

# Fossils of Fremont



*"There' s fossils in those hills."*

## *Time scale*

Era	Period	Epoch	Age (yrs)	Life Forms
<b>Cenozoic</b>	<b>Quaternary</b>	<b>Holocene</b>	<b>10.000</b>	<b>modern life forms</b>
		<b>Pleistocene</b>	<b>2 Million</b>	<b>LAST ICE AGE, large terrestrial mammals, mammoths, mastodons, first modern man, cave paintings</b>
	<b>Tertiary</b>	<b>Pliocene</b>	<b>7 M</b>	<b>first Australopithecines, toolmaking, Neanderthals</b>
		<b>Miocene</b>	<b>25 M</b>	<b>large sharks, whales, first hominids</b>
		<b>Oligocene</b>	<b>40 M</b>	<b>first grasses, anthropoids</b>

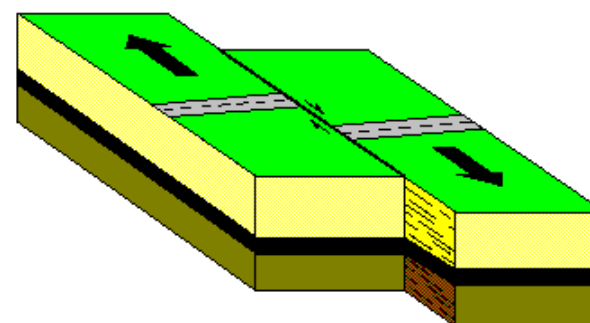
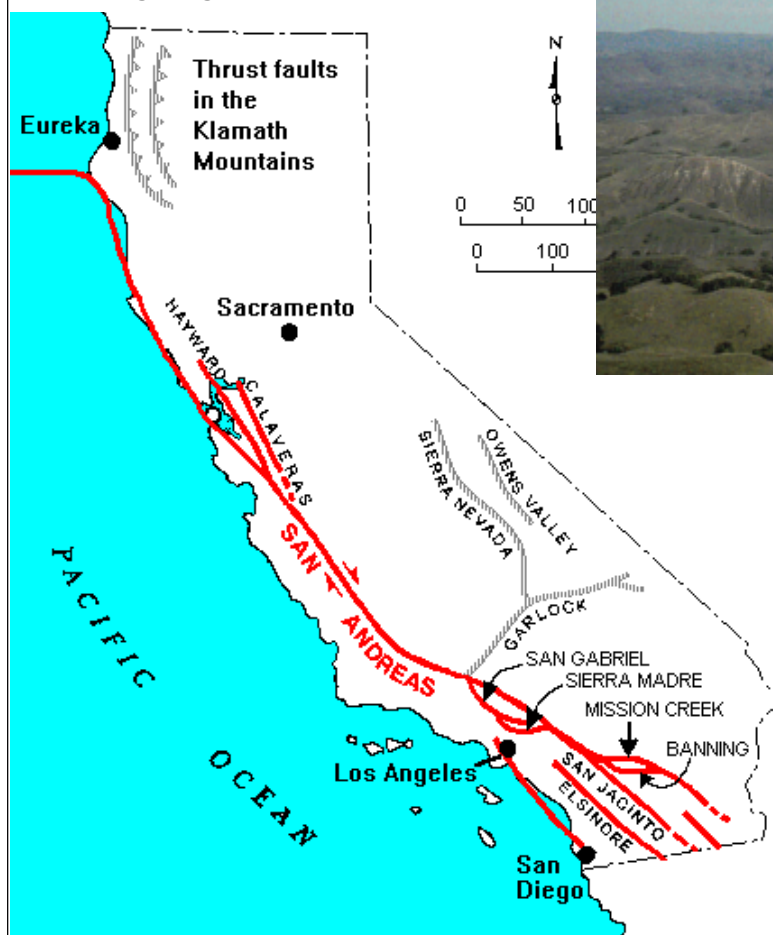


# ***Geology of the Regional Area***

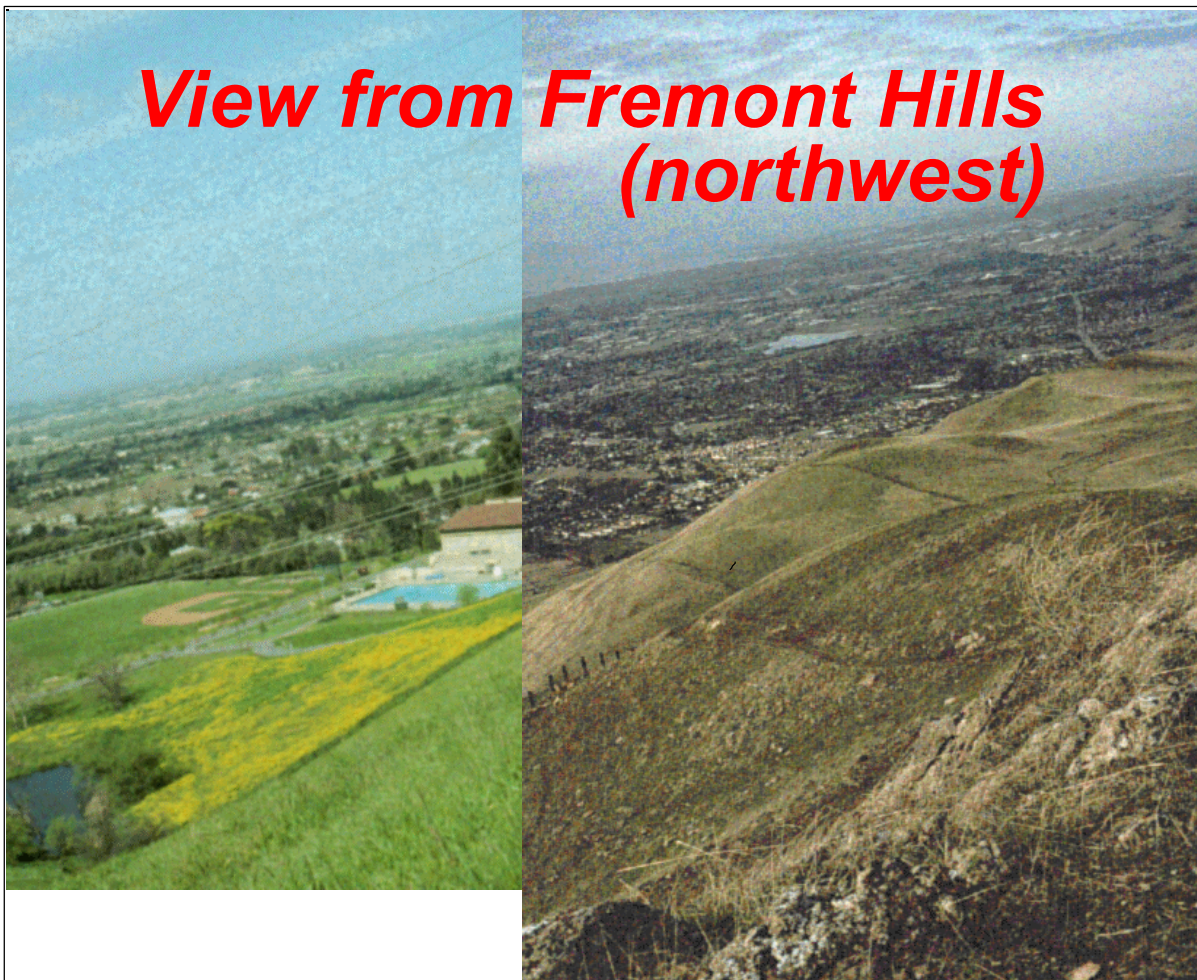
*The movement of the faults have created topographic highs and lows, which shaped how water would flow through the area. Water is important to sustain organisms, but also brings sediments to cover their remains.*



*Changing landscape,  
creates environments for  
living organisms*

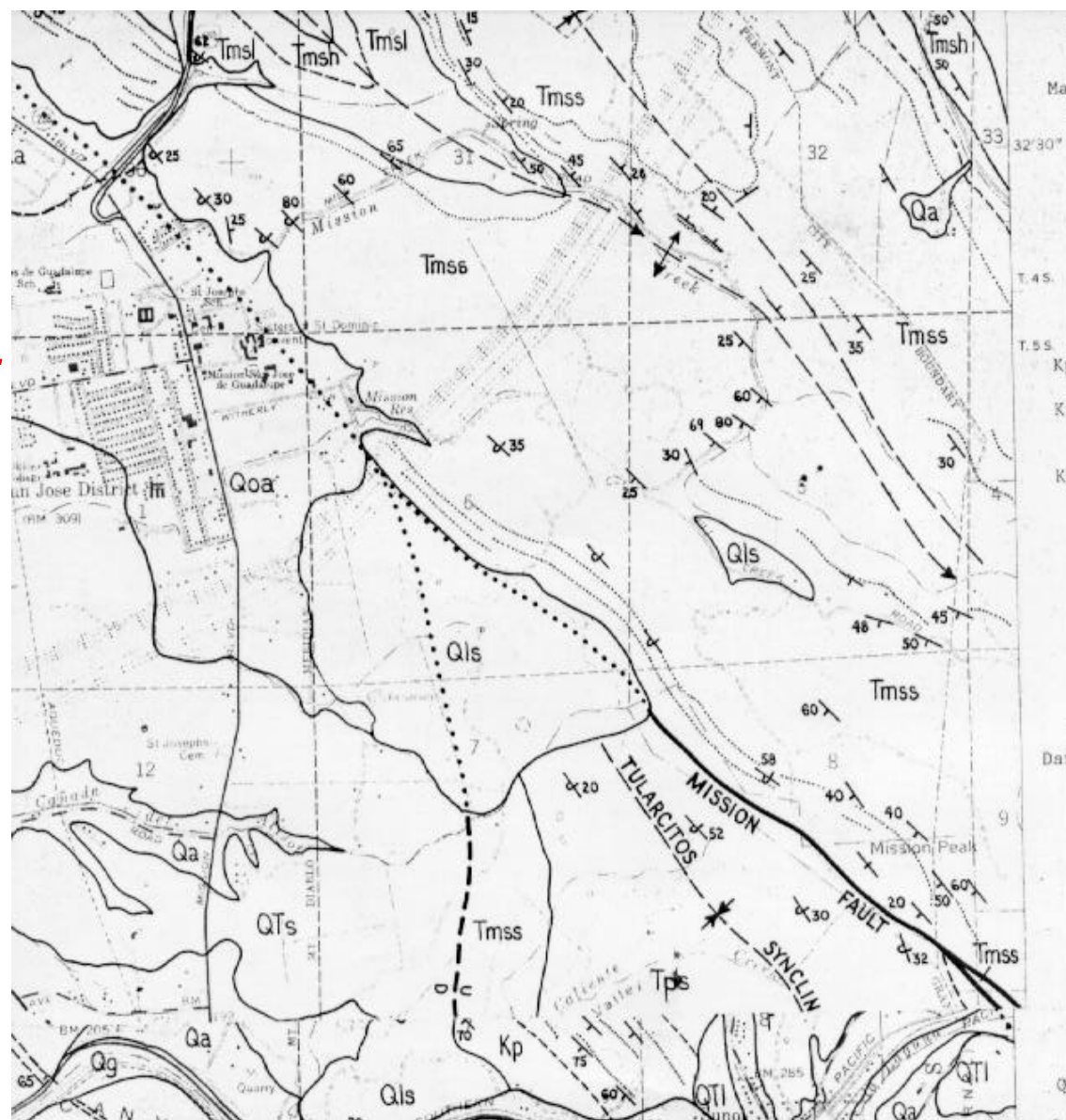


# ***View from Fremont Hills (northwest)***





*Geologic maps help to show where fossils may be located.*





*Sandstone beds that were laid down horizontally, are now tilted*







# **Fremont**

## **(Irvingtonian Stage)**



*Plants (pines, sycamore, willow, oak, cattail)*

*Invertebrates ( fresh water mussel, clam, snail)*

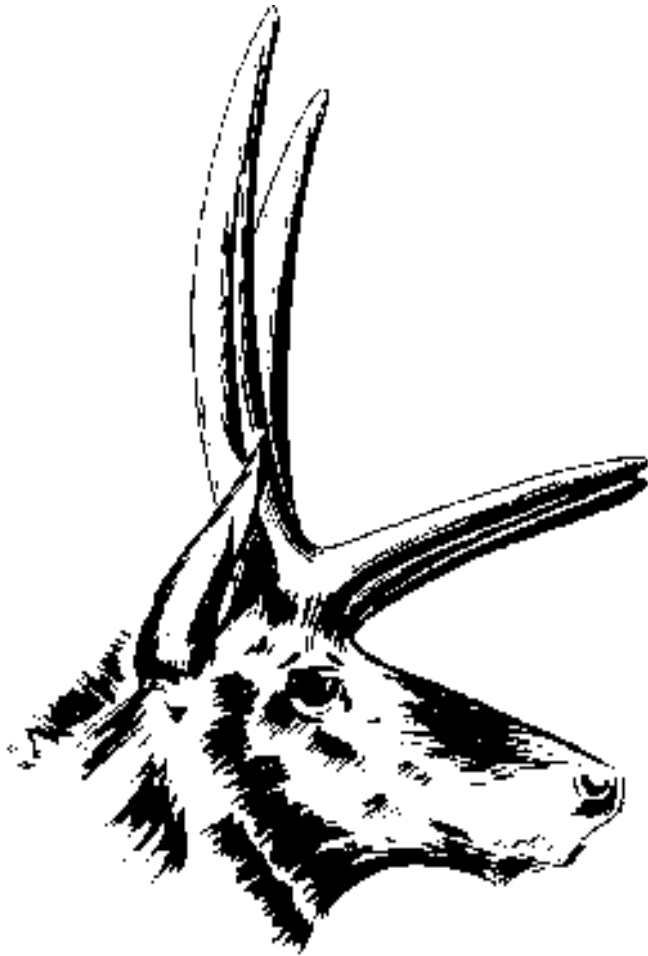
*Vertebrates (sunfish, sucker, minnow, stickleback; salamander, bullfrog, peeper frog, toad; turtle, lizard, snake; goose, mallard, turkey, owls; shrew, mole; woodrat, pocket mouse, deer mouse, tree mouse ground squirrel, gopher ; cottontail; sabercat, jaguar, wolf, coyote, fox, bear, badger; camel, antelope, deer, ox, peccary, mammoth, mastodon, ground sloth, horse*

## *Bell Quarry*



*Now homes are on top of these ridges. Gravel from this quarry (Santa Clara Formation), was used for fill on many of the streets in the south bay. Broken-up fossils could be found in the matrix.*





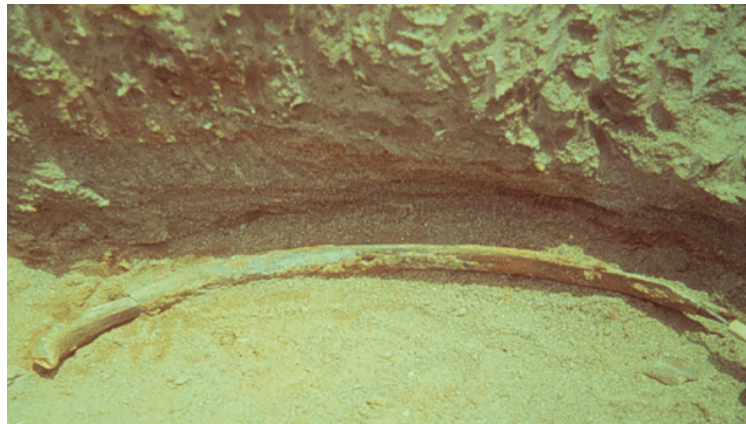
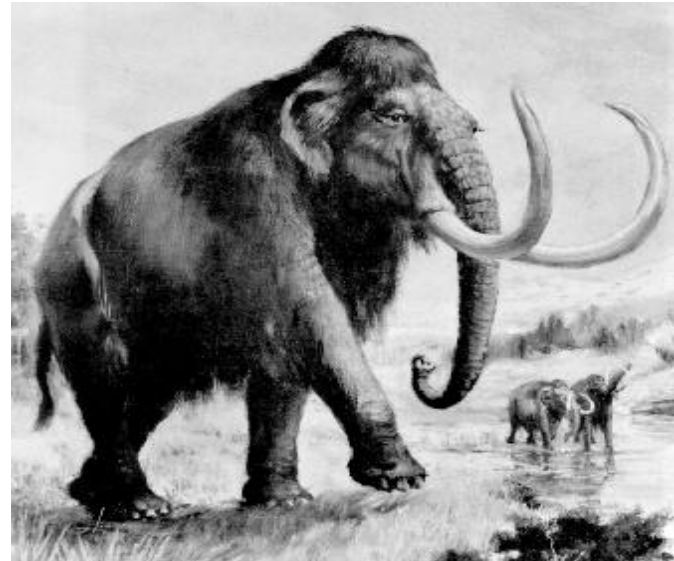
*Tetrameryx irvingtonensis*, similar  
to the modern prongbuck

Boy paleontologists uncovered  
new species



*skull of young mammoth, notice  
the tusk (above)*

*rib of a mammoth (right)*

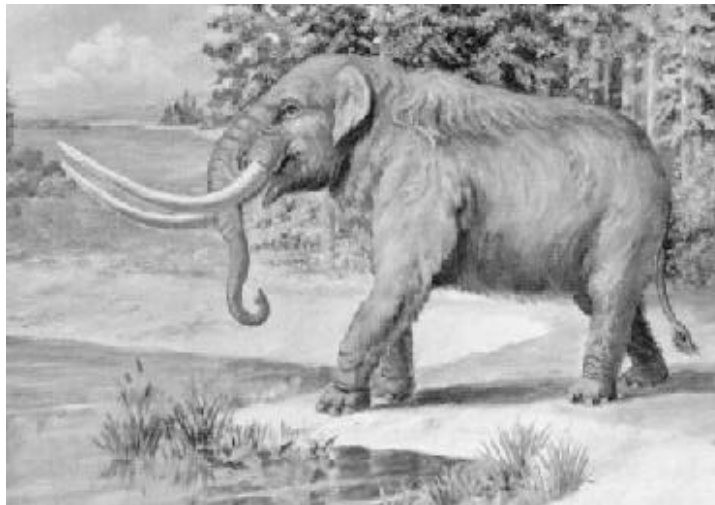




*Don Savage, who called this the Irvingtonian Stage, uncovers a 3 meter section of a mammoth tusk*



*Mammut americanus (Mastodon); smaller than a mammoth (height: 2-3 meters) similar to modern elephant*





*sifting through  
rock to find teeth,  
and small vertebrae*

*Smilodon californicus  
larger than a modern tiger; short tail,  
canines probably to stab mammoths,  
mastodons, and ground sloths*











