# EDUCATIONAL OUTREACH in WESTERN SUMATRA

Using information provided by the Caltech and Indonesian research team and colleagues, plus feedback from people in the GPS instrumented areas, we proposed a public information poster and accompanying brochure, which address in layman's terms, the tectonic environment of coastal West Sumatra.

October 2002

**Sumatran Plate Boundary Project Educational Outreach** 

During the summer 2004 research field season several thousand copies of our first Educational Outreach poster were distributed in schools, churches, and to community leaders throughout the Mentawai Islands. Citizens of the islands requested more information so we began developing Mentawai Islands poster v1.2 and

Nias/Simeulue Islands poster v1.1.

July 2004 Mentawai Islands Poster v1 & 1.2

**Mentawai Islands Poster v1.2** 

Are sinking islands and

earthquakes related?

IN BETWEEN EARTHQUAKES!

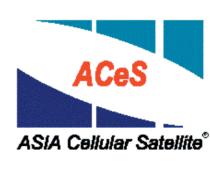
Coral on the reefs tell us.

ACeS

California Institute of Technology

ASIA Cellular Satellite®





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Nias/Simeulue Islands poster v1.2

UNDERSTANDING BIG

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### Sumatran Project long-term **Educational Outreach goals**

- Produce updates of these materials as new data becomes available from GPS and coral studies
- Continue distributing posters and data sheets in the communities where research is conducted
- Provide these materials to local community groups who may find them useful in developing their own education, hazard mitigation and response plans.

### 2007: Going Forward

KOGAMI, a local volunteer organization based in Padang, Sumatra, has requested our Educational Outreach materials for use in their community education and hazard mitigation plans that reach the 700,000+ population of the city. The international relief organizations Mercy Corps, Geohazards International and USAID, have also requested our materials to distribute and use in their programs in Indonesia.

Through these collaborations our outreach materials will reach a much broader audience than Sumatran Project researches can access during field seasons. Providing print-ready files directly to these organizations will give them the flexibility to produce the posters on an as-needed basis.

Mentawai Islands Poster v

When the rocks beneath the islands spring up, the sudden movement causes the

ocean water to flow AWAY from the land

Tsunami waves can be very small

When the ocean comes back onto

the islands, it comes in a series of

waves. These waves are TSUNAMIS

(centimeters) to very large (tens of meters)

Press interviews with survivors make it clear that people in the affected areas had little knowledge of how to prepare for, or respond to this type of catastrophic event, confirming the need for continuing earthquake and tsunami science education in the entire region.

December 26, 2004

M 9.1 Aceh-Andaman Earthquake occurs

March 2005

Nias/Simeulue Islands poster v1.1

March 28, 2005 M 8.7 Nias/Simeulue Earthquake occurs off the West coast of Northern Sumatra.

April 10, 2005

M 6.7 Mentawai region earthquake occurs, East of **Siberut Island and West of Padang, Sumatra** 

April 2006

**GPS Station Data Sheets** 

Funding:
Gordon and Betty Moore Foundation:
National Science Foundation

With Nias/Simeulue Islands poster v1.2 we use photographs and area maps to show where post earthquake subsidence and uplift was measured, and how the surrounding Banyak and Batu islands were affected.

October 2006

Coastal West Sumatra poster v1

## January 2003

The poster is printed in English, Indonesian and Mentawai to reach the largest possible audience. The design is dense and colorful and geared toward a 6th grade level of understanding, in order to appeal to a broad range of people. The posters are meant to capture the attention and imagination, and to be studied over time.

A numbered question and answer format was used to create a conversational style appropriate to the informal nature of the presentation. This allows the viewer to look at each question separately and come back to the poster many times, each absorbing the information at their own pace.

How do we know our

slands are sinking?

Buildings made from wood or Following an earth-

other light materials are safer quake, high ground

than those made from heavy faraway from the

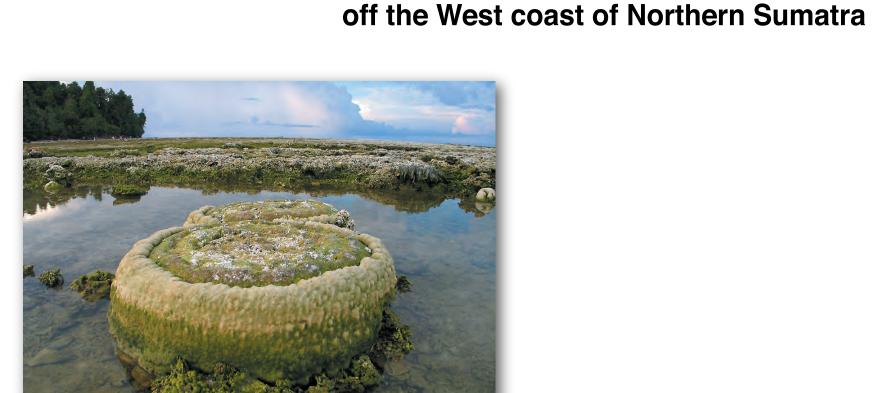
materials, because if they fall beach is a good

during an earthquake they place to be to avoid

are less likely to hurt us. tsunami waves."

