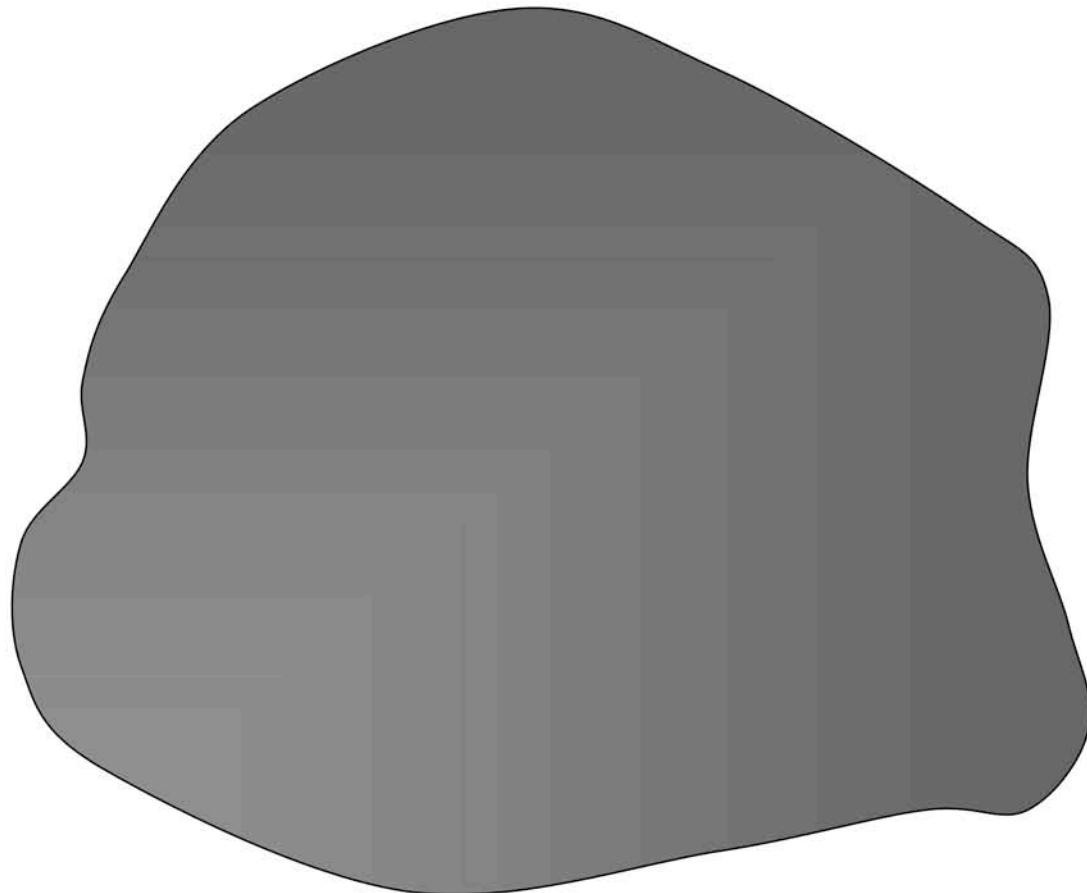




***Every Rock Tells a Story...***







**1850's:** Miners found **GOLD** in rivers.

**Today:** We can find **GOLD** in rocks that were deposited by ancient rivers that have dried up.

**???**: How do we recognize rocks that formed in rivers?





