnological research
- 4) To develop draft material for proposals for the Lake Towuti Drilling Project

LAKE TOWUTI WORKSHOP AGENDA

March 26

Introduction and Review of Workshop (Convener: Bijaksana)

8:30 AM: Welcoming Remarks

Bupati, Regent of Luwu Timur

Sri Widiyantoro, Dean of the Faculty of Mining & Petroleum Engineering, ITB

Iskandar Zulkarnain, Deputy Chairman of Earth Sciences, LIPI

9:00 Goals of the Workshop & Project Overview

Jim Russell

9:15 The ICDP Program

Ulrich Harms

9:30 Introduction to DOSECC

Dennis Nielsen

9:45 Drilling logistics & core handling

Anders Noren

10:15-10:45 coffee break

State-of-the-Art: Current research on the Malili Lakes (Convener: Russell)

Charge: Synthesize current understanding of Lake Towuti & the Malili Lakes
Highlight Key Questions for the Towuti Drilling Program

10:45 The Structural Geology of Sulawesi and the Malili System

Ian Watkinson, Nigel Watrus, Ben Sapie

11:15 Limnological Research on the Malili Lakes

Doug Haffner, Dede Hartoto, Cynthia Henny

11:45 Paleoclimate of central Indonesia observed in Lake Towuti

Jim Russell

12:15-1:30 LUNCH

State-of-the-Art & Future Questions: Current research on the Malili Lakes & Questions for a Drill Core (Convener: Haffner)

1:30 Paleocenographic perspectives on Indonesian paleoclimate

Mahyar Mohtadi, Yair Rosenthal

2:00 Glacial-interglacial rainfall dynamics of the warm pool: dynamics and detection in models

Pedro DiNezio

- 2:25 Climatology of Indonesia and Climate Change **Edvin Aldrian, BMKG**
- 2:50 Speleothem records of the Indo-Asian monsoons **Xianfeng Wang**
- 3:15-3:45 *Coffee break*
- 3:45 The geomicrobiology of the Malili Lakes
David Fowle, Sean Crowe
- 4:10 Evolution and Endemism in the Malili Lakes
Thomas von Rintelen, Ristiyanti Marwoto
- 4:35 Terrestrial paleoecology of Sulawesi
Janelle Stevenson, Eko Yulianto
- 5:00 Summary and Discussion

MARCH 27: SCIENCE BREAK-OUT GROUPS

***We will work in groups to discuss the major scientific questions to be answered with the next drilling project, methods, and how each lake will best address science priorities. Participants are encouraged to attend multiple working group meetings.

- 8:30 Synthesis & possible drilling strategies for Lake Towuti **Jim Russell**
- 9:00-10:30 WORKING GROUPS: Define Key Questions for the Towuti Drilling Project
 Group 1: Paleoclimate (Conveners: Russell, Mohtadi, Di Nezio)
 Group 2: Geomicrobiology & limnology (Fowle, Ariztegui)
 Group 3: Regional Geology & Geophysics (Watkinson, Sapie)
 Group 4: Evolutionary biology & paleoecology (Rintelen, Yulianto)

*Conveners should help guide and record discussion and be prepared to summarize

- 10:30-10:50 Coffee break
- 10:50-12:15 Reports of working groups & Discussion
- 12:15-1:00 Lunch
- 1:00--- Field Trip

MARCH 28: METHODOLOGICAL APPROACHES, LOGISTICS, AND PLANNING
(Convener: Cahyarini)

- 8:30 Synthesis of Science Themes **Jim Russell**
- 8:50 Downhole Logging Strategies **Thomas Wonik**
- 9:10 Geomicrobiological investigations **Daniel Ariztegui**

9:30 Methodological Working Groups

Charge: What methods can best address thematic questions in the Towuti Drilling Project? What additional science activities could set the stage for Towuti Drilling success?

- Group 1: Geochronology & Tephrostratigraphy (Conveners: King, Harpel)
Group 2: Geomicrobiology & Biogeochemistry (Ariztegui, Crowe)
Group 3: Sedimentology, geochemistry, & paleoclimate (Vogel, Russell)
Group 4: Paleoecology & Evolution (Hamilton, Marwoto)
Group 5: Structural & regional geology (Watkinson, Sapie)

10:30-11:00 COFFEE BREAK

11:00-12:15 Reports of Methodological Working groups & Discussion

12:15-1:30 Lunch

1:30- Drilling planning working groups

- Site Survey and core site selection (Conveners: Wattrus, Russell)
Core handling & on-site science (Noren, Ariztegui)
Logistical & community issues (Bijaksana, Vogel, Idriyanti)

