

The Fauna of SLAC

Tales of selected species in and around the
SLAC National Accelerator Laboratory

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SASS Talk

July 8th, 2009



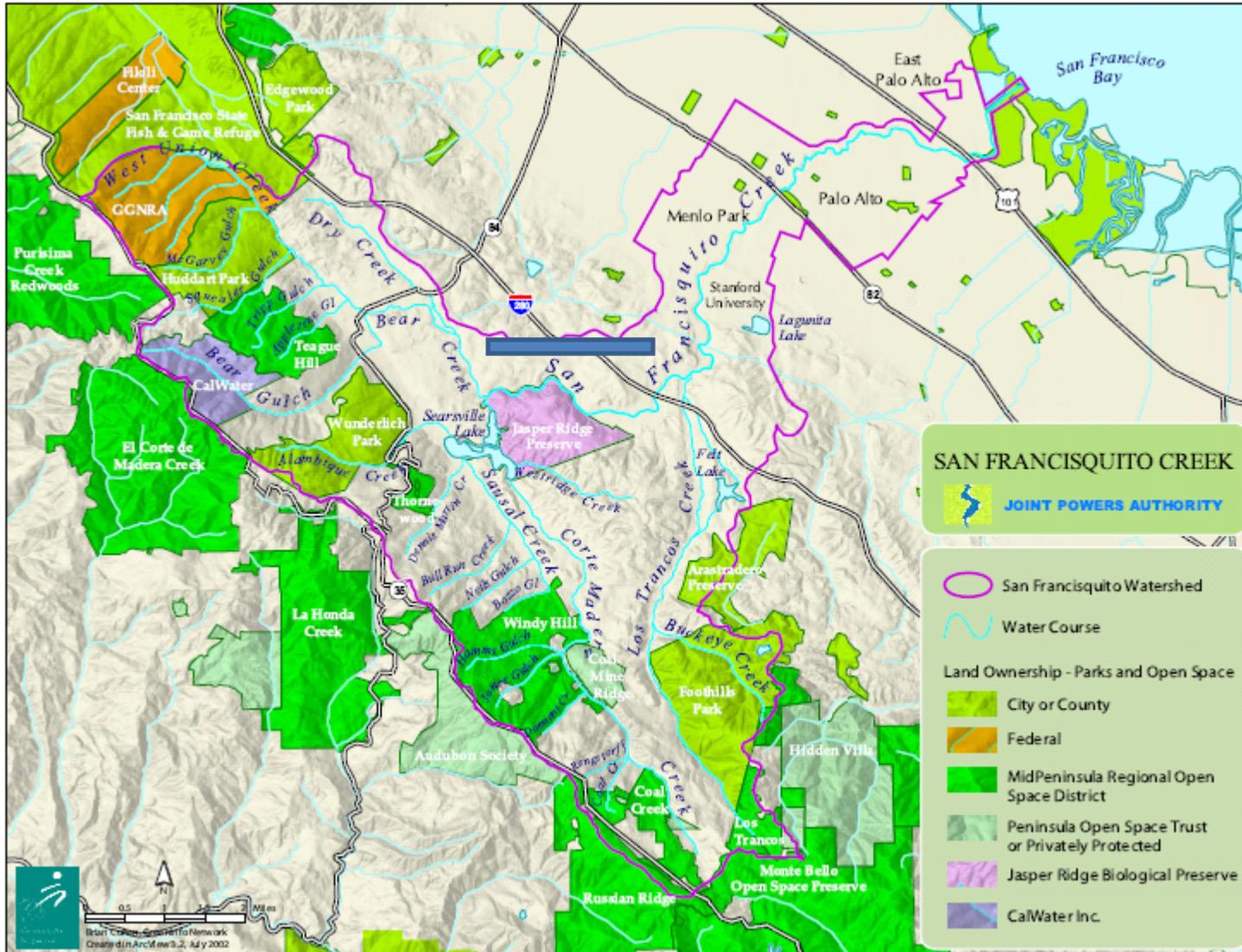
The location that sparked my interest in the outdoors -- Two kettle ponds connected by a narrow waterway in outer Cape Cod.

A wrecked 19th century Schooner washed ashore after over 100 years at sea. Thoreau describes the kettle ponds, as well as a similar shipwreck in "Cape Cod." Roughly 3000 such shipwrecks lie off the coast of the cape.





A California newt. Newt's are aquatic salamanders, of the family Salamandrodae.



SLAC, though itself dry, shares a border along San Francisquito Creek. The watershed is home to 4 federally protected species, three of which can likely be found on Stanford's campus.



A rough skinned newt. Certain populations of Rough Skinned Newt's are believed to be the most poisonous animals in the world. This is the result of an evolutionary arms race between the newt and the only predator resilient to its toxin—the garter snake. This also highlights the difference between venomous and poisonous. Venomous means don't get bitten. Poisonous means don't eat!

The Rough Skinned and California Newt's are nearly identical as adult. Their egg and nymph stages are very different, however. The California newt lays a group of eggs that looks like a bouncy rubber ball. The rough skinned newt lays eggs resembling those of frogs.





The California Tiger Salamander. Black Salamander with pokadots and a smile on it's face, you can't miss it! This species is endemic to the area and critically endangered.



The Red Legged Frog – hunted nearly to extinction– and it’s “replacement” the bullfrog pictured left. The Red Legged Frog is protected. It is a primary food source for the SF Garter Snake, right, also protected.



Pacific Giant Salamander (*Dicamptodon tenebrosus*)

Photo Credit: James Bettaso
U.S. Fish & Wildlife Service

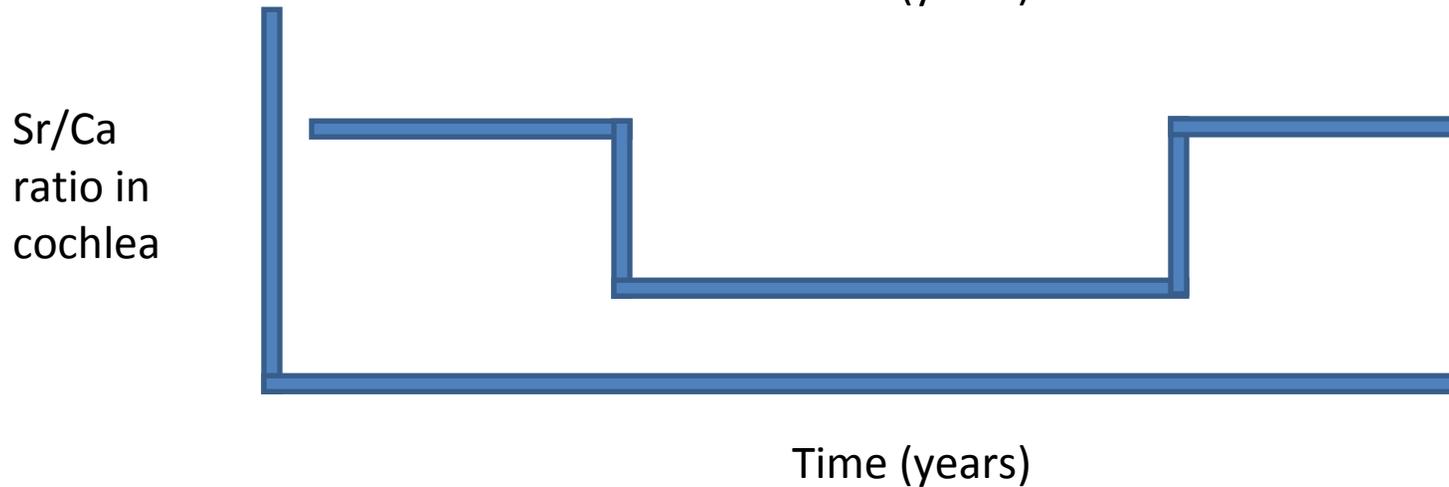
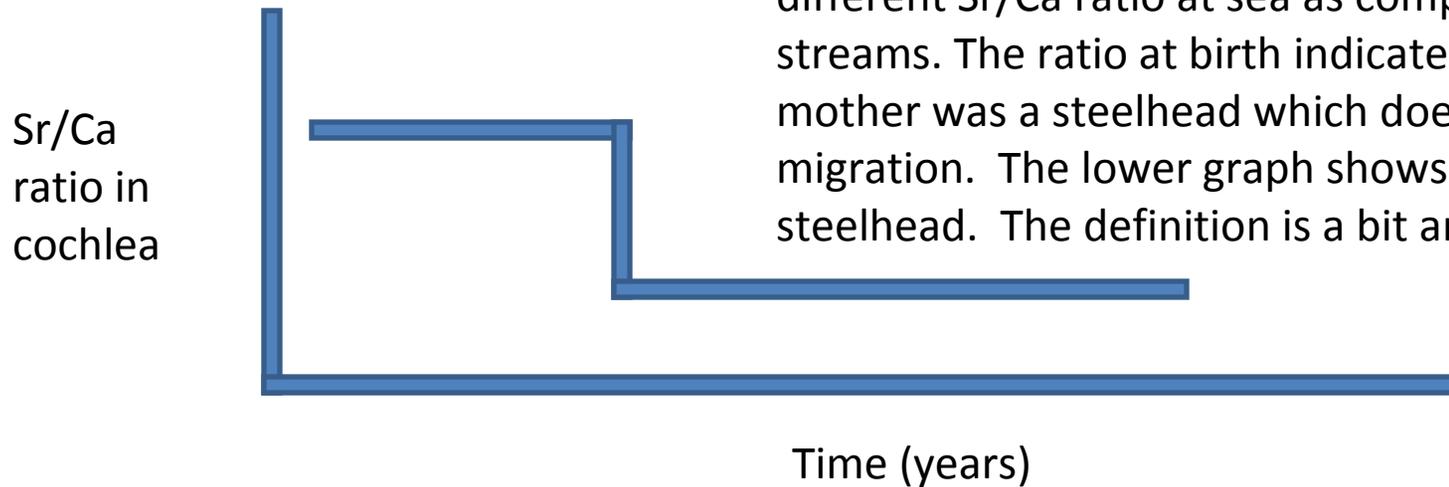
North America's largest Salamander, the Dicamptodon or Pacific Giant Salamander. It is a natural predator of the world's largest terrestrial mollusk, our very own banana slug.



The last protected species— Steelhead Trout. A Steelhead trout is a rainbow trout that's born in a river or stream, migrates out to the bay or ocean after a year or two, then comes back to spawn. How can we distinguish between a steelhead and a normal? We can't really, but...

Are you a steelhead?

A fishes cochlea (small ear bone) acquires a different Sr/Ca ratio at sea as compared to in streams. The ratio at birth indicates whether the mother was a steelhead which does not assure migration. The lower graph shows a true steelhead. The definition is a bit arbitrary...



The 5 T's: Who gets bitten by snakes?



1. Testosterone
2. Tequila, a.k.a. "liquid courage"
3. T-shirts
4. Tattoos
5. 1/Teeth



The Gopher Snake superficially resembles a rattlesnake.

Deaths Per Year (United States)

Snakes: 1-10 deaths/year US

Hymenoptera: ~100 deaths/year



Photo Credit: Alan Launer

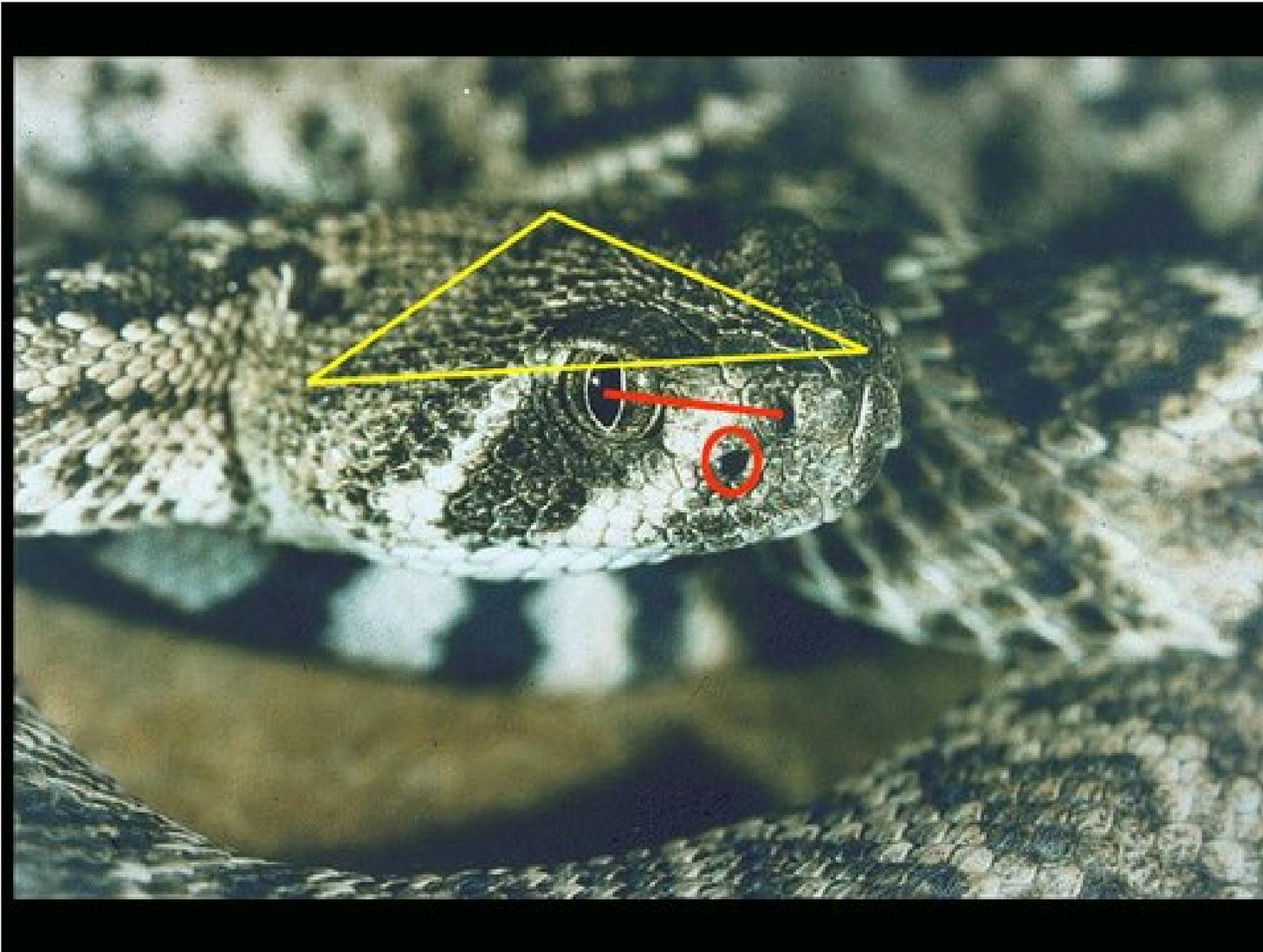


Hymenoptera include bees, wasp, hornets and ants. They cause far more deaths per year in the United States than snakes.



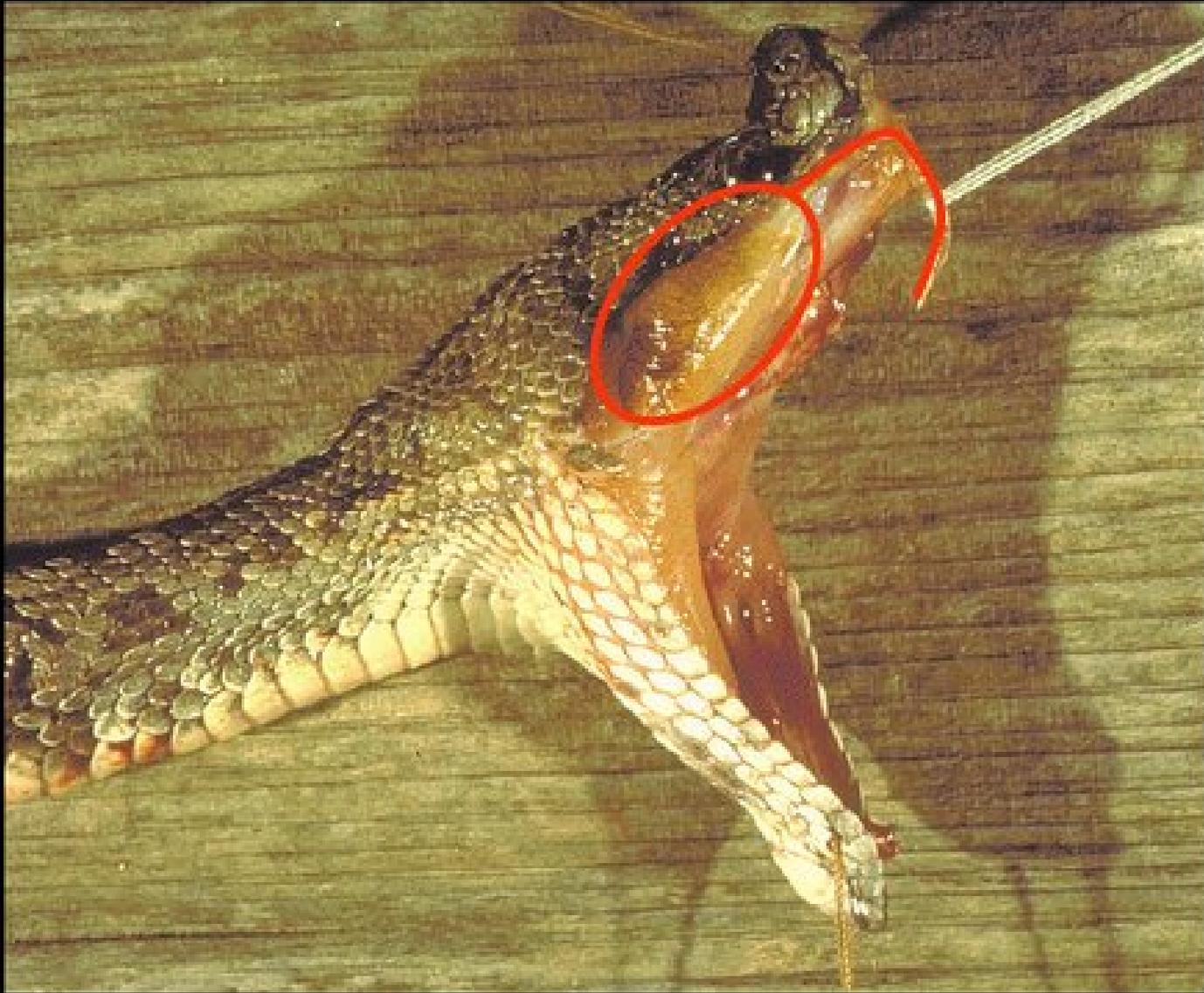
The rattlesnake is distinctly more menacing. The northern pacific rattlesnake, a subspecies of the Western Rattlesnake (not to be confused with Western Diamondback) is found in our area. Rattler's grow one ring on their rattle per molt. Several molts, or none at all, are possible in a given year depending on food availability.

Photo Credit: Alan Launer



Rattlesnakes, like cottonmouths and copperhead are pit vipers (crotalinae). The pit, highlighted above, is a heat sensing organ that helps snakes find prey and judge how much venom to inject. The only venomous snake not of the crotalinae in the United State is the Coral Snake, a cobra cousin.

Photo taken from Robert Norris



The venom sac is shown in this road kill specimen. It is attached to a hollow fang that drops in a trap door style when the mouth is opened.

Photo taken from Robert Norris



The pit organ in action. This blindfolded rattlesnake is striking at a hot light bulb while ignoring the cold one.



Rattlesnakes are not the king of all snakes in the area. That title is reserved for the King Snake. Here a king snake finishes consuming a small rattlesnake. They are resilient to the rattler's venom. The presence of a king snake virtually gaurentees the absence of rattlers in an area.



King snakes are remarkably variable in markings. This is another common king snake that we found in southern California. It is brown and blotchy rather than striped and black, as was the previous snake.



The western fence lizard, or blue bellied lizard, are all over the place. A protein in their blood destroys Lyme Disease in ticks that prey on the lizard. This is a primary reason for the low prevalence of Lyme Disease in California. They are also fond of doing push-ups.



Ever wondered what blue herons, a bird usually seen around water, are doing walking around Stanford's campus? Well, now you know.



Lest we forget SLAC's domesticated wildlife. Above, Sara Gamble's Holland Lop bunny Nacho, a.k.a Nacho Cheese, a.k.a. Mr Amazing.