. . . . . . . . . . . . . . . . . .

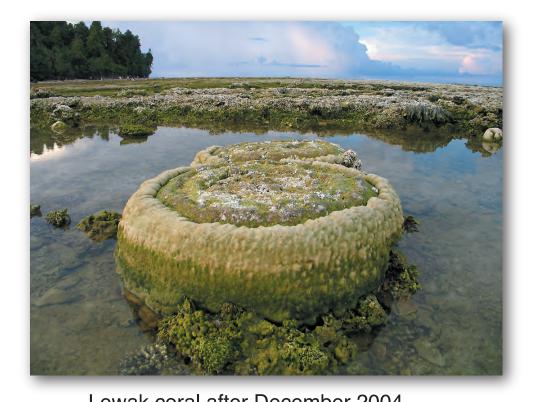
We intend to use results from new data in future versions, developing additional posters for areas along the Sumatran Megathrust, including coastal West Sumatra.



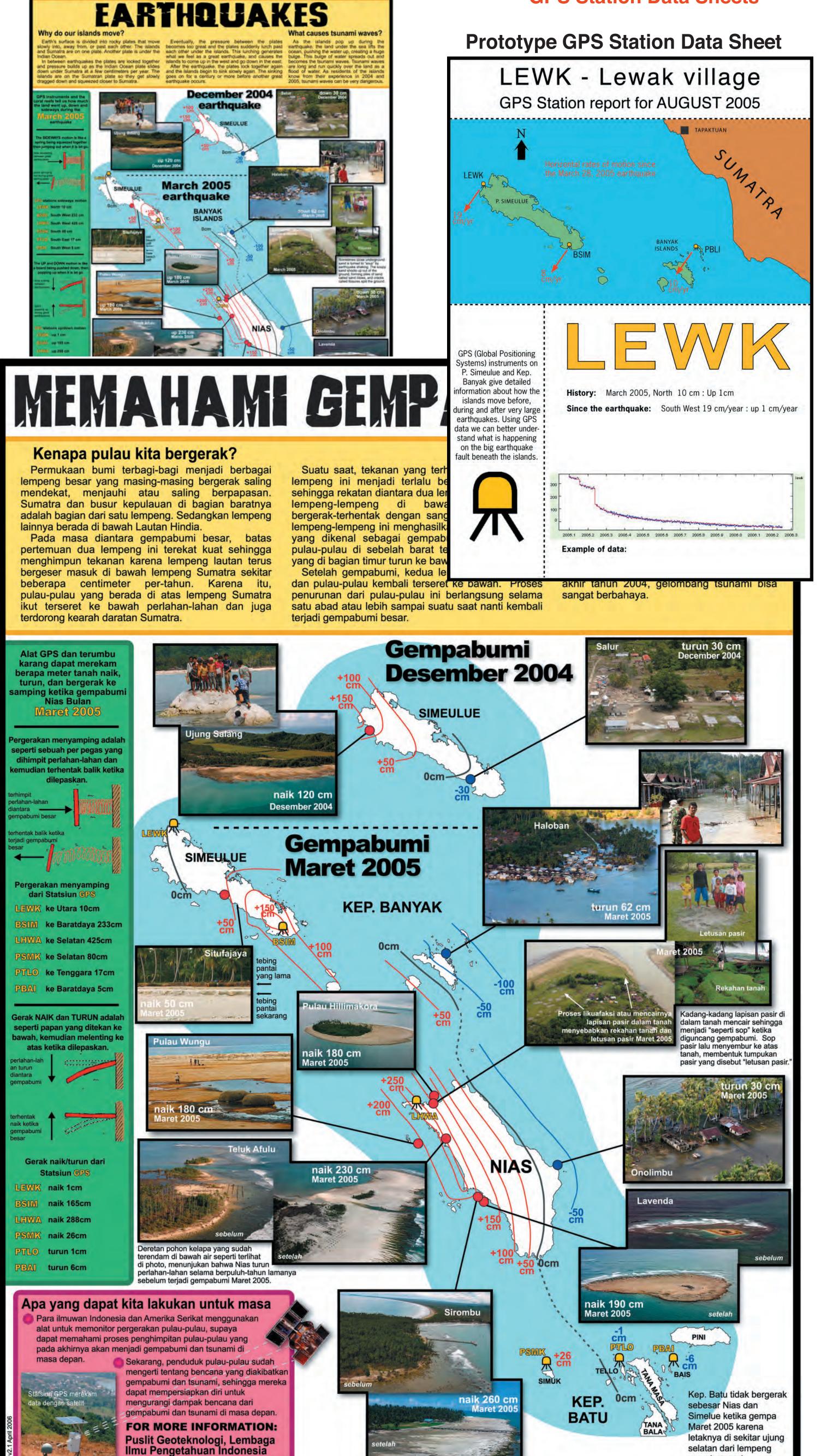
Lewak coral after December 2004

Building on positive feedback from recipients of the Mentawai Islands poster, our first for Nias and Simeulue islands is ready for distribution the day of the March 28, 2005 earthquake. The

posters will be distributed during follow-up field research and we immediately begin planning v1.2. Because of the recent earthquakes, we change the focus in this poster from describing the general tectonic processes to showing what actually happened during and after the







Graphic Design: Catharine Stebbins, Caltech Photos: Prof. Dr. Kerry Sieh, Caltech

GPS station locations and data are added, describing the sinking and springing up process in more detail than in earlier versions of the posters. At this time we introduce a new outreach component, the one page GPS Station Data **Sheet** handout. Many people still misunderstand the purpose of the twenty seven GPS Stations located

throughout the islands and Sumatra. They also want to know what the data show and how it might relate to them. We use the handouts to address these questions and present the data to people in communities where the stations are located. The first data sheets will be distributed early in 2007, and yearly thereafter.

What does research

tell us?

owest coastal land

For distribution in the densely populated urban centers of central West Sumatra as well as the adjacent islands, in this poster we address the likelihood that an earthquake and tsunami will occur in this region within the lifetimes of most young people living on the coast today. In particular, we describe possible tsunami scenarios and reference the historical events of 1797 and 1833 to provide context. We also show what to expect afterward and list

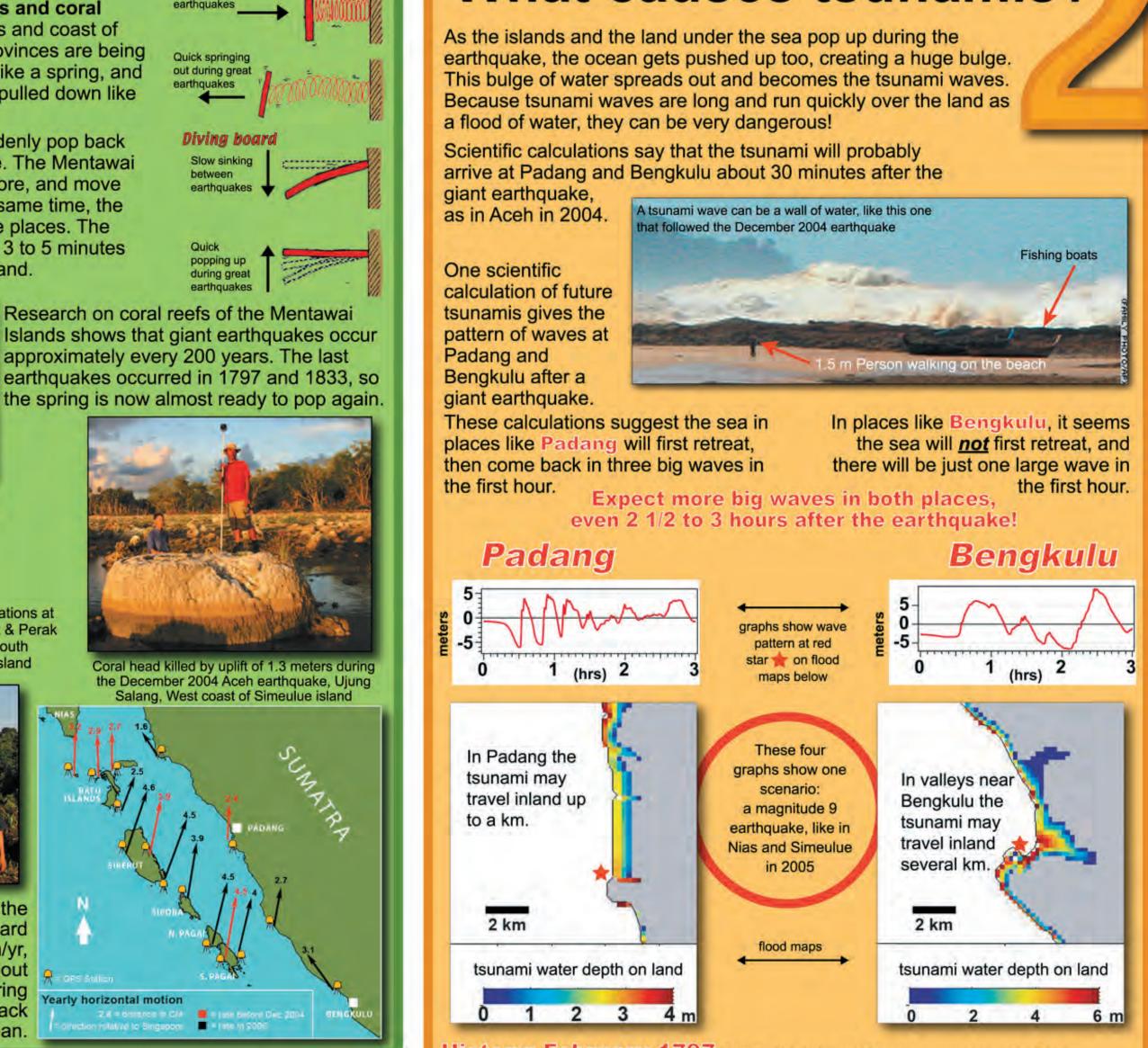
local contacts for preparedness information.