3:15-3:45 COFFEE BREAK

3:45 Working group presentations and Group Discussion of drilling strategies

MARCH 29: GROUP DISCUSSION AND PLANNING

Convener: Russell

Accompanying field programs
Education & outreach
Funding strategies
Permitting
Logistics

Lake Towuti Workshop Participants:

| | | | | |
|----|------------------------|----|-----------------------|-------------------------------|
| 1 | A.M Imran | ID | U Makassar | Sedimentology |
| 2 | Ade Kadarusman | ID | PT INCO | Sulawesi Geology |
| 3 | Alan Deino | US | BGC | tephrastratigraphy |
| 4 | Anders Noren | US | LacCore | Core logging, curation |
| 5 | Basrie Kamba | ID | PT Vale-Inco | Director, External Relations |
| 6 | Benyamin Sapiie | ID | ITB | Structural Geology |
| 7 | Brian Fryer | CA | GLIER | Isotope geochemistry |
| 8 | Bronwen Konecky | US | Brown U. | Paleolimnology |
| 9 | Chris Harpel | SG | NTU | Tephrastratigraphy |
| 10 | Cynthia Henny | ID | LIPI | Limnology, geochemistry |
| 11 | Daniel Ariztegui | CH | U. Genève | Geomicrobiology |
| 12 | David Fowle | US | U. Kansas | Microbial biogeochemistry |
| 13 | Dennis Nielson | US | DOSECC | Lake drilling |
| 14 | Doug Haffner | CA | GLIER | Limnology, biology |
| 15 | Edvin Aldrian | ID | BMKG | Indonesian climate |
| 16 | Eko Yulianto | ID | LIPI | Palynology |
| 17 | Gerald Tamuntuan | ID | ITB | Paleomagnetism |
| 18 | Hendrik Vogel | DE | U. Cologne | Sedimentology |
| 19 | Henry Ekazandri | ID | PT Vale-Inco | Environmental Health & Safety |
| 20 | Ian Watkinson | UK | Royal Holloway | Structural Geology |
| 21 | Iskandar Zulkarnain | ID | LIPI, Deputy Chairman | Rock geochemistry |
| 22 | James Russell | US | Brown U. | Paleoclimate, geochemistry |
| 23 | Janelle Stevenson | AU | ANU | Palynology |
| 24 | Jens Kallmeyer | DE | U. Potsdam | Geomicrobiology |
| 25 | John King | US | URI | Paleomagnetism |
| 26 | Mahendra Maulana | ID | PT Vale-Inco | External Rep. |
| 27 | Mahyar Mohtadi | DE | MARUM, Bremen | Paleoceanography |
| 28 | Volker Wennrich | DE | U. Cologne | Sedimentology |
| 29 | Mike Dutton | CA | Vale Metals | Environment |
| 30 | Nigel Wattrus | US | LLO, U. Minnesota | Geophysics |
| 31 | Paul Baker | US | Duke U. | Sed/strat |
| 32 | Paul Hamilton | CA | Can. Mus. Nat. | Diatom & Algal Ecology |
| 33 | Pedro DiNezio | US | IPRC, U. Hawaii | Climate Dynamics & Modeling |
| 34 | Bupati | ID | Regent of Luwu Timur | |
| 35 | Ristiyanti Marwoto | ID | LIPI | Evolutionary Biology |
| 36 | Robby Rafianto | ID | PT INCO | Production |
| 37 | Satria Bijaksana | ID | ITB | Paleo and rock magnetism |
| 38 | Satrio Wicaksono | US | Brown | Paleolimnology |
| 39 | Sean Crowe | DK | U. Copenhagen | Geomicrobiology |
| 40 | Shinta Idriyanti | ID | U. Indonesia | Hydrology, logistics |
| 41 | Sri Widiyantoro | ID | ITB | Structural Geology |
| 42 | Sri Yudawati Cahyarini | ID | LIPI | Paleoclimatology |
| 43 | Supriyanti Adreastuti | ID | Geol. Agency | Tephrastratigraphy |
| 44 | Thomas von Rintelen | DE | Mus. Natur. | Evolutionary biology |
| 45 | Henrike Baumgarten | DE | LIAG | Downhole logging |
| 46 | Uli Harms | DE | ICDP | Drilling operations, logging |
| 47 | Xianfeng Wang | SG | NTU | Paleoclimate |
| 48 | Yongsong Huang | US | Brown | Organic Geochemistry |
| 49 | John Leach | ID | Hatfield Group | Environmental Survey |
| 50 | Sinyo Rio | ID | Rio Towuti | Local Relations |

Honorary Guests:

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