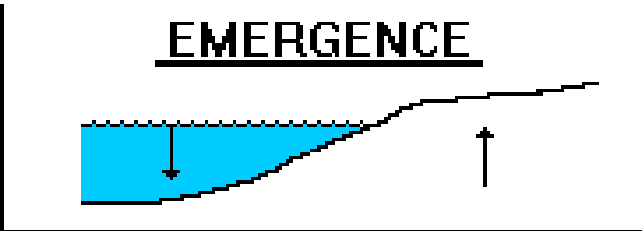
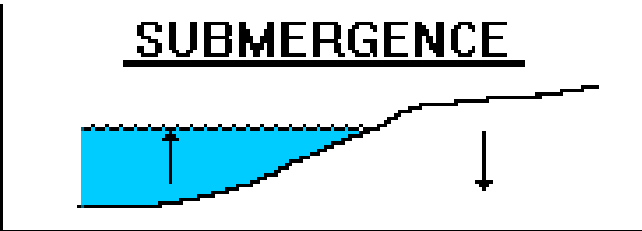
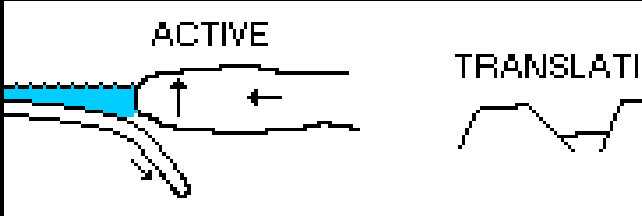
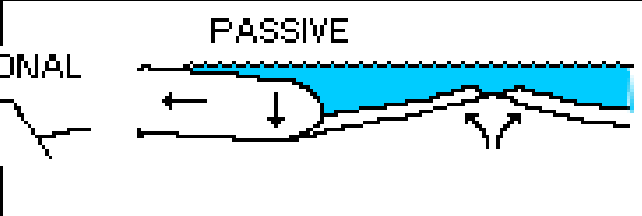
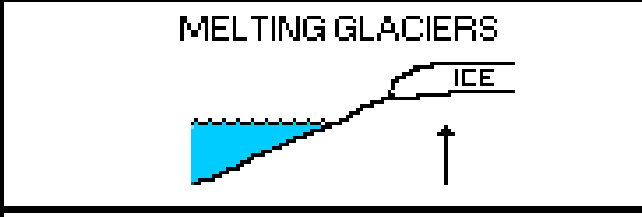
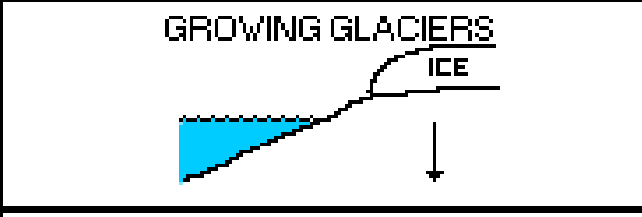
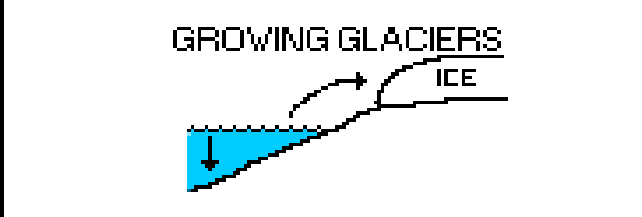
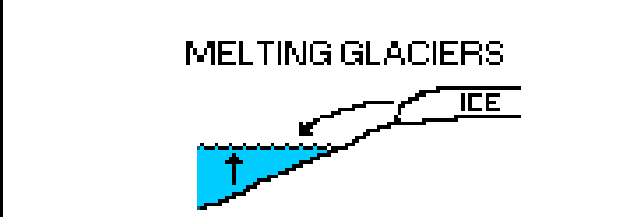


# Coast Types:

1. Emergent vs. Submergent
- ~~2. Primary vs. Secondary~~
3. Erosion vs. Deposition

		<u>EMERGENCE</u>	<u>SUBMERGENCE</u>
<b>CHANGES ON LAND</b> (effects are local)	<b>TECTONIC</b>	 <p>ACTIVE</p>	 <p>PASSIVE</p>
	<b>ISOSTATIC</b>	 <p>MELTING GLACIERS ICE</p>	 <p>GROWING GLACIERS ICE</p>
<b>CHANGES AT SEA</b> (effects are world-wide = eustatic)	<b>GLACIAL</b>	 <p>GROWING GLACIERS ICE</p>	 <p>MELTING GLACIERS ICE</p>
	<b>SEA FLOOR SPREADING</b>	 <p>SLOW SEA FLOOR SPREADING</p>	 <p>RAPID SEA FLOOR SPREADING</p>

**EROSION**





# HYDRAULIC ACTION



**Verin**  
**BIG RED JACKS**  
**30-TON HYDRAULIC JACK**  
**⚠ WARNING!**  
Read-**STUDY** and understand all warning and operating instructions prior to use. This is a lifting device only. The load must be supported immediately by other appropriate means. **DO NOT OVERLOAD** this jack beyond its rated capacity. This jack is designed for use on hard level surfaces only. Failure to heed these warnings may result in damage to jack and/or failure resulting in personal injury or property damage. Inspect before each use.

**ANSI/ASME**  
SAE J1913-1  
SAE J1913-2  
SAE J1913-3  
SAE J1913-4  
SAE J1913-5  
SAE J1913-6  
SAE J1913-7  
SAE J1913-8  
SAE J1913-9  
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SAE J1913-98  
SAE J1913-99  
SAE J1913-100

# ABRASIVES





**ABRASIVES  
UNDERCUT**

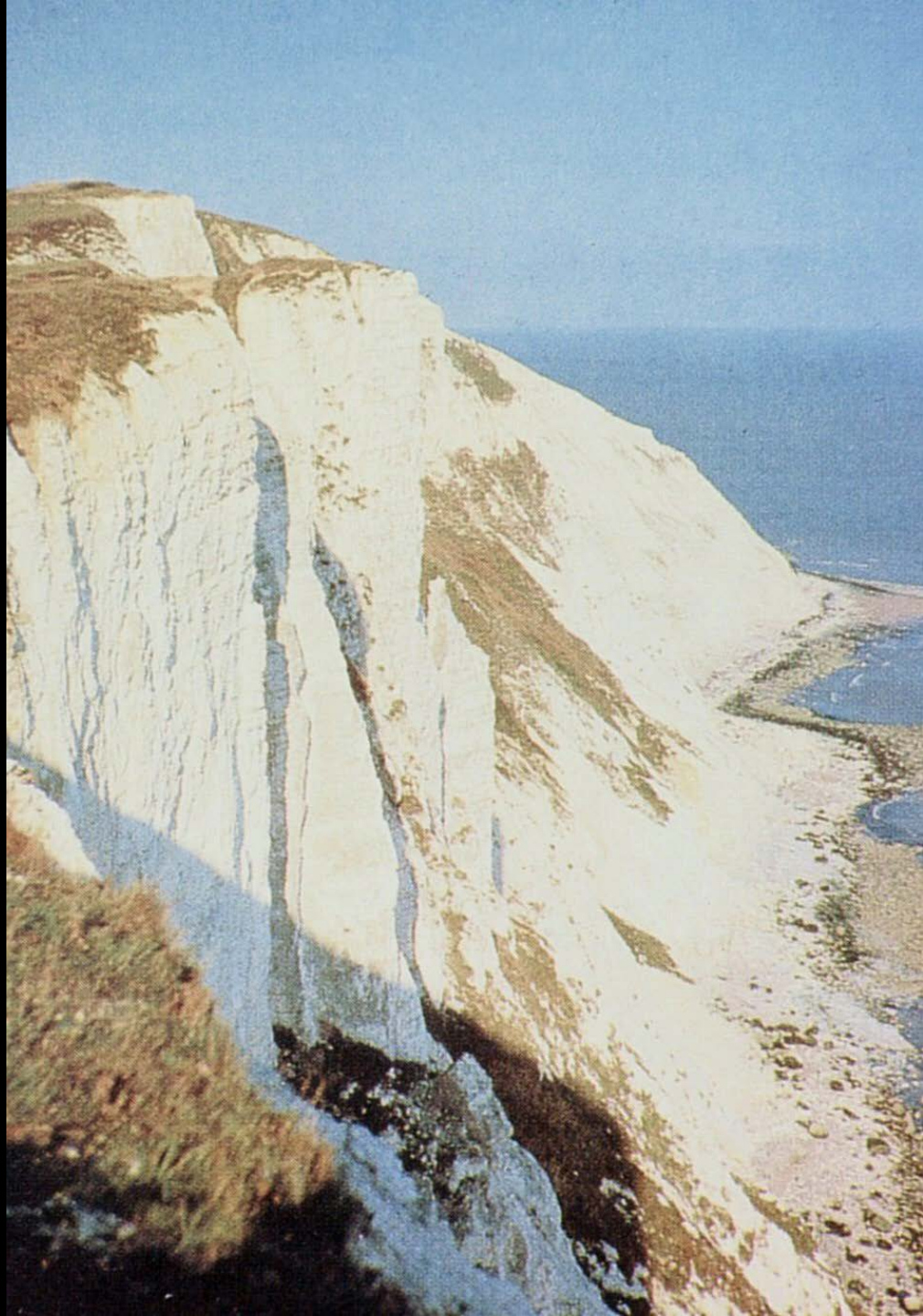


# UNDERCUT COASTS COLLAPSE TO FORM CLIFFS

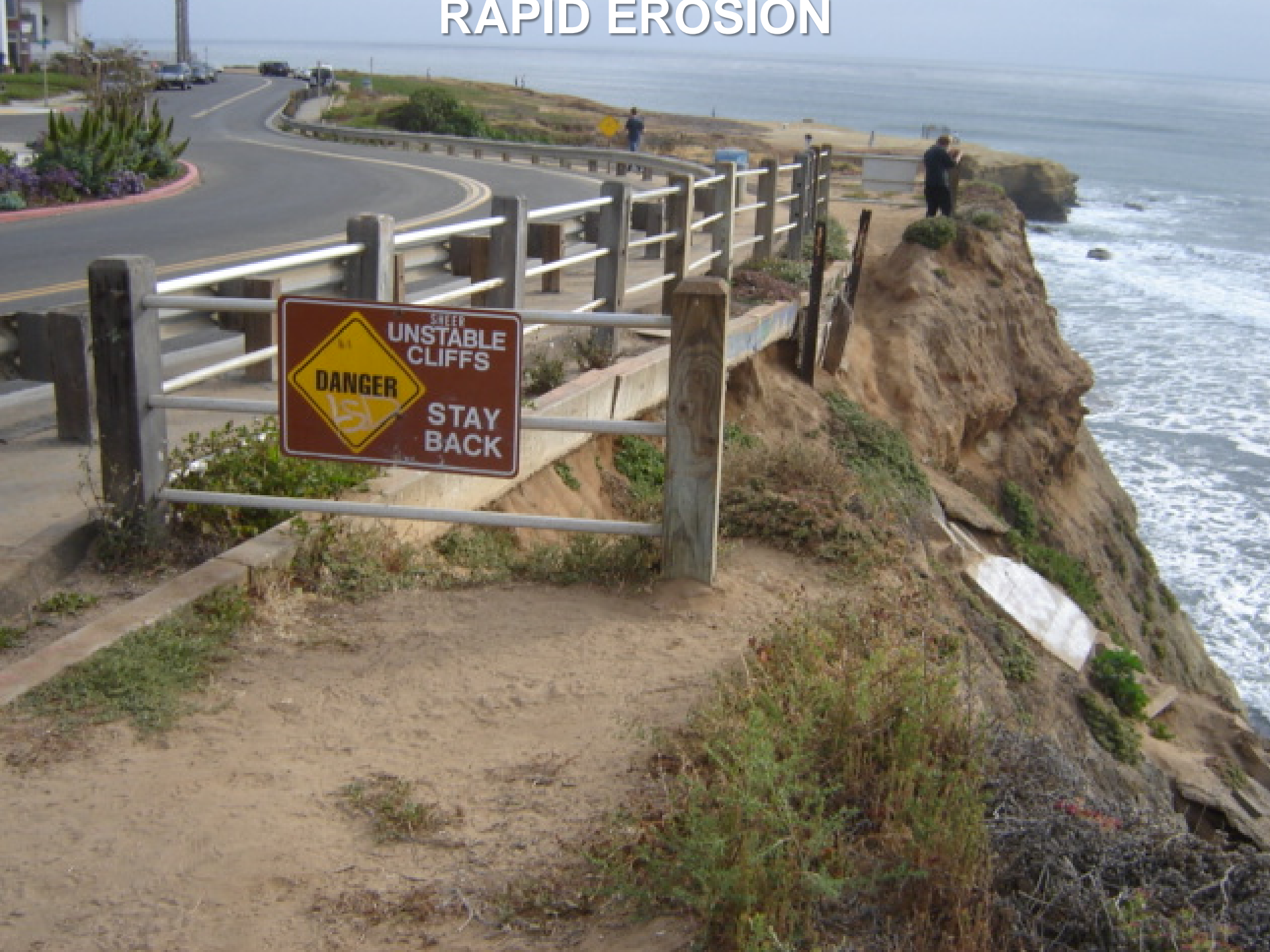


# SOLUTION





# RAPID EROSION

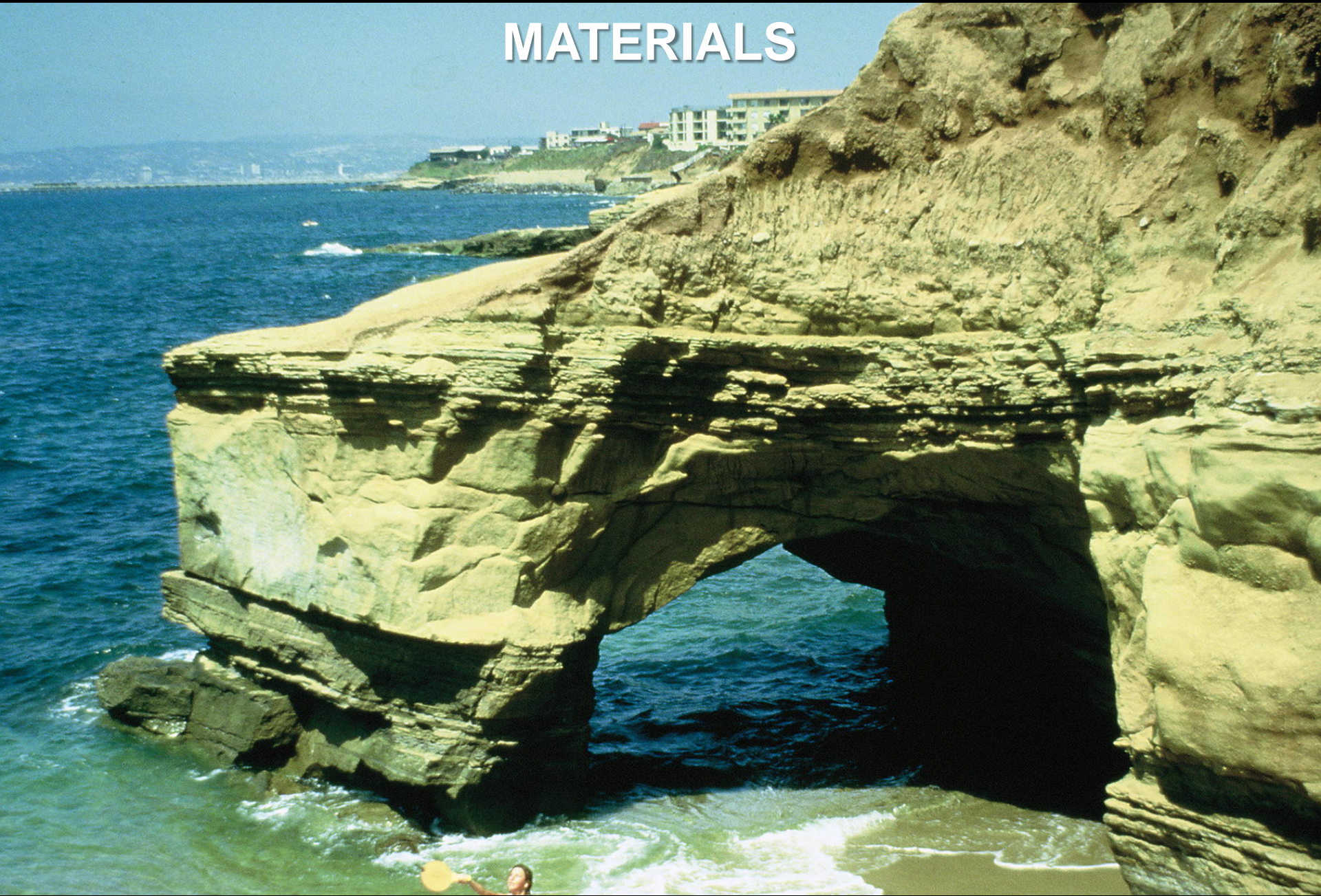


**SHEEP**  
**UNSTABLE**  
**CLIFFS**

**DANGER**  
15

**STAY**  
**BACK**

# MATERIALS



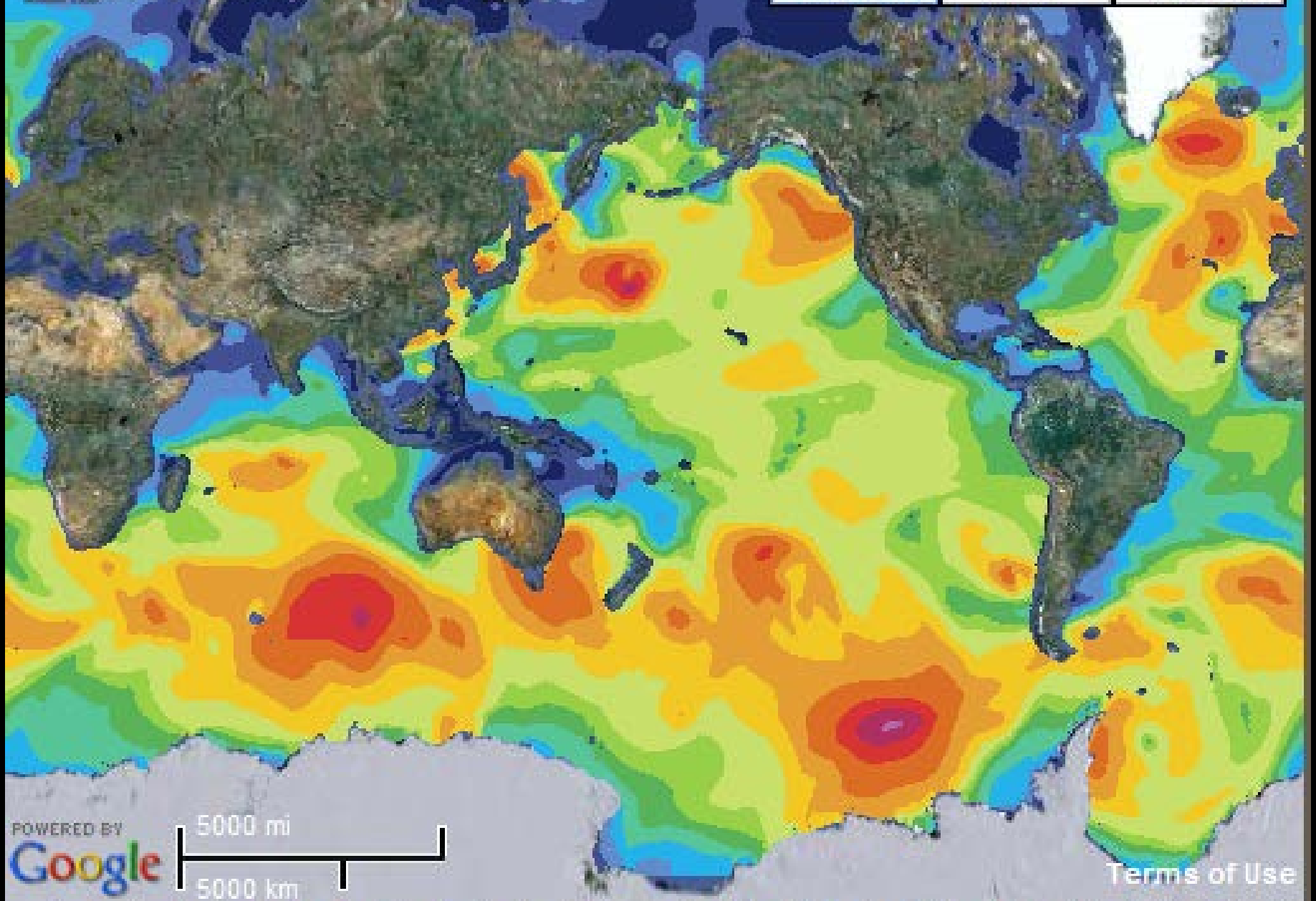


# FETCH

Satellite

Road

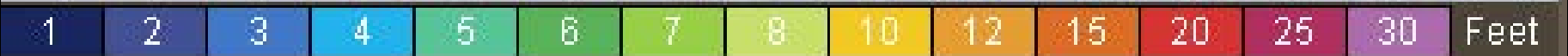
Terrain



POWERED BY  
**Google**

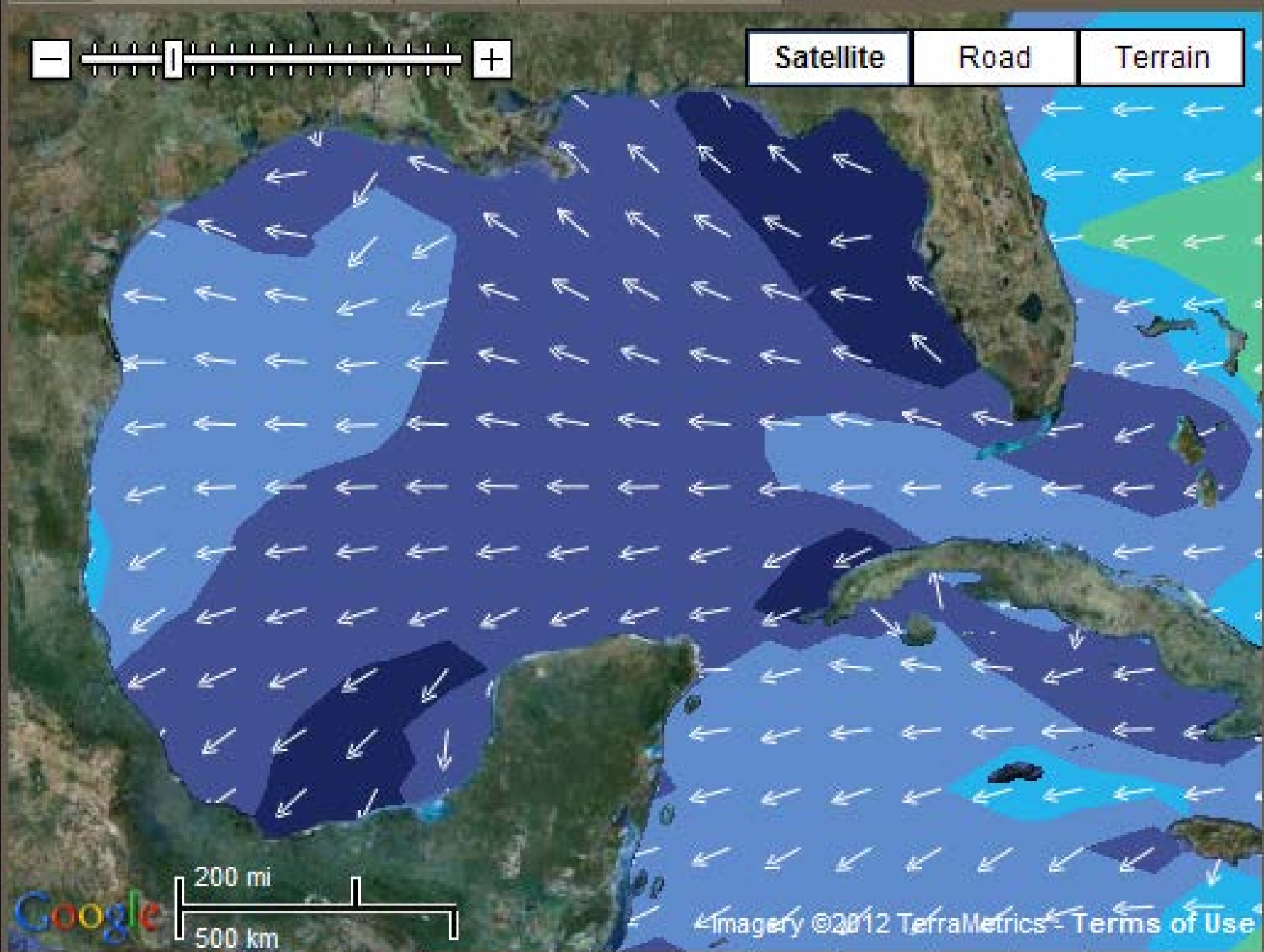


[Terms of Use](#)





Satellite Road Terrain



200 mi  
500 km

Google

Imagery ©2012 TerraMetrics - Terms of Use

1 2 3 4 5 6 7 8 10 12 15 20 25 30 Feet

# TIDAL RANGE (less is more)





## Effects of Wave Erosion

- a. Differential erosion
- b. Coastal straightening
- c. Leveling



**Differential Erosion**





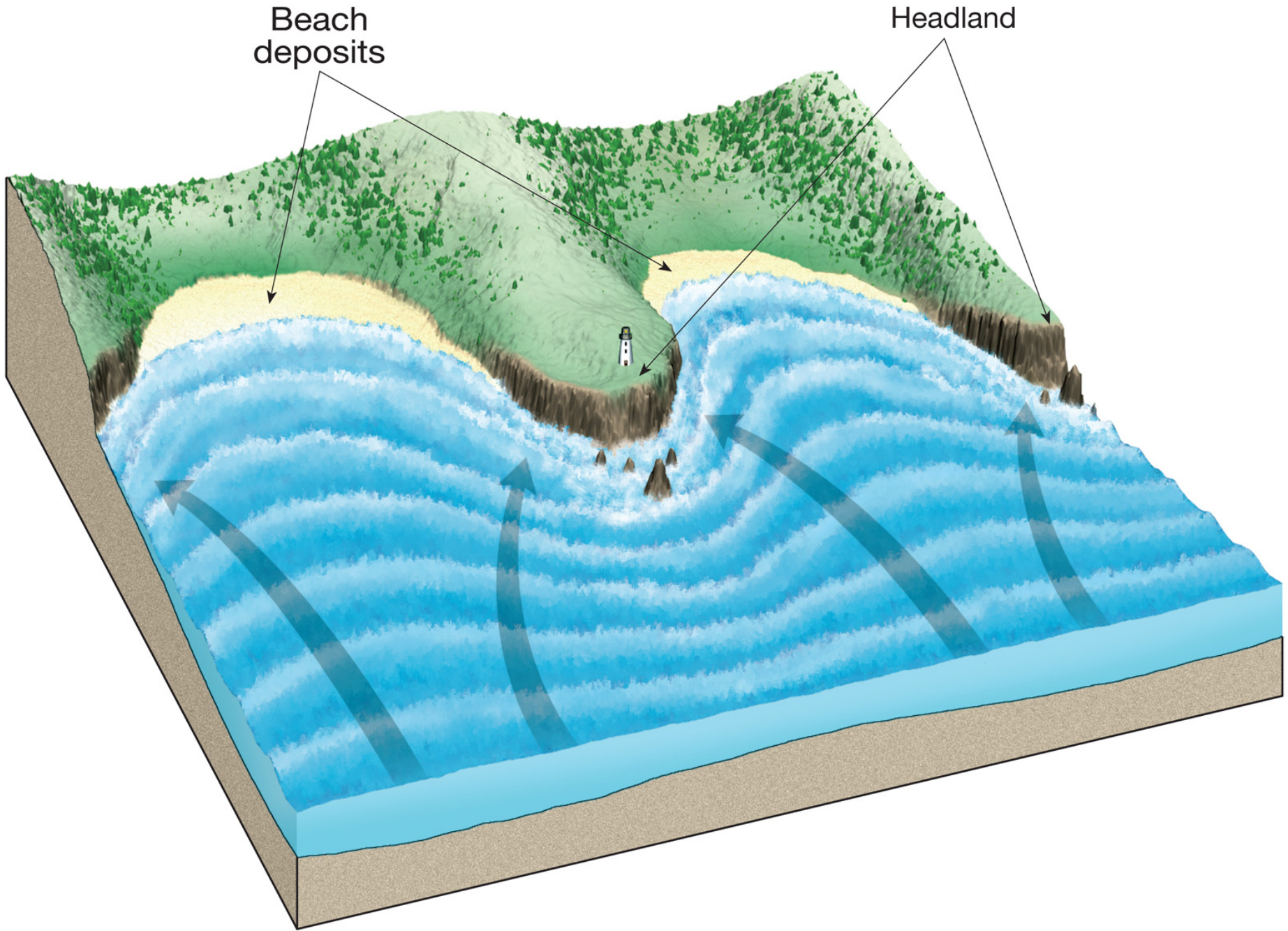




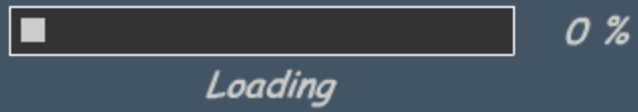
# Coastal Straightening



Figure 13.8

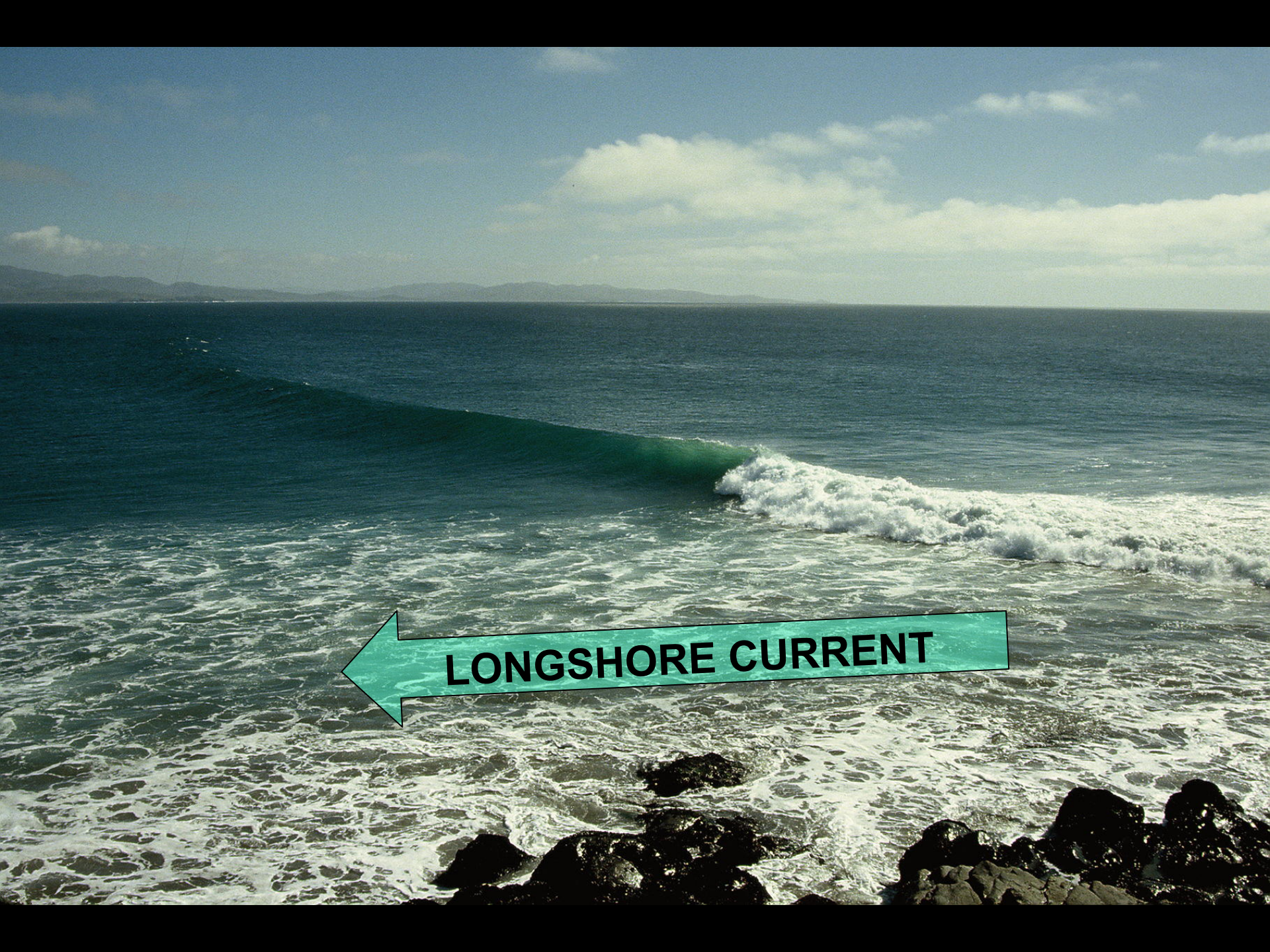












**LONGSHORE CURRENT**





















Figure 13.10

# Leveling

Wave-cut  
platform

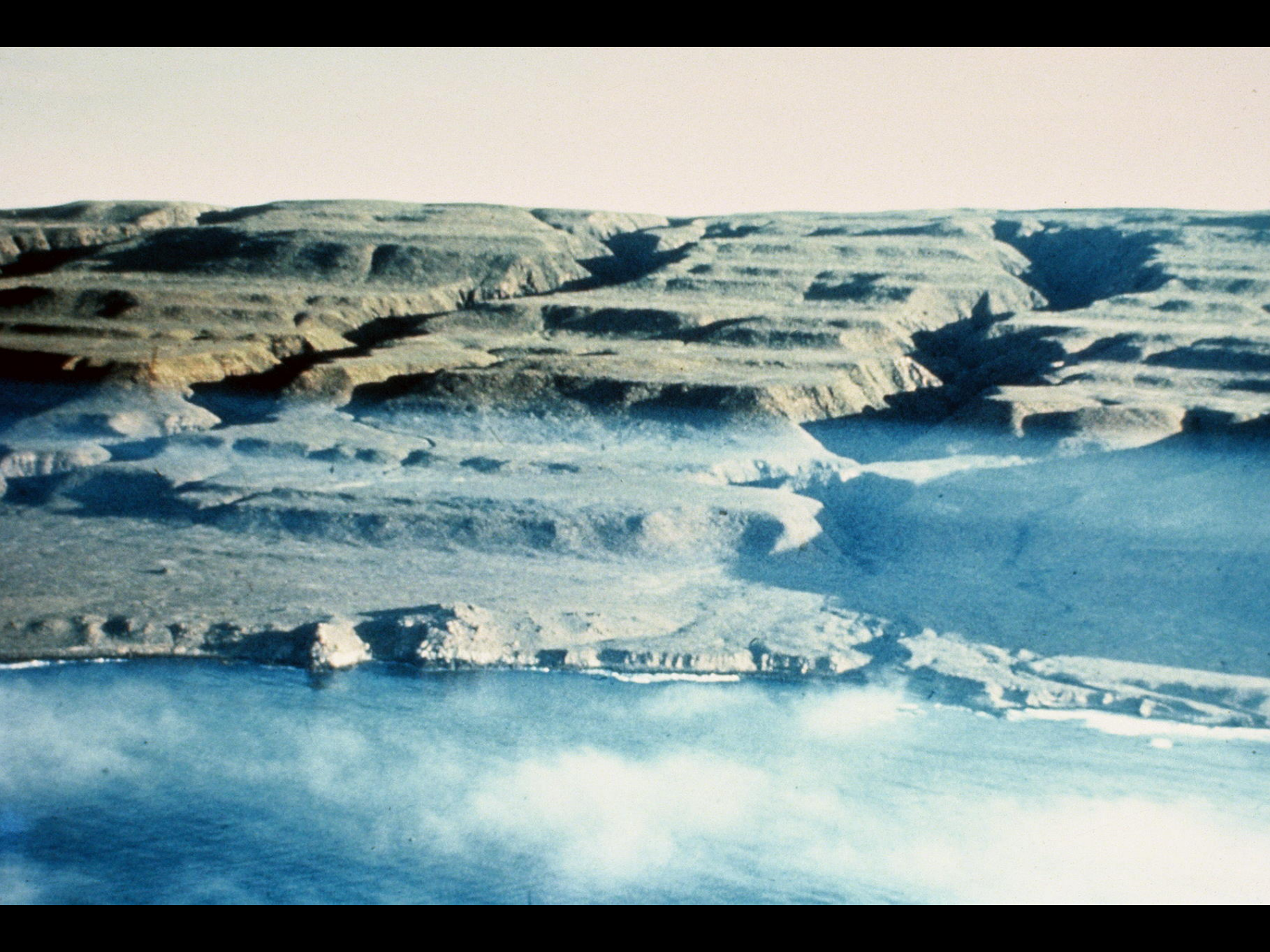
Marine terrace













# DEPOSITION

# Sources of Sediment

## 1. local













# Sources of Sediment

1. Local
2. Rivers



**Transportation of  
Sediment is  
“Longshore Drift”  
(= longshore transport)**



# Longshore Transport has 2 Components

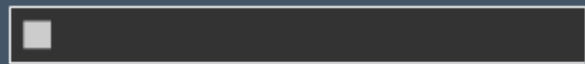


Longshore  
Current

# Longshore Transport has 2 Components



**Beach Face**



0 %

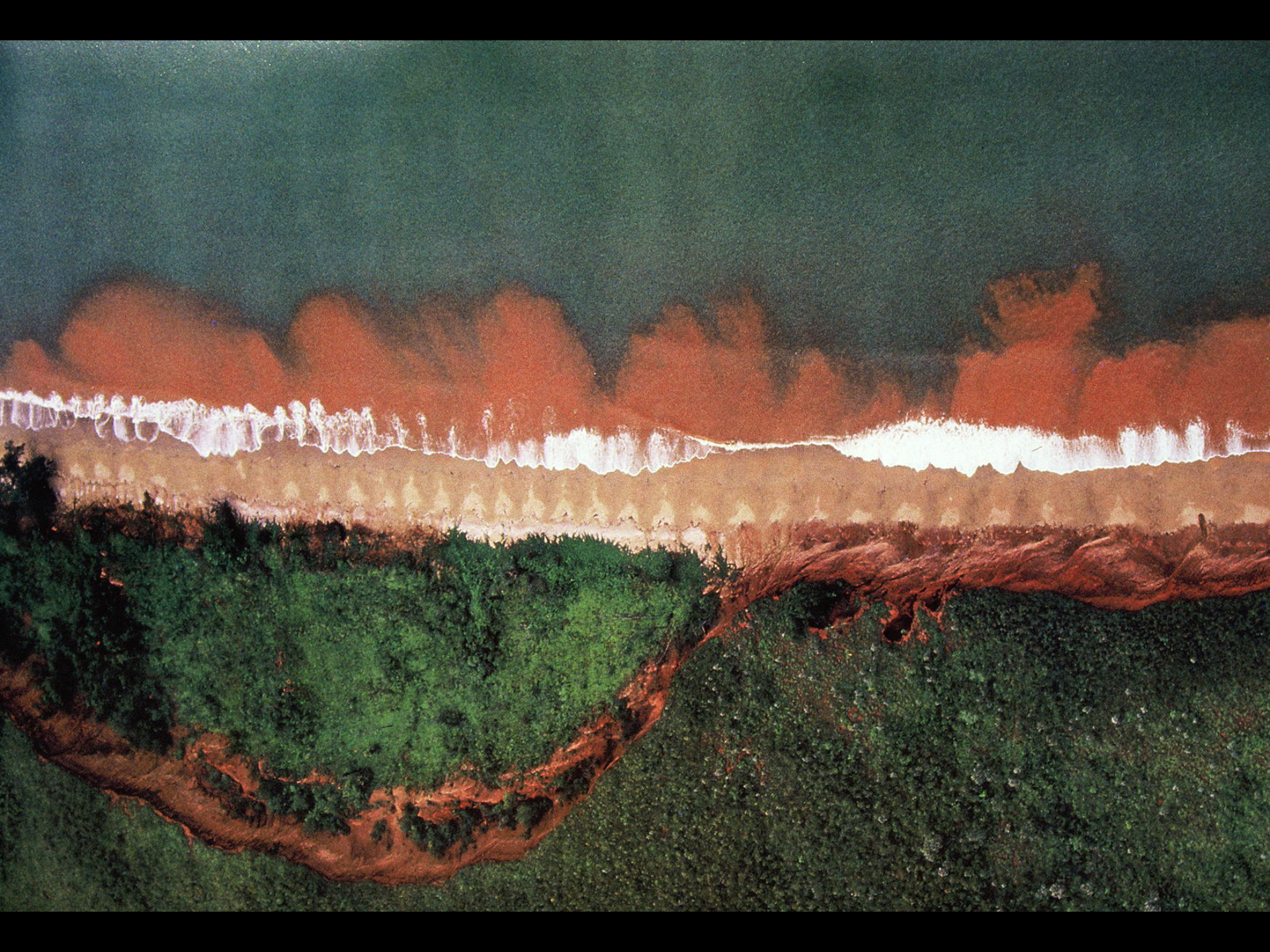
*Loading*



# Deposition of Sediment



**Beaches**









**Spit**







# Baymouth Bars















South San Diego Bay

San Diego Bay

Crown Cove

Emory Channel

Telegraph Canyon

Imperial Beach

Oneonta Slough

National City

Chula Vista

Otay Valley

Highland Reservoir (historical)

Judson Reservoir (historical)

Bonita



Image © 2006 DigitalGlobe  
Image © 2006 TerraMetrics  
© 2006 Europa Technologies

© 2005 Google



Horseshoe Cove

Salmon Creek

Bodega Bay

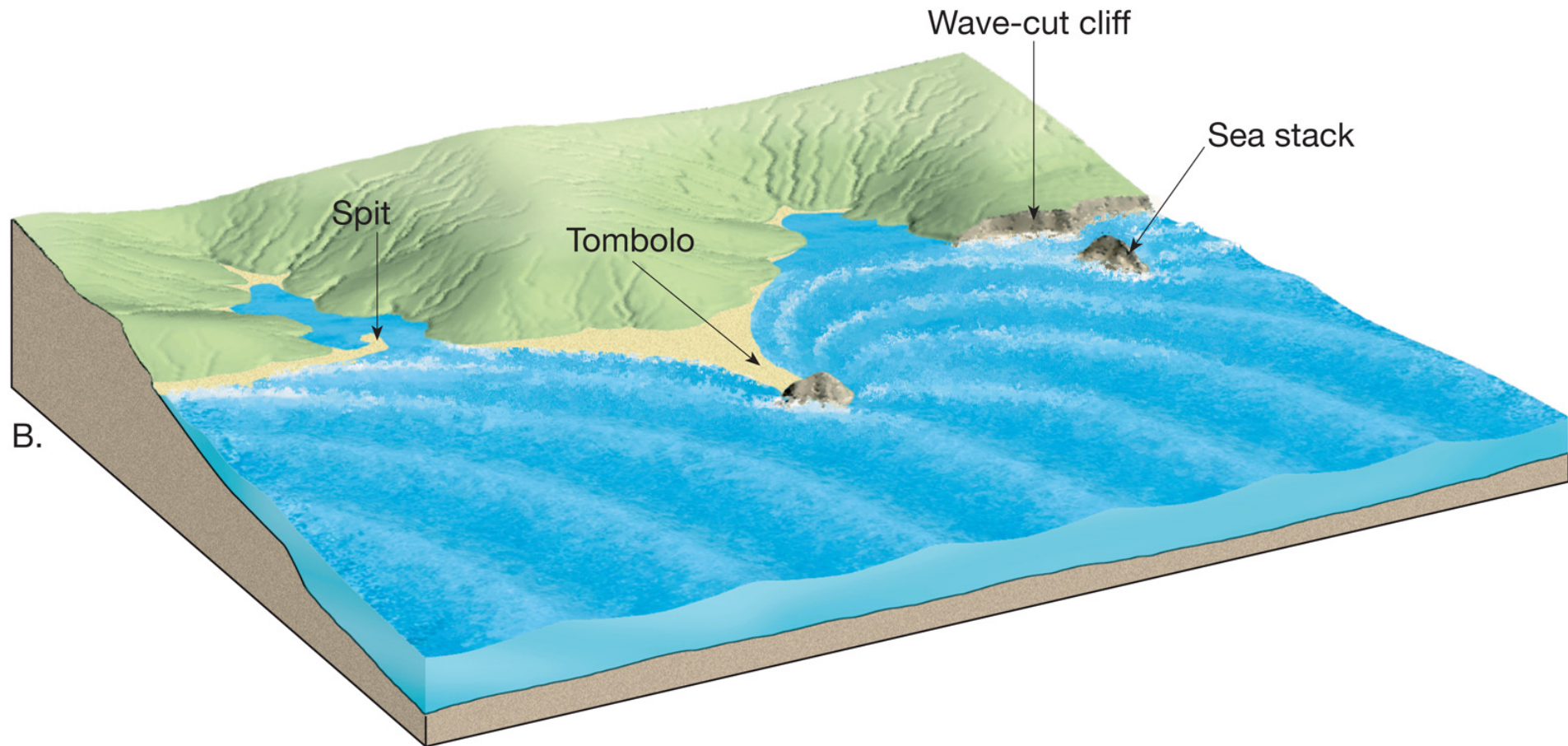
Campbell Cove

Bodega Rock

© 2014 Google  
Data SIO, NOAA, U.S. Navy, NGA, GEBCO

Data CSUMB SFML, CA OPC

Figure 13.14b (left)



Copyright © 2006 Pearson Prentice Hall, Inc.





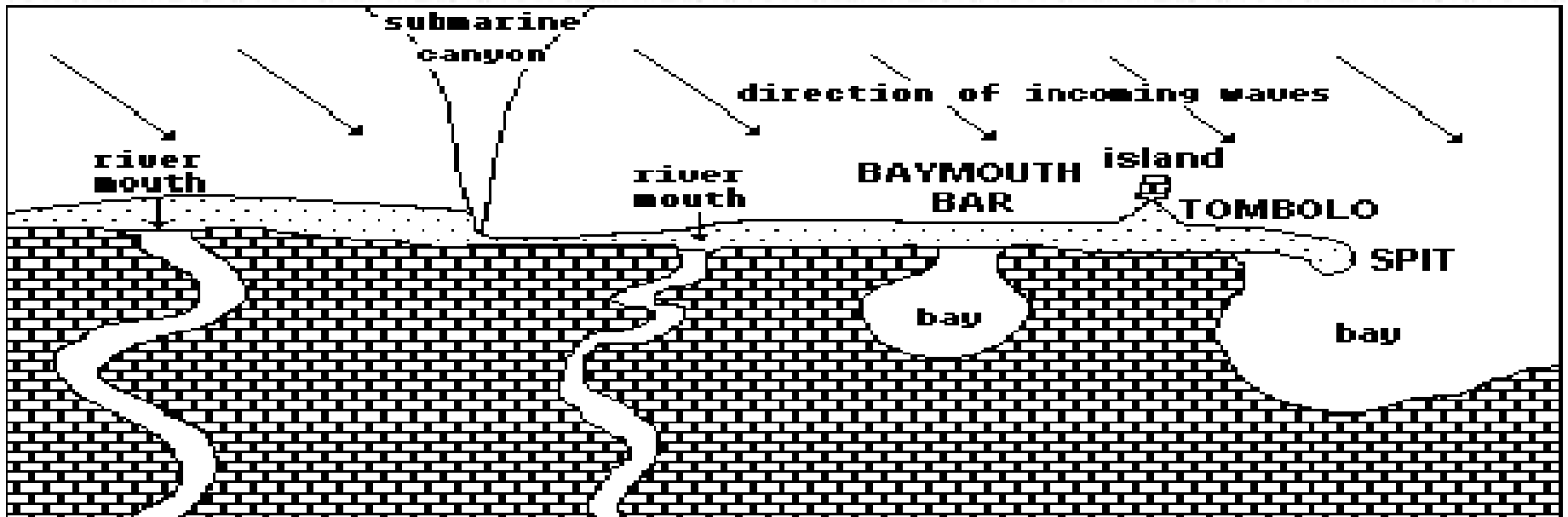










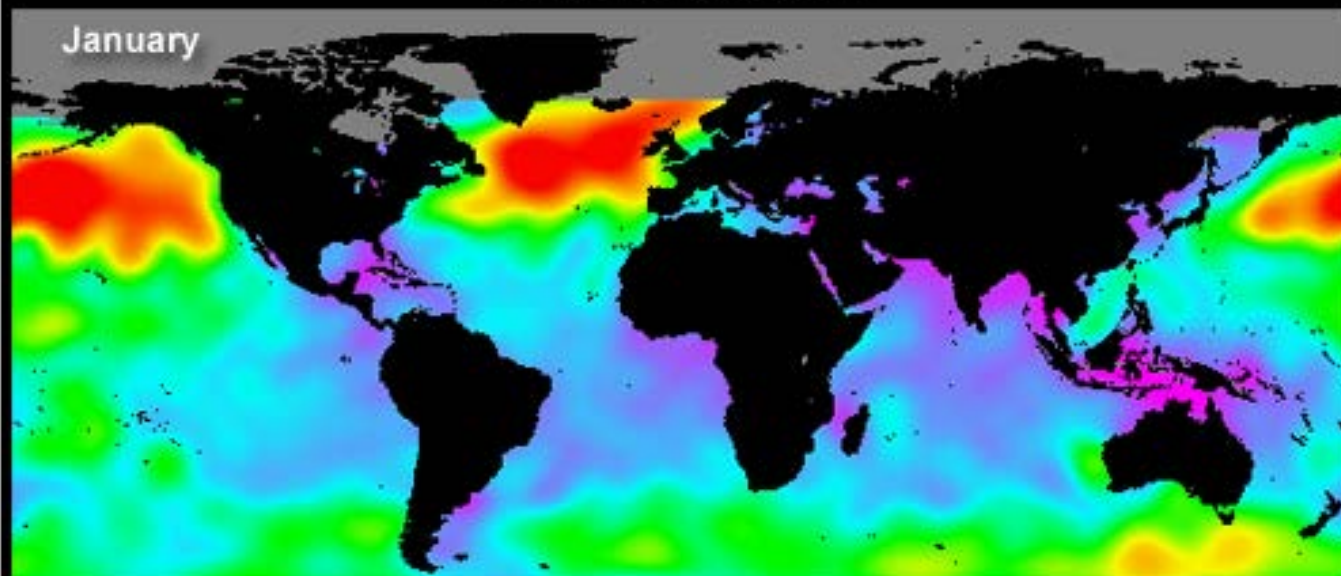


# Seasonal changes

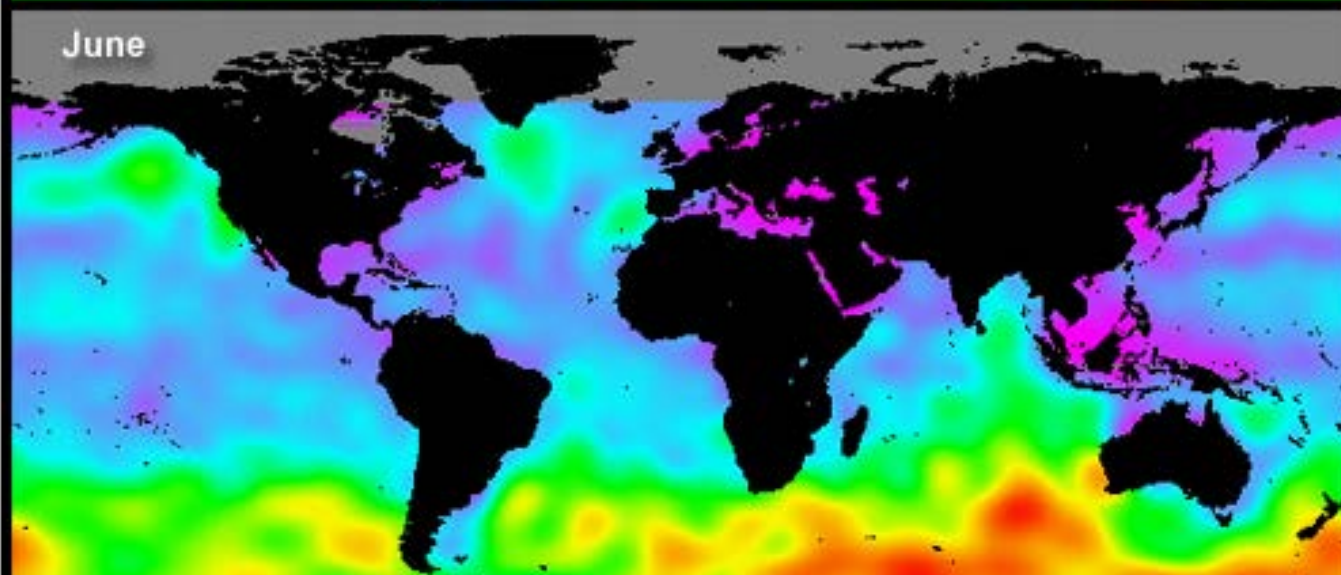


Significant wave height as measured by Topex-Poseidon  
Winter vs. summer 1995

January

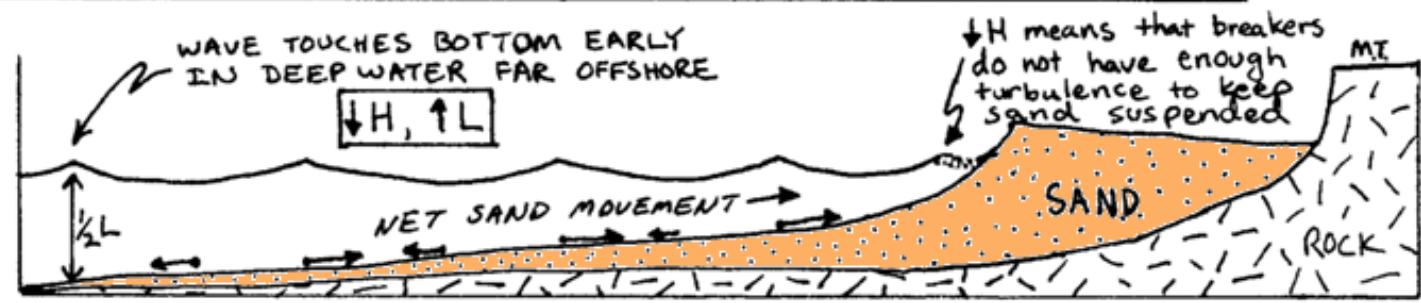


June

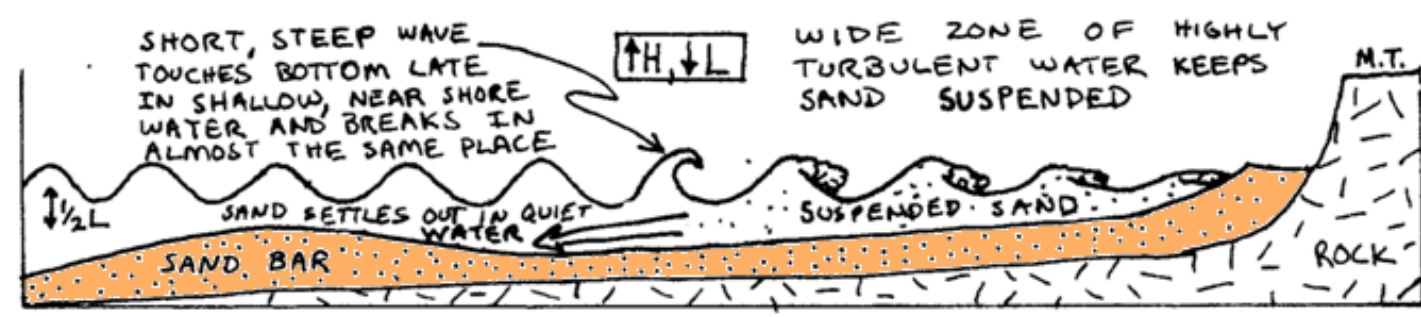


# SAND TRANSPORT PERPENDICULAR TO SHORE:

Summer



Winter





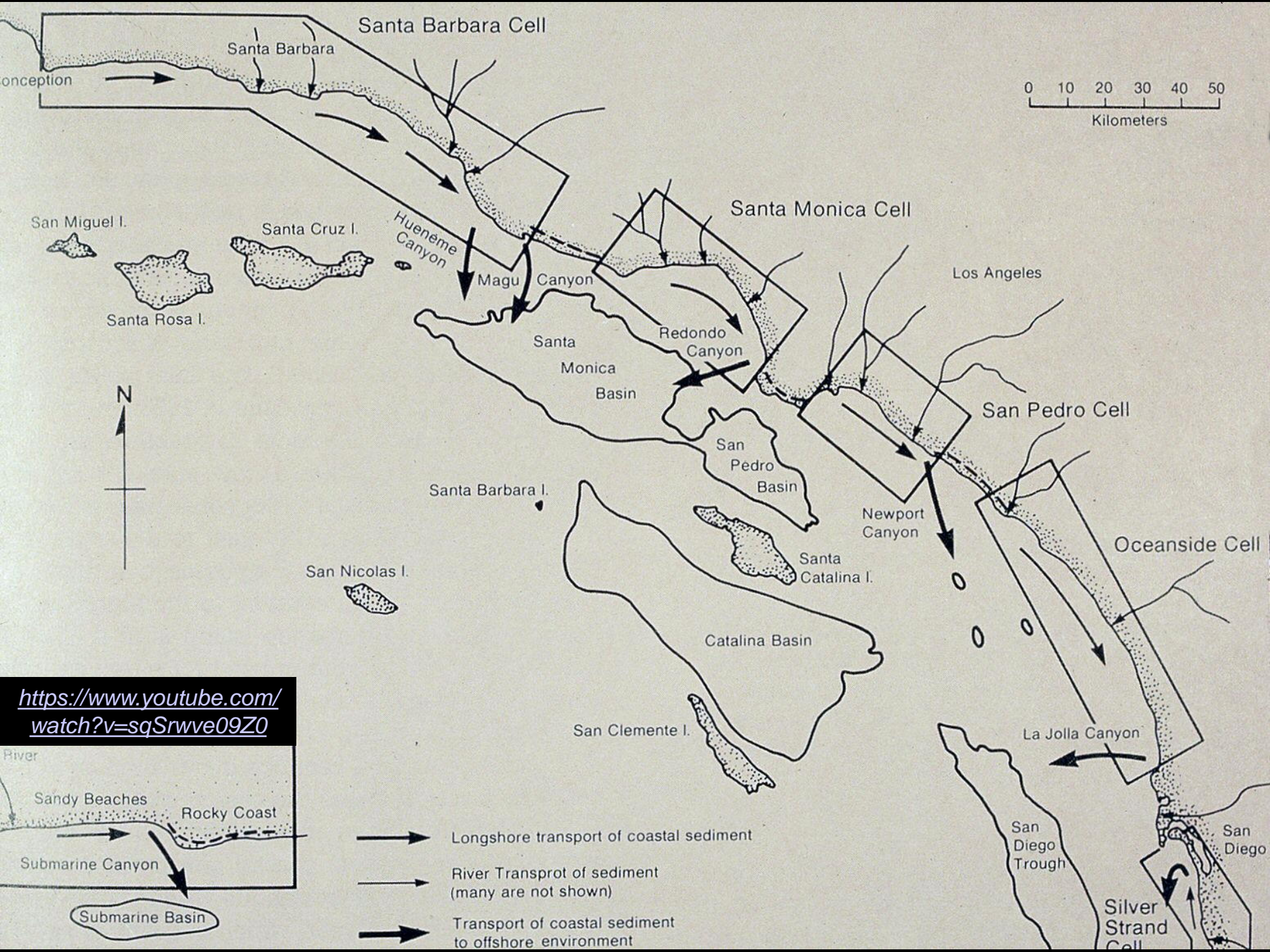












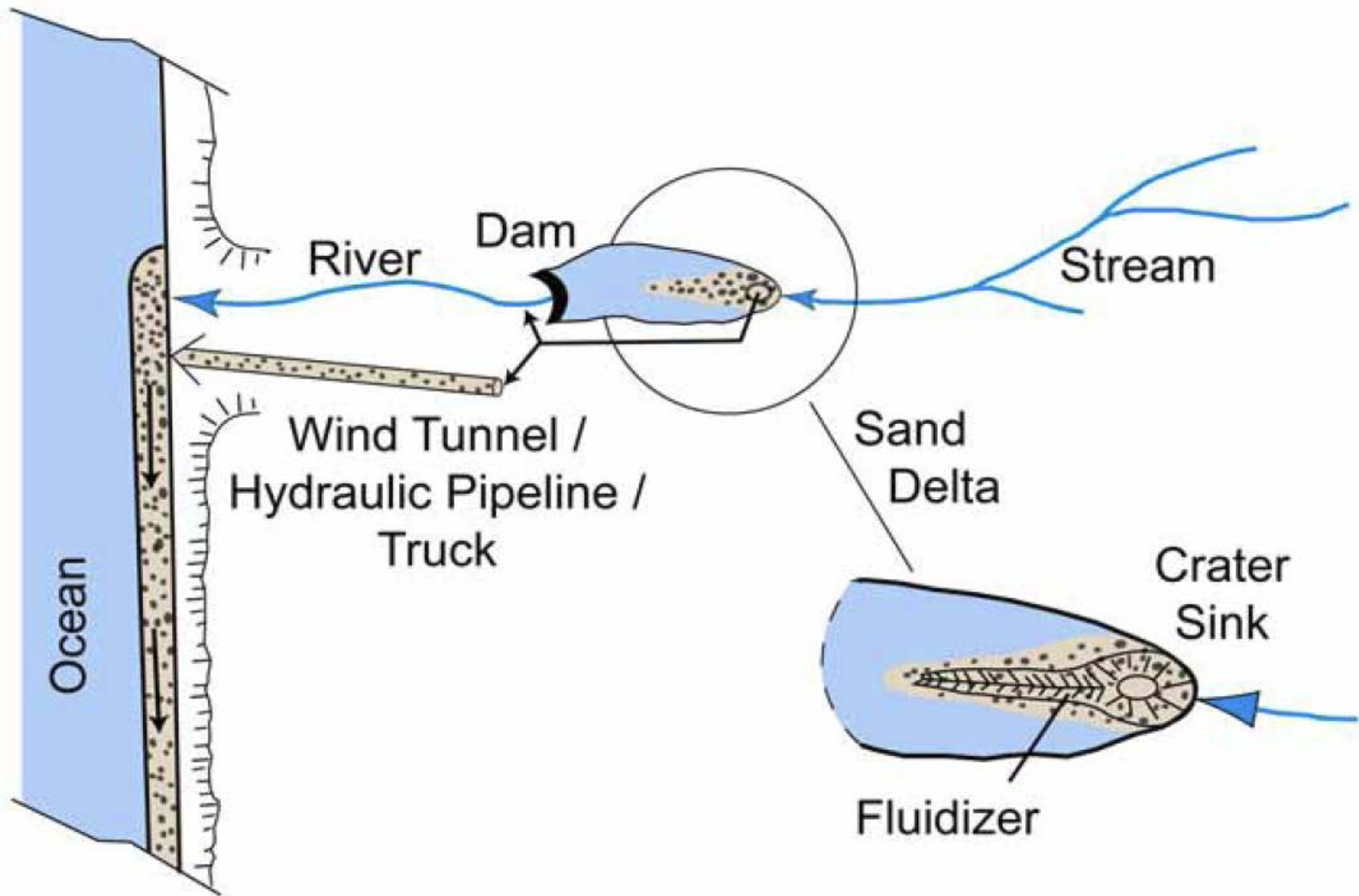






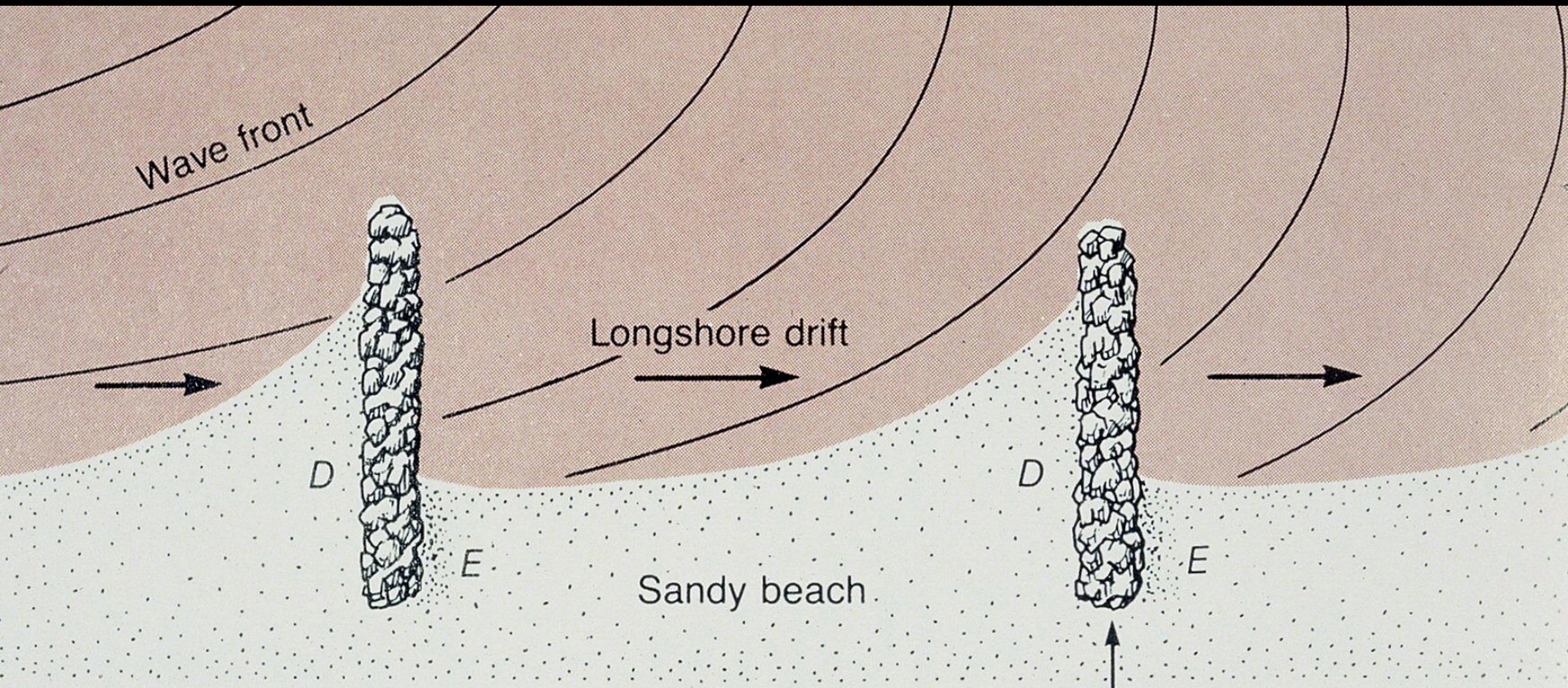






Schematic of a dam bypass system [after Inman, 1989].





D = Deposition, wide beach

E = Erosion, narrow beach

Beach groin, barrier to longshore drift, constructed of large rock blocks or other materials



Figure 13.15



Figure 13.18a



A.

Figure 13.18b



B.



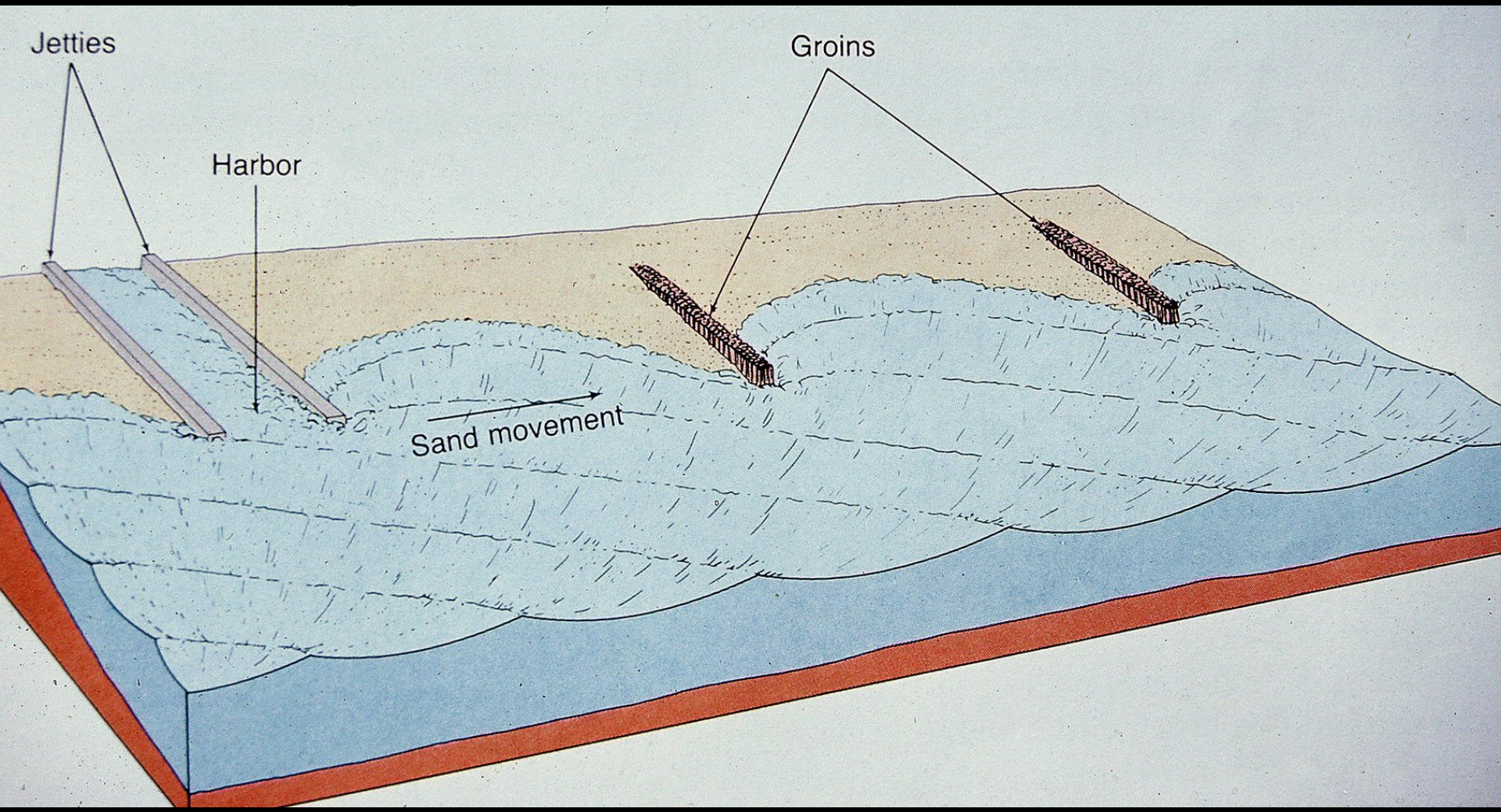


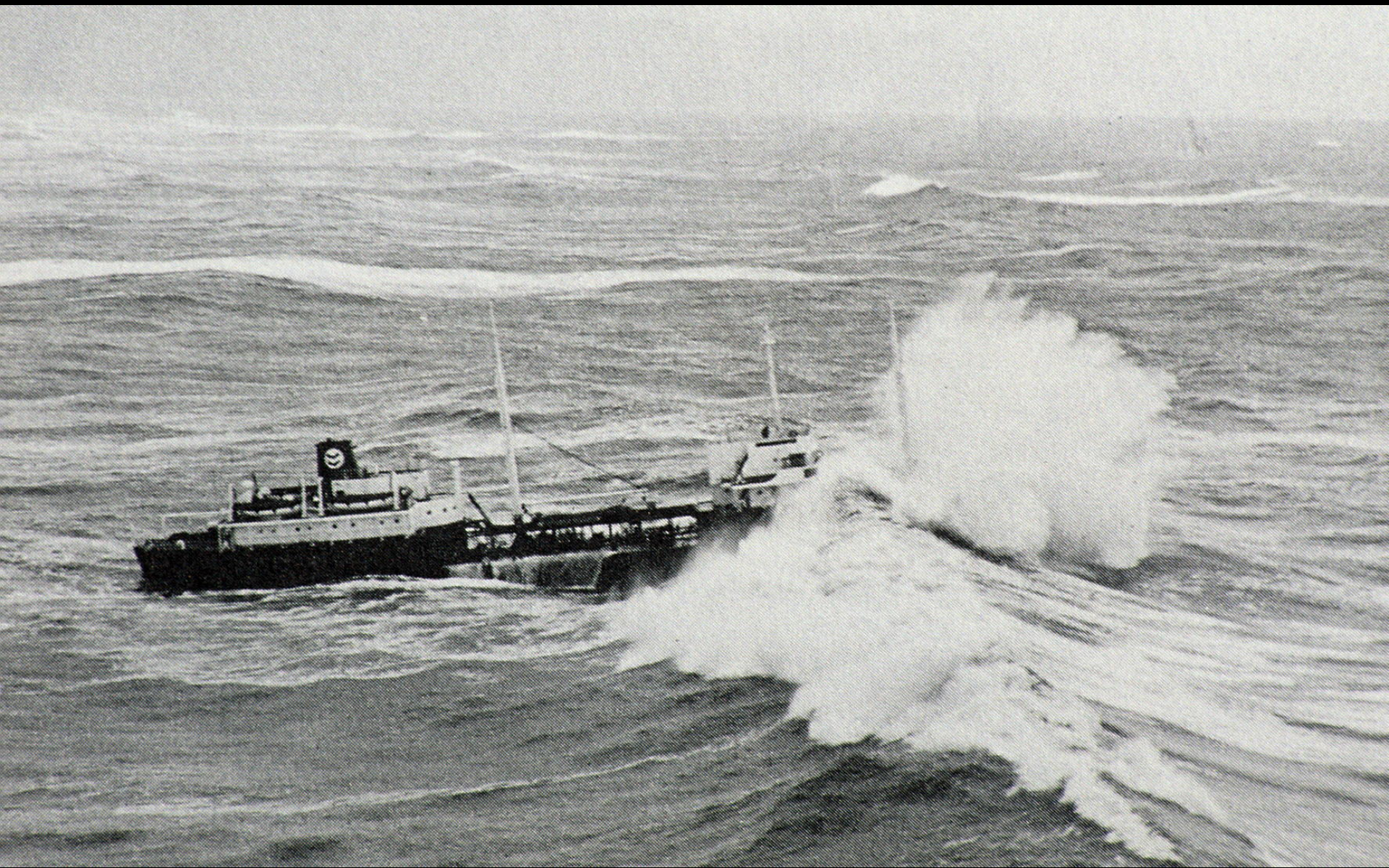
Jetties

Groins

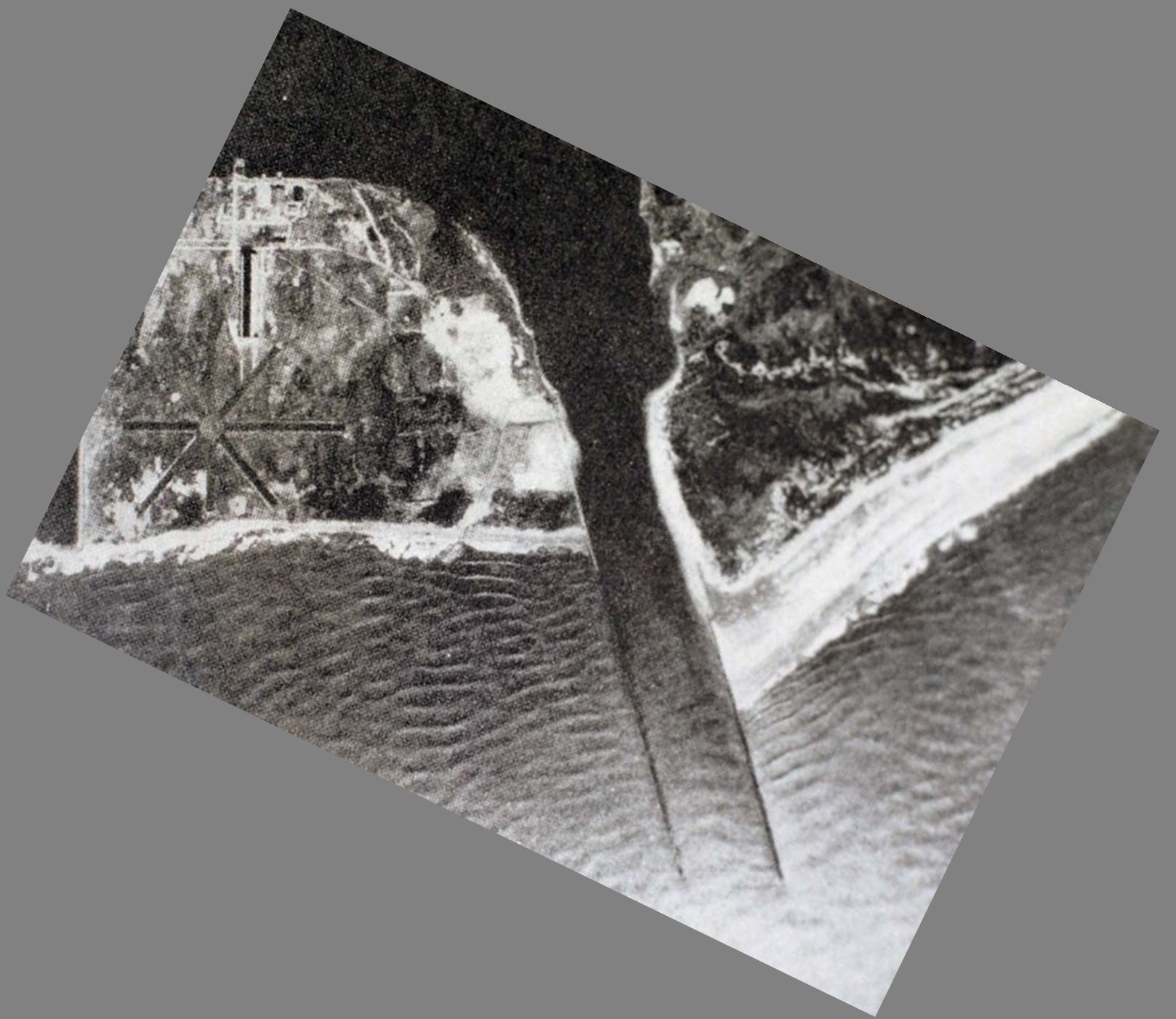
Harbor

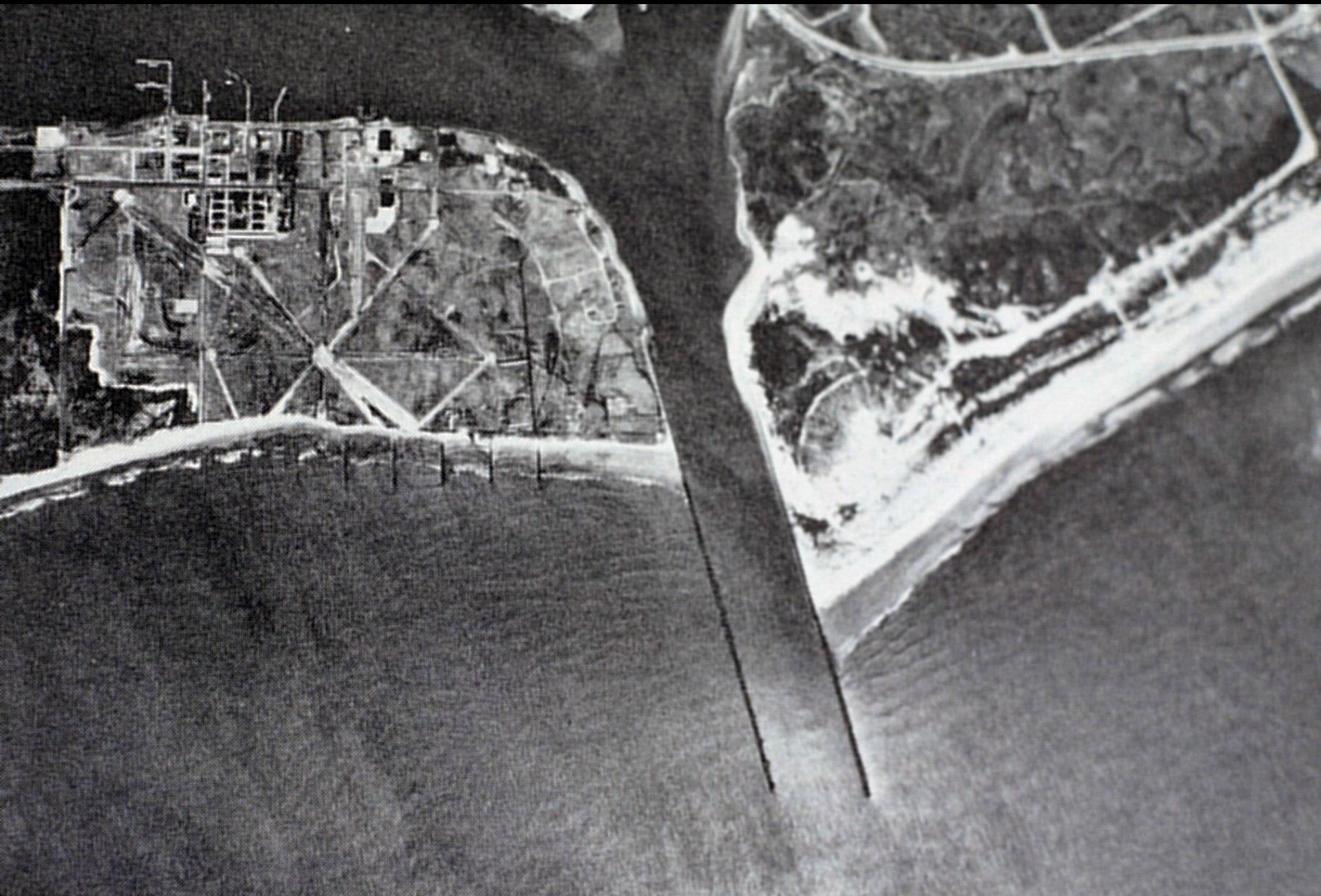
Sand movement





















Map

Satellite

Hybrid



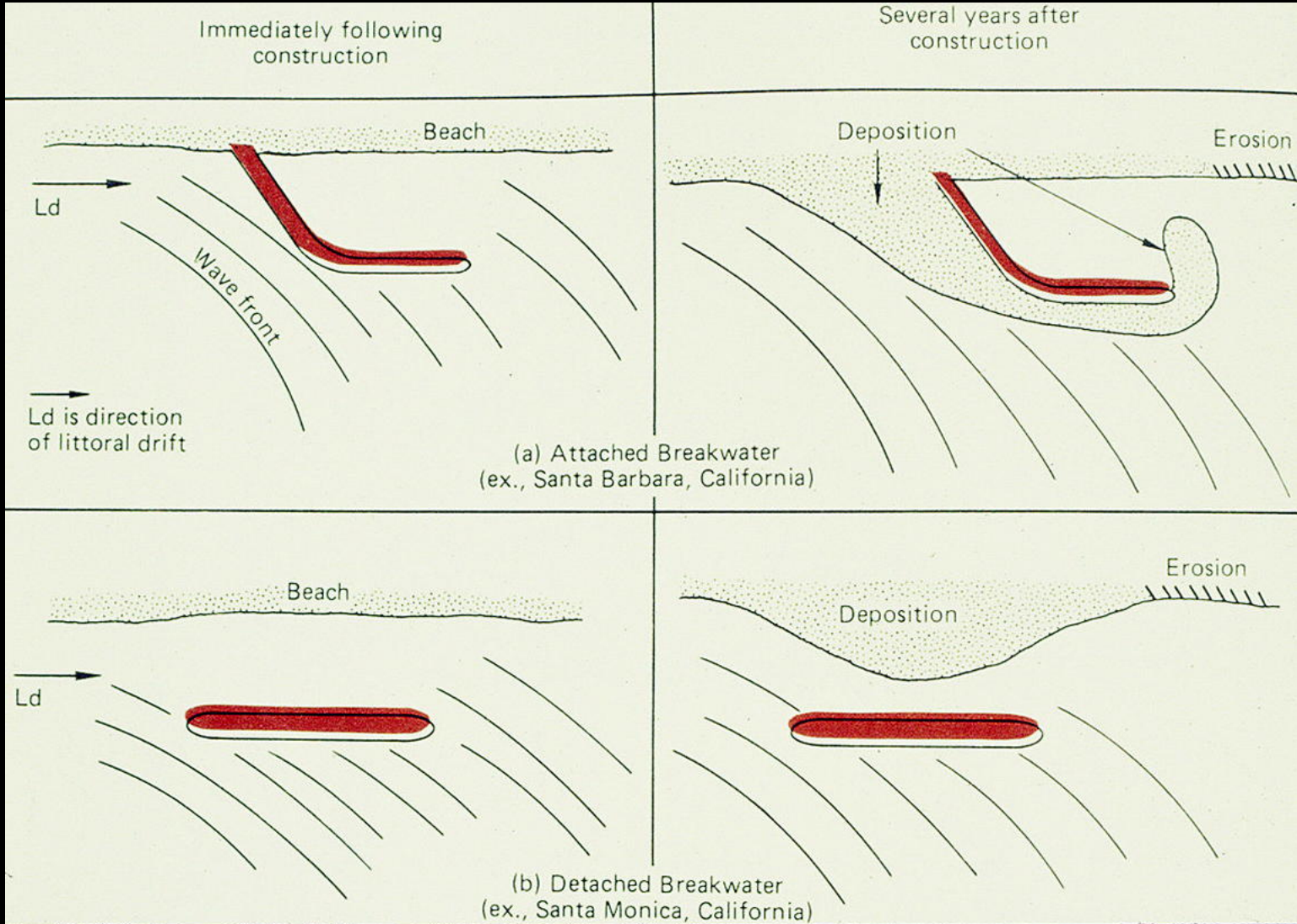
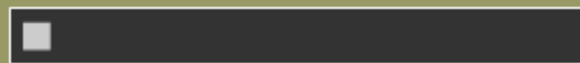


Figure 13.16







0 %

*Loading*