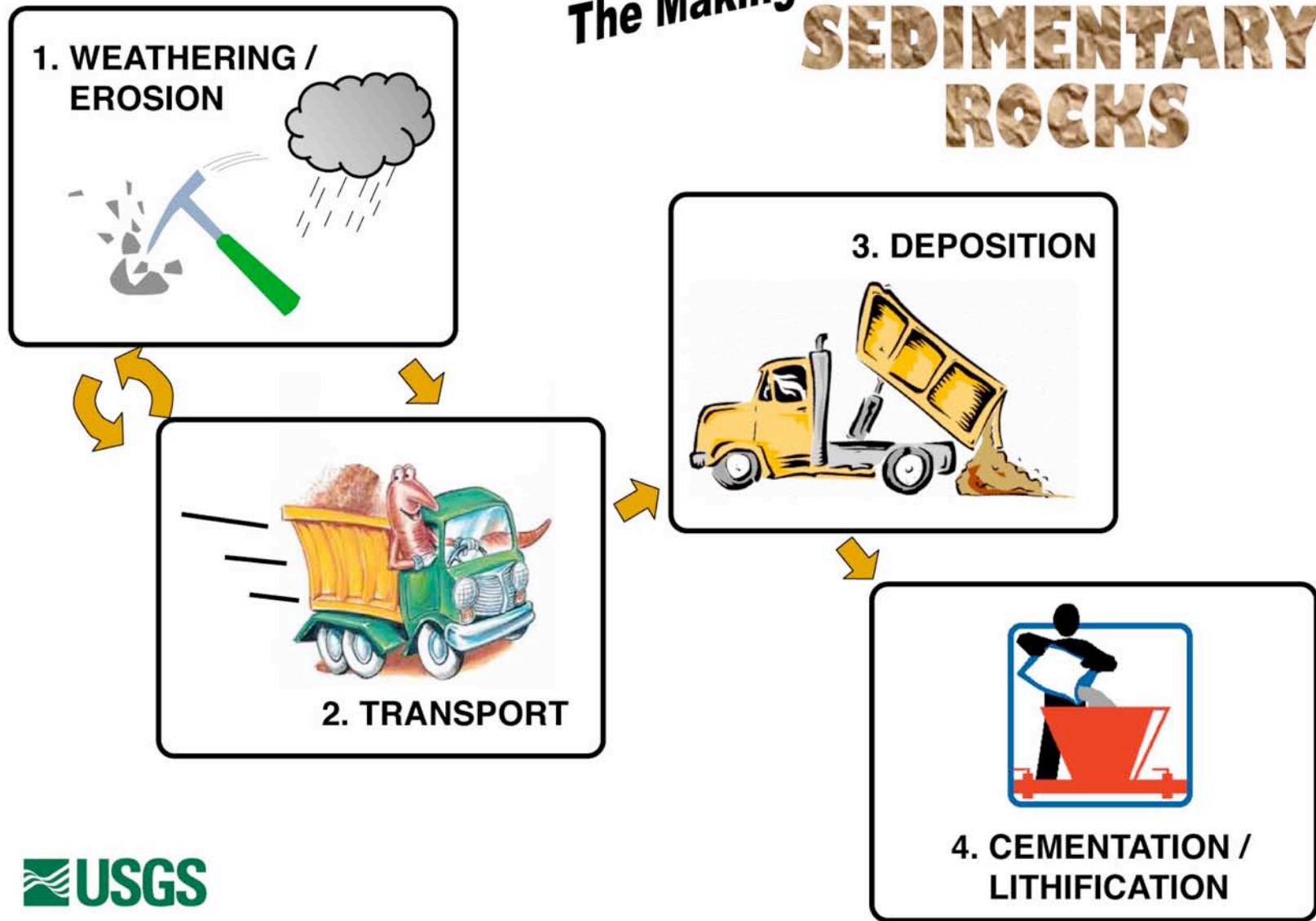
How are these rocks different from one another?  
How are they similar?





Images From: USGS / US House of Representatives  
<http://resourcescommittee.house.gov/subcommittees/emr/usgsweb/frames/main.html>

# The Making Of **SEDIMENTARY ROCKS**

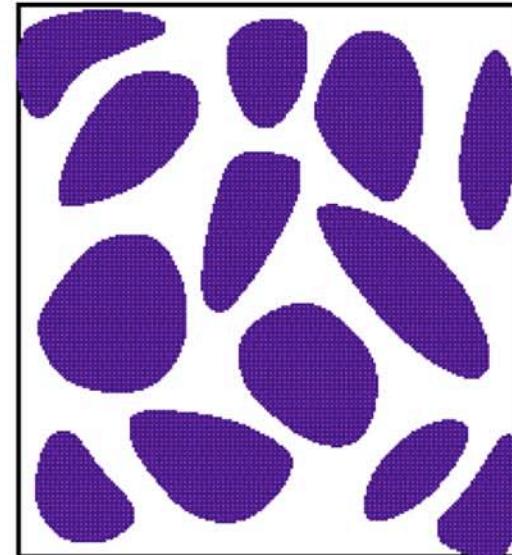




**ANGULAR**



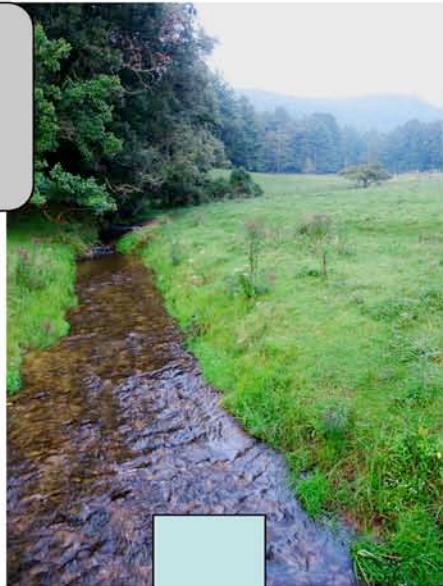
**MEDIUM**



**ROUNDED**

**More Mechanical Weathering**

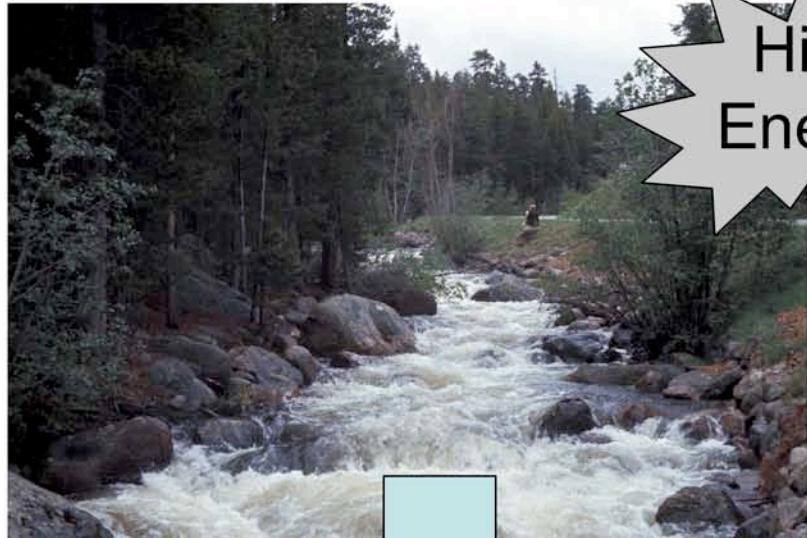
low  
energy



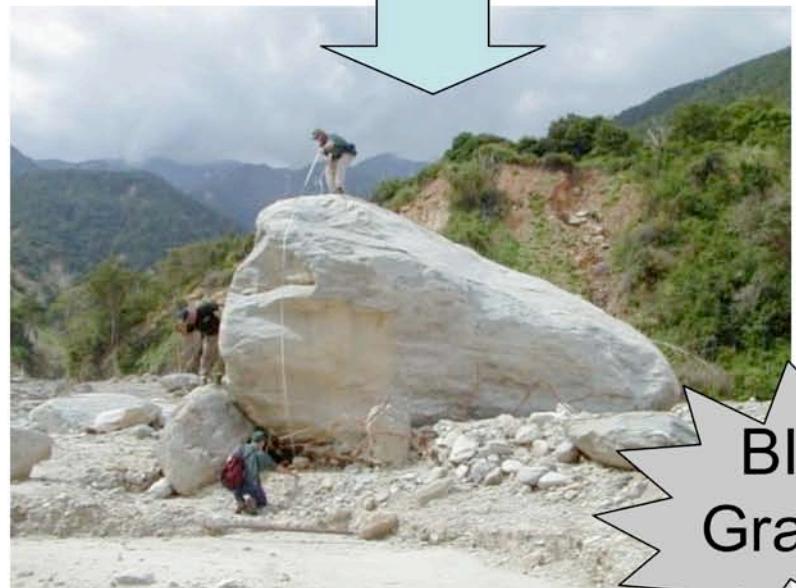
small  
grains



High  
Energy



BIG  
Grains



<b>Location</b>	
<b>Colors</b>	
.....All the same color?	(underline most common colors above)
<b>Grain Size</b>	
.....Minimum grain size	_____ cm
.....Maximum grain size	_____ cm
.....Typical grain size	_____ cm
.....All the same size?	
<b>Grain shapes</b>	Angular ... Medium Angular ... Medium Rounded ... Rounded
<b>Strength</b>	
<b>Other Comments</b>	



If you saw a rock like this in nature...



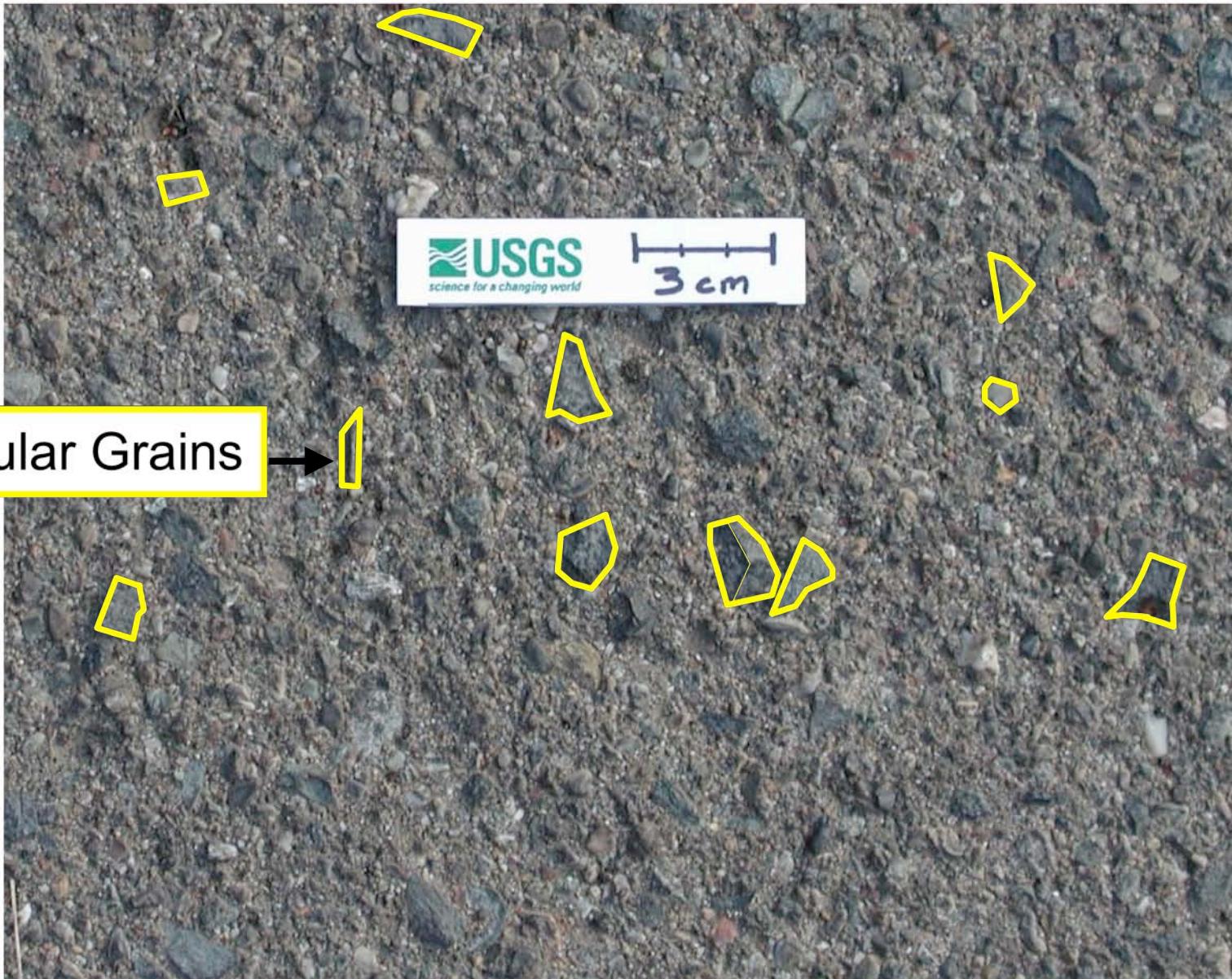
...what could you deduce about where it formed?