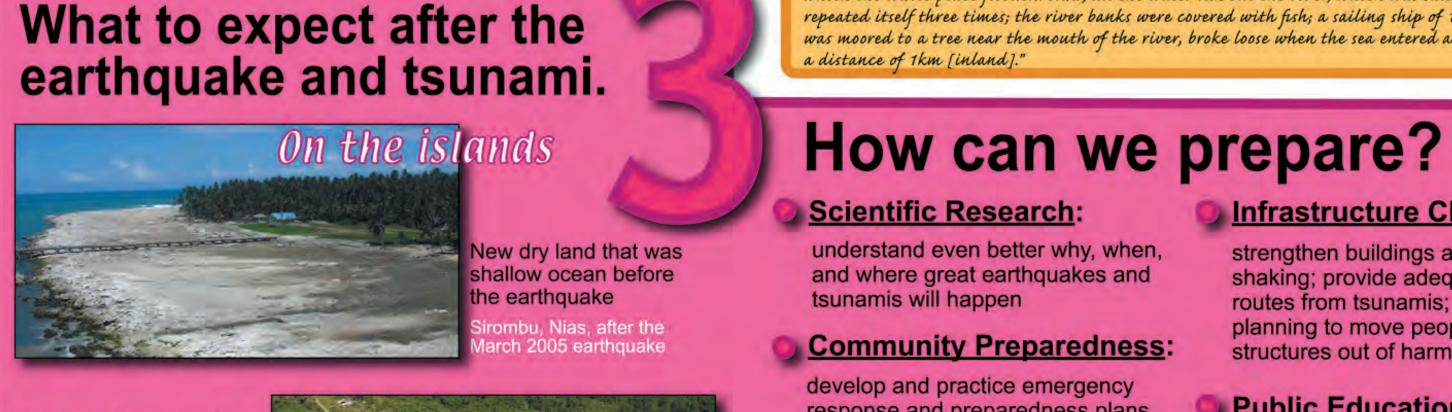
Coastal West Sumatra poster v1



living along the coast of West Sumatra and Bengkulu Provinces







learn what to do in the event of a big earthquake and tsunami

www.mercycorps.org

For more information contact: KOGAMI http://kogami.multiply.com/ Sumatran Plate Boundary Project Mercy Corps www.tectonics.caltech.edu/sumatra/

dvisors & Translators: Prof. Dr. Kerry Sieh, Caltech; Dr. Danny Natawidjaja, LIPI unding: Gordon and Betty Moore Foundation; National Science Foundation; RUTI IV; USAID ASIA

How can we prepare for earthquakes and tsunamis? rthquakes may strike without warning. However, we can ake preparations to lessen their damaging effects. First, let's understand what causes them. Second, let's try to avoid as many earthquake dangers as possible.

December 2004 and March 2005 events.

Advisors and Translators: Prof. Dr. Kerry Sieh, Caltech; Dr. Munasri, Dr. Danny Natawidjaja, LIPI

tation collects data using