



# SISTEMA OCEANO

## Gênese e Evolução dos Fundos Marinhos

### Parte I

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Dep. de Oceanografia Geológica (IOUSP)  
5 de outubro de 2023  
(millo@usp.br)

# **Livros sugeridos:**

## ***Decifrando a terra***

W. Teixeira, M.C. Motta de Toledo, T.R. Fairchild, F. Taioli  
(Oficina de textos, 2001).

## ***The Ocean Basins: Their Structure and Evolution***

(The Open University, 1998).

**WORLD OCEAN FLOOR**

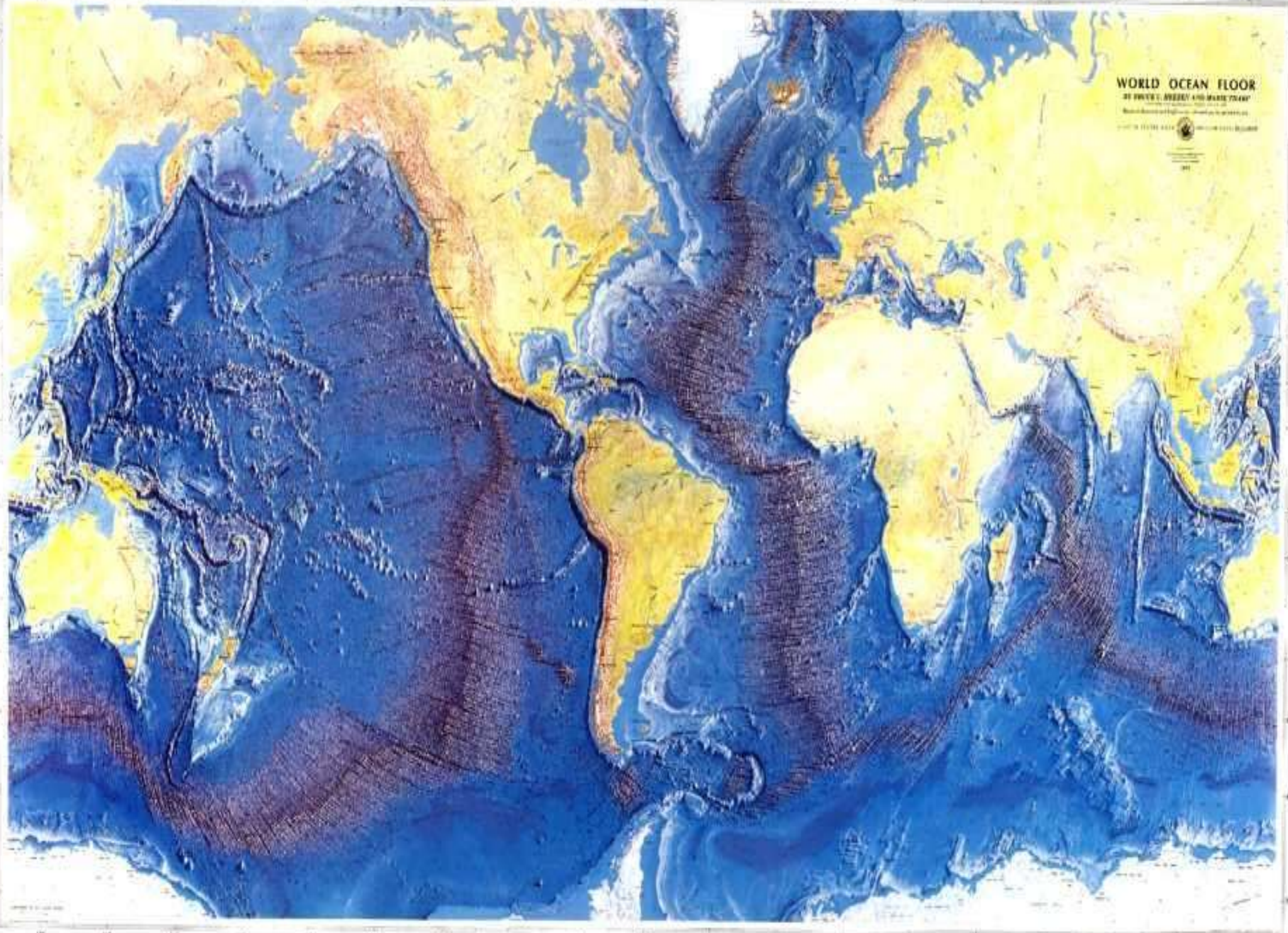
BY PHILIP H. ABNEY AND MARIE THOMAS

Map of the World Ocean Floor

United States Geological Survey



1957



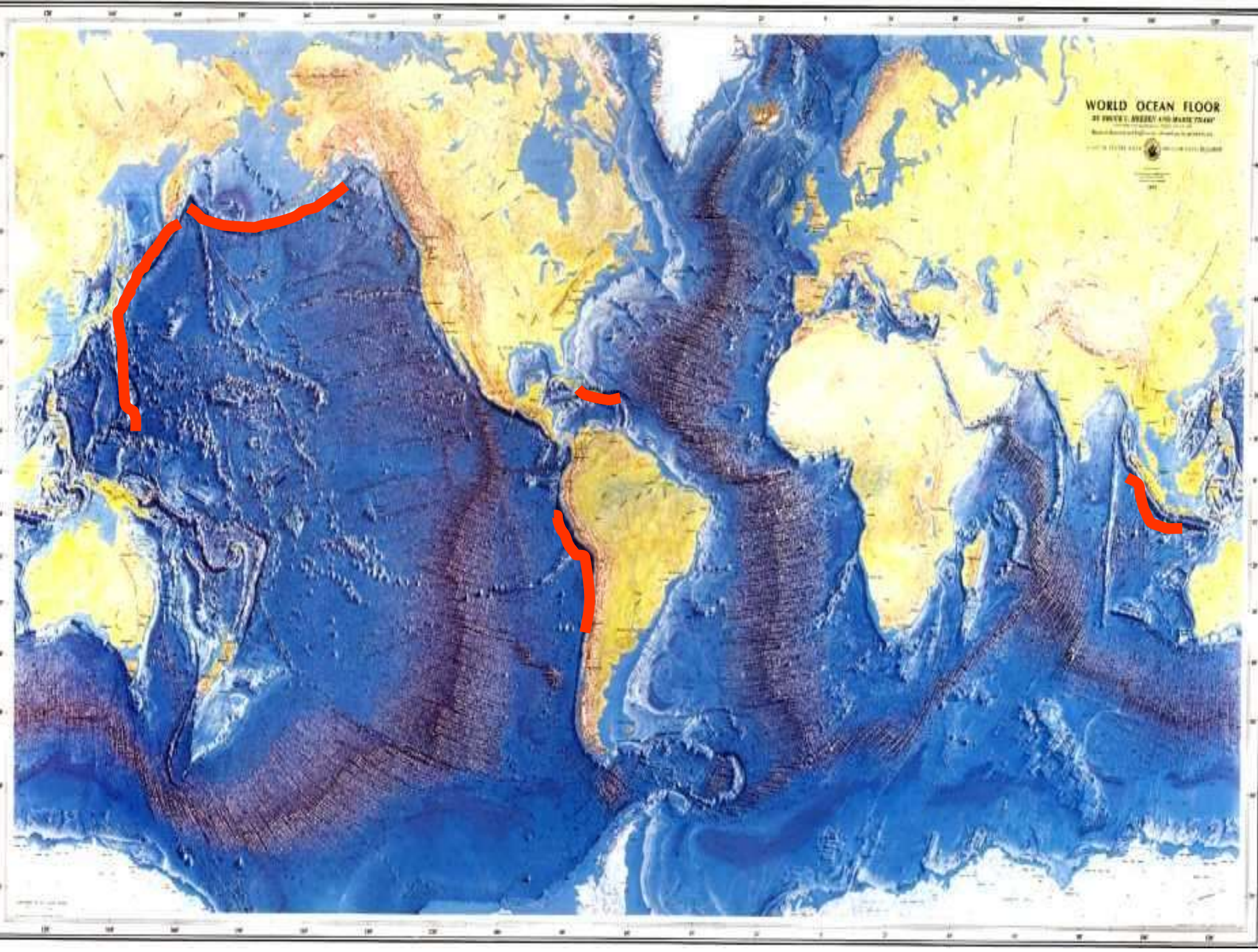


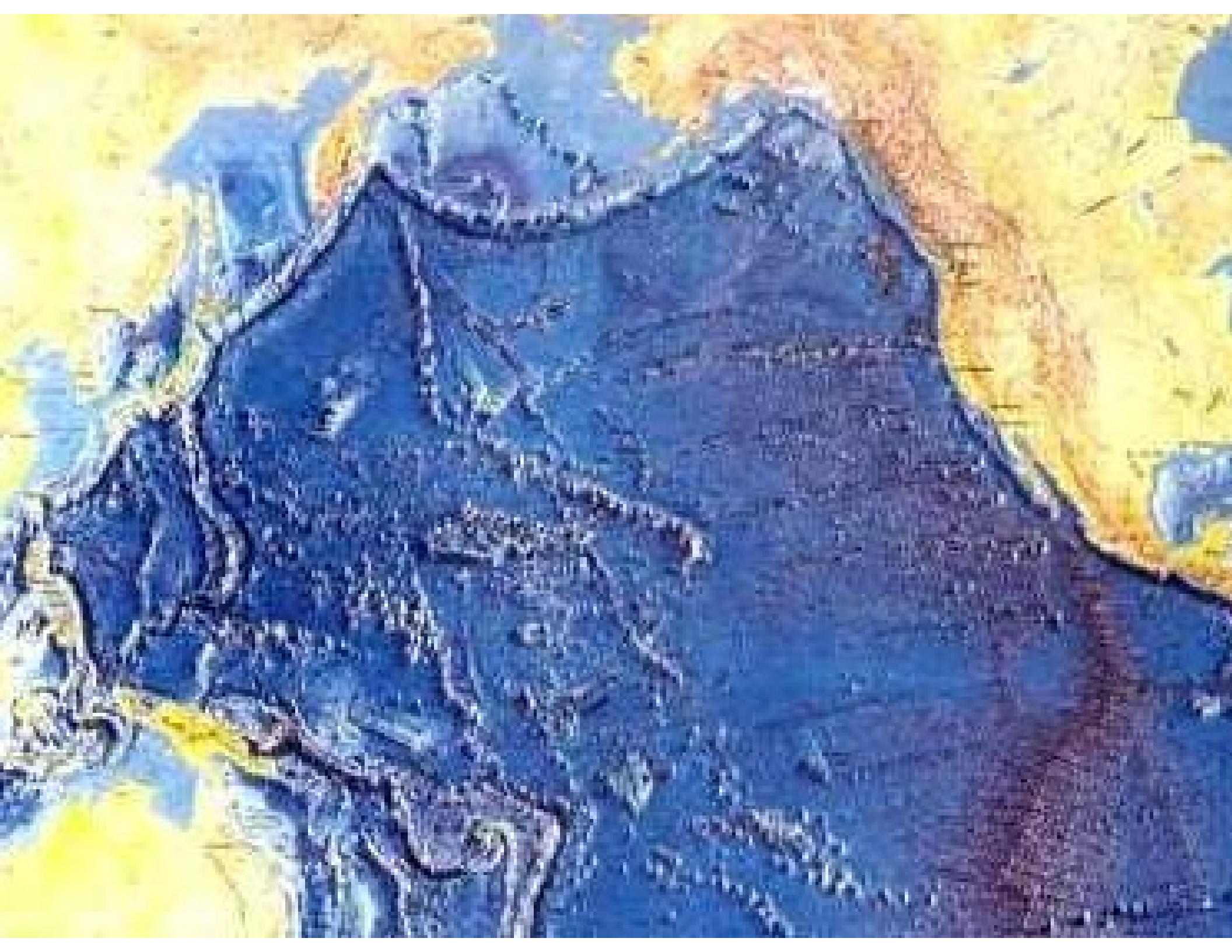
**WORLD OCEAN FLOOR**

BY PHILIP H. ABNEY AND MARIE THOMPSON

United States Geological Survey, Washington, D. C.

1953





# SUMARIO DA AULA:

Principais feições dos fundos oceânicos:

- Plataformas Continentais
- Fossas Oceânicas
- Dorsais Oceânicas
- Planícies Abissais
- Montes Submarinos

- Plataformas Continentais
- Fossas Oceânicas
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# **TECTÔNICA DE PLACAS**



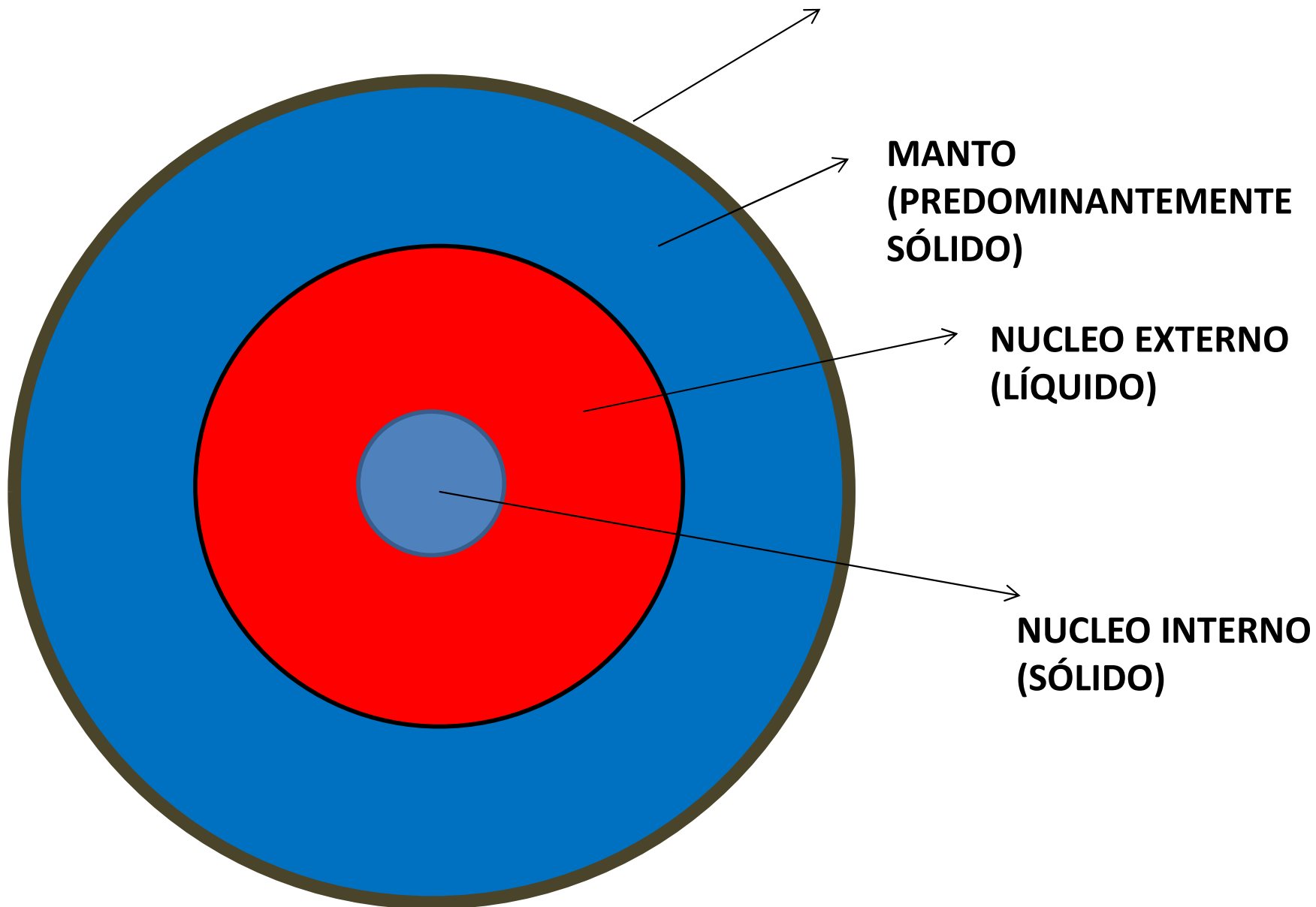
# Estrutura interna da Terra

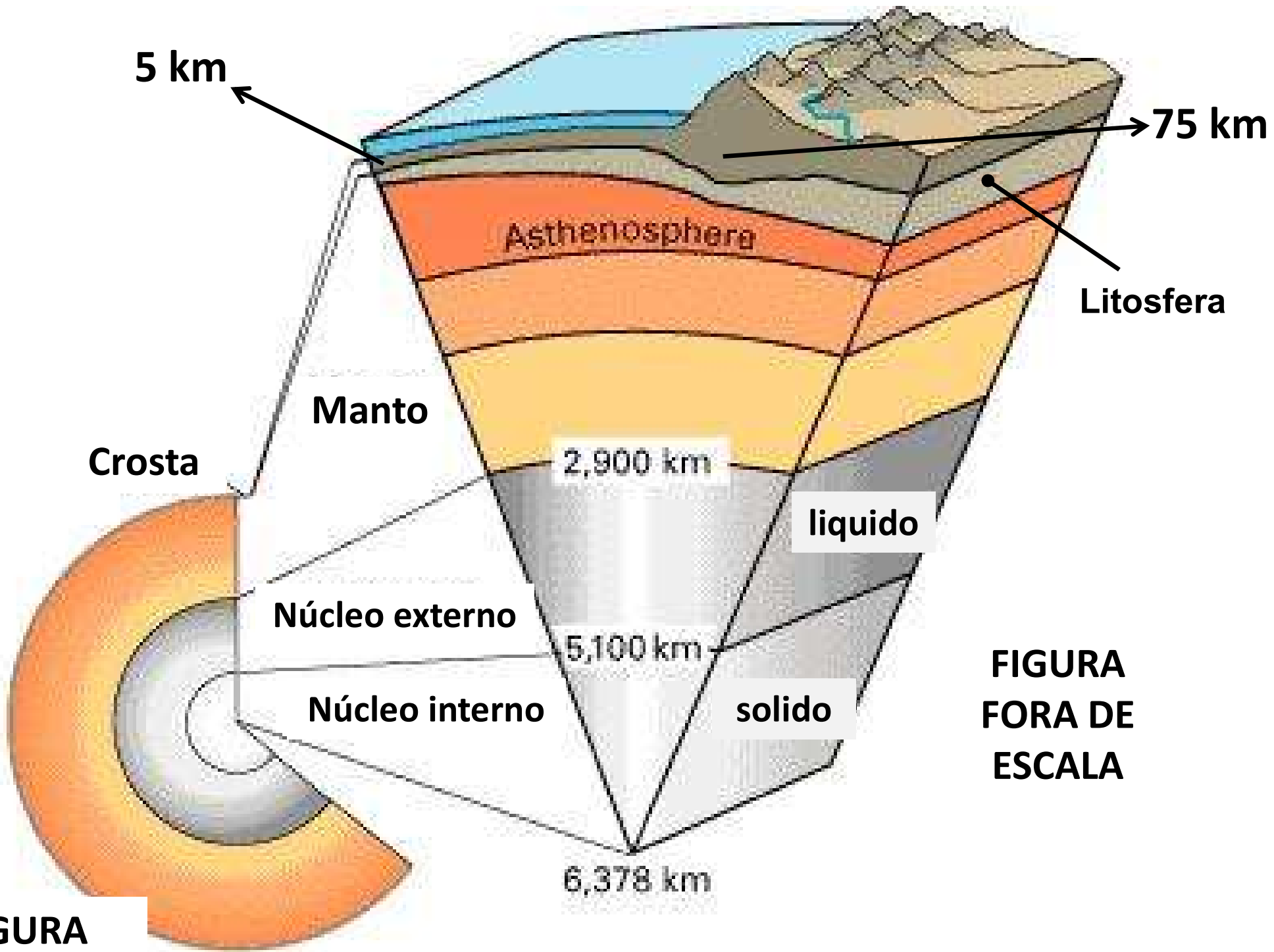
**CROSTA (SÓLIDA)**

**MANTO  
(PREDOMINANTEMENTE  
SÓLIDO)**

**NUCLEO EXTERNO  
(LÍQUIDO)**

**NUCLEO INTERNO  
(SÓLIDO)**

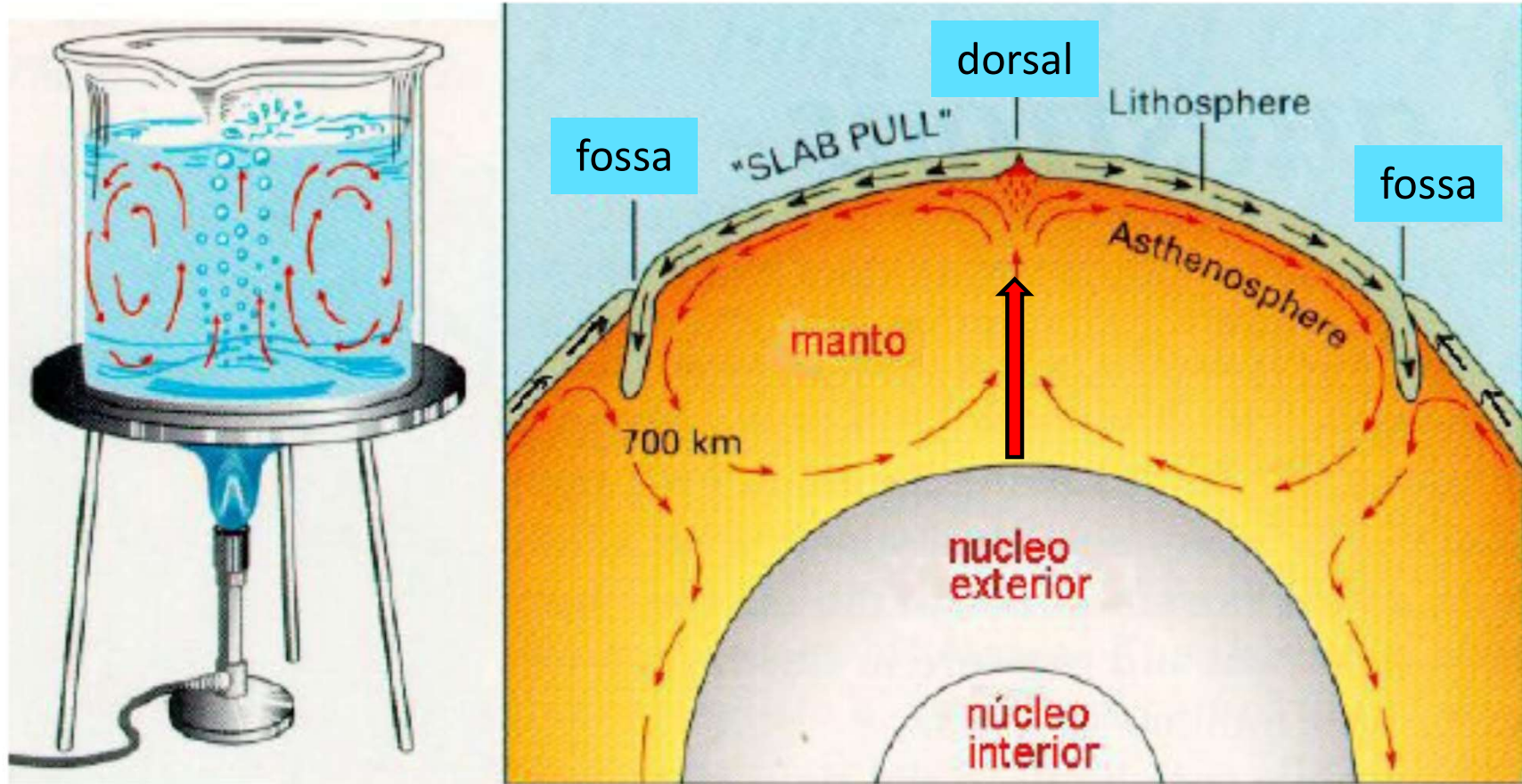




**FIGURA EM ESCALA**

**FIGURA FORA DE ESCALA**

# Células de convecção no Manto



- **Correntes convectivas no manto**

**WORLD OCEAN FLOOR**

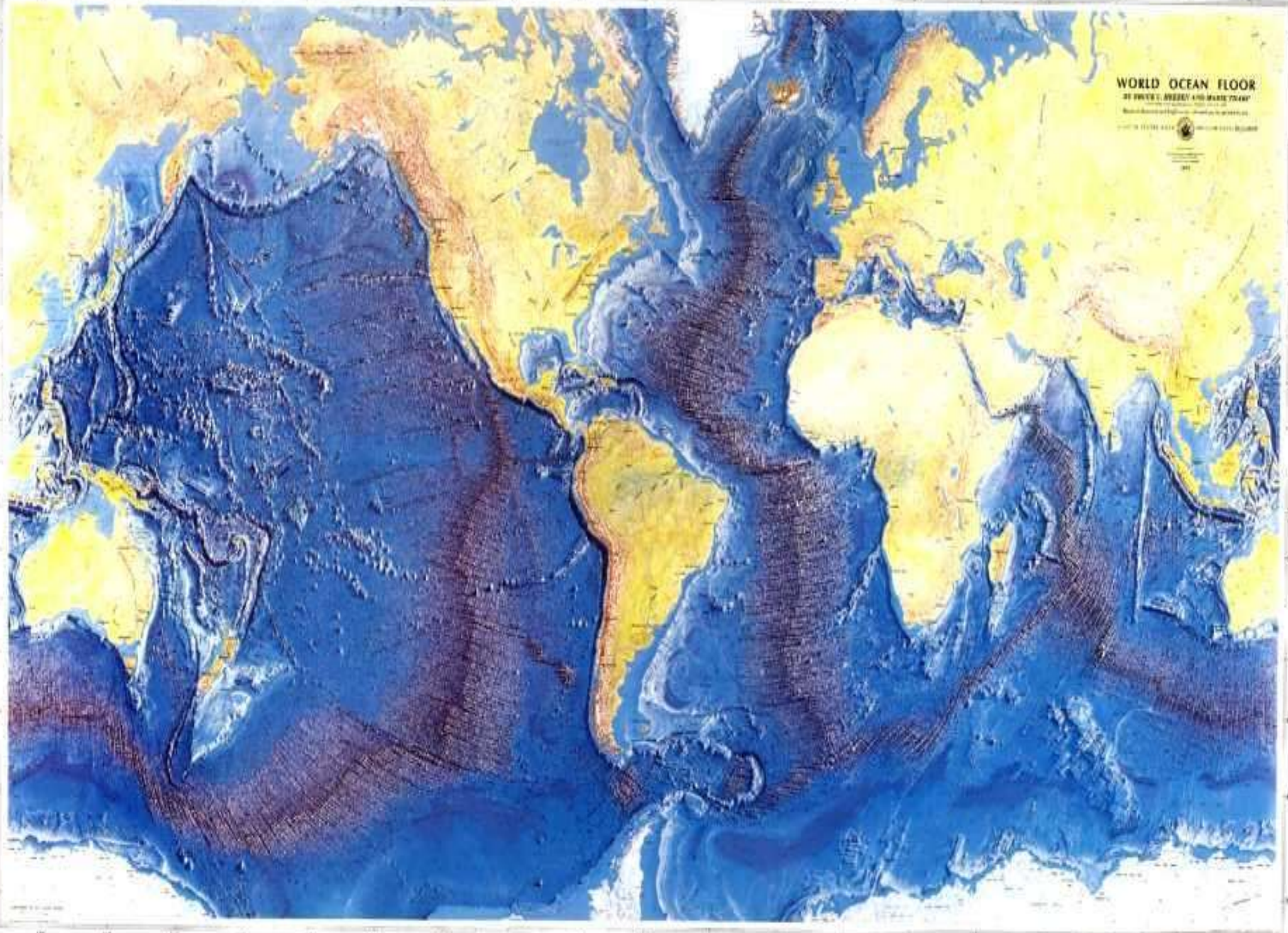
BY PHILIP H. ABNEY AND MARIE THOMPSON

Map of the World Ocean Floor

United States Geological Survey



1955

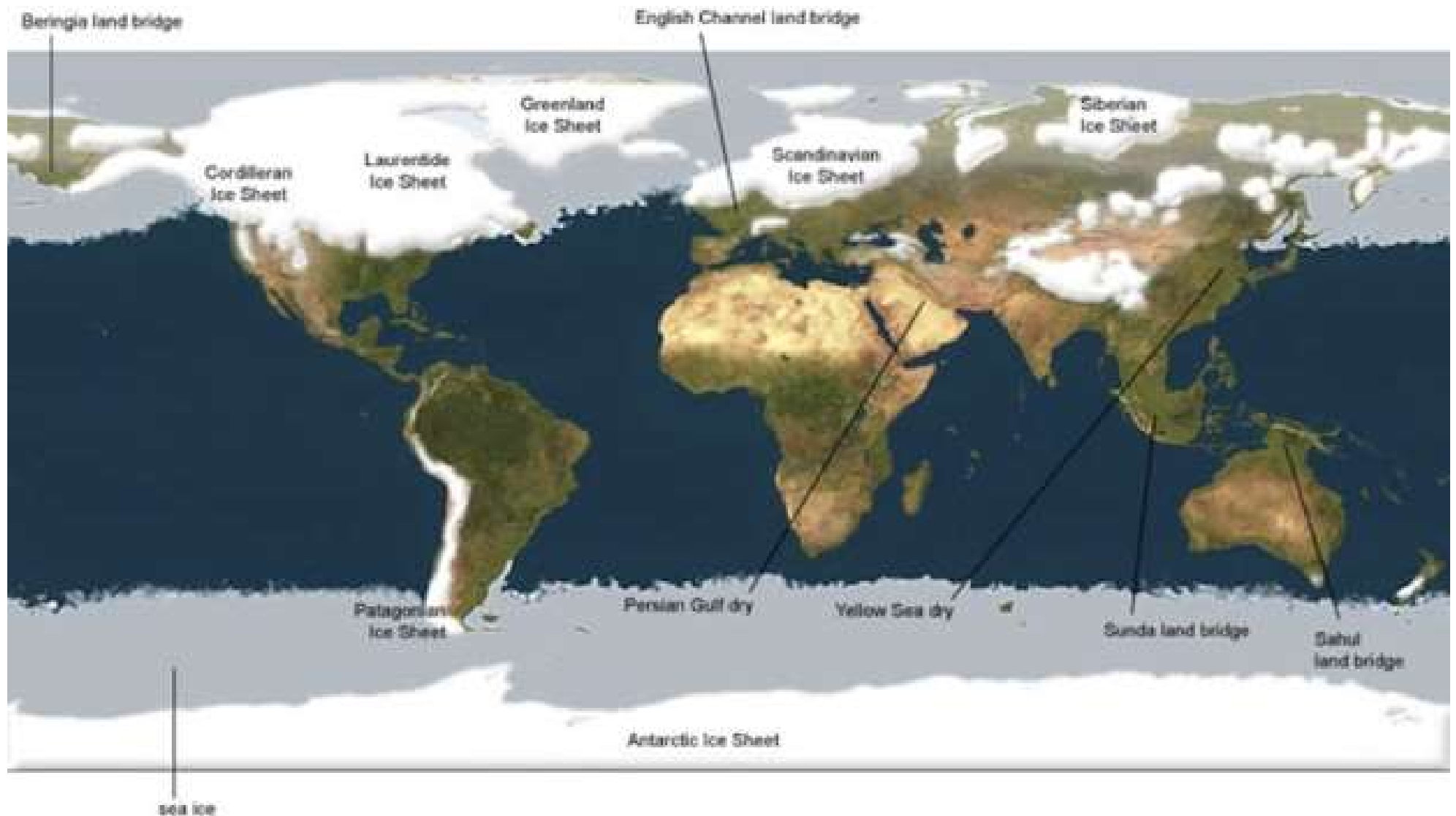


- **Plataformas Continentais**
- Fossas Oceânicas
- Dorsais Oceânicas
- Planícies Abissais
- Montes Submarinos

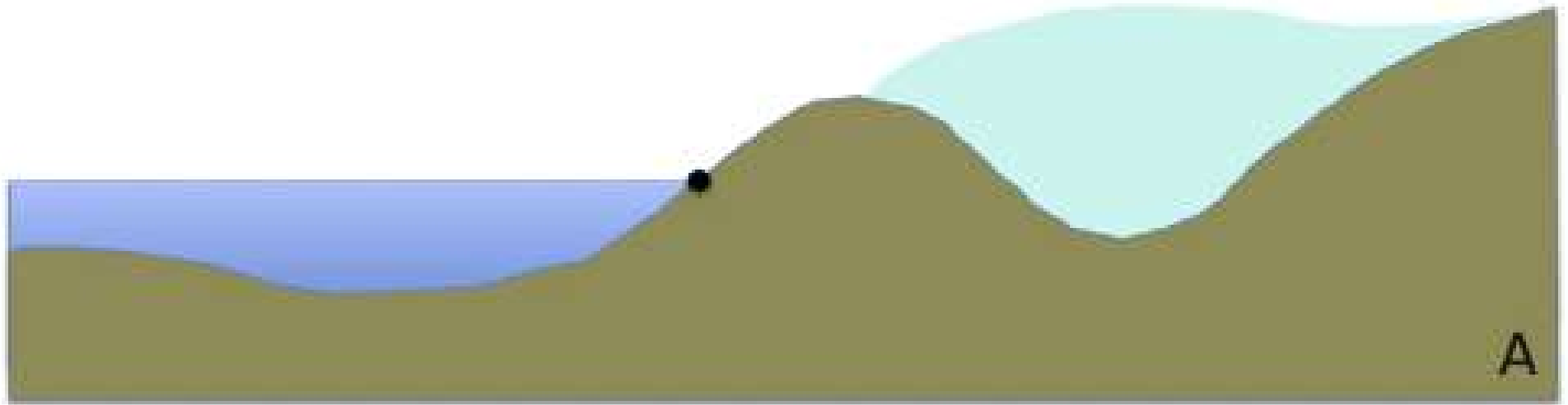
**TECTÔNICA DE PLACAS**



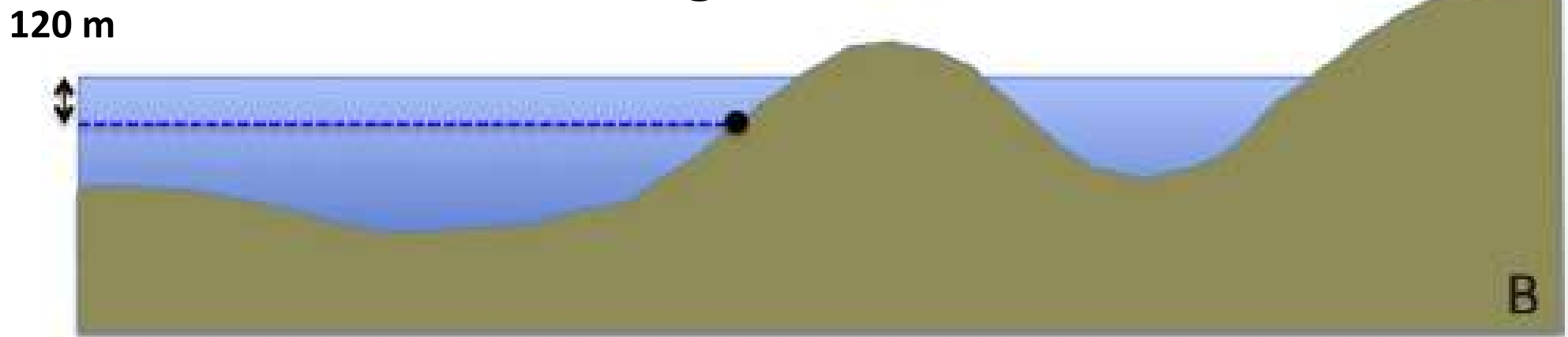
# Glaciações



## Período Glacial



## Período Interglacial





- Plataformas Continentais
- **Fossas Oceânicas**
- Dorsais Oceânicas
- Planícies Abissais
- Montes submarinos

# **TECTÔNICA DE PLACAS**

**WORLD OCEAN FLOOR**

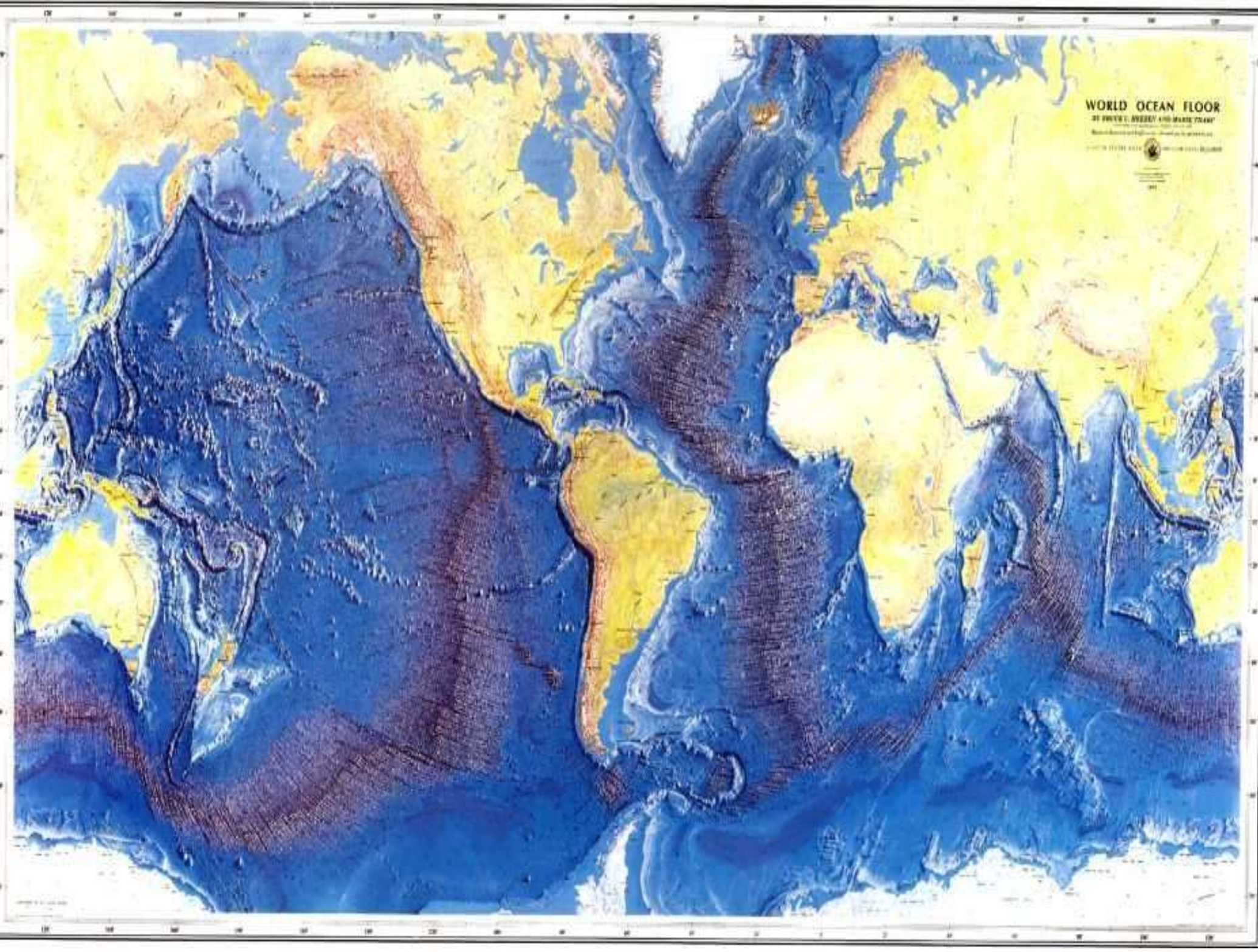
BY PHILIP H. ABNEY AND MARIE THOMPSON

Map of the World Ocean Floor, showing the bathymetry of the world's oceans and seas. The map is color-coded to show depth, with yellow representing shallow waters and deep blues representing the deepest parts of the ocean floor. The map includes labels for major ocean basins, tectonic plates, and various oceanographic features such as trenches, ridges, and seamounts.

Map of the World Ocean Floor, showing the bathymetry of the world's oceans and seas. The map is color-coded to show depth, with yellow representing shallow waters and deep blues representing the deepest parts of the ocean floor. The map includes labels for major ocean basins, tectonic plates, and various oceanographic features such as trenches, ridges, and seamounts.



1971

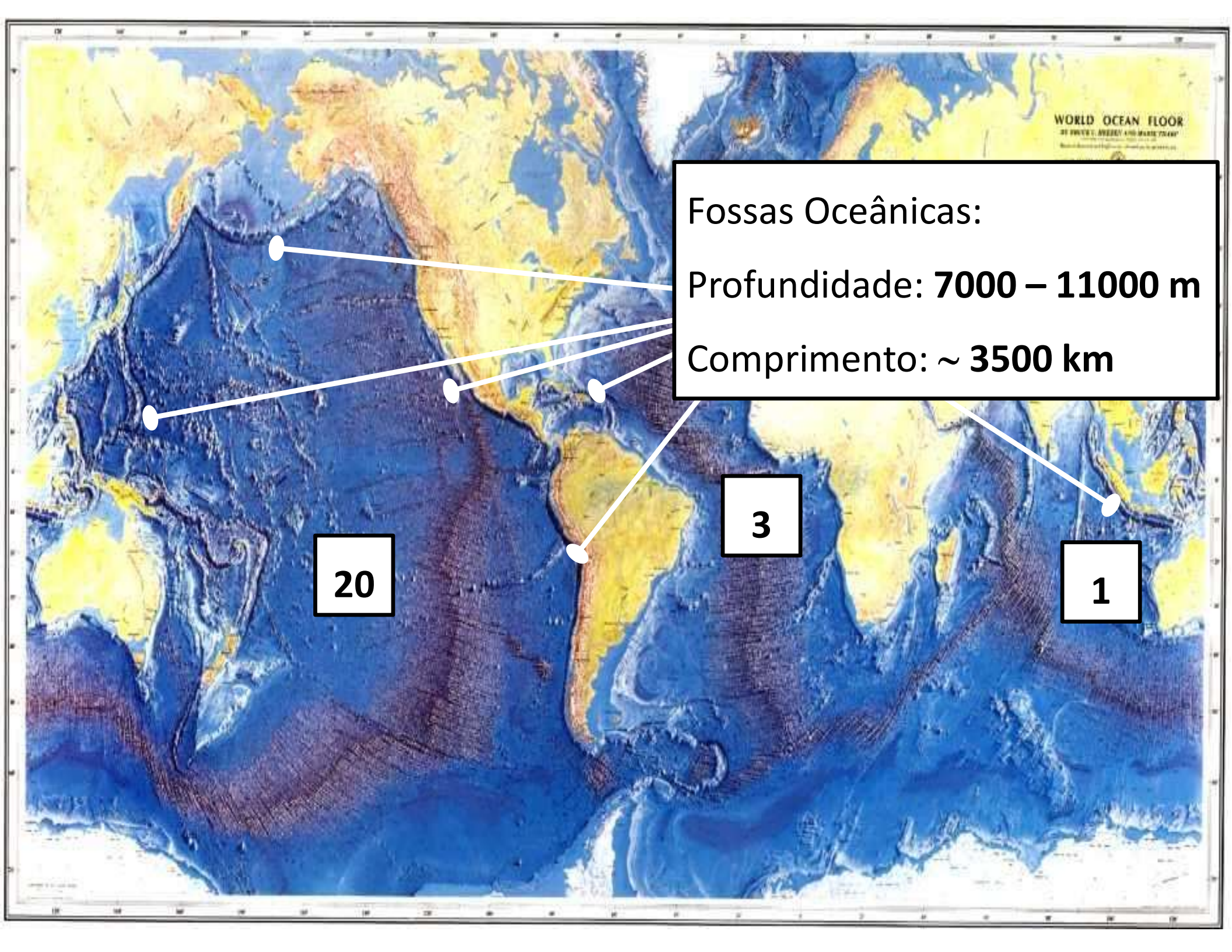


Fossas Oceânicas:  
Profundidade: **7000 – 11000 m**  
Comprimento: ~ **3500 km**

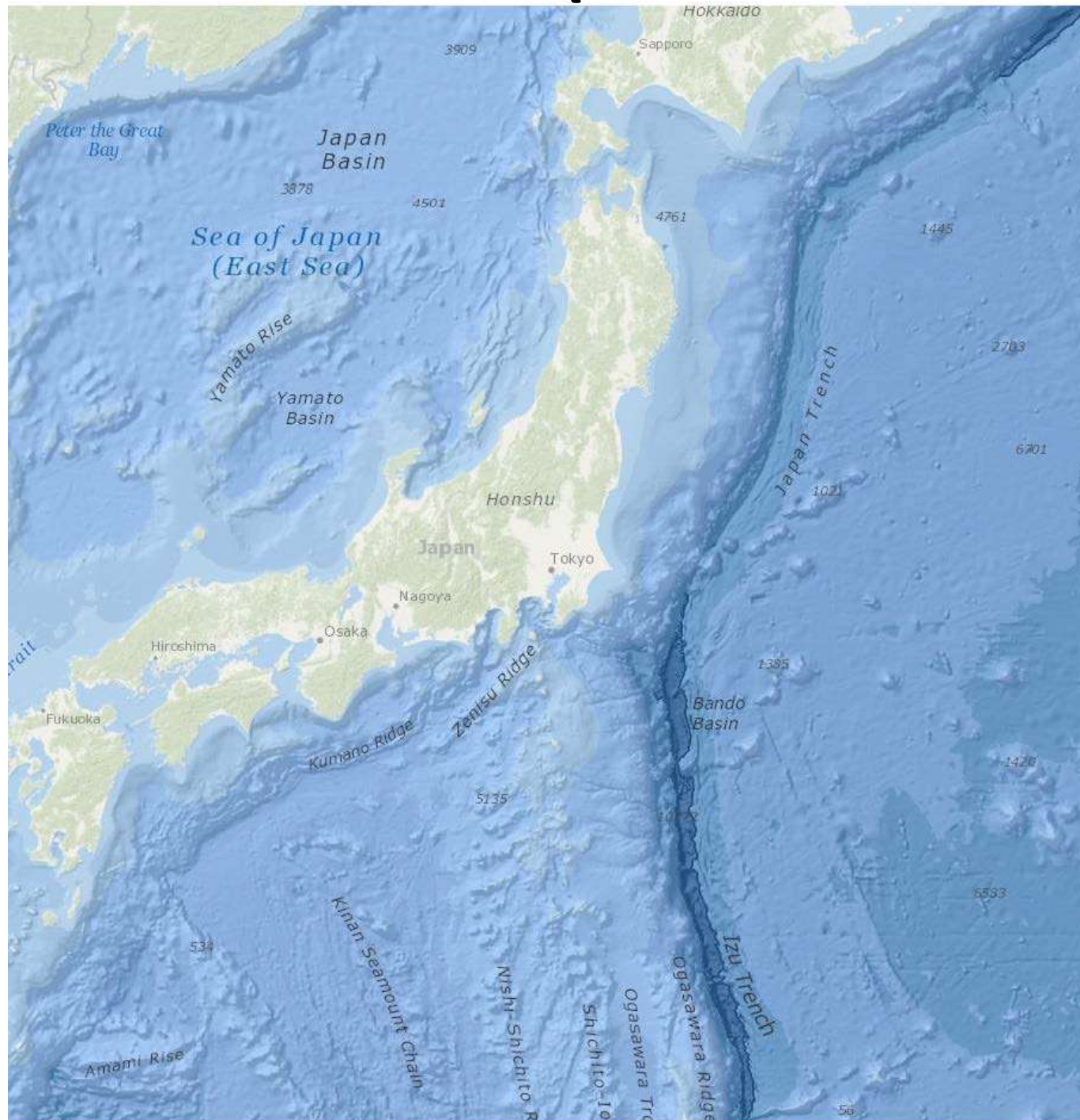
**20**

**3**

**1**



# FOSSA DO JAPÃO (Oceano Pacífico)



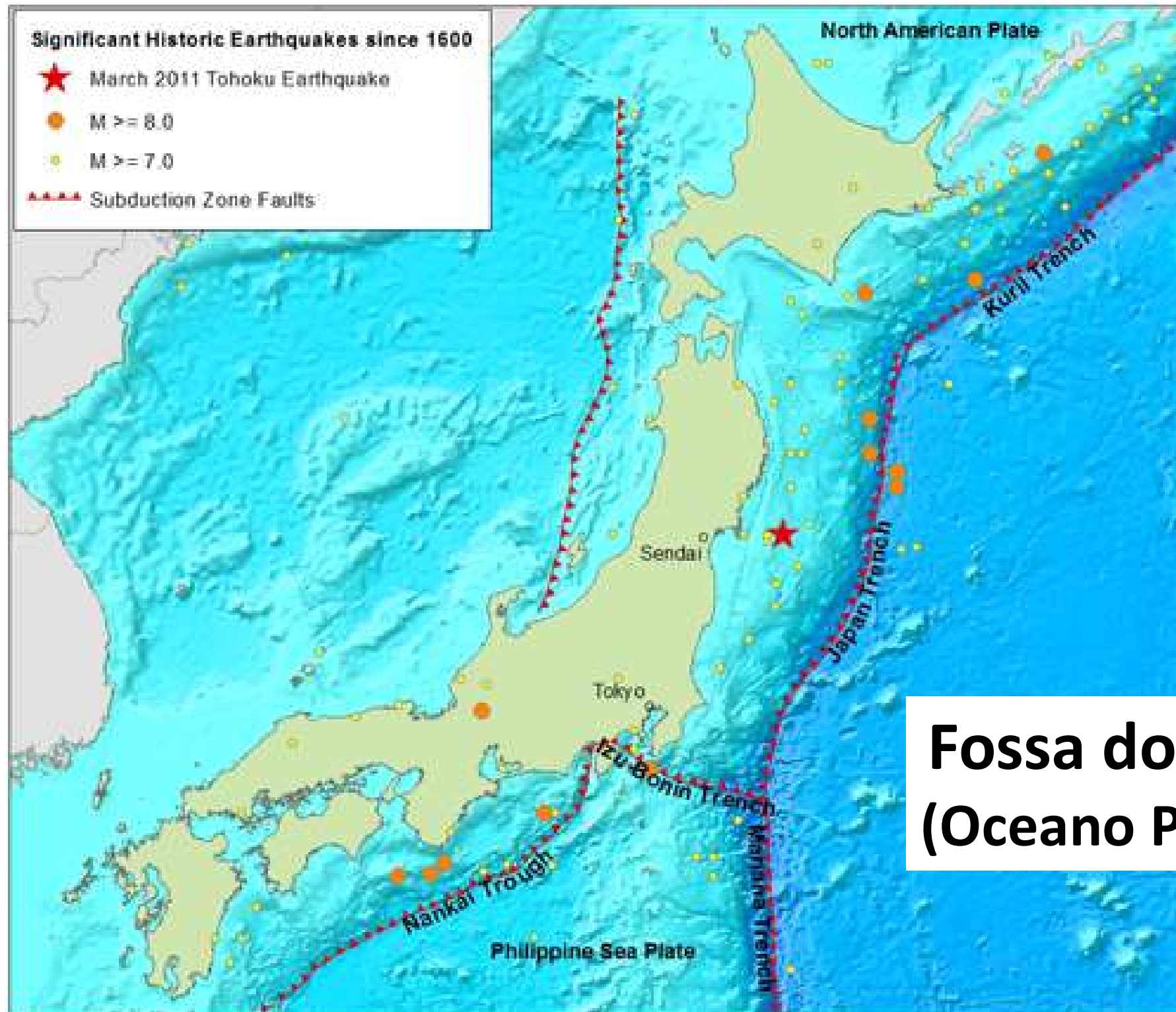
**Significant Historic Earthquakes since 1600**

★ March 2011 Tohoku Earthquake

● M ≥ 8.0

● M ≥ 7.0

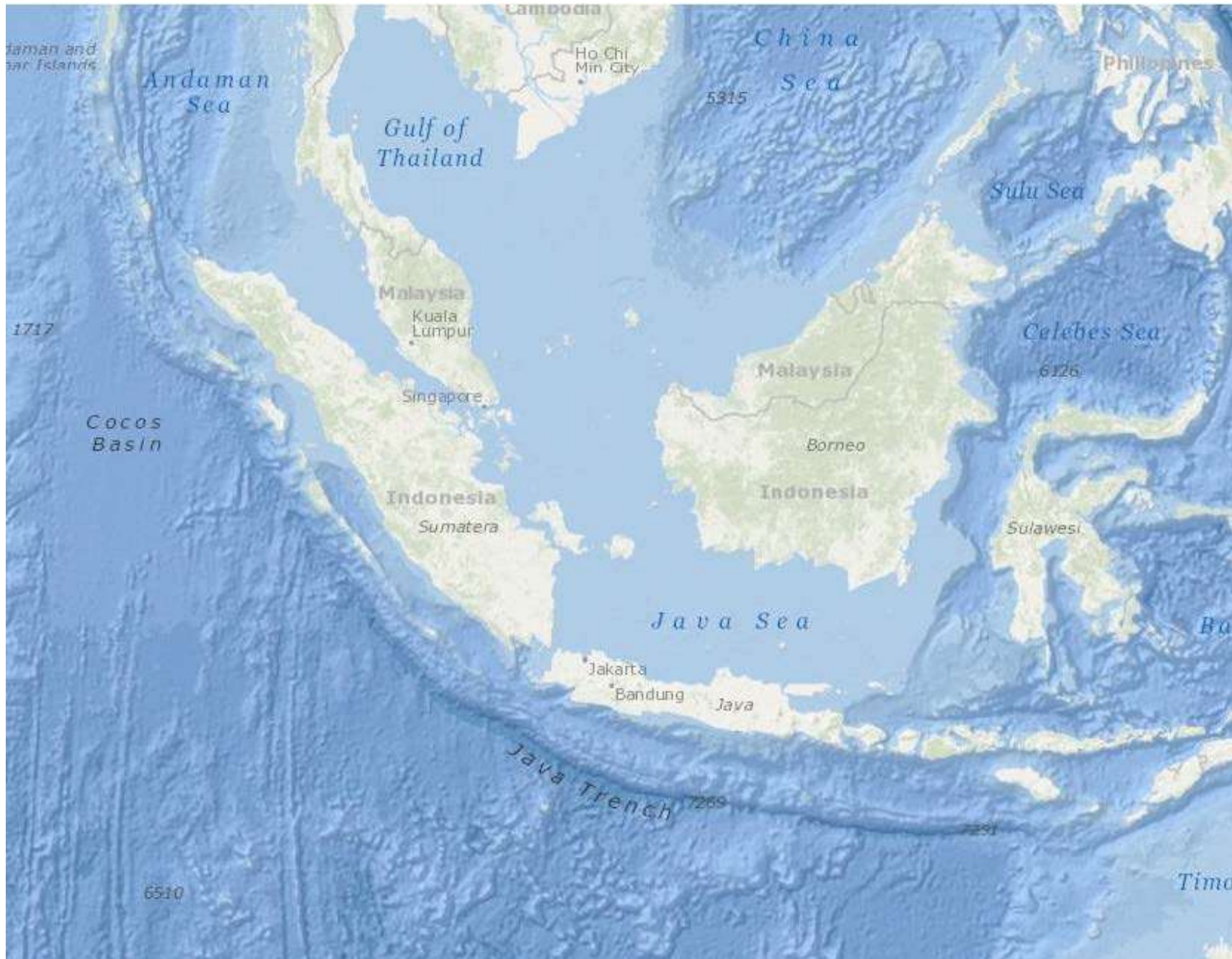
▲▲▲▲ Subduction Zone Faults



# Fossa do Japão (Oceano Pacífico)

Fonte:  
AIR Worldwide

# FOSSA DE JAVA (Oceano Indico)



# FOSSA DE JAVA (Oceano Indico)

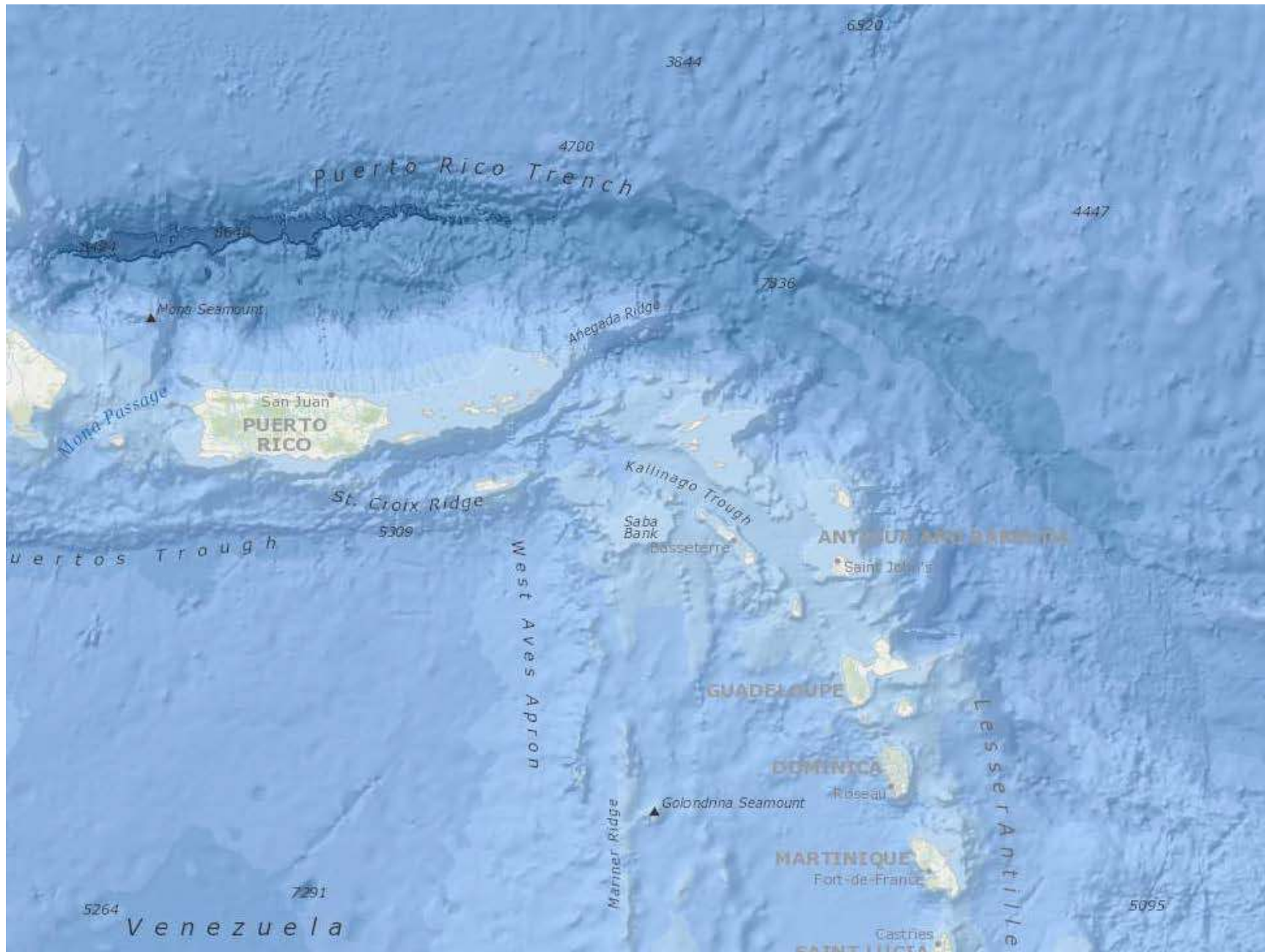


# Fossa de Java (Oceano Indico)

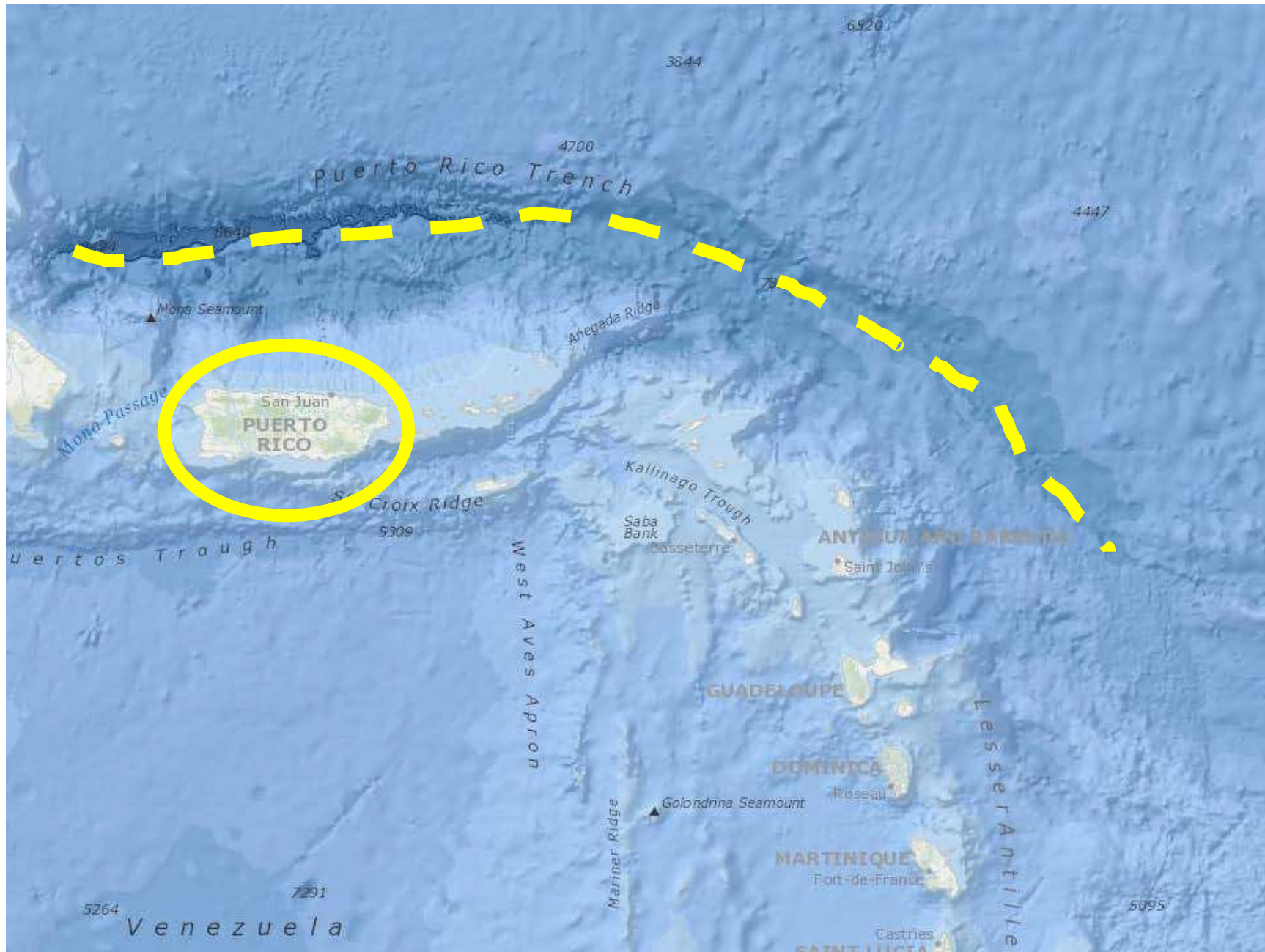


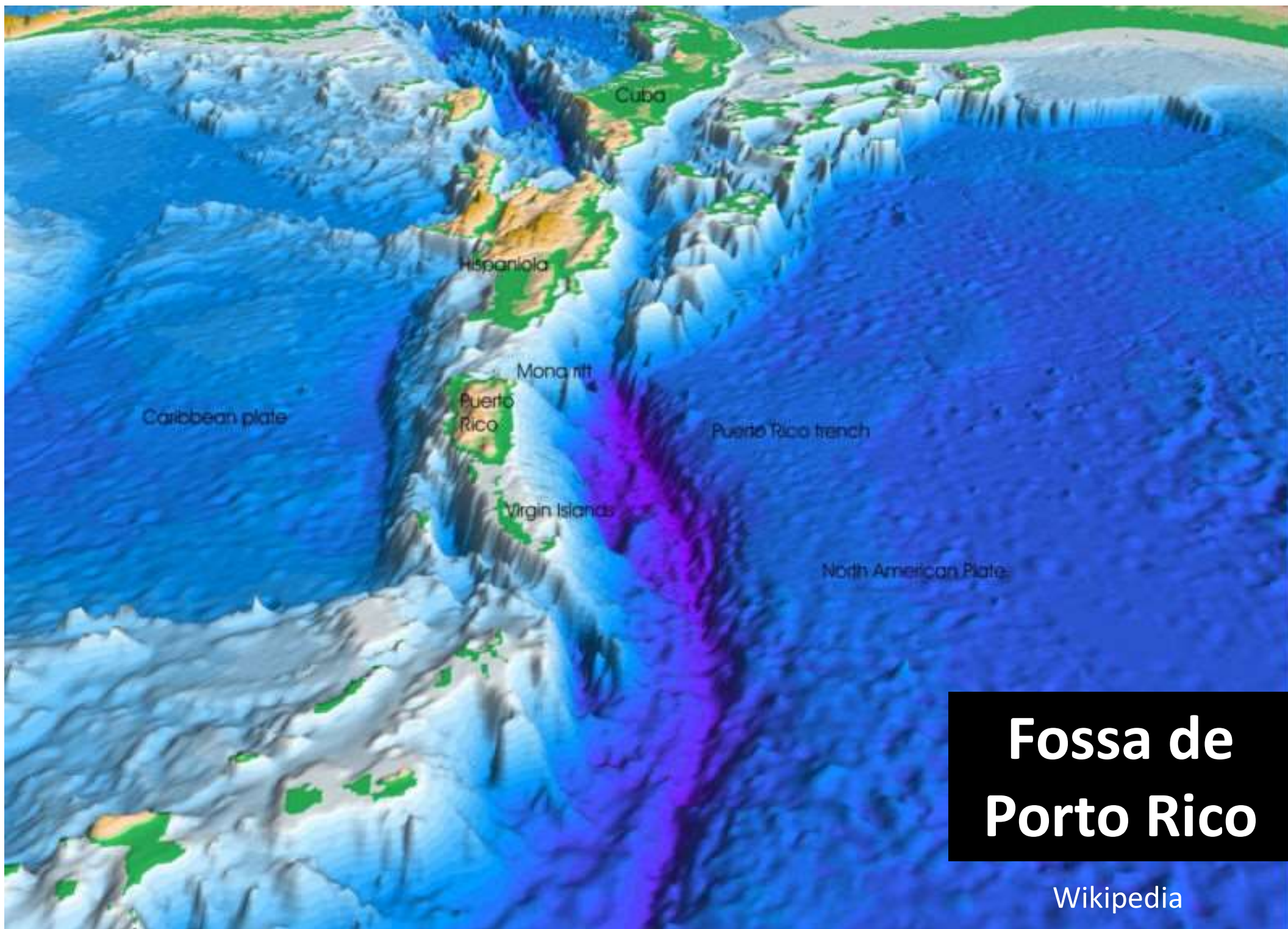


# FOSSA DE PORTO RICO (Oceano Atlântico)



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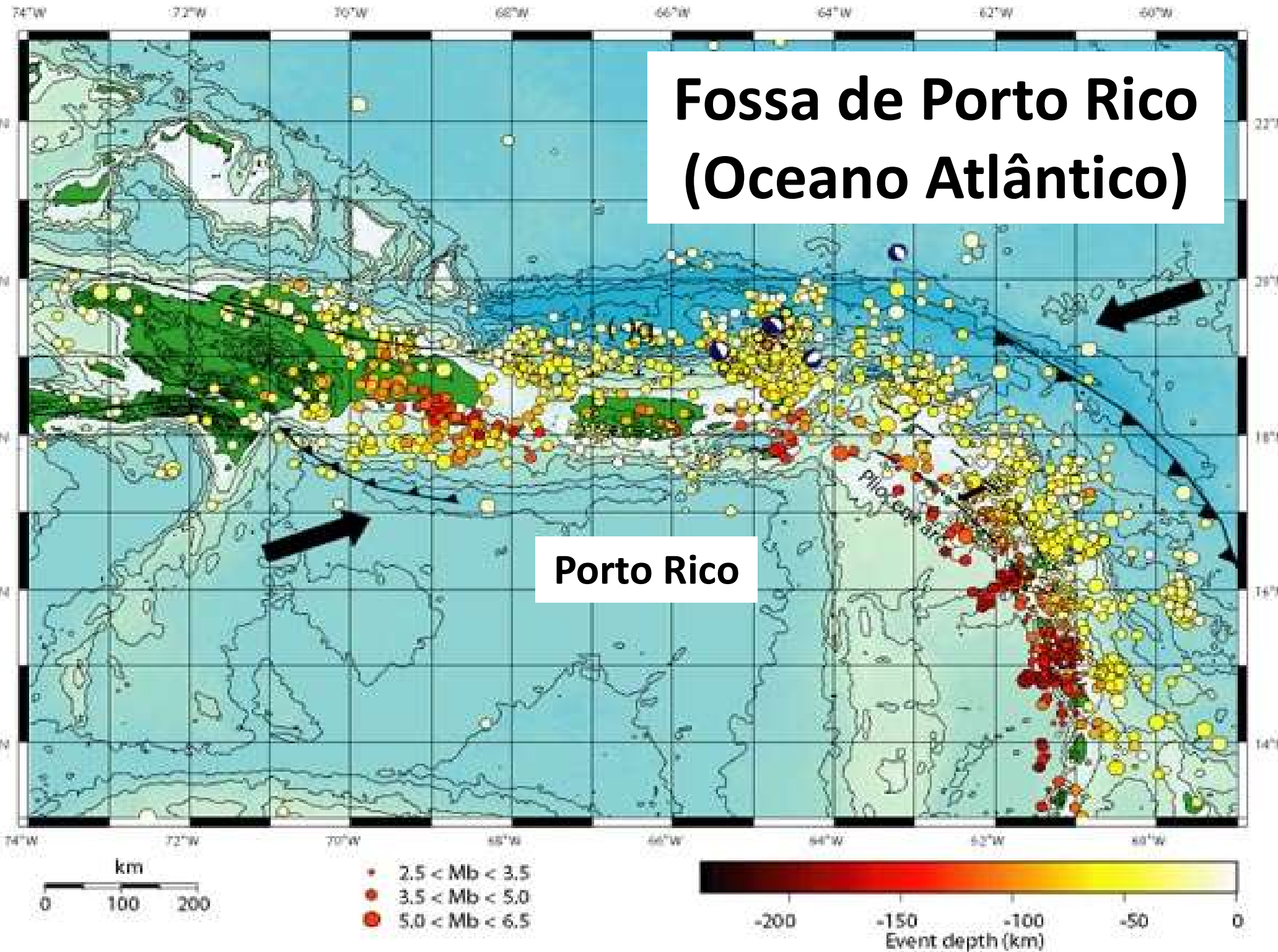




# Fossa de Porto Rico

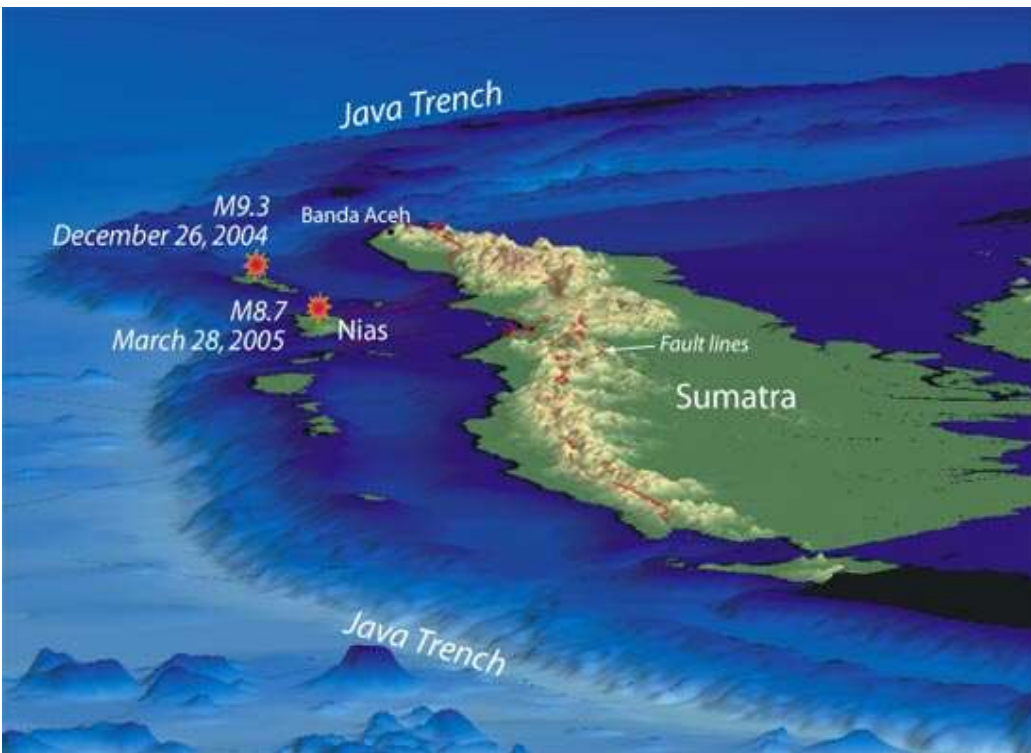
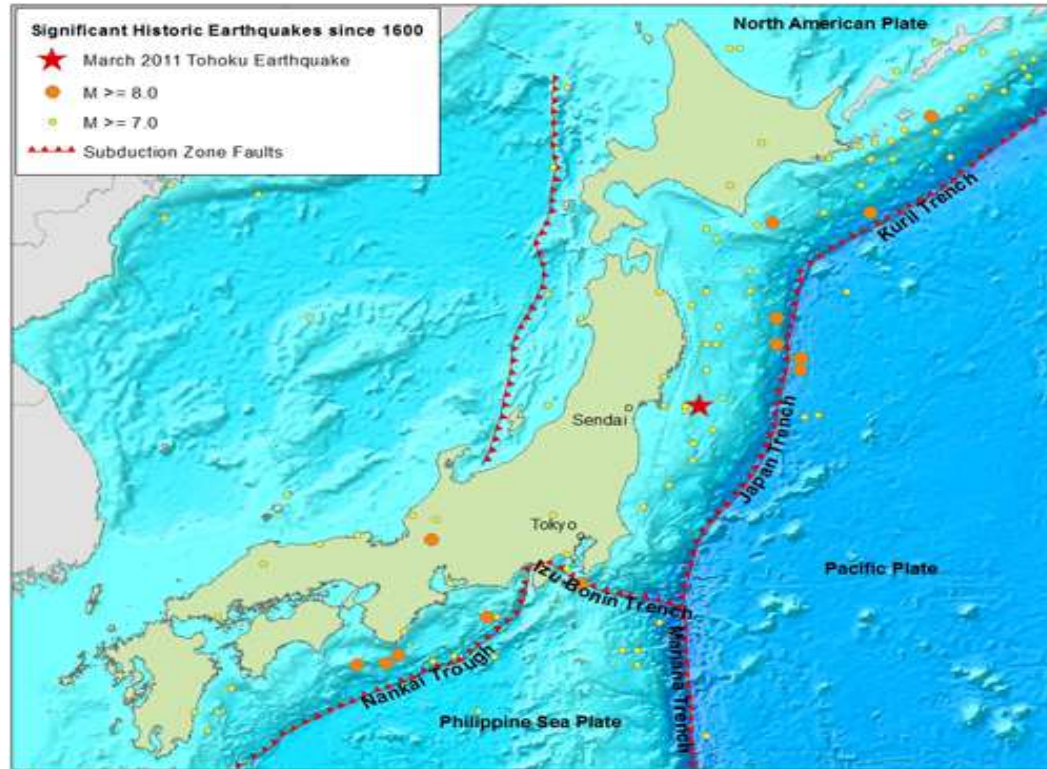
Wikipedia

# Fossa de Porto Rico (Oceano Atlântico)



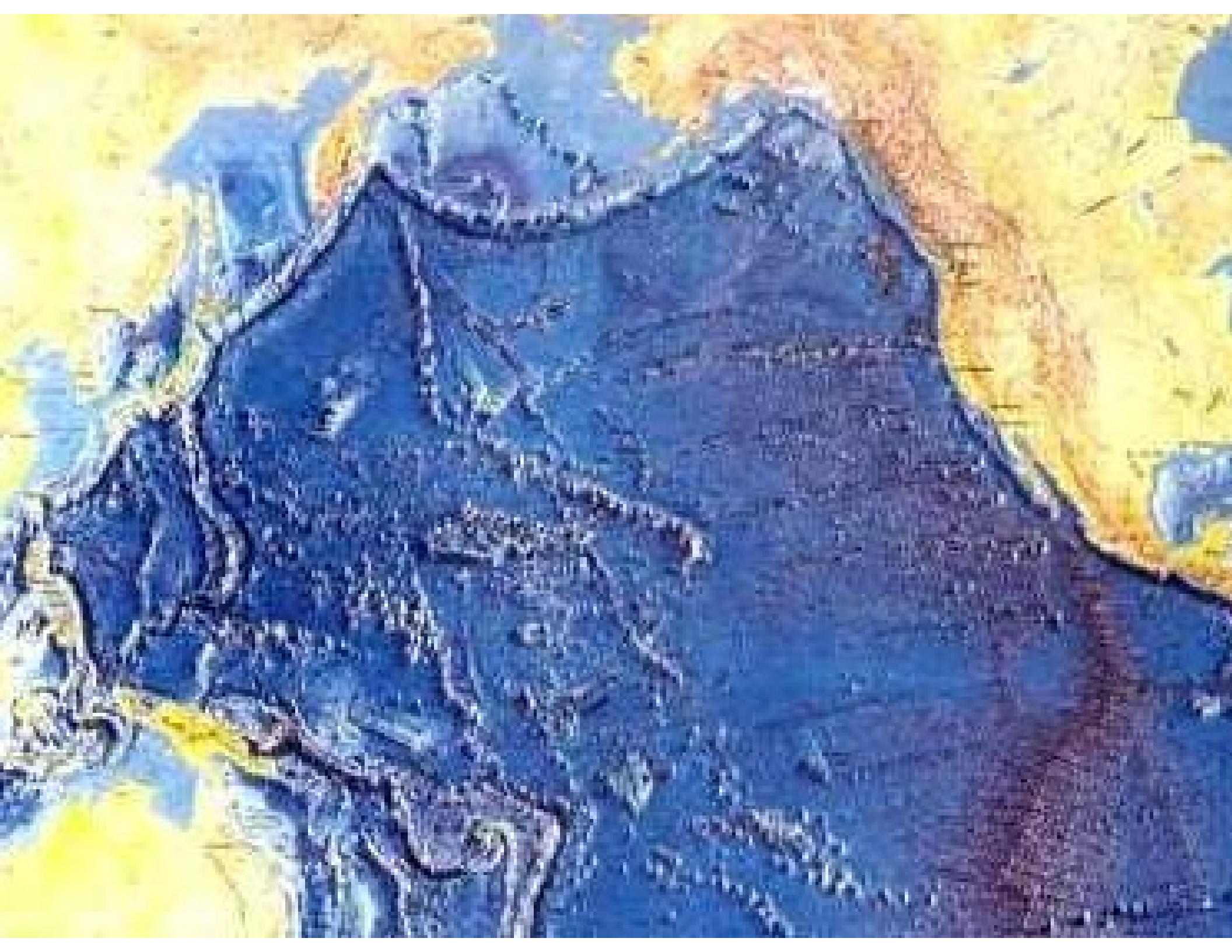


**Fossa de Porto Rico**

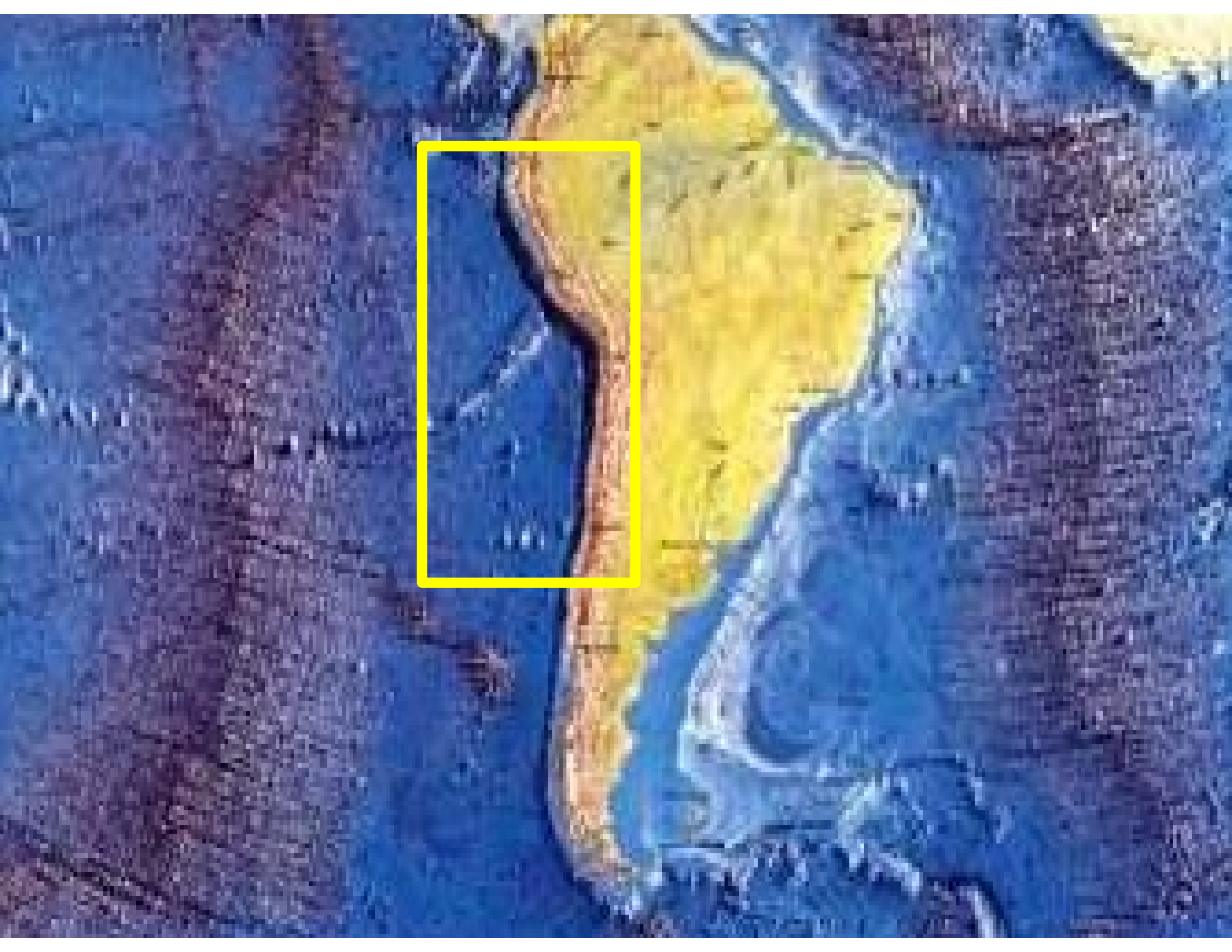


## Fossas Oceânicas: associadas á

- Arcos de ilhas e/ou cordilheiras
- Vulcões
- Elevada sismicidade



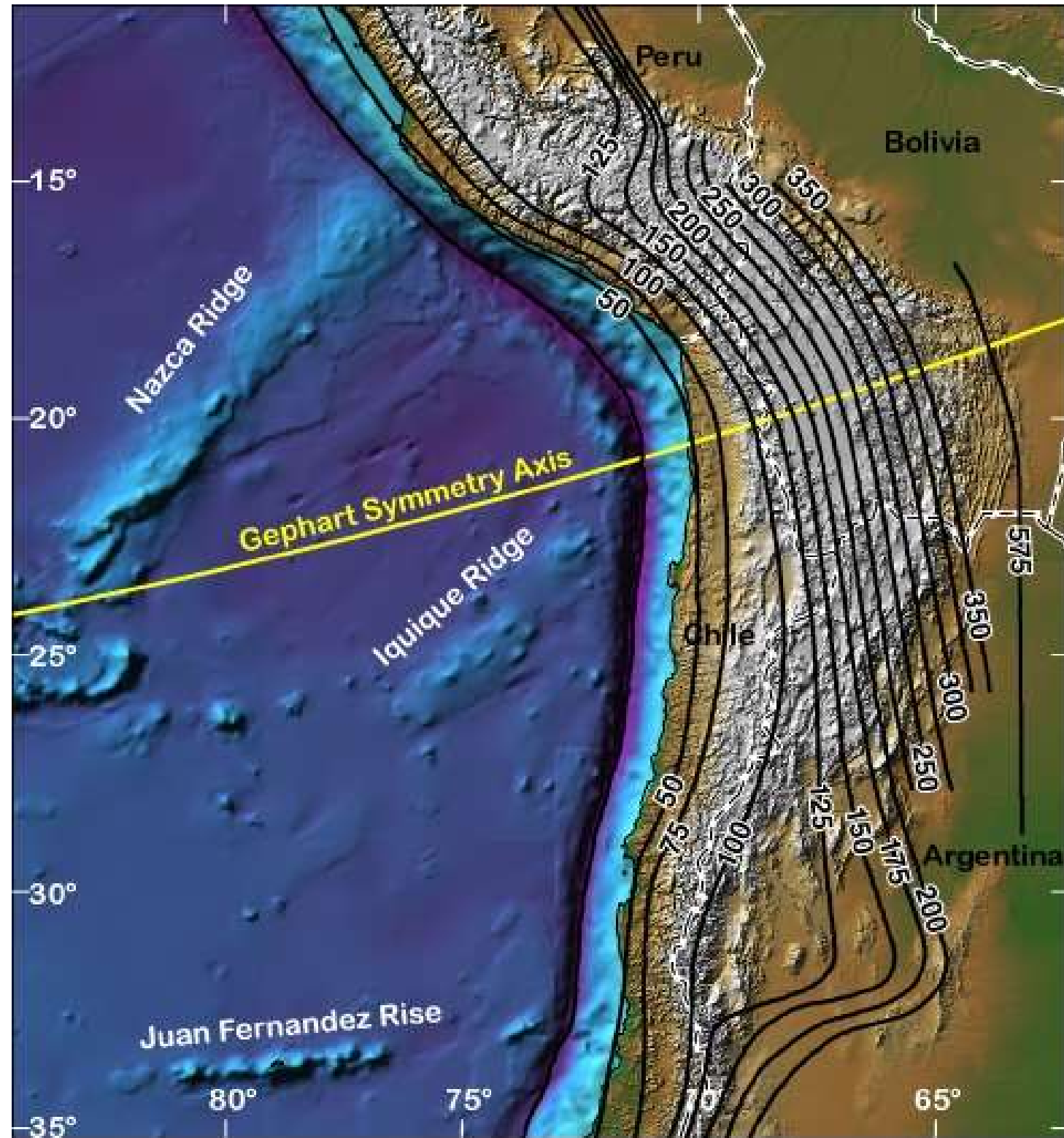


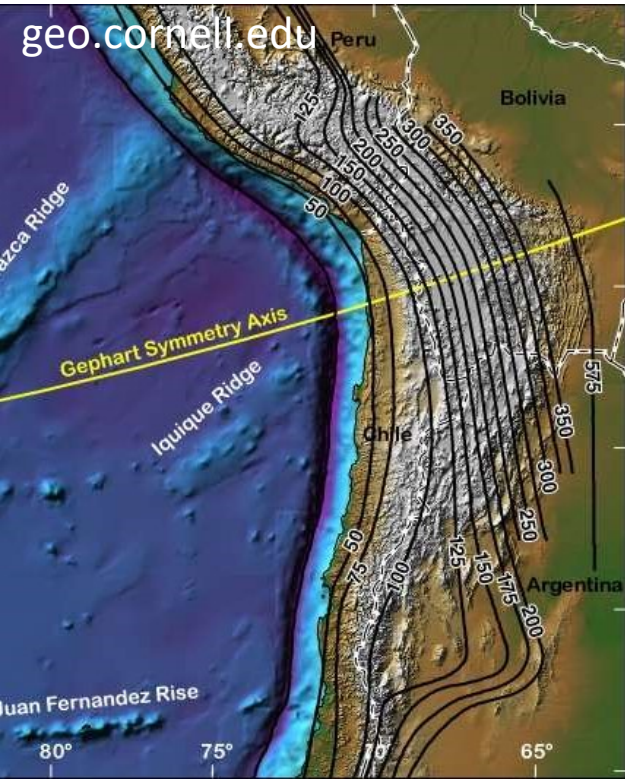


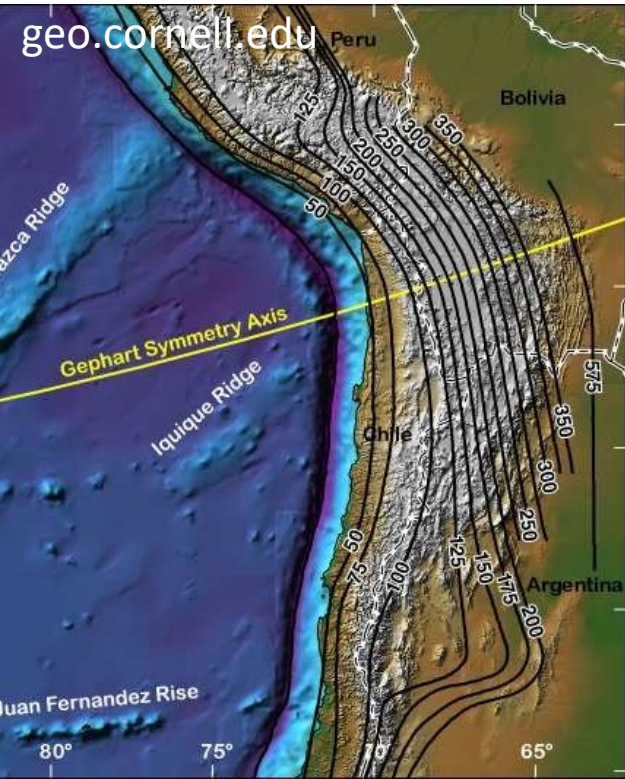


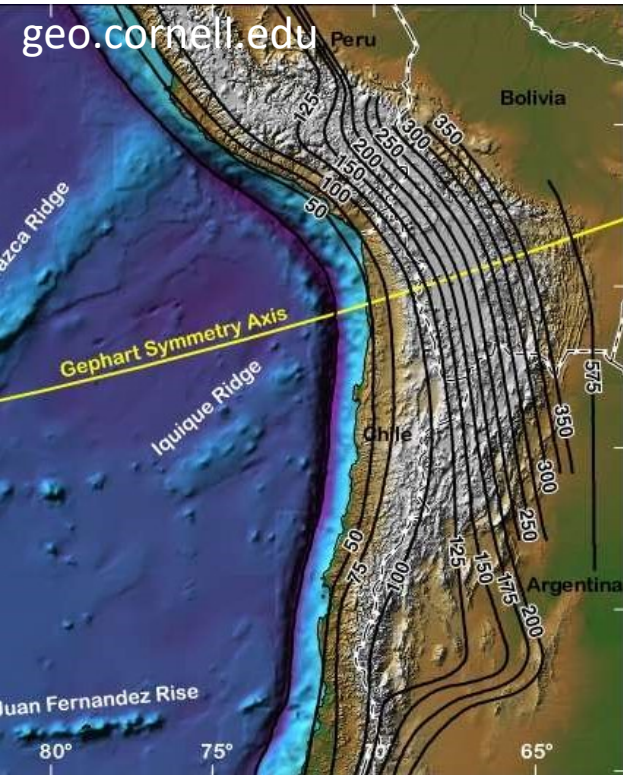
Fossa do Peru – Chile  
8000 m  
de  
profundidade

geo.cornell.edu



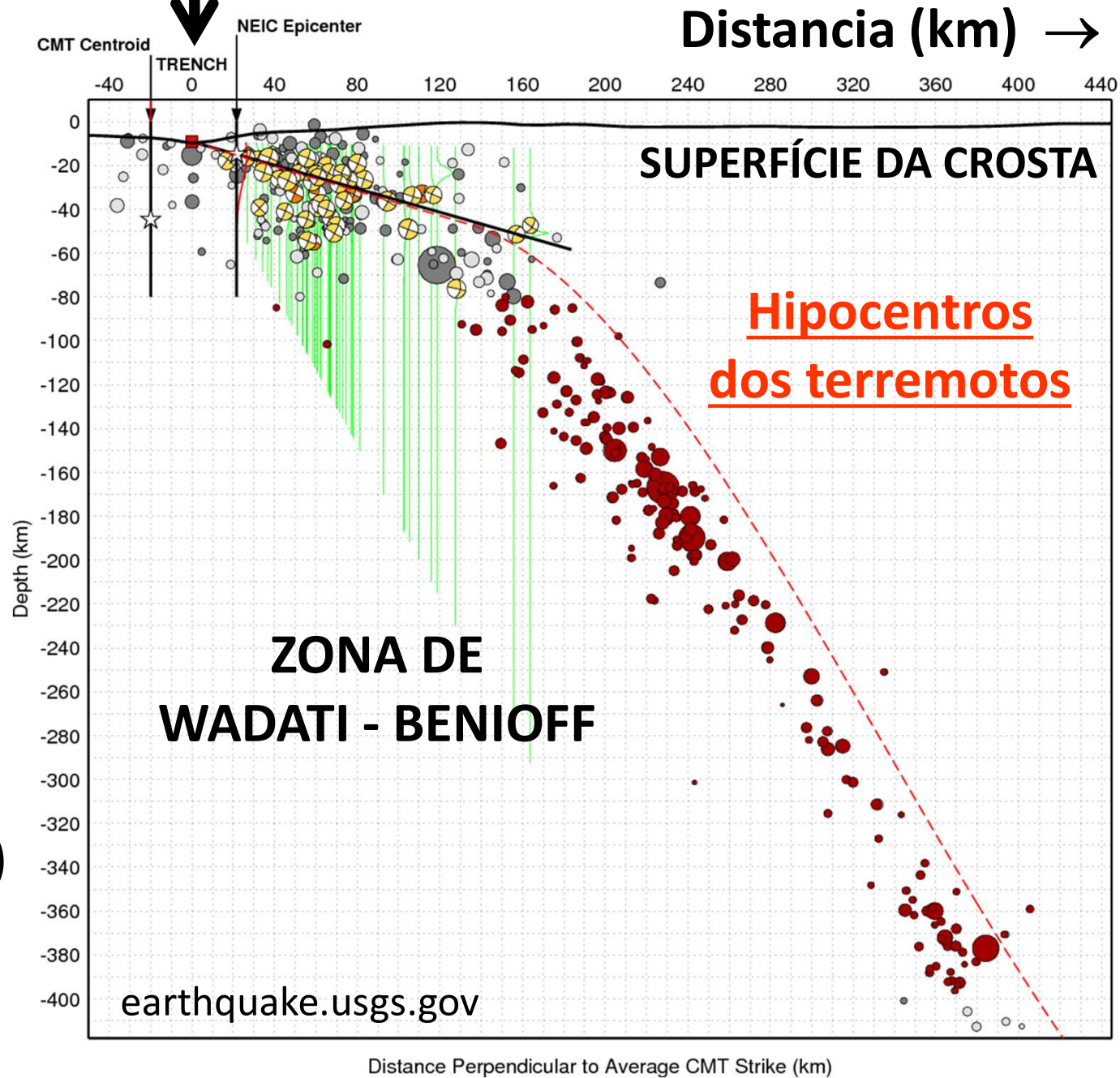


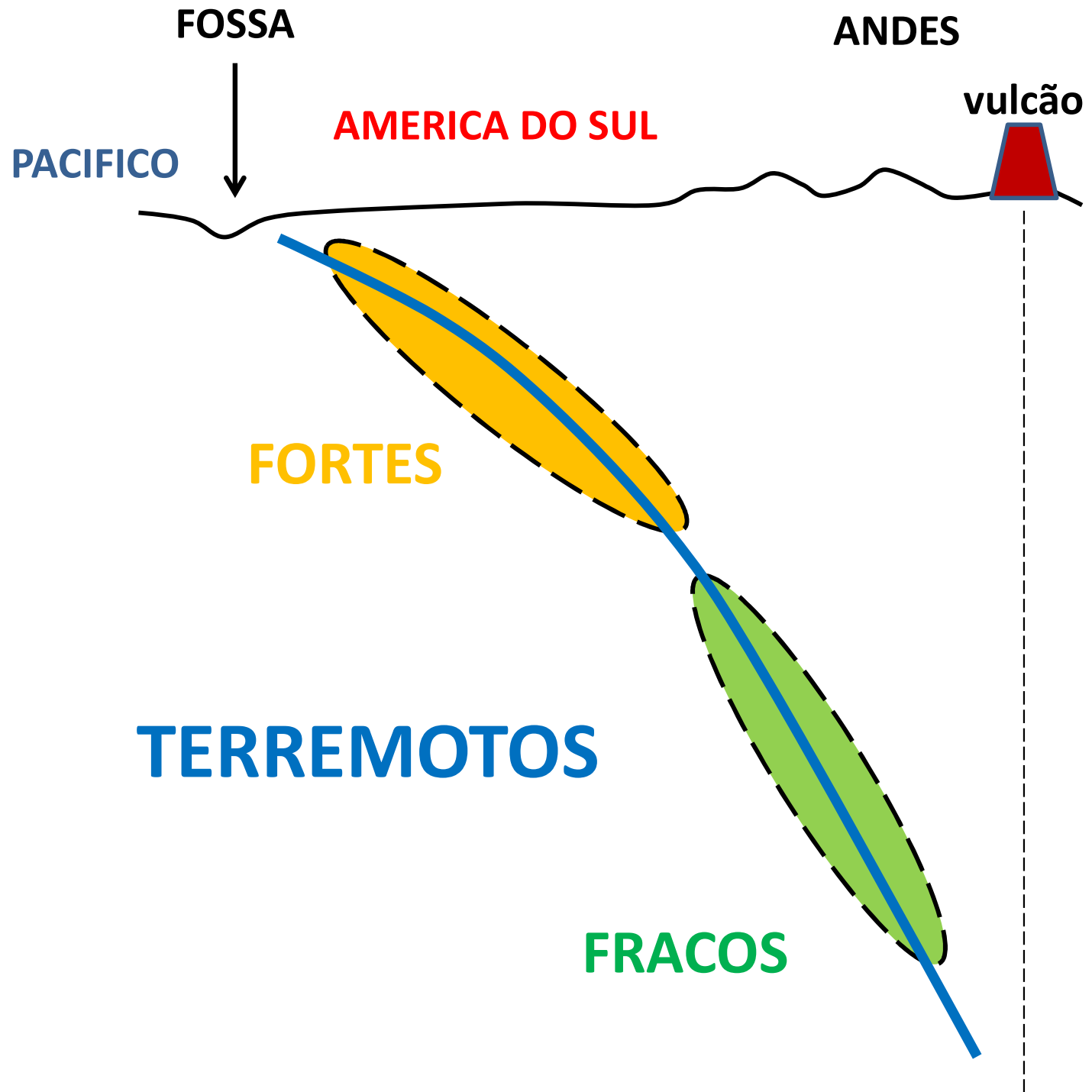
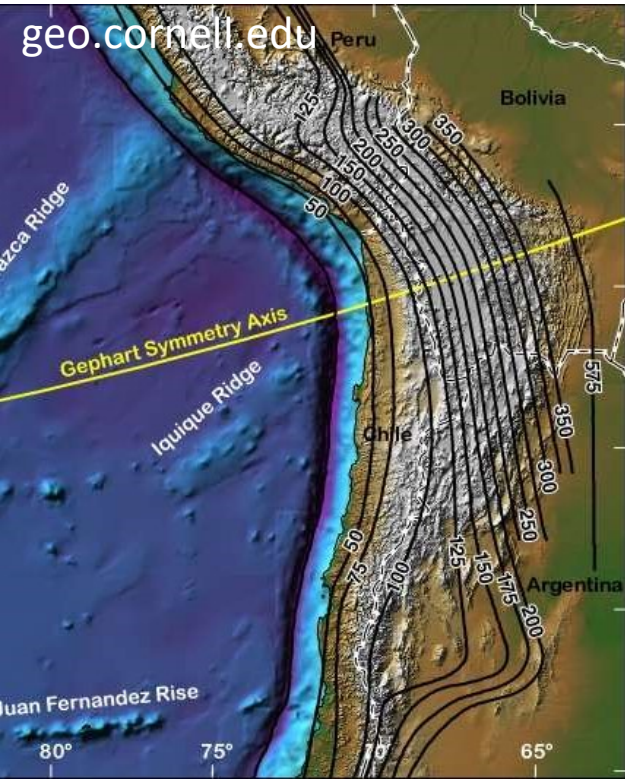


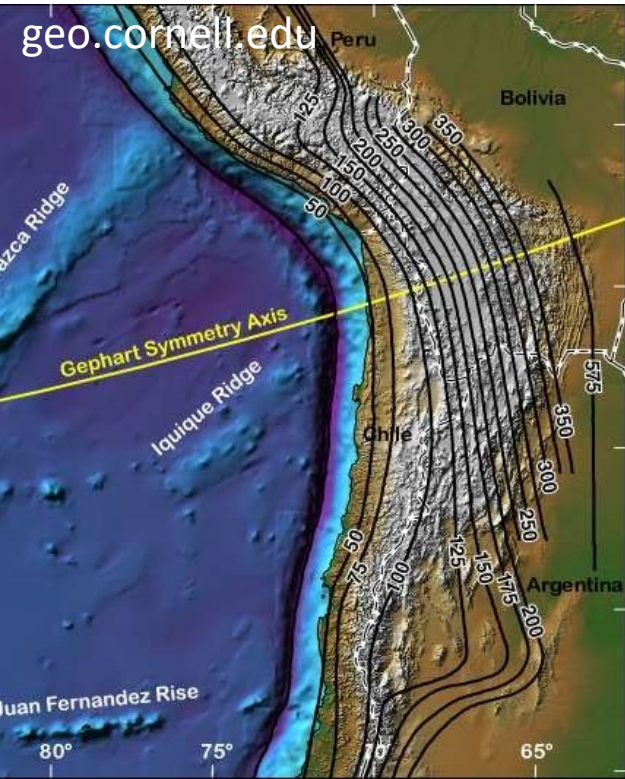


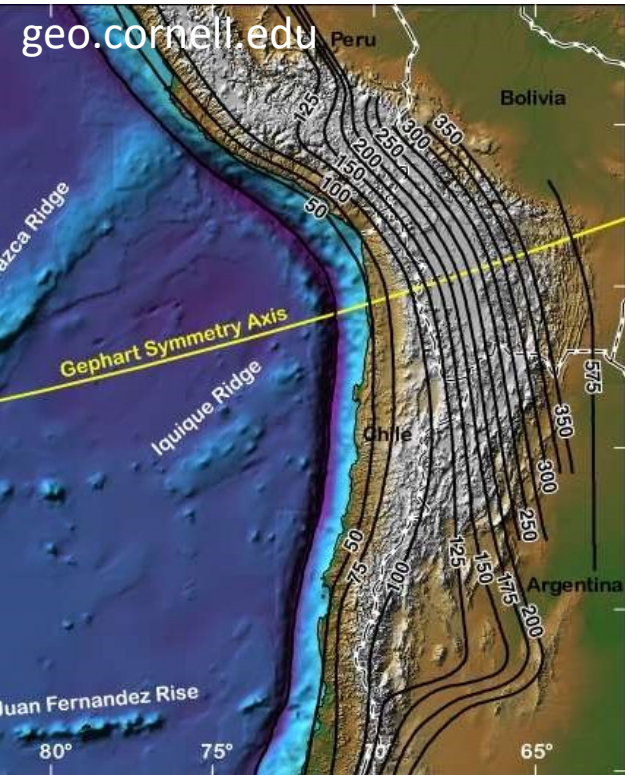
Profundidade (km)

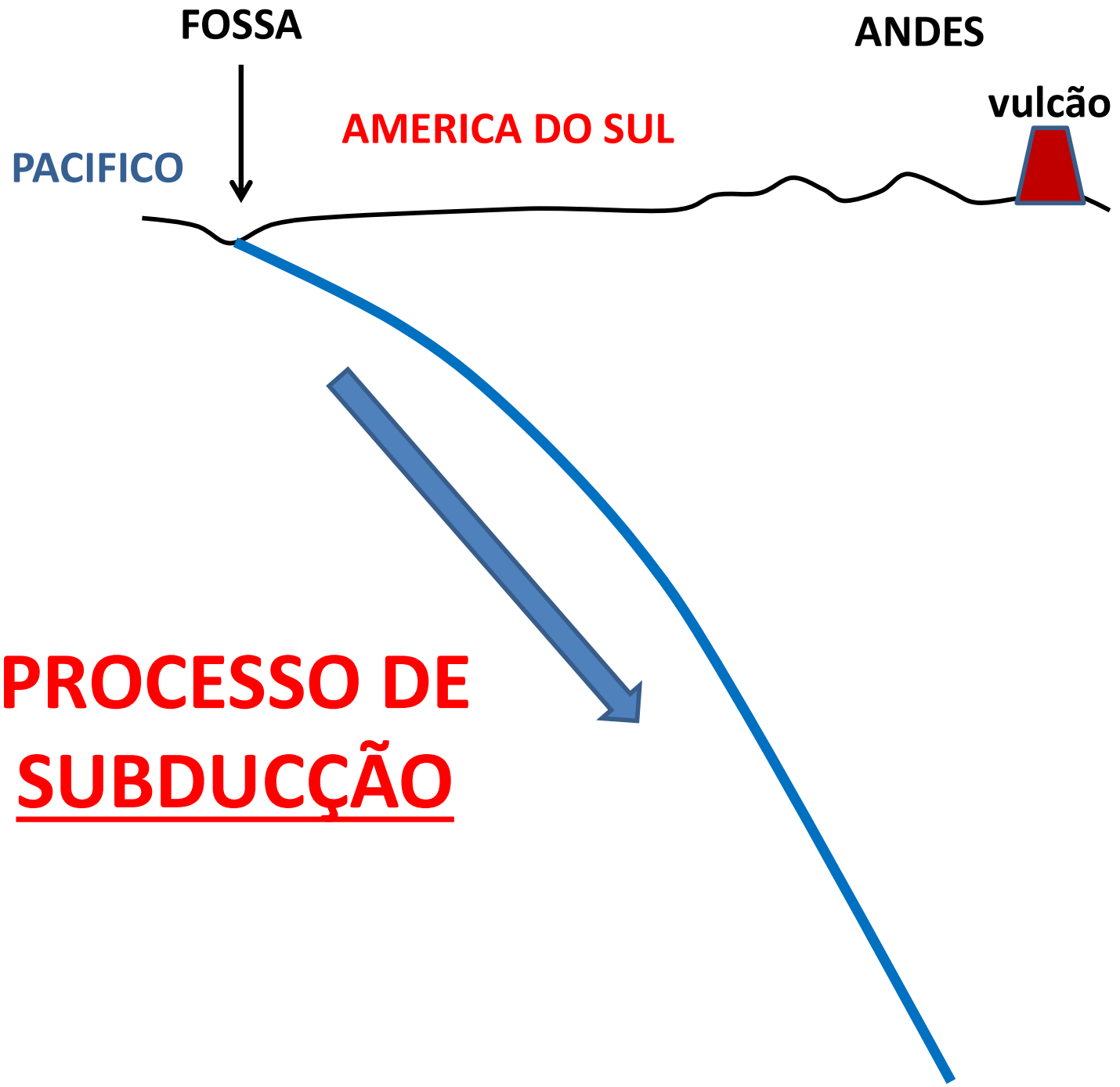
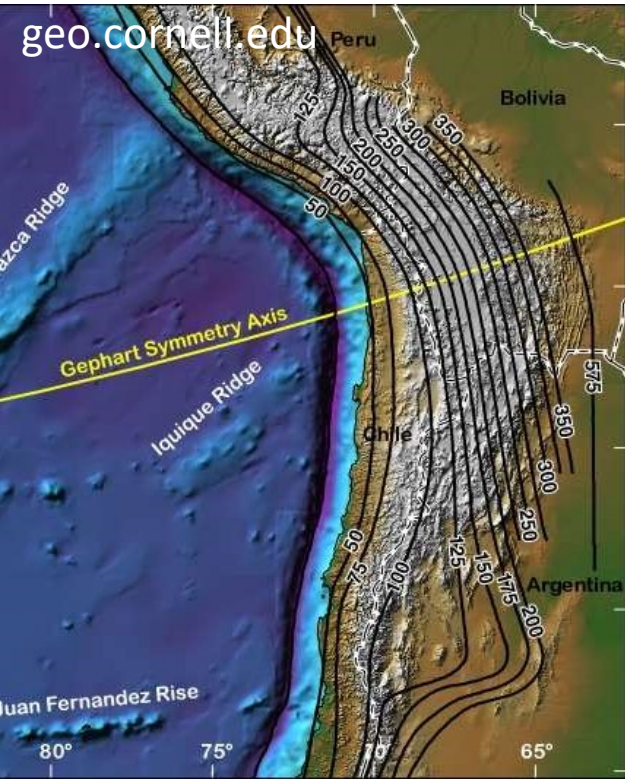
**FOSSA**  
**PACIFICO**      **AMERICA DO SUL**





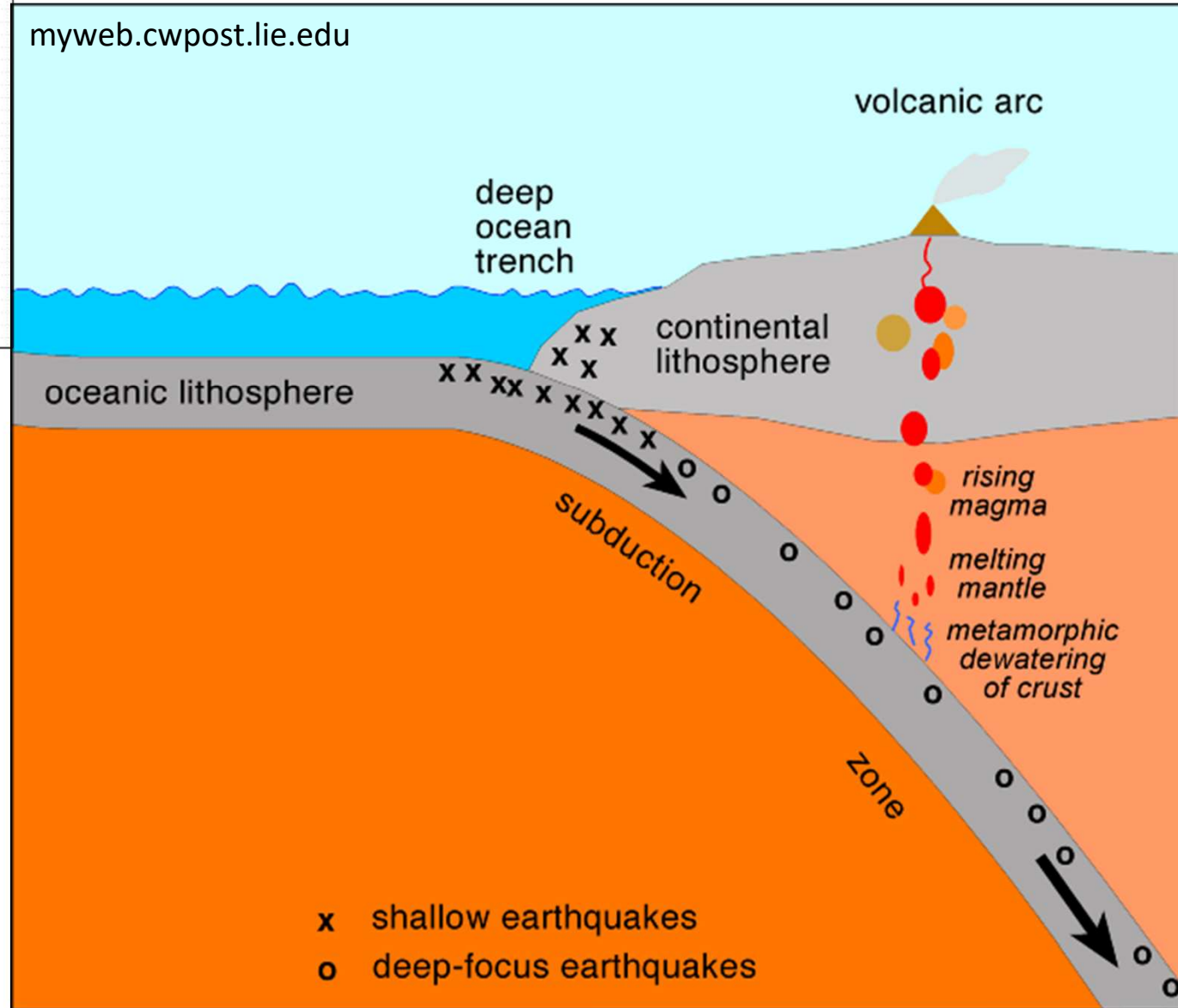
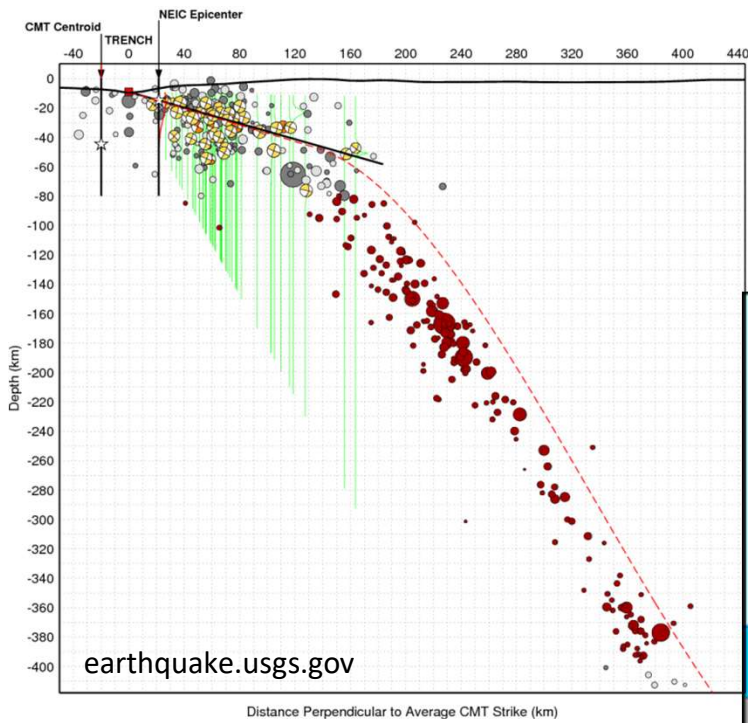








# Processo de subducção



# Processo de subducção

## FOSSA, ANDES, VULCÕES