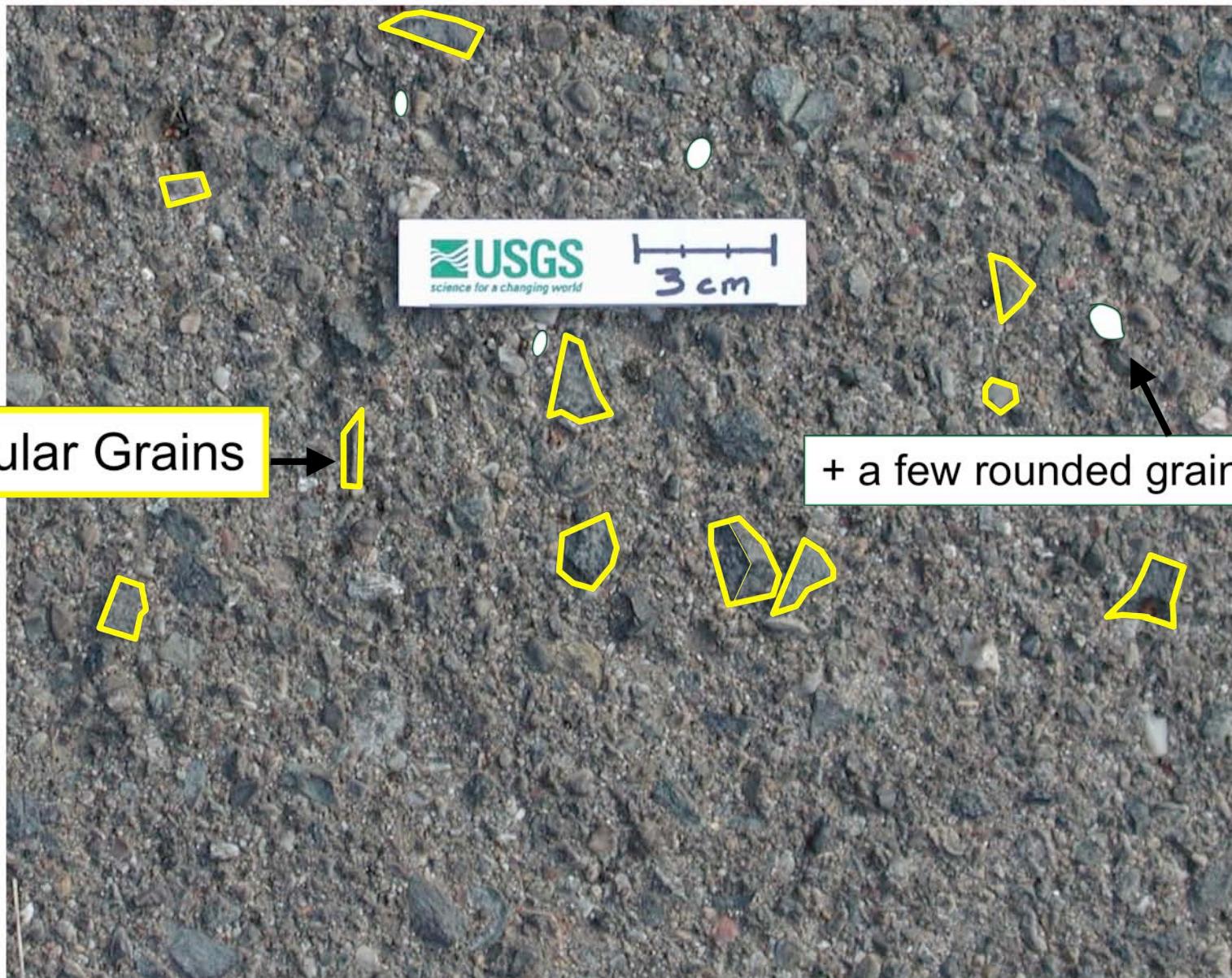
## Interpretation:

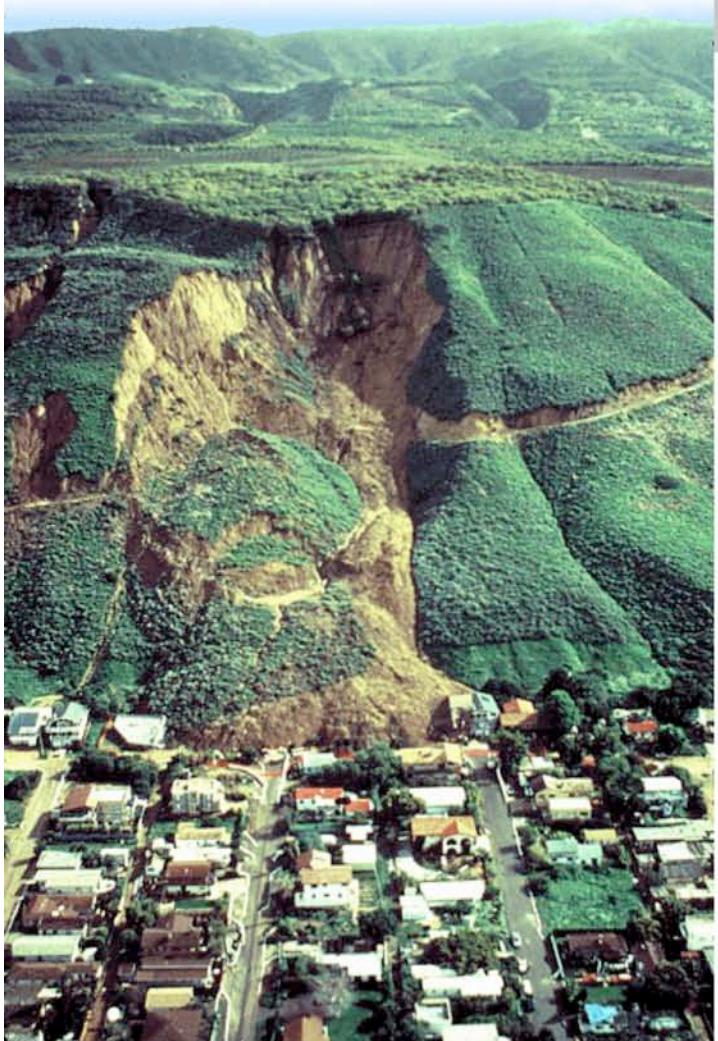
**Natural tar seeps** produce rocks with **all black grains held together by tar**. Beaches produce grains that are *all the same size*. Tar occurs near some California beaches.











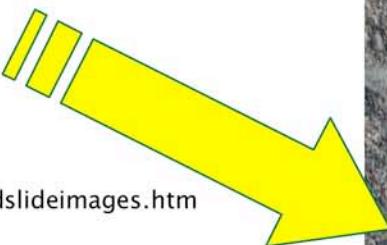
La Conchita Landslide, 1995.

Photograph by R.L. Schuster, U.S. Geological Survey

[http://landslides.usgs.gov/html\\_files/landslides/slides/landslideimages.htm](http://landslides.usgs.gov/html_files/landslides/slides/landslideimages.htm)

## Interpretation:

**Landslides** produce **angular** fragments spanning a *wide range of grain sizes*. Landslides are quick events that break the rocks apart but are not steady or long enough to round the grains





## Interpretation:

A **fast moving stream or river** is the only thing capable of moving **large** grains like these. The grains are rounded because they sat in the river for a while.

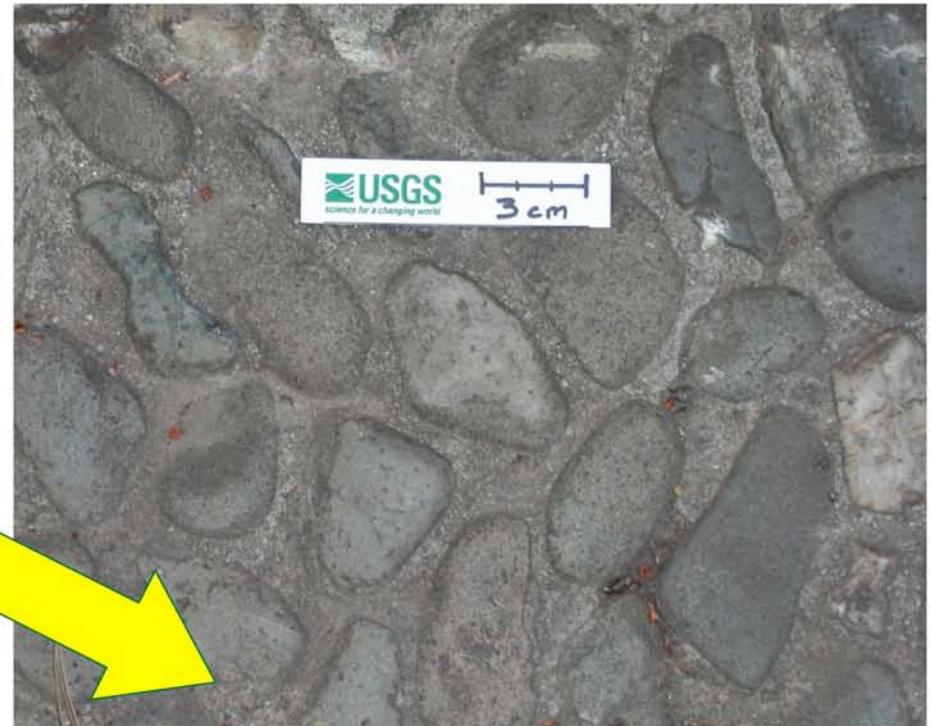


Image Copyright: Oklahoma University  
<http://www.earthscienceworld.org/imagebank/search/results.html?ImageID=hn86m8>



## Interpretation:

**Beaches** produce **small, rounded** grains. They are rounded because repeated wave action slowly wears the pieces down. They are small because waves are not strong enough to move large boulders.





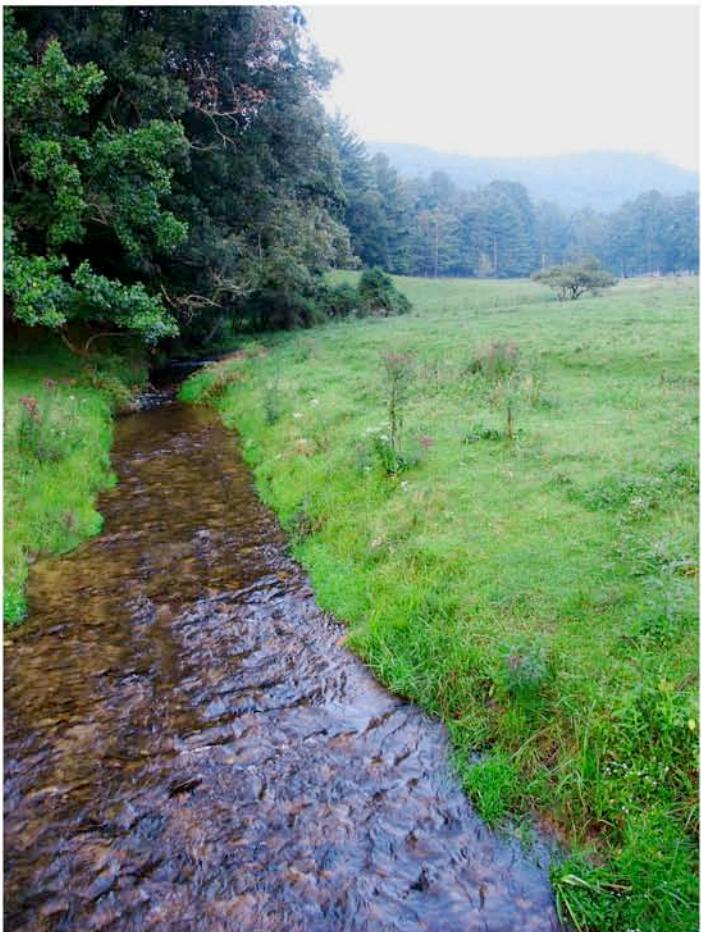


Image Used by Permission from *Black Dove Stock Photography*.  
<http://www.deviantart.com/deviation/15053728/>

### Interpretation:

How fast would water have to flow to push a **1 cm** pebble? It couldn't be too slow, but wouldn't have to be too fast either. A **small creek** would fit the bill. The **round** grains again indicate that it sat in the bed for a very long time.







Image Copyright: Oklahoma University, <http://www.earthscienceworld.org/imagebank/search/results.html?ImageID=hn86m8>

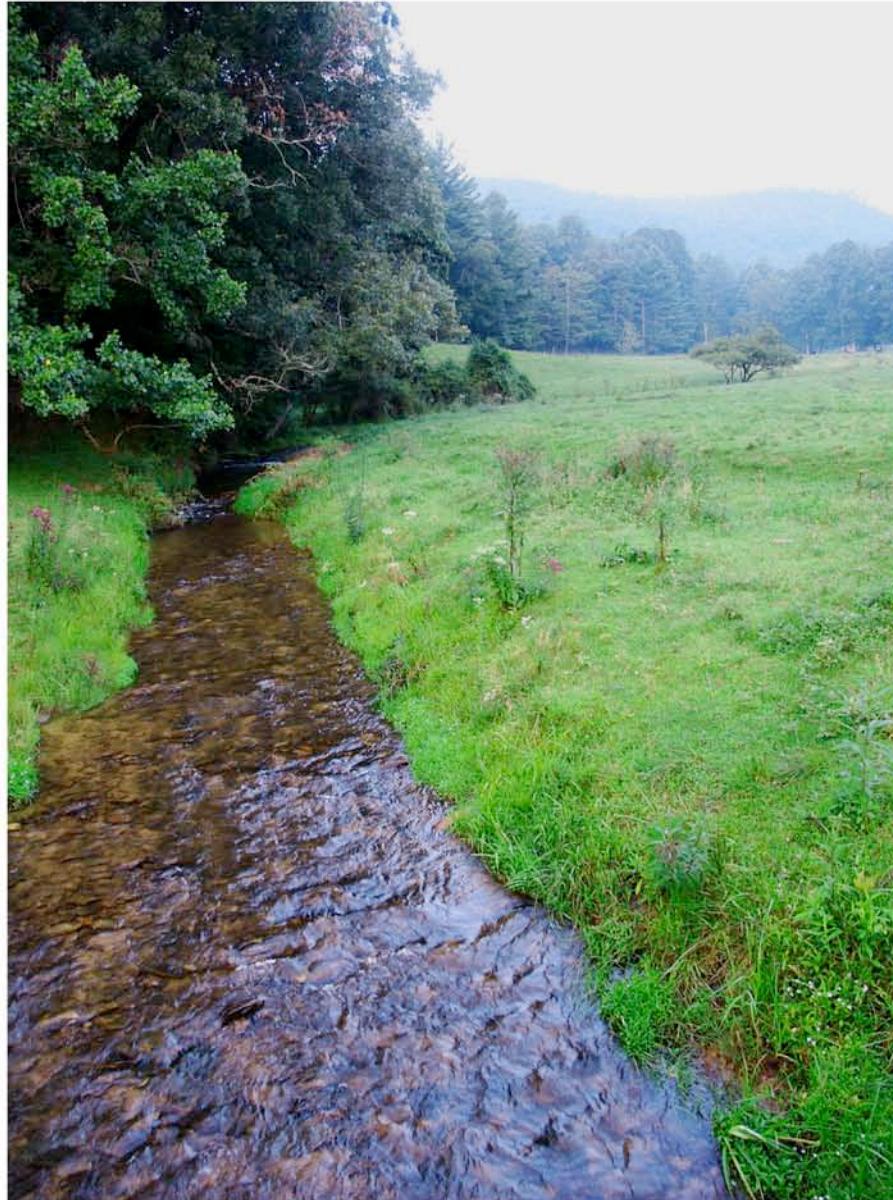


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from *Black Dove Stock Photography*.  
<http://www.deviantart.com/deviation/15053728/>



Pit is about 200 feet deep!

Image From: *County of Marin.*

<http://www.co.marin.ca.us/depts/GJ/main/cvgrjr/2000gj/ssrq/SRRQREPT.pdf